Endbericht Jubiläumsfonds Projekt Nr. 13614

Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system

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1. Einleitung

Als das Projekt *„Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system“* vom Jubiläumsfonds der österreichischen Nationalbank im Jahr 2009 bewilligt wurde, war noch nicht zu erahnen, welche Relevanz die Thematik „Erneuerbare Energie“ in den Folgejahren entwickeln würde. Zwar gehören die Themen Energiewende und Anti-Atombewegung gerade in Deutschland seit vielen Jahren zur Alltagspolitik, die Situation in Österreich verhält sich jedoch anders. Die durch ein schweres Seebeben ausgelöste Atomkatastrophe in Fukushima/Japan im Frühjahr 2011 hat das Projekt zusätzlich inhaltlich beeinflusst.

Eine weitere überraschende Wendung wiederfuhr der deutschen Förderpolitik für Photovoltaikanlagen. Über viele Jahre war die Errichtung von Photovoltaikanlagen großzügig gefördert worden. In Deutschland entwickelte sich daher eine nicht zuletzt von der günstigen Fördersituation begünstigte Industrie für die Erzeugung von PV-Paneelen. Die Unternehmen gingen aufgrund ihres starken Wachstums und des damit verbundenen Kapitalbedarfs teilweise an die Börse. Im vergangenen Jahr musste jedoch eine Vielzahl der einstigen aufstrebenden Unternehmen Konkurs anmelden beziehungsweise ums Überleben kämpfen. Der Nachfrageeinbruch erzeugte entsprechende Überkapazitäten; die den durch die inzwischen gesunkenen Stückkosten induzierten Preisverfall weiter verstärkten. Eine weitere Schwierigkeit stellt die Kürzung der durch das EEG (Erneuerbare-Energien-Gesetz) gesetzlich vorgesehenen Einspeisevergütung dar. Darüber hinaus haben sich chinesische Firmen zu starken Konkurrenten der deutschen PV-Industrie entwickelt. China hat sich mittlerweile zum Weltmarktführer bei der Erzeugung von PV-Anlagen entwickelt und kann mit weit günstigeren Preisen als die deutsche Konkurrenz aufwarten.

Eingebettet in die dargestellten politischen und gesellschaftlichen Rahmenbedingungen war es Ziel des Projekts, die Bedeutung von Genossenschaften und anderen Formen von Bürgerbeteiligungsanlagen im Bereich der erneuerbaren Energie zu untersuchen. Ein weiterer Aspekt war dabei die Frage, ob und wie Energiegenossenschaften und andere Bürgerbeteiligungsanlagen als soziale Innovationen verstanden werden können.

Konkret hat sich das Projekt mit den folgenden Forschungsfragen auseinandergesetzt:

- Welche verschiedenen Formen von Gemeinschaftsanlagen im Bereich erneuerbarer Energien lassen sich identifizieren – nicht nur im Sinne unterschiedlicher Rechtsformen sondern auch in Bezug auf verschiedene Rollen und Strategien die innerhalb des Energiesystems eingenommen werden? Lassen sich Veränderungen typischer Akteursrollen und -strategien beobachten?
- Wie werden innerhalb einzelner Energiegenossenschaften oder Gemeinschaftanlagen Beziehungsnetzwerke entwickelt? Wie werden auf dieser Mikro-Ebene Strategien entwickelt und Ressourcen mobilisiert?

- Welche institutionellen Rahmenbedingungen fördern oder behindern die Entwicklung von Energiegenossenschaften und anderen Gemeinschaftsanlagen im Bereich erneuerbarer Energien? Wie haben sich diese Rahmenbedingungen in den letzten Jahren verändert?
- Welches Potenzial haben Energiegenossenschaften und andere Formen von Gemeinschaftsanlagen im Bereich erneuerbarer Energien um zu einem Übergang zu einem nachhaltigeren Energiesystem beizutragen?

Das Projekt wurde in mehreren Work Packages behandelt:

1. WP 1: Literaturrecherche
2. WP 2: Länderfallstudien Österreich und Deutschland
3. WP 3: Internationaler Vergleich
4. WP 4: Mikroanalyse der Beziehungsnetzwerke in zwei Energiegenossenschaften
5. WP 5: Synthese der Ergebnisse und Ausblick

Der geographische Fokus des Projektes lag dabei auf Österreich und Deutschland. Der internationale Vergleich in WP 3 umfasste neben einem Vergleich zwischen Österreich und Deutschland jedoch auch einen literaturbasierten Vergleich zu Dänemark und Großbritannien.

In weiterer Folge wird der Begriff ‚Energiegenossenschaft' für Beteiligungsanlagen verwendet, die tatsächlich die Rechtsform der Genossenschaft annehmen. Innerhalb des Projektes wurden jedoch auch Beteiligungsanlagen berücksichtigt, für die eine andere Rechtsform gewählt wurde. Für diesen allgemeineren Fall werden die Begriffe ‚Bürgerbeteiligungsanlage', ‚Gemeinschaftsanlage' und Bürgerkraftwerk' verwendet.

2. Ausgangslage

In Deutschland und Österreich sind in den frühen 1990er Jahren die ersten Bürgerbeteiligungsanlagen im Bereich der Windkraft entstanden. In den letzten Jahren entstehen neue Gemeinschaftsanlagen vor allem im Bereich der Photovoltaik. Viele der neuen Gemeinschaftsanlagen in Deutschland werden in der Form von Genossenschaften (meist im Bereich Photovoltaik) gegründet. In Österreich gibt es eine geringere Zahl an neu gegründeten Energiegenossenschaften. Historisch haben sich in Österreich wie auch in Deutschland im Zuge der Elektrifizierung so genannte Elektrizitätsgenossenschaften gegründet. Einige dieser Genossenschaften bestehen bis heute. Die Rechtsform der Genossenschaft galt schon damals als geeignetes Instrument, um Versorgungsprobleme (etwa von Glühlampen; vgl. Einkaufsgenossenschaft Österreichischer Elektrizitätskraftwerke 2012) gemeinschaftlich zu lösen. Im Bereich landwirtschaftlicher Unternehmen gibt es ebenfalls seit vielen Jahren Biomasseanlagen, die als Genossenschaft geführt werden.

Genossenschaften (mit Bürger/innenbeteiligung), die im Bereich der Photovoltaik oder der Windkraft angesiedelt sind, finden sich in Österreich erst seit einigen Jahren und in vergleichsweise geringer Anzahl. Diese geringere Zahl lässt sich mit der im Vergleich zu Deutschland anderen historischen Entwicklung erklären. In Österreich gab es zwar auch eine relevante Anti-Atom-Bewegung – die erfolgreich die Inbetriebnahme des einzigen österreichischen Atomkraftwerks in Zwentendorf in den 1970er Jahren verhindern konnte – danach wurde es jedoch wieder ruhiger. In Österreich wird ein relativer hoher Anteil des hier erzeugten Stroms durch Wasserkraft gewonnen. Wasserkraft gilt trotz aller Probleme und Gefahren als „sauber“. Das scheint dazu zu führen, dass das Bewusstsein für erneuerbare Energie und die Bereitschaft sich persönlich zu engagieren weniger stark ausgeprägt ist als in Deutschland, wo eine fixe Verankerung des Themas Energiewende besteht.

In Deutschland kam es in den letzten vier Jahren zu einer regelrechten Gründungswelle im Bereich von Energiegenossenschaften, die auch von den Revisionsverbänden als neues Geschäftsfeld erkannt wurden.

3. Thesen

3.1. Akteure

3.1.1. Bürger/innen

Dem Engagement der Bürger/innen kommt bei der Verbreitung von Erneuerbarer Energie eine entscheidende Rolle zu.

Die großen Energieversorgungsunternehmen sowie die Politik prägen wechselseitig die Art der Versorgung. Seit der Liberalisierung des Strommarkts haben Verbraucher/innen – also die Bürger/innen – die Möglichkeit, das Versorgungsunternehmen frei zu wählen. Der Preis spielt dabei eine entscheidende Rolle, ebenso wie die grundsätzliche Bereitschaft zu einem Wechsel des Versorgers, die angesichts der nicht spürbaren Produktqualität – Strom funktioniert immer gleich gut – oftmals nicht stark ausgeprägt ist. Für immer mehr Menschen wird es jedoch – verstärkt durch Ereignisse wie beispielsweise die Katastrophe in Fukushima/Japan im Frühjahr 2011 – immer wichtiger, woher der erzeugte Strom kommt. Die Versorgungsunternehmen haben das erkannt und setzen in ihrem Marketing vermehrt auf den „sauberen" Anteil der von ihnen vermarkteten Energie, mag dieser auch noch so gering sein Neben den großen Versorgungsunternehmen werden aber in Deutschland immer mehr „kleine" Energiegenossenschaften in der Energieerzeugung aus erneuerbaren Quellen aktiv. Die Bürger/innen können also einerseits als Konsumenten als auch aktiv durch ihr Engagement in solchen Energiegenossenschaften die Energiepolitik mitgestalten.

Von der Politik wurde das Bedürfnis nach erneuerbarer Energie und aktiver Mitgestaltung bereits erkannt, was dazu führt, dass solche Anlagen immer öfter mit Unterstützung der Gemeinden oder politischen Parteien errichtet werden.

Energieaffine Bürger/innen fühlen sich von der Rechtsform Genossenschaft angesprochen, weil sie ermöglicht, persönlichen Aktivismus und das Eintreten für eine als richtig empfundene Sache zu demonstrieren (soziales Image der Genossenschaft).

Bürger/innen, die sich im Bereich der erneuerbaren Energie aktiv engagieren, zeichnen sich zumeist durch ein ausgeprägtes Interesse am Thema Energie aus. Die im Projekt durchgeführte Erhebung (Solargenossenschaft Rosenheim) hat gezeigt, dass der finanzielle Aspekt – die Rendite – von untergeordneter Bedeutung ist. Eine viel größere Rolle spielt der ideelle Gedanke, durch die Beteiligung etwas „Gutes" tun zu können. Aus diesem Grund ist der rechtliche Organisationsrahmen von wesentlicher Bedeutung.

Die Rechtsform der Genossenschaft wird von vielen Personen als „gut" und somit zum Thema passend gesehen. Neben den wahrgenommen Eigenschaften der Genossenschaft, spielen auch die gesetzlichen Rahmenbedingungen eine entscheidende Rolle. Das „Pro Kopf eine Stimme"-Prinzip eignet sich für Bürgerbeteiligungsprojekte, da alle beteiligten Personen gleich-

berechtigt sind. Es spielt keine Rolle, wie viele Geschäftsanteile gezeichnet werden, sondern, dass für die gleichen Werte eingetreten wird. Eine Umwandlung/Gründung in eine reine Kapitalgesellschaft würde auf viele engagierte Bürger/innen, die sich zudem oftmals tendenziell mit eher „linken“ Politikkonzepten identifizieren – abschreckend wirken.

Die Intention, Mitglied in einer Energiegenossenschaft zu werden, ist intrinsisch motiviert.

Die Gründe, Mitglied in einer Energiegenossenschaft zu werden, sind vielfältig. Die durchgeführte Befragung in der Solargenossenschaft Rosenheim hat gezeigt, dass die intrinsische Motivation eine große Rolle spielt. Obwohl mit der Zeichnung des Genossenschaftsanteils eine Beteiligung am Geschäftsmodell verbunden ist, spielen finanzielle Aspekte nur eine untergeordnete Rolle. Das mag auch daran liegen, dass Beteiligungen an Projekten erneuerbarer Energie (noch) nur geringe Gewinne abwerfen. Dass es in Deutschland vergleichsweise viele Bürgerbeteiligungsprojekte in diesem Bereich gibt, liegt vor allem auch daran, dass die Anti-Atom-Bewegung und die Energiewende eine lange Geschichte haben. Es gibt viele Menschen, die mit dem Thema aufgewachsen sind und daher ein großes Energiebewusstsein haben.

3.1.2. Gemeinden

PCP (Public Citizen Partnership) Modelle unterstützen die Verbreitung von erneuerbarer Energie.

PCP-Modelle sind Organisationsformen innert derer die Gemeinde gemeinsam mit Bürger/innen Aufgaben der öffentlichen Daseinsvorsorge löst. Ein PCP-Modell kann in unterschiedlichen Rechtsformen organisiert sein. Aufgrund der demokratischen Ausrichtung bietet sich jedoch insbesondere die Genossenschaft als Organisationsform an. Neben Projekten im Bereich der Kinder- und Altenbetreuung oder Nahversorgung ist die Erzeugung von erneuerbarer Energie ein weiteres geeignetes Themenfeld. Es gibt zwar viele Projekte, wo Bürger/innen alleine tätig sind, oft ist jedoch auch die Unterstützung der Gemeinde vorhanden. Eine solche Unterstützung kann dabei unterschiedliche Formen und Intensitätsgrade annehmen, ein Beispiel ist etwa die kostenfreie Zurverfügungstellung von öffentlichen Dächern. PCP-Modelle können eine gemeinsame Plattform für Bürger/innen und Gemeinden bieten und so zur Akzeptanz und Verbreitung von Erneuerbarer Energie beitragen.

Gemeinden sind meist wichtige Akteure für die Errichtung von Gemeinschaftsanlagen. Die Gemeinde kann dabei unterschiedliche Rollen einnehmen.

Gemeinde als Entscheidungsträgerin: Gemeinden spielen als Entscheidungsträgerinnen vor allem bei der Flächenwidmung für Windkraftanlagen und Photovoltaik-Freiflächenanlagen eine wesentliche Rolle. Sowohl in Österreich als auch in Deutschland ist die Gemeinde zusammen mit höheren Entscheidungsebenen (Region, Land) für die Flächenwidmung zuständig.

Gemeinde als Initiatorin einer Bürgerbeteiligungsanlageanlage: Gemeindevertreter/innen können auch die Entwicklung von Gemeinschaftsanlagen initiieren. So kam es in Österreich, nachdem die erste Windkraft-Bürgerbeteiligungsanlage errichtet worden war, bei der betreffenden Firma zu mehreren Anfragen interessierter Gemeinden. Auf dieser Basis konnten weitere Bürgerbeteiligungsanlagen entwickelt werden. Darüber hinaus sind viele österreichische Gemeinden, die am e5 Programm für energieeffiziente Gemeinden teilnehmen, an der Errichtung einer PV-Bürgerbeteiligungsanlage interessiert.

Gemeinde als Teilhaberin: In Ausnahmefällen (z.B. Windpark Wolkersdorf in Österreich, Bürgerwindpark Lübke-Koog in Deutschland) kann es dazu kommen, dass die Gemeinde selbst Teilhaberin einer Gemeinschaftsanlage wird.

Koordination von Akteuren: Beim ersten Bürgerwindpark Deutschlands, dem Bürgerwindpark Lübke-Koog, spielte die Gemeinde auch eine wichtige Rolle in der Koordination von Akteuren. Nachdem von Landwirten mehrere Einzelanträge auf Errichtung von Windrädern eingegangen waren, initiierte die Gemeinde eine Koordination dieser Aktivitäten, woraus schließlich der Bürgerwindpark hervorging.

Unterstützungsleistungen der Gemeinde: Gemeinden können Gemeinschaftsanlagen auf verschiedene Arten unterstützen, etwa durch politische Unterstützung (Meinungsbildung) oder durch Bereitstellung von Sachmitteln (z.B. Bereitstellung einer Dachfläche für eine PV-Anlage).

3.1.3. Unterstützungsorganisationen

In Deutschland haben sich spezielle Unterstützungsorganisationen für Gemeinschaftsanlagen herausgebildet. In Österreich wird diese Rolle von den bundesweiten Interessensvertretungen für erneuerbare Energie und von regionalen Energieagenturen wahrgenommen.

In Deutschland hat sich in den letzten Jahren ein breites Feld an Unterstützungsangeboten für die Entwicklung von Bürgerkraftwerken entwickelt. Ein Anzeichen dafür ist schon die bemer-

kenswerte Anzahl an Handbüchern und Leitfäden die dazu herausgegeben wurden.[1] Insbesondere für Energiegenossenschaften gibt es mittlerweile vielfältige Unterstützungsangebote. Von besonderer Bedeutung sind Angebote im Bereich der Ausbildung und Beratung. Eine Ausbildung zum/zur Projektentwickler/in von Energiegenossenschaften wird etwa von der innova eG in Kooperation mit der Evangelischen Arbeitsgemeinschaft für Erwachsenenbildung angeboten, weitere Kurse gibt es an der Technischen Hochschule Mittelhessen. Ein anderer Zugang zur Unterstützung der Gründung von Energiegenossenschaften besteht darin replizierbare Konzepte und Vorlagen (Statuten, Verträge, Homepage, etc.) anzubieten. Dieser Ansatz wird vom Genossenschaftsverband Weser-Ems und von der bayerischen Agrokraft GmbH verfolgt. Darüber hinaus sind auch Plattformen entstanden, die der Vernetzung, dem Austausch und der Nutzung von Synergien dienen sollen (Verband der Bürger-Energiegenossenschaften Baden-Württemberg, ARGE Energiegenossenschaften). Abgesehen von speziellen Unterstützungsorganisationen für Energiegenossenschaften, gibt es auch regionale Vereine und Energieagenturen (z.B. fesa, windcomm), die die Verbreitung von Bürgerkraftwerken unterstützen.

Die bundesweiten Interessensvertretungen für erneuerbare Energietechnologien spielen in Deutschland in der Unterstützung von Bürgerbeteiligungsanlagen eine untergeordnete Rolle. In Österreich hingegen, wo es keine speziellen Organisationen gibt, die Bürgerbeteiligungsanlagen unterstützen, gelten vor allem solche technologiespezifischen Interessensvertretungen als Unterstützungsorganisationen, insbesondere die IG Windkraft. Dies dürfte auch damit zusammenhängen, dass die Verbreitung von Bürgerbeteiligungsanlagen in Österreich weniger stark als in Deutschland mit dem Gedanken der Entwicklung alternativer, dezentraler Wirtschaftsstrukturen verknüpft ist – im Vordergrund steht die Ausbreitung erneuerbarer Energietechnologien. Weiters spielen auch in Österreich einige regionale Vereine und Energieagenturen eine Rolle in der Unterstützung von Bürgerbeteiligungsanlagen.

[1] Siehe DAKS (2006), 'Bürger machen Energie: Bürgerkraftwerke - Ein Handlungsleitfaden'. Dresden, DAKS e.V. http://www.buerger-kraftwerke.de/commonFiles/pdfs/Erneuerbare_Energien/DAKS_Buerger_machen_Energie_Handlungsleitfaden.pdf

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3.1.4. EVUs

In Deutschland stehen die großen Energieversorgungsunternehmen (EVUs) den Akteuren im Bereich erneuerbare Energien (u.a. Bürgerkraftwerke) als Kontrahenten gegenüber. In Österreich sind diese Konflikte weit weniger ausgeprägt.

Der deutsche Strommarkt wird bislang stark von vier großen EVUs dominiert – RWE, EON, Vattenfall und EnBW halten gemeinsam einen Marktanteil von 65 – 70 %. Diese großen EVUs sind jedoch nur in sehr geringem Umfang im Bereich erneuerbarer Energien aktiv, ihr Anteil an der gesamten installierten Leistung im Bereich der Erneuerbaren betrug im Jahr 2010 lediglich 6,5 %.[2] Ein weitaus größerer Anteil an Ökostromanlagen ist im Besitz von BürgerInnen, Landwirten, regionale EVUs und Stadtwerken, sowie weiterer mittelständischer Unternehmen. Die Position der großen EVUs muss dabei im Lichte des gesellschaftlichen Konflikts um die Nutzung der Atomkraft in Deutschland gesehen werden. Erneuerbare Energien werden in diesem Zusammenhang vielfach bewusst als ‚Antithese' zur Atomkraft positioniert. Angesichts des Engagements der großen EVUs im Bereich der Atomkraft sowie ihrer dominanten Stellung am Strommarkt stehen sie Akteuren im Bereich erneuerbarer Energien (u.a. Bürgerkraftwerke) als Kontrahenten gegenüber. Akteure im Bereich von Bürgerbeteiligungsanlagen streben nicht an die großen EVUs für den Ausbau von erneuerbaren Energien als Verbündete zu gewinnen, sondern möchten vielmehr den Aufbau unabhängiger, dezentraler Strukturen weiter vorantreiben.

Diese Situation stellt sich in Österreich anders dar. Im Bereich der Windkraft standen zwar EVUs ersten Versuchen im Bereich der Windkraft sehr skeptisch gegenüber. Nachdem die technisch-wirtschaftliche Machbarkeit inzwischen als erwiesen gilt, sind jedoch einige EVUs (EVN, BEWAG, Verbund) auch zu wichtigen Marktakteuren in der Windkraft geworden. Manche Vertreter/innen von Bürgerbeteiligungsanlagen bedauern zwar etwas den abnehmenden Marktanteil von Bürgerbeteiligungsmodellen, begrüßen aber grundsätzlich den Einstieg der EVUs in die Windenergie. Gemeinsame Interessen, insbesondere die Schaffung förderlicher Rahmenbedingungen für den Ausbau der Windkraft in Österreich, haben hier mehr Gewicht als die Auseinandersetzung um bestimmte Formen der Umsetzung. (Siehe auch den nachfolgenden Abschnitt Historisch-kultureller Kontext)

[2] trend:research (2011), 'Marktakteure Erneuerbare - Energien - Anlagen in der Stromerzeugung'. Köln, KNi - Klaus Novy Institut

3.2. Institutionelle Rahmenbedingungen

3.2.1. Historisch-kultureller Kontext

Der historische Kontext spielt eine entscheidende Rolle für die Entwicklung von Energiegenossenschaften.

Energiegenossenschaften sind nicht überall gleich weit verbreitet. Es hat sich klar gezeigt, dass Deutschland weit mehr Genossenschaften im Energiebereich aufweist als Österreich. Nachdem sich die Bedingungen zur Gründung einer Genossenschaft und auch die Genossenschaftsaffinität nicht stark unterscheiden, liegt das aller Wahrscheinlichkeit nach zu einem großen Anteil an den unterschiedlichen historischen und kulturellen Kontexten. Deutschland hat eine lange Geschichte der Anti-Atom-Bewegung. Das Thema Energie und Aktivismus ist bei vielen Bürger/innen präsent. Die Befunde, dass die intrinsische Motivlage von Mitgliedern von Energiegenossenschaften ausgeprägt ist, sprechen ebenfalls für diese Vermutung. In Österreich wurde hingegen der Bau des Atomkraftwerks Zwentendorf in den 1970er Jahren erfolgreich von Aktivist/innen verhindert.

Zudem wird ein großer Anteil der erzeugten Energie mittels Wasserkraft erzeugt. Innerhalb der Landesgrenzen fehlt es demnach nach dem großen „Gegner" Atomkraftwerk. Auch die österreichische Politik betreibt parteiübergreifend eine Anti-Atom-Politik. Die überwiegende Mehrheit verspürt daher ein geringeres Bedürfnis, sich aktiv in Energiegenossenschaften zu engagieren.

In den letzten Monaten wurde das Thema aber zunehmend von der Politik aufgegriffen. In Wien wurden bereits mehrere „Bürgersolarkraftwerke" errichtet: Es handelt sich dabei um ein Kooperationsprojekt der Wien Energie mit der Stadt Wien.

Eine weitere wesentliche Rolle kommt den jeweiligen Genossenschaftsgesetzen und den Genossenschaftsverbänden zu. Umso „mitgliederfreundlicher" agiert wird, desto mehr Initiativen gründen dann tatsächlich eine Genossenschaft. Ist das Gegenteil der Fall, wird das Projekt eventuell als Verein geführt. Die deutschen Revisionsverbände haben hier Vorbildwirkung und den Bereich der Energiegenossenschaften als neues Kundensegment für sich entdeckt.

Vorarlberg ist anders? Die verschiedenen Akteurs- und Interessenslagen in Vorarlberg bauen auf einer stark verankerten Tradition des Bürger/innen-Engagements auf.

Bei der Beschäftigung mit dem Thema Bürger/innenengagment fällt immer wieder auf, dass viele „Vorzeigeprojekte" im Bundesland Vorarlberg aufzufinden ist. Die Vorarlberger Landesregierung setzt seit vielen Jahren auf Schlagwörter wie „Ehrenamt" und „Miteinander". Das hat dazu geführt, dass sich mit dem „Büro für Zukunftsfragen" eine eigens geschaffene Abteilung im Land Vorarlberg mit Themen wie Sozialkapital, Verantwortung und Bürger/innenräte beschäftigt und aktiv die Bevölkerung einbindet. Die starke politische Unterstützung von Bürger/innenbezogenen Themen führt dazu, dass die meisten Institutionen in einem engen Austausch mit dem Land Vorarlberg stehen.

In Deutschland sind Gemeinschaftsanlagen im Bereich erneuerbarer Energien sehr stark mit dem Gedanken einer Dezentralisierung des Energiesystems und einer Abkehr von der Atomkraft verbunden.

In Deutschland existiert eine langanhaltende gesellschaftliche Debatte um die Nutzung der Atomkraft. Dieser konfliktbehaftete Diskurs überträgt sich auch auf Diskussionen um erneuerbare Energien, da diese vielfach als ‚Antithese' zur Atomkraft positioniert werden. Dazu kommt, dass der deutsche Strommarkt bislang stark von vier großen EVUs dominiert wird (vgl. dazu Abschnitt 3.1), die allesamt im Bereich der Atomkraft engagiert sind. Vor diesem Hintergrund positionieren sich Bürgerkraftwerke im Bereich erneuerbarer Energien sowohl als technische Alternative (erneuerbare Energien statt Atomkraft) als auch als ökonomische Alternative (dezentrale Strukturen und regionale Wertschöpfung) zum etablierten Energiesystem. Diese beiden Aspekte sind in Österreich weit weniger ausgeprägt. Zwar war die Debatte um Atomkraft in den späten 1980er und frühen 1990er Jahren auch in Österreich durchaus präsent und hat auch zur Entwicklung von Bürgerbeteiligungsmodellen im Bereich der Windkraft beigetragen, da der Wunsch entstand, selbsttätig Alternativen zur Atomkraft zu entwickeln. Vor dem Hintergrund des breiten gesellschaftlichen Konsenses gegen die Atomkraftnutzung in Österreich hat dieser Aspekt in der Positionierung von Bürgerbeteiligungsanlagen jedoch an Bedeutung verloren. Auch die Etablierung alternativer, dezentraler Wirtschaftsstrukturen hat vielfach nur den Stellenwert eines ‚positiven Nebeneffekts' – Hauptinteresse für die InitiatorInnen von Bürgerbeteiligungsanlagen bleibt der Ausbau erneuerbarer Energien.

3.2.2. Politisch-rechtlicher Kontext

Die politischen Rahmenbedingungen spielen eine entscheidende Rolle für die Entwicklung von Energiegenossenschaften.

Neben historisch-kulturellen Kontexten spielen die politischen Rahmenbedingungen eine große Rolle bei der Entwicklung von Energiegenossenschaften. Ohne das öffentliche Fördersystem könnten viele Anlagen nicht errichtet werden. Derzeit können sich die Betreiber/innen von Energiegenossenschaften noch darauf verlassen, dass der von ihnen erzeugte Strom zu den gesetzlich vorgesehenen Einspeisetarifen abgenommen wird. Das wirtschaftliche Risiko ist deshalb relativ gut kalkulierbar. Neben den Förderungen sind Bürgerbeteiligungsprojekte auch auf die Unterstützung durch die Gemeinde angewiesen. Große PV-Projekte erfordern Dachflächen (oder Freiflächen) und diese sind schwieriger zu bekommen, als man denken würde. Kooperationsprojekte mit der Gemeinde, die dann etwa ein Schuldach oder ein Dach des Bauhofs zur Verfügung stellt, können dafür eine Lösung sein. Die Politik nutzt mittlerweile solche Projekte als Instrument, um nachhaltiges Commitment mit dem Bürger/innen zu schaffen.

Garantierte Einspeisetarife stellen die bedeutendste Form der Unterstützung für Ökostrom-Gemeinschaftsanlagen dar. Die Prospektpflicht hat sich zu einer Hürde für die Errichtung von Gemeinschaftsanlagen entwickelt.

Sowohl in Österreich als auch in Deutschland stellen die staatlich garantierten Einspeisetarife die wichtigste Form der Unterstützung für Bürgerbeteiligungsanlagen dar. Geförderte Einspeisetarife für Ökostrom wurden in Deutschland auf bundesweiter Basis erstmals 1991 mit dem Stromeinspeisegesetz eingeführt; dieses wurde 2000 vom Erneuerbare Energien Gesetz (EEG) abgelöst. In Österreich gibt es mit dem Ökostromgesetz seit 2002 bundesweit einheitlich gestützte Einspeisetarife. Neben den geförderten Tarifen sorgen diese Regelungen auch für einen garantierten Netzzugang für Ökostromerzeuger. Auch wenn diese Regelungen nicht speziell für Bürgerbeteiligungsanlagen entwickelt wurden, sind sie gerade für Akteure in diesem Bereich von besonderer Bedeutung, da sie ein hohes Maß an ökonomischer Sicherheit anbieten. Abgesehen von der Risikoreduktion für die beteiligten Bürger/innen wird damit der Zugang zu Bankkrediten erleichtert. Dazu kommt, dass Genossenschaften aufgrund ihrer Prinzipien eine Tendenz zum konservativeren Wirtschaften innewohnt.

In Österreich führten allerdings zahlreiche Novellierungen des Ökostromgesetze (tw. auch nicht umgesetzte Pläne zu Novellierungen) zu einer ‚Stop and Go'-Politik, die große Unsicherheiten für (potenzielle) Ökostrom-Erzeuger/innen mit sich brachte. Weitere Kritikpunkte am österreichischen Ökostromgesetz betreffen die Deckelung des Gesamt-Fördervolumens, kurze Laufzeiten und zu niedrige Tarife in manchen Technologiebereichen.

Als Hürde für die Errichtung von Gemeinschaftsanlagen hat sich in den letzten Jahren sowohl in Österreich als auch in Deutschland die Prospektpflicht entwickelt. Wird die Beteiligung an einer Gemeinschaftsanlage öffentlich beworben, fällt dies wie bei jedem anderen öffentlich beworbenen Investment unter die Prospektpflicht. Es muss also ein Prospekt mit detaillierten Informationen zum Investment und zu dem damit verbundenen finanziellen Risiko erstellt werden. Die Erstellung eines solchen Prospekts ist zeitaufwändig, erfordert umfangreiche juristische Expertise und ist daher mit hohen Kosten verbunden. Gerade für kleine und mittlere Bürgerbeteiligungsanlagen kann das eine entscheidende Schwierigkeit darstellen. Ausnahmen gibt es, wenn nachgewiesen werden kann, dass nur im eigenen Bekanntenkreis für eine Beteiligung geworben wurde. In Deutschland sind darüber hinaus Genossenschaften von der Prospektpflicht ausgenommen.

3.2.3. Organisationsformen

Für die Errichtung von Bürgerbeteiligungsanlagen stehen verschiedene Rechtsformen zur Verfügung.

In Österreich wurden Bürgerbeteiligungsanlagen im Bereich der Windkraft zunächst meist in Form einer GmbH & Co KG (Beteiligte als Kommanditisten) oder GmbH (Beteiligte als Gesell-

schafter oder stille atypische Gesellschafter) errichtet. In manchen Fällen wurde auch eine Beteiligung mittels eines Darlehens an die GmbH bzw. GmbH & Co KG angeboten. Zwei Firmen, die zu mittelständischen Unternehmen angewachsen sind (WEB, Windkraft Simonsfeld), wurden im Zuge dieses Wachstumsprozesses in eine nicht-börsennotierte Aktiengesellschaft umgewandelt. Im Bereich der Photovoltaik Gemeinschaftsanlagen gibt es bisher ein breites Feld verschiedener Rechtsformen: GmbH & Co KG, GmbH, Gesellschaft nach bürgerlichem Recht (GbR) sowie Darlehensmodelle. Bei manchen Darlehensmodellen errichtet ein Produktionsbetrieb eine Photovoltaikanlage (GEA Schuhwerkstatt Schrems, Biobauernhof Wegwartehof), die Rückzahlung der Darlehen erfolgt über Warengutscheine. Genossenschaften sind im Gegensatz zu Deutschland kaum verbreitet, allerdings wurde im Juni 2012 in Vorarlberg eine Photovoltaik-Gemeinschaftsanlage eröffnet, die über die bereits in anderen Tätigkeitsbereichen aktive Talente-Genossenschaft abgewickelt wird. Von Energieversorgungsunternehmen (Linz AG, Wien Energie) werden inzwischen auch Photovoltaik-Bürgerbeteiligungen angeboten. Diese erfolgen nach einem ‚Sale and Lease Back' Prinzip (Verkauf einzelner Module an Bürger/innen und Rückvermietung an das EVU, das als Betreiber der Photovoltaikanlage fungiert.)

In Deutschland gilt die GmbH & Co KG als Standardmodell für Bürgerwindparks. Im Bereich der Photovoltaik entstanden zunächst viele Gemeinschaftsanlagen in der Form einer GbR; seit 2008 ist ein starker Anstieg bei der Gründung von Photovoltaik-Genossenschaften zu beobachten.

Die Genossenschaft ist eine geeignete Rechts- und Organisationsform für PCP-Modelle und damit auch für Bürgerenergieprojekte.

Bürgerbeteiligungsprojekte brauchen eine Organisationsform. Nur so ist es möglich, die Projekte wirtschaftlich und rechtlich abgesichert durchzuführen. Damit eine Rechtsform sich für ein PCP Projekt eignet, muss sie gewisse Eigenschaften mitbringen. Der Ein- und Austritt von Mitgliedern sollte leicht und kostengünstig durchführbar sein, die Haftung der Mitglieder sollte gesetzlich beschränkt sein und es sollte ein gut verankertes Mitspracherecht geben. Die Genossenschaft bringt diese Voraussetzung mit. Der von den Mitgliedern zu zeichnende Genossenschaftsanteil schafft Commitment und stellt das notwendige Kapital für die Errichtung einer Photovoltaikanlage dar. Der Geschäftsanteil wird zumeist verzinst und gilt als „alternative" Form einer Geldanlage.

Die netzintegrierte Betriebsweise von Ökostromanlagen (Einspeisung des erzeugten Stroms ins Netz) erschwert bei Energiegenossenschaften die Erfüllung des Förderauftrags.

Angesichts der Struktur der Ökostromförderung in Österreich und Deutschland (geförderte Tarife für die Netzeinspeisung) und angesichts der schwankenden Stromproduktion einzelner Ökostromanlagen ist der Betrieb von Ökostromanlagen meist nur in netzintegrierter Form sinnvoll

(Einspeisung des erzeugten Stroms ins Netz). Besitzer/innen von Gemeinschaftsanlagen können daher meist nicht direkt Strom von ihrer Anlage beziehen. Dies kann im Falle von Energiegenossenschaften die Erfüllung des gesetzlichen Förderauftrags in Frage stellen (betrifft vor allem Photovoltaik-Genossenschaften). Dieser Auftrag zur Förderung der Genossenschaftsmitglieder wird bei Genossenschaften in anderen Tätigkeitsfeldern meist durch den Bezug von Sachgütern oder die Inanspruchnahme von Dienstleistungen erfüllt. Eine ausschließliche Förderung der Mitglieder durch Ausschüttung einer Kapitaldividende entspricht nicht dem Förderauftrag.[3]

Tatsächlich zeigen in Österreich manche Initiatoren von Gemeinschaftsanlagen aufgrund des nicht erzielbaren Sachgüterbezugs Vorbehalte gegenüber der Rechtsform Genossenschaft. Auch in Deutschland gestehen manche Promotor/innen von Energiegenossenschaften ein, dass eine Eigennutzung des erzeugten Stroms mit genossenschaftlichen Prinzipien besser im Einklang stehen würde. Aus diesem Grund wird von manchen Photovoltaik-Genossenschaften nach Auslauf der Einspeisetarife eine Eigennutzung des erzeugten Stroms angestrebt. Allerdings kann durchaus auch argumentiert werden, dass der Förderauftrag auch bei Einspeisung des erzeugten Stroms ins Netz gegeben ist. Zum einen bieten manche Energiegenossenschaften zusätzliche Dienstleistungen wie etwa Energieberatungen für ihre Mitglieder an. Zum anderen kann der genossenschaftliche Förderauftrag auch durch die Förderung ideeller Ziele der Mitglieder erfüllt werden – im Falle von Energiegenossenschaften etwa das Ziel zum Ausbau erneuerbarer Energien beizutragen. Volz (2011) argumentiert in diesem Sinne, dass eine Erfüllung des Förderauftrags bei Energiegenossenschaften gegeben ist und stützt sich dabei auf eine Umfrage, die zeigt, dass der Ausbau erneuerbarer Energien und ein Beitrag zum Klimaschutz stärkere Motivationsfaktoren für die Mitgliedschaft bei einer Energiegenossenschaften sind als die Ausschüttung einer Dividende.[4]

Ein anderes genossenschaftliches Prinzip, das Demokratieprinzip, steht mit Gemeinschaftsanlagen sehr gut im Einklang, da von den beteiligten Personen meist ein gleichberechtigtes Miteinander angestrebt wird und/oder eine dominierende Stellung einzelner Großinvestoren ausgeschlossen werden soll. Auch bei Gemeinschaftsanlagen, die in anderen Rechtsformen (AG, GmbH & Co KG) umgesetzt werden, wird daher oft durch Stimmrechtsbeschränkungen oder durch Beschränkung der maximalen Einlage vermieden, dass einige wenige Entscheidungsprozesse dominieren können.

[3] Volz, Richard (2011), 'Zur Umsetzung des Förderauftrags in Energiegenossenschaften', *Zeitschrift für das gesamte Genossenschaftswesen* 61 (4): 289-304.
[4] Ebd.

3.3. Prozesse

3.3.1. Entstehung

Projekte, die top-down initiiert werden, sind weniger widerstandsfähig und zeigen Schwierigkeiten bei der Entwicklung von Ownership.

PCP-Projekte können top-down oder bottom-up initiiert werden, was Einfluss auf den weiteren Entwicklungsverlauf hat. Bürger/innenprojekte scheinen sich nachhaltiger zu entwickeln, wenn sie in einem bottom-up-Prozess entstehen. Die Ausmachung eines „Gegners" (etwa die großen Versorgungsunternehmen) kann dabei helfen, dass sich mehrere Personen dem gleichen Thema verbunden fühlen und sich Kollektividentitäten im Projekt formieren. Ein zu großer Einfluss von politischen Parteien kann wiederum dazu führen, dass sich genau aus diesem Grund manche Bürger/innen vom Projekt nicht angesprochen fühlen. Projekte, die politisch motiviert und top-down initiiert werden, haben ebenfalls Schwierigkeiten, Mitglieder zu finden. Bürger/innen-Engagement setzt den Rahmen von echter „Mitsprache- und Mitgestaltung" voraus. Nur so kann sich nachhaltiges Commitment und Ownership entwickeln.

3.3.2. Ausbreitungsprozesse

Das Modell der Bürgerbeteiligungsanlagen hat sich auf verschiedene Arten verbreitet: Replikation erfolgreicher Modelle, Wachstum einzelner Initiativen und Hinzukommen weiterer, oft kommerzieller ausgerichteter Akteure.

Replikation: Sowohl in Österreich als auch in Deutschland entstanden die ersten Bürgerwindparks als kleine, lokale Initiative von Bürger/innen, die in der eigenen Gemeinde oder in der unmittelbaren Umgebung eine oder mehrere Windkraftanlagen aufstellten. In Deutschland etwa entstand der erste Bürgerwindpark in Lübke-Koog in Nordfriesland. Das Modell verbreitete sich in der Folge rasch durch Informationsaustausch und Mundpropaganda in der ganzen Region. Auch in Österreich entstanden Anfang / Mitte der 1990er Jahre mehrere Bürgerwindparks mit ähnlicher Struktur. Auch hier dürfte der Replikation des Modells einerseits ein Informationsaustausch zwischen den Akteuren in Österreich und andererseits die Orientierung an ähnlichen Vorbildern im Ausland (Deutschland, Schweden) zugrunde gelegen haben. Aktuell finden in Deutschland im Bereich der Photovoltaik-Genossenschaften wieder Nachahm-Effekte statt.[5] Zu diesem Trend haben auch Unterstützungsorganisationen beigetragen, die die Gründung von Energiegenossenschaften (insbesondere Photovoltaik-Genossenschaften) befördern und teilweise fertige Gründungskonzepte mit Musterstatuten, Vorlagen für Verträge, etc. anbieten (z.B. Genossenschaftsverband Weser-Ems, Agrokraft GmbH).

[5] Siehe dazu auch Stappel, Michael (2011), 'Trends bei Neugründungen von Genossenschaften in Deutschland', *Zeitschrift für das gesamte Genossenschaftswesen* 61 (3): 187-200.

Wachstum: In Österreich sind drei Firmen, die mit der Errichtung kleiner, lokaler Bürgerwindparks begonnen haben, zu mittelständischen Unternehmen angewachsen, die Windparks an verschiedenen Standorten in Österreich und auch im Ausland betreiben (Windkraft Simonsfeld, WEB, Ökoenergie). Die Windparks werden immer noch als Bürgerbeteiligungsanlagen umgesetzt, das Wachstum hat jedoch einige Änderungen mit sich gebracht. (Ausweitung der geographischen Beteiligungsstruktur, Investment-Aspekt gewinnt für Beteiligte an Bedeutung, Änderungen in der Rechtsform)

Hinzukommen weiterer Akteure: In den letzten Jahren sind im Feld der Bürgerbeteiligungsanlagen auch einige neue Akteure hinzugekommen, die von Anbeginn stärker kommerziell orientiert sind und nicht mehr als ‚bottom-up' Initiativen betrachtet werden können. Dazu zählen in Österreich etwa Bürgerbeteiligungsanlagen, die von EVUs betrieben werden (vgl. Abschnitt ‚Organisationsformen'). In Deutschland sind sowohl im Bereich der Windkraft als auch im Bereich der Photovoltaik Beteiligungsmodelle entstanden, die sich stärker als (anonyme) Investmentoption positionieren (Solarfonds, Windparks mit geographisch ausgestreuter Beteiligungsstruktur, geschlossene Fonds). Dazu kommen auch Großinvestoren, die der lokalen Bevölkerung in begrenztem Umfang den Mitbesitz an einem Windpark anbieten.

Initiativen zur Errichtung von Gemeinschaftsanlagen haben in mehrfacher Weise zur Ausbreitung erneuerbarer Energien (insbes. Windkraft, Photovoltaik) beigetragen.

- *Pionierrolle*: Initiativen zur Errichtung von Gemeinschaftsanlagen haben in den frühen Phasen der Verbreitung von Windkraft- und Photovoltaikanlagen entscheidend zur Marktentwicklung beigetragen. Dazu zählte einerseits die grundsätzliche Erkundung von Möglichkeiten der Errichtung von Anlagen (Sammeln und der Austausch von Informationen, Durchführung von Windmessungen, etc.) andererseits die tatsächliche Umsetzung von Anlagen. Über Bürgerbeteiligungsmodelle konnte dabei das nötige Kapital für Windkraft und Photovoltaikanlagen aufgebracht werden. Hier war vielfach die intrinsische Motivation der beteiligten Personen ausschlaggebend. Der Wunsch einen Beitrag zu einer ökologischen Energieversorgung zu leisten hatte mehr Gewicht als die Erzielung eines finanziellen Gewinns.
- *Politische Hebelwirkung*: Durch die breite Beteiligung der Bevölkerung konnten Bürgerbeteiligungsanlagen auch eine politische Hebelwirkung entfalten. Zwar können weder in Österreich noch in Deutschland die Ökostrom-Einspeiseregelungen als unmittelbare Reaktion auf Bürgerbeteiligungsmodelle interpretiert werden. Die Mobilisierungskraft solcher breiter Beteiligungsmodelle (Demonstrationen, Petitionsschreiben) hat aber zur Verteidigung der Einspeiseregelungen beigetragen, wenn deren Einschränkung oder Abschaffung zur Debatte stand. Darüber ging zumindest auf lokaler und regionaler Ebene politische Unterstützung für Windkraftanlagen auf die breite Beteiligung der Bevölkerung zurück.
- *Bewusstseinsbildung und Akzeptanz*: Die breite Beteiligung der Bevölkerung wirkt sich auch positiv auf die Akzeptanz von Windkraftanlagen aus. Darüber hinaus können Bürger/innen durch die Beteiligung bei einer Windkraft- oder Photovoltaikanlage generell für das Thema erneuerbare Energien sensibilisiert werden.

3.3.3. Professionalisierung

Die Verbreitung von Gemeinschaftsanlagen hat einen Prozess der Professionalisierung und der Kommerzialisierung mit sich gebracht. Mit dem Boom von Energiegenossenschaften lässt sich in Deutschland jedoch auch einen gegenläufigen Trend beobachten.

Die ersten Gemeinschaftsanlagen in den 1990er Jahren (Windkraft in Deutschland und Österreich, Photovoltaik in Deutschland) waren noch stark von einem Pioniergedanken geprägt: Entscheidend für die Errichtung von Gemeinschaftsanlagen waren hierbei engagierte Personen, die zur Ausbreitung erneuerbarer Energien beitragen wollten. Die Entwicklung der Gemeinschaftsanlagen erfolgte meist auf ehrenamtlicher Basis, die wirtschaftliche Tragfähigkeit war noch keinesfalls gesichert.[6] Mit den praktischen Erfahrungen, die mit diesen Technologien gesammelt wurden sowie mit einer Verbesserung der Förderbedingungen (ab 2000 Erneuerbare Energien Gesetz in Deutschland, ab 2002 Ökostromgesetz in Österreich) wuchs jedoch das Vertrauen in die Wirtschaftlichkeit solcher Initiativen. Zeitgleich wurden jedoch im Bereich der Windkraft auch die gesetzlichen Anforderungen für die Errichtung einer Windkraftanlage erhöht (genauere Regulierung der Flächenwidmung, genauere Spezifizierung der technischen Anforderungen und der Sicherheitsvorkehrungen, genauere Spezifizierung der Umweltschutzauflagen, etc.). Die gesicherte Wirtschaftlichkeit der Gemeinschaftsanlagen machte eine Professionalisierung und Kommerzialisierung der Initiativen möglich, die erhöhten gesetzlichen Anforderungen machten im Bereich der Windkraft einen erhöhten Professionalisierungsgrad erforderlich.

Diese Professionalisierung und Kommerzialisierung lässt sich an verschiedenen Entwicklungen ablesen:

- Während viele Initiativen nur ein bis zwei lokal verankerte Windparks errichten, gibt es in Österreich drei Initiativen, die einen Expansionskurs verfolgen und zu mittelständischen Unternehmen heranwachsen. Auch in Deutschland haben manche Betreibergesellschaften von Bürgerwindparks diese Entwicklung vollzogen.
- Für die Führung dieser Unternehmen machen die zentral involvierten Akteure ihr ursprünglich ehrenamtliches Engagement zu ihrem Hauptberuf.
- Mit den verbesserten Rahmenbedingungen und der damit gesicherten Wirtschaftlichkeit beteiligen sich zunehmend auch Personen, die stärker Investment-orientiert sind.
- Diese stärkere Investment-Orientierung schlägt sich bei einigen Firmen auch in einer geographisch ausgeweiteten Beteiligungsstruktur nieder.
- In Österreich werden zwei der mittelständischen Unternehmen, die Windparks auf Basis von Bürgerbeteiligungen errichten, von einer (bzw. mehreren) GmbH & Co KGs in eine (nicht börsennotierte) Aktiengesellschaft umgewandelt.

[6] Dies gilt vor allem für Photovoltaik-Gemeinschaftsanlagen in Deutschland und Windkraft-Gemeinschaftsanlagen in Österreich. Mit dem deutschen Stromeinspeisegesetz von 1990 war der wirtschaftliche Betrieb von Windkraftanlagen in Deutschland relativ gut abgesichert. Daher waren etwa Gemeinschaftsanlagen von Landwirten im Bereich der Windkraft in Deutschland durchaus auch mit der Hoffnung einer zusätzlichen Einnahmequelle verbunden.

- Es kommen neue Akteure hinzu, die von Beginn an stärker kommerziell ausgerichtet sind, z.B. Solarfonds und Windkraftfonds (siehe auch Abschnitt Ausbreitungsprozesse). Es ist umstritten ob solche Investment-orientierten Modelle noch als Bürgerbeteiligungsanlagen zu betrachten sind (siehe dazu auch nachfolgende These).

In Deutschland sind seit 2008 in den letzten Jahren allerdings auch viele Photovoltaik-Genossenschaften gegründet worden. In diesen Genossenschaften spielen idealistische Motive wie Ökologie und demokratische Mitbestimmung meist eine große Rolle. Darüber hinaus werden diese Genossenschaften meist von einer ehrenamtlichen Geschäftsführung geleitet.[7] Damit kann der Boom der Photovoltaik-Genossenschaften in Deutschland auch als gegenläufiger Trend zu Prozessen der Professionalisierung und Kommerzialisierung gedeutet werden.

In Deutschland ist es vielen Akteuren ein Anliegen ‚echte' Bürgerkraftwerke von anderen daran angelehnten Modellen abzugrenzen.

Angesichts der Vielzahl unterschiedlicher Modelle der Beteiligung von Bürger/innen an Windkraft- und Photovoltaikanlagen, darunter mittlerweile auch Modelle kommerziellerer Ausrichtung (siehe oben), verwundert es nicht, dass es in Deutschland mittlereile vielen Akteuren ein Anliegen ist ‚echte' Bürgerkraftwerke von daran angelehnten Modellen zu unterscheiden. Diese Abgrenzungsprozesse können je nach Akteursgruppe auf unterschiedlichen Kriterien beruhen.

Im Bereich der Windkraft wird betont, dass bei einem Bürgerwindpark die Beteiligung der *lokalen* (oder regionalen) Bevölkerung ausschlaggebend ist. Manche betrachten es auch als wichtiges Kriterium, dass die Initiative auch aus der lokalen Bevölkerung heraus entsteht. Insbesondere wird der Teilbesitz eines Windparks durch die lokale Bevölkerung, der von einem großen Investor betrieben wird, von einigen dezidiert nicht als echter Bürgerwindpark betrachtet. Promotor/innen von Energiegenossenschaften stellen hingegen die besonderen Vorzüge der genossenschaftlichen Organisationsform von Gemeinschaftsanlagen in den Vordergrund, insbesondere die demokratischen Entscheidungsstrukturen.

3.3.4. Spannungsfeld Motivationslage

Es gibt ein breites Spektrum an Motiven für die Errichtung von Gemeinschaftsanlagen sowie für die Beteiligung an diesen Gemeinschaftsanlagen.

Motive der Initiator/innen und Promotor/innen von Gemeinschaftsanlagen: Für die meisten Initiator/innen von Gemeinschaftsanlagen stellt der Wunsch zur Verbreitung erneuerbarer Energien beizutragen einen entscheidenden Motivationsfaktor dar. Anstatt abzuwarten, dass die bisheri-

[7] Volz, Richard (2011), 'Zur Umsetzung des Förderauftrags in Energiegenossenschaften', *Zeitschrift für das gesamte Genossenschaftswesen* 61 (4): 289-304.

gen Player im Energiesystem den Ausbau erneuerbarer Energien vorantreiben, werden diese Personen selbst aktiv. Bürgerbeteiligungsmodelle tragen in diesem Zusammenhang unter anderem dazu bei, das erforderliche Eigenkapital für eine Windkraft- oder Photovoltaikanlage aufzustellen. Während dieser Aspekt mit verbesserten Rahmenbedingungen an Bedeutung verliert (Bankkredite werden leichter verfügbar), gewinnt in den letzten Jahren im Bereich der Windkraft der Aspekt der Erhöhung der Akzeptanz durch Bürger/innenbeteilung an Bedeutung.

Darüber hinaus kann durch Bürgerbeteiligungsanlagen mit regionaler Beteiligungsstruktur auch eine *regionale Wertschöpfung* erzielt werden. Neben der Rendite, die an die beteiligten Bürger/innen ausgeschüttet werden kann zählt dazu in Deutschland auch die Gewerbesteuer, die an die Gemeinde entrichtet wird. Darüber hinaus sind oft auch regionale Firmen und Banken in die Errichtung von Gemeinschaftsanlagen involviert.

Neben diesem ökonomischen Aspekt betonen einige Initiator/innen und Promotor/innen auch den politischen Aspekt einer Dezentralisierung des Energiesystems durch Gemeinschaftsanlagen, insbesondere die *Mitbestimmung und Mitgestaltung* der Wende hin zu einem nachhaltigen Energiesystem. Dieser Aspekt ist vor allem in Deutschland und hier vor allem im Genossenschaftssektor von Bedeutung.

Motive für die Beteiligung Einzelner: Bei Personen, die sich an einer Gemeinschaftsanlage beteiligen, ist meist ein Kombination aus zwei Motivationsfaktoren ausschlaggebend: Zum einen der Wunsch zu einer ökologischen Energieversorgung beizutragen und zum zweiten das Interesse an einer (wenn auch manchmal bescheidenen) Rendite. Dazu kommen in manchen Fällen die Identifikation mit der Anlage (Stolz), der Wunsch nach einer Möglichkeit der Mitgestaltung im Energiebereich und das positive Gemeinschaftsgefühl, das bei lokal verankerten Projekten entstehen kann. Für manche ist auch der Wunsch nach Energieautarkie ein Motivationsfaktor; aufgrund der meist netzintegrierten Funktionsweise von Ökostromanlagen kann diese jedoch oft nicht eingelöst werden.

Obwohl bei Windparks die starke visuelle Präsenz der Windräder Widerstände hervorrufen kann, ist bei Gemeinschaftsanlagen gerade die Sichtbarkeit und physische Präsenz der Anlagen ein wesentlicher Motivationsfaktor.

Windkraftanlagen stellen einen starken Eingriff ins Landschaftsbild dar. Wenn sie von einem externen Investor errichtet werden lösen sie daher oft Widerstände bei der lokalen Bevölkerung aus. Bei Bürgerbeteiligungsanlagen, insbesondere bei kleinen, regionalen Projekten, kann die starke physische Präsenz jedoch genau die Gegenteilige Wirkung erzielen: Die Sichtbarkeit der Windräder (oder auch die Sichtbarkeit einer Photovoltaikanlage) wird nicht nur in Kauf genommen sondern stellt in vielen Fällen einen entscheidenden Motivationsfaktor dar. Dies dürfte darin begründet liegen, dass die Sichtbarkeit die Identifikation mit der Anlage erhöht. Bürger/innen entwickeln mitunter einen Stolz auf die Anlage als sichtbares Markenzeichen der Gemeinde oder freuen sich über die physische Greifbarkeit des eigenen Investments.

Kleine Energieprojekte eignen sich nicht als Investment, da die ausgeschütteten Renditen marginal sind.

Die meisten Energieprojekte benötigen für die Errichtung der Anlagen ausreichend Kapital. Mittels der Zeichnung von Genossenschaftsanteilen besteht die Möglichkeit, das notwendige Kapital über die Mitgliederstruktur aufzubringen. Im Gegenzug sind die Mitglieder an dem Projekt finanziell beteiligt und damit Miteigentümer. Es wird Ownership geschaffen. Die Erzeugung von erneuerbarer Energie ist jedoch mit hohen Investitionskosten verbunden und hat sich nicht so rentabel entwickelt wie ursprünglich erhofft. Bürgerenergieprojekte haben deshalb oft Schwierigkeiten, Investoren zu finden. Potentielle Investoren und/oder Mitglieder können am besten über das Thema angesprochen. Das heißt, dass die intrinsische Motivation eine große Rolle spielt. Der finanzielle Aspekt spielt zwar eine Rolle, jedoch nur eine geringe.

3.3.5. Soziale Innovation

Die Entwicklung und Verbreitung von Gemeinschaftsanlagen im Bereich erneuerbarer Energien lässt sich als soziale Innovation verstehen.

Gemeinschaftsanlagen im Bereich erneuerbarer Energien tragen nicht nur zur Entwicklung und Verbreitung neuer Technologien bei. Abseits der bisherigen zentral organisierten Strukturen im Energiesystem, geprägt von universellen Energieversorgungsunternehmen mit großen Kraftwerksprojekten, stellen sie auch eine neue Form sozio-ökonomischer Organisation im Energiesystem dar. Damit können Gemeinschaftsanlagen als soziale Innovation betrachtet werden, im Sinne ihrer Definition als „neue Wege, Ziele zu erreichen, insbesondere neue Organisationsformen, neue Regulierungen [und] neue Lebensstile, die die Richtung des sozialen Wandels verändern“.[8]

Darüber hinaus lässt sich auch beobachten, dass sich die soziale Innovation ‚Bürgerbeteiligungsanlage‘ während ihrer Verbreitung verändert, insbesondere durch Prozesse der Professionalisierung und Kommerzialisierung (vgl. Abschnitt Professionalisierung). Diese Veränderungsprozesse gehen mit einer Neuinterpretation der Bedeutung von Bürgerbeteiligungsanlagen einher. So waren Windkraft-Beteiligungsmodelle in der Frühphase unter anderem deshalb von Bedeutung, weil sie eine Möglichkeit darstellten genügend Eigenkapital für die Errichtung von Windkraftanlagen zu mobilisieren. Während dieser Aspekt mit den gesicherten Einspeisetarifen (leichterer Zugang zu Bankkrediten) und dem zunehmenden Interesse von Großinvestoren an Bedeutung verloren hat, werden heute Beteiligungsmodelle als Mittel zur Erhöhung der Akzeptanz von Windkraftanlagen wahrgenommen. Bei einzelnen Beteiligten lässt sich eine Verschiebung von rein idealistischen Motivationsfaktoren (Beitrag zu ökologischer Energieversorgung) hin zur stärkeren Gewichtung von Renditeerwartungen beobachten.

[8] Zapf, Wolfgang (1989), 'Über soziale Innovationen', *Soziale Welt* 40 (1/2): 170-183; S. 177.

4. Gesamtresümee

Die Bandbreite der veröffentlichten Studien zur Frage der Bürgerbeteiligung im Energiebereich (vgl. Kapitel 5) hat verdeutlicht, dass in Europa eine große Vielfalt von unterschiedlichen Modellen für Bürgerbeteiligungsanlagen zu finden ist. Die Projekte geben sich dabei die verschiedensten Organisationsformen. Die Rechtsform der Genossenschaft spielt vor allem in zwei spezifischen Kontexten eine Rolle: bei Windkraft in den Niederlanden und bei PV-Anlagen in Deutschland.

Windkraft wird aufgrund der höheren Investitionen und technischen Anforderungen vorwiegend kommerziell in der Form von GmbH & Co KGs, GmbHs oder AGs betrieben. Anders stellt sich die Situation von PV-Anlagen dar. Die in Deutschland bisher großzügigen Förderungen und gesetzlich vorgesehenen Einspeisetarife sollen die auch politisch gewünschte Energiewende beschleunigen. Viele Bürger/innen haben mit Hilfe der staatlichen Fördermaßnahmen PV-Anlagen auf ihren hauseigenen Dächern errichtet. PV-Anlagen sind sichtbar und vermitteln: „Uns ist die Umwelt etwas wert." Bürger/innen, denen kein eigenes Dach für eine PV-Anlage zur Verfügung steht und/oder die einen weiteren Beitrag leisten möchten, fühlen sich von Bürgerbeteiligungsanlagen angesprochen.

Die Rechtsform der Genossenschaft eignet sich für solche Projekte. Die Genossenschaft ist relativ kostengünstig und der zu zeichnende Genossenschaftsanteil stärkt das Commitment und stellt die finanzielle Beteiligung an der Gemeinschaftsanlage dar. Der Genossenschaftsanteil wird verzinst. Es handelt sich dabei also auch um ein „finanzielles Investment", wobei die Rendite allerdings meist gering ist. Bürger/innen, die in erster Linie eine finanzielle Investition tätigen wollen und hohe Renditen erwarten werden sich eher an einem großen Windpark als an einer PV- Anlage beteiligen. Energiegenossenschaften sprechen vor allem Bürger/innen an, die primär am Thema Energie interessiert sind. Das Thema Energie ist, obwohl es spätestens bei der Preisentwicklung „alle" betrifft, immer noch sehr idealistisch besetzt. Für den Großteil der Konsument/innen spielt der Preis die entscheidende Rolle. Allerdings hat der gesellschaftliche Konflikt um die Atomkraft in Deutschland viele Menschen für Energiethemen sensibilisiert und politisiert. In Deutschland sind die Energiewende und die Anti-Atom-Bewegung damit im Bewusstsein verankert. Beteiligungsprojekte formieren sich oft als Gegenbewegung zu den großen Energieversorgungsunternehmen. Diese werden klar als „Gegner" ausgemacht. In Österreich verhält es sich etwas anders. Durch den großen Anteil an Energie aus Wasserkraft und dem „Fehlen" eines Atomkraftwerks sind die „Gegner" weniger sichtbar. Es ist daher schwieriger, starke nachhaltige Emotionen für das Thema erneuerbare Energie und Bürgerbeteiligung in Österreich selbst zu wecken, die Anti-Atom-Emotion bleibt zumeist auf die Nachbarländer beschränkt. Die empirische Befragung der Mitglieder einer kleinen Energiegenossenschaft in Bayern/Deutschland hat dabei die ursprüngliche Vermutung bestätigt, dass die Mitgliedschaften in Energiegenossenschaften zu einem Großteil intrinsisch motiviert sind. Es ist zwar nicht unwesentlich, dass das gezeichnete Geschäftsanteilskapital verzinst wird, doch stellt dies keinesfalls den ausschlaggebenden Grund für das Engagement dar. Die meisten Mitglieder fühlen sich seit langem dem Thema erneuerbare Energie verbunden und wollen durch ihre Mitgliedschaft aktiv

zur Energiewende beitragen. Energiegenossenschaften stellen damit als neue Organisationsform im Energiesystem eine soziale Innovation dar. Sie bündeln die Interessen energieaffiner Bürger/innen, entwickeln neue, dezentrale Strukturen im Energiesystem und tragen zur Verbreitung erneuerbarer Energien und zur weiteren Bewusstseinsbildung für erneuerbare Energien bei ihren Mitgliedern bei. Diese wiederum spielt eine wesentliche Rolle bei der Umsetzung der Energiewende.

Die nachfolgende Abbildung zeigt den Bezugsrahmen, in dem sich Energiegenossenschaften bewegen.

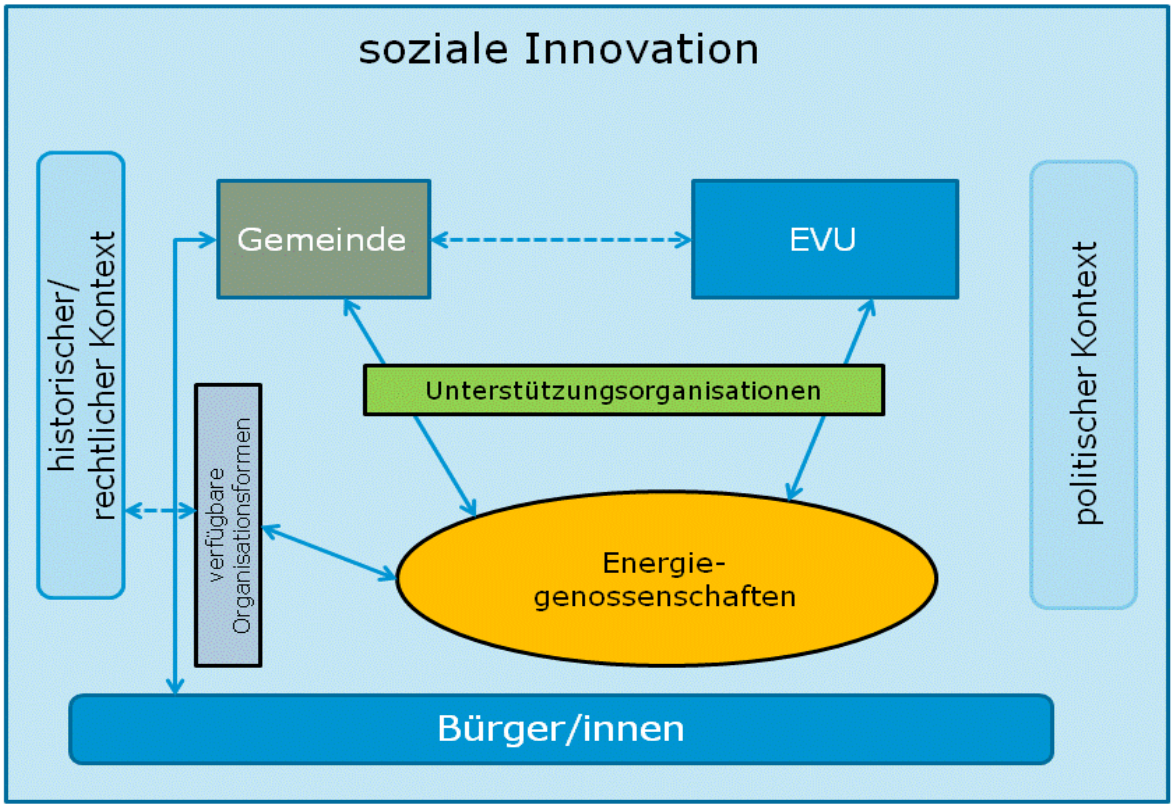

Abb.1: Bezugsrahmen “Energiegenossenschaften als soziale Innovation”

5. Work package 1: Energy cooperatives and local ownership in the field of renewable energy technologies: A literature review

Table of Contents

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List of abbreviations:

BDH	biomass district heating
NIMBY	'Not In My Back Yard' (referring to opposition towards installations based on concerns over local disturbances)
PV	photovoltaics
RET	renewable energy technologies

1 Introduction

With rising concerns over ecological sustainability as well as security of supply, the energy system has come under increasing pressure over the last years and various efforts have been made aiming at a transformation towards more sustainable systems of energy provision. At the grassroots level this has included the establishment of energy cooperatives and other forms of local or community based ownership of renewable energy technologies.

Energy cooperatives have thus introduced new forms of socio-economic organisation to the system of energy provision. While the classical regime of energy provision usually involved highly centralised energy infrastructures with 'end-of-wire captive consumers', locally and cooperatively-owned facilities for energy production can constitute a substantially differing model of energy provision and distribution. Furthermore energy cooperatives and similar initiatives have sometimes also been important sites of technological innovation activities, as in the cases of wind turbine development in Denmark (Olesen et al., 2004).

Existing research in the field has addressed a variety of issues in relation to energy cooperatives. In terms of technology areas, activities in the area of wind energy (often referred to as 'community wind') have clearly been documented most extensively in the literature. Often the focus has been on institutional framework conditions in a particular country, or the comparison of such conditions in different countries. Other issues covered in the literature in relation to energy cooperatives encompass micro-level processes of negotiation, conflict and the build-up of trust as well as the relationship between local ownership and public acceptance of renewable energy technologies (again, especially concerning wind power).

This review is organised along these main themes treated in the literature. The first section following the introduction reviews literature on energy cooperatives by country. Countries were selected either because a significant amount of literature treats energy cooperatives and similar initiatives there (Denmark, Netherlands, UK, partly Germany) or because the countries are of particular interest for the further course of this research project (Germany and Austria). The following sections then present literature on institutional framework conditions, the 'micro-level' and the issue of public acceptance respectively. Each section or sub-section concludes with a summary of central points. A concluding section both summarises important points from the literature review and draws particular attention to issues that may be of interest for the further course of this research project and were not used as organising themes in the preceding sections.

A final note has to be made on the understanding and use of the term 'energy cooperatives' adopted here and, in relation to that, the scope of this literature review. We adopt a broad understanding here in terms of ownership models, encompassing different forms of

collective, citizen-based ownership of energy generating facilities, not necessarily in the legal form of a cooperative. However, our understanding is narrow in the sense that we specifically focus on *renewable* energy generation facilities. A broad variety of terms for such citizen ownership models can be found in the literature, often accentuating different possible characteristics of such initiatives: energy cooperatives, community energy, local ownership, community ownership, small private investors, citizen participation, etc.

In this literature review we have decided not to limit ourselves to the use of one single term but rather to try to choose the most appropriate term in each case - depending on the terms used by the author(s) in focus or what appears to capture the emphasis of their writing best.

2 Country Cases

2.1 Denmark

Jørgensen and Karnøe (1995) provide a historical account of wind energy development in Denmark in which distributed ownership models (farmers, cooperatives, local ownership) played an important role. However, only short reference is made to small cooperatives as dominant the ownership model in the 1970s and to a total of 160.000 Danish households holding shares in at least one turbine [as of 1995?]. They give an overview of the long history of wind energy in Denmark dating back to the 1890s and provide a number of explanatory factors for the 'success story' of wind energy development in Denmark. These include the strength of the anti-nuclear and alternative energy movement, a bottom-up strategy of learning by experience / learning by doing and a good R&D base in which – contrary to the US - necessary adaptations were made in the utilisation of the existing knowledge base from aerospace research.

The authors also point to the *broad actor base* that was necessary for the successful development of wind power in Denmark in the 1970s, including grass-roots entrepreneurs and early industrial entrepreneurs producing turbines, idealistic buyers, anti-nuclear power engineers starting test station, interest organisations such as the Organisation for Renewable Energy, the Association of Danish Wind Power Owners and the Association of Danish Wind Mill Manufacturers.

From their account it also becomes clear that significant *changes in actor roles* took place over the course of the 1980s and 1990s with industry taking over technological development of wind turbines, and a general process of concentration. This also resulted in a weakening of links to the alternative energy movement. However, Jørgensen and Karnøe also point out that this does not simply amount to a return to traditional actor constellations in the energy system, since also the roles of power companies have changed and since the institutional setup shifted in favour of more decentralised systems.

Danielsen (1995) also provides a brief account of the 'success story' of wind power development in Denmark, emphasising the *role of citizens* organised in 'windmill guilds'. According to Danielsen 80% of wind power capacity in Denmark [as of 1995?] was installed by citizen-led initiatives, only 20% by big power utilities, that were rather forced into wind power and were in fact rather reluctant to engage with it. Danielsen especially points to the changes that have occurred in *spatial planning* for wind energy projects, moving from an 'anarchic period' in the 1970s to more integrated spatial planning. However, new administrative procedures introduced in the 1990s in spatial planning have apparently slowed down the installation rate of wind power. Against this background Danielsen argues for large-scale off-shore wind farms (reducing public opposition) with the possibility of ownership by windmill guilds (not possible at the time of writing of the paper).

Kemp, Rip and Schot (2001) provide a comparison of Danish and Californian wind power policy in 1970s and 1980s. They use this comparison to argue for the approach of '*Strategic Niche Management*', a policy approach aiming at the provision of temporal support for learning processes around new technologies (e.g. sustainable energy technologies). They argue that the small-scale, stepwise form of wind turbine development, that was situated in Danish cooperatives and self-build groups, accompanied by gradually emerging policy support, lead to more successful design variants and diffusion patterns than wind turbine development in the US, notably California, driven by large-scale business investments and R&D programmes.

Olesen, Maegaard and Kruse (2004) also provide a historical account of the Danish windmill tradition, highlighting the role of community ownership from a normative perspective. Furthermore they also describe *relevant legislation aspects* for wind power development, among the accepted forms of ownership. Other aspects include spatial planning, technical issues, taxation and feed-in regulation.

With respect to policies on citizen-based ownership models they point out that original legislation in the late 1970s favoured ownership by people living in the neighbourhood of wind farms. In order to create broad popular involvement original policies also restricted the shares of private individuals to an amount corresponding to their household's private consumption. However, these share restrictions were later relaxed and eventually abandoned in 2001. In addition to that, policies were adapted in a way to allow for investors to purchase land for windmill installations without living in the neighbourhood, thus increasingly turning wind power installation into *investment projects*. Concerning offshore-wind farms Olesen et al. (2004) note that consumers were not allowed to invest in such projects up until 1997. Graphs on the distribution of ownership types in wind energy in Denmark (1978-2002) show that during a first 'boom' period around 1990, cooperatives

constituted the most popular form of ownership. After 1994 single ownership (mostly farmers but also other) started to be more widely spread.

Furthermore Olesen et al. (2004) point out that cooperatively owned wind farms usually take on the legal form of a full liability company (tax advantages). Due to the full liability these cooperative-like companies are usually managed so as to build up reserves and to make no debts. Financing of cooperative shares is easily accessible, as some banks provide loans without assessing the private economy of the buyer if the overall project is trusted because (shares act as a security for the loan).

With respect to planning issues, Olesen et al. (2004) provide a description of typical planning procedures, especially for the case of wind power cooperatives. Also, while they highlight the integration of wind power in spatial planning as a success for spatial planning, they also criticise the status quo of the planning regime for making things easier for larger investors, thereby creating local opposition to wind power. The authors also present a brief case study on a locally owned wind turbine and highlight the benefit of avoiding local conflict.

In a master thesis focussing on a comparison of the development of the Danish and Dutch wind power industries *Boon (2008)* provides some information on *framework conditions* for different citizen-based ownership models for wind power in Denmark. As he notes, in the late 1970s there were simple rules to connect privately (individually) owned turbines to the grid, but these rules did not apply to cooperatively owned turbines, an issue that was finally resolved in 1981, following pressure from the Danish wind owners association “DK Vind”. Furthermore Boon notes that up until 1990 cooperatively-owned turbines constituted the dominant ownership model in Denmark, but starting from the 1990s turbine sizes were increasing to a point that they were no longer attractive for cooperatives anymore. Boon also refers to the ‘re-powering development’ in Denmark during which, from 2002 onwards, incentives were provided for taking down several small turbines and replacing them by fewer larger ones. As professional investors also had become very interested in wind energy at that time and were prepared to pay high prices, many farmers and cooperatives were tempted into selling their turbines (Boon 1995 quoting Preben Maegaard p. 52).

Bolinger (2001) describing community wind ownership schemes in different countries, provides an overview of different support mechanisms for wind power in Denmark. In relation to community ownership models in Denmark he notes that they, although frequently referred to as cooperatives, are in fact general partnerships (“Interessentskab”). Due to Danish ownership regulation (as of 2001) wind turbines had to be owned directly by electricity consumers [or utilities?], so the legal form of a cooperative could not be applied. Bolinger provides further details on financing, taxation and liability issues in relation to Danish wind

partnerships and points to the Middelgrunden wind turbine partnership that has set up a large offshore wind farm as an exceptional example.

Summary – country case Denmark

- The development and diffusion of wind power in Denmark from the 1970s onwards generally is seen as an impressive success story. In the early years these developments were strongly rooted in **citizen-led bottom-up initiatives** (Danielsen, 1995; Kemp et al., 2001; Jørgensen and Karnøe, 1995). Different explanatory factors can be provided for this development, including the **strength of the anti-nuclear** / **alternative-energy movement** and a small-scale **stepwise form of turbine development** accompanied by gradually emerging and **continuously adapted policy support** (Kemp et al., 2001, Jørgensen and Karnøe, 1995).
- Due to ownership restrictions, joint ownership of wind turbines in Denmark typically has taken the form of a **general partnership** / **full liability company** rather than that of a cooperative (Bolinger, 2001, Olesen et al., 2004).
- **Changes in actor roles** / **actor constellations** have clearly taken place over time, both in terms of turbine production, marked by the emergence of a specialised industry, and in terms of dominant ownership models for wind farms, marked by the entry of professional investors e.g. during the re-powering development and by utilities being 'forced' into wind power projects. This also resulted in a weakening of links to the alternative energy movement. These changes in actor constellations were partly induced by policy adaptations but also by technological developments (larger turbines) and increasing profitability expectations (Olesen et al., 2004, Jørgensen and Karnøe, 1995, Boon, 2008).
- A number of **policy issues** have been relevant for the setup of citizen-owned wind farms in Denmark, including the admissibility of particular ownership models, spatial planning issues, regulations concerning grid-connection, tax issues and feed-in tariffs (Olesen et al., 2004).

2.2 The Netherlands

Agterbosch, Vermeulen and Glasbergen. (2004) review the *systemic conditions* for wind power in the Netherlands in the 1990s and analyse how these affect the 'implementation capacity' of different entrepreneurial groups, including energy cooperatives and small private investors (mainly farmers). They point out that the policy framework does not establish an overall 'implementation capacity' but rather facilitates some and hinders other types of entrepreneurs.

With respect to cooperatives they emphasise the limited reactivity to the institutional framework due to their 'idealistic approach' (goal to promote a sustainable society rather than to make profit). However, the authors also find that cooperatives were 'less well equipped to deal with the depersonalisation of the wind power supply market, increased competition, and the increase in the scale of wind power projects' (p. 2062) that occurred during the 1990s.

The authors also provide some background information on the history of Dutch wind power cooperatives, noting that all of them (total: 28) were founded in the time span from 1986 to 1992 with strong links to the anti-nuclear movement. The largest part of their capacity was set up from 1987 to1994, typically with strong local support and participation, even though conditions were not very favourable at that time (e.g. need to negotiate tariffs with regional energy distributor). From 1998 on cooperatives could take advantage of favourable tax schemes but at the same time the demand for 'clustering' of wind turbine sites (fewer larger ones) rose, which turned out to be difficult for them as it required an increase in investment capital and increased the complexity of project development.

Concerning the role of cooperatives for the development of wind energy in the Netherlands Agterbosch et al. (2004) note that in terms of installed capacity, cooperatives have only played a minor role. Nevertheless they also suggest that cooperatives may have been *important catalyst actors* due to their promotion and lobbying activities and due to their perseverance in economically less attractive periods.

Small private investors in many ways faced similar problems to cooperatives (need to negotiate tariffs with regional energy distributors, later the demand for 'clustering'). Nevertheless, the *liberalisation of the energy market* in the late 1990s together with landownership and the *formation of umbrella organisations* eventually boosted their implementation capacity (most important entrepreneurial group in terms of installed capacity around 1999-2002, see graphs on p. 2052).

Agterbosch, Meertens and Vermeulen (2009) explore the social and institutional conditions in the process of planning wind power schemes, especially with respect to local social conditions. They argue that a formal positive policy framework can be neutralized by negative social conditions (NIMBY syndrome[1], e.g. in case of a large utility company planning a wind power installation), but also positive social conditions can compensate for a negative public policy framework (local capacity building, open deliberation, shared economic interest in case of small private investor).

In a similar vein *Wolsink (2000)* challenges the conventional view that the public in general supports wind power but objects to wind power development in their neighbourhood ('NIMBY

[1] NIMBY: 'Not In My Back Yard', i.e. referring to local opposition to an installation based on concerns over local disturbances (e.g. noise, visual disturbance, etc.)

syndrome'). He illustrates his argument by describing developments in Dutch wind energy policy (largely top-down) and argues for creation of more 'institutional capital', i.e. more open and collaborative approaches in planning. Nonetheless, he does not specifically mention cooperatives as such.

Breukers and Wolsink (2007) compare wind power installation achievements in the Netherlands, England and the German state of North Rhine Westphalia (NRW), thereby also providing background information on Dutch wind energy policy and its implications for local ownership models. They find that Dutch policy in general has been very volatile. In the first half of 1990s independent power producers needed to negotiate the remuneration price with regional energy distributors for each installation. Later independent power producers could make use of tax exemptions on renewable energy production and also profited from the end of regional monopolies of energy distributors.

In terms of spatial planning, Breukers and Wolsink note that local ownership (by farmers) was put at an advantage, since a pro-active decision is needed by the municipality for permission procedures and farmers were more acquainted with local social networks. Also, from the late 1990s locally owned projects increased 'as an unintended consequence of liberalisation' (p. 2747). Nevertheless they see a failure of Dutch grassroots initiatives to become forerunners in wind energy in the Netherlands, hardly exerting any influence on policy choices.

Summary – country case Netherlands

- **Local ownership** has also played an important role for wind power implementation in the Netherlands, mostly in the form of small private investors (mainly farmers). Wind power policy for a long time was rather unfavourable for small locally based wind power projects but has (unintentionally) become more supportive in the course of the **liberalisation of the energy market** in the late 1990s (Agterbosch et al., 2004, Breukers and Wolsink, 2007).
- In contrast to small private investors cooperatives (founded in late 1980s / early 1990s) have only been of **minor importance** in terms of installed capacity. In later years, the increased competition and increased scale of wind power projects has been difficult for them to handle. However, it has been suggested that they may have been important **catalyst actors**. (Agterbosch et al., 2004)
- Using case studies from the Netherlands some authors have challenged the concept of the 'NIMBY syndrome' in relation to wind power. These authors highlight the importance of **local social conditions** and emphasise the **positive effects** of local ownership and/or local involvement in planning and local acceptance (Agterbosch et al., 2009, Breukers and Wolsink, 2007, Wolsink, 2000).

2.3 UK

In their comparison of wind power installation achievements in the Netherlands, England and the German state of North Rhine Westphalia (NRW) *Breukers and Wolsink (2007)* also provide some background information on the situation in England. They describe an early policy choice to focus on large scale applications and a support system that was in general rather volatile. Furthermore, they point to the virtual absence of any grassroots initiatives in the area of local energy generation in 1970s and 1980s. The early liberalisation of the energy market in the early 1990s, based on the 'Non Fossil Fuel Obligations' and later the 'Renewables Obligations', made companies with strong financial backing (often subsidiaries of incumbents in the energy sector) also invest in wind power. For smaller companies it was more difficult to become involved in wind power projects.

Toke, Breukers and Wolsink (2008), also comparing wind power developments in several European countries, similarly highlight the *dominance of corporate ownership* of wind power in the UK. They suggest a general link between the spread of citizen-led ownership models in wind power in Europe to the existence of tradition of local energy activism and anti-nuclear movement in 1970s and 1980s and offer the weak tradition of energy activism in the UK as a possible explanation for the low number of wind power installations based on local ownership.

However*, Toke (2005)* also argues that commercially sized community wind power projects are desirable and also feasible under the 'Renewables Obligation' (RO) policy in the UK and should be encouraged and supported. In his view issues of ownership and size have become falsely linked because in Denmark larger projects typically are owned by utilities while smaller projects typically are owned by cooperatives or farmers – due to original legislative restrictions on extent of ownership for individuals. However, 'few farm owners have felt confident enough to invest much time, effort and their own money into developing their own wind power projects' (Toke, 2005, p. 303). Toke (2005) argues in favour of local ownership of wind energy projects as a means of increasing public acceptance and as means to give returns to 'ordinary people'. Furthermore, he provides two examples of commercially sized community wind projects in England and Wales, one of them in the form of a cooperative.

Bolinger (2001) describing community wind ownership schemes in different countries, notes a *number of barriers to community wind* energy projects in the UK, including the administrative burden to participate in the 'Non-Fossil Fuel Obligation' scheme (predecessor of the Renewables Obiligation scheme), the spillover of negative sentiments towards large-scale wind projects to community initiatives as well as the absence of tax incentives and capital investment subsidies. Furthermore, he points out that the UK does not have any

specific cooperative law. Nevertheless, he draws attention to other legal structures available for participatory wind power projects and describes two of them (industrial and provident society, public limited company) in more detail. At the time of writing, only two examples of community wind existed in the UK, one in each of these two legal forms..

Walker (2008) provides a review of experiences with community owned renewable energy technologies (not only wind power) in the UK. He points out that since 2000 government support has been available for 'community energy' and that many different kinds of projects have been developed under this label. This includes completely community owned projects as well as different forms of co-ownership with the private sector. Also different legal forms have been chosen, such as cooperatives (e.g. Baywind), community charities, development trusts (esp. in Scotland) or commercial projects with shares owned by a local community organisation. Furthermore, Walker (2008) points to the frequent distinction between communities of interest and communities of locality.

As *incentives for community ownership* of renewable energy technologies Walker (2008) lists local income and regeneration, local approval and planning permission, local control, lower energy costs and reliably supply, ethical and environmental commitment as well as easier load management through many small scale projects. Barriers to community energy lie in the many complexities (legal conditions, economic and technical viability, need for extensive liaison) thus creating a need for expert advice. Furthermore, community energy initiatives may face problems in grid connection and in the receipt of green energy certificates. Finally, 'funding often needs to be stitched together from many different sources' (p. 4402).

Concerning funding and support organisations, Walker (2008) points to the Community Renewables Initiative (CRI) that was established for this purpose in England but was not further funded from 2007. In Scotland, the Scottish Community and Household Renewables Initiatives (SCHRI) provides better framework conditions.

With regards to future developments, Walker (2008) highlights that 'a key question is the extent to which their success [frontrunner projects], however measured, can be replicated without initial dynamics of innovation or the involvement of key enthusiasts and social entrepreneurs' (Walker, 2008, p. 4403). Another possible problem might lie in the lack of a tradition of cooperative organisation in the UK. Introducing feed-in tariffs (in place of the Renewables Obligations) could stimulate community ownership in renewable energy technologies, but Walker (2008) emphasises that the transferability of this model to the UK has been questioned. However, he suggests that community co-ownership with commercial developers could become widespread practice in the UK.

Walker, Hunter, Devine-Wright, Evans and Fay (2007) try to explain why community-based localism has emerged as a *policy theme* in the UK since the year 2000. They find no 'grand

coordinating plan but instead a number of programs that have emerged relatively independently' (p. 67-71). They point out different instrumental rationales, such as increased acceptance of renewable energy installations (especially for large onshore wind farms), the wish to 'educate the public' about renewable energy, rural regeneration as well as the possibility to circumvent EU free market regulations (community approach enabling government to provide capital funding and market support). To a smaller extent, normative rationales such as communitarian and participatory principles are also present. In view of these different rationales the authors refer to Hajer's concept of a 'discourse coalition' (Hajer, 1995). They find that the openness of the notion of community ownership has enabled experimentation with different models of project management, ownership and distribution of benefits. 'Whilst therefore from a normative position we could be critical of the degree to which the meaning of community RE [renewable energy] has been stretched, pragmatically its malleability appears to have been purposeful and productive (…)' (p. 78). Additionally, they note as a possibility that – with reference to the transition management framework – a 'niche' may be created in which innovation in the social organisation of technology can occur.

Walker and Devine-Wright (2008) also focus on *discursive aspects* in relation to community energy and look at the way 'community energy' has been applied in relation to renewable energy projects in the UK (discursive politics). They find different interpretations of community energy, which may be based on a project's legal form (led by organisation without commercial interests), its physical rationale (e.g. involving public / community buildings), its involvement of local people in project development or on local people having a financial stake. Walker and Devine-Wright (2008) suggest a basic distinction between process and outcome dimension (who is concerned with developing and running project vs. who is the project for and how is it spatially and socially distributed? p.497/498). The authors provide a slightly more critical discussion of this interpretative flexibility than in Walker et al. (2007) and note that labelling a project as 'community energy' if the benefits are not shared by local people can also create resentment.

Summary – country case UK

- Traditionally, the UK (in particular England) has seen very **little citizen- or community led initiatives** in the area of renewable energy technologies. Especially in the area of wind power this has been attributed to an energy policy that has been very much in favour of large scale installations and corporate ownership and to the absence of a strong alternative energy movement (Toke et al., 2008, Breukers and Wolsink, 2007). However, it has also been argued that commercially sized community wind power should be feasible under the given legislative framework

(Toke, 2005).

- Since 2000 **government support** has been available for community energy projects. Projects carried out under this label vary widely in terms of ownership structure, legal forms and forms of community involvement. However, funding was discontinued for a central funding and support programme in England, the Community Renewables Initiative (CRI) in 2007. The Scottish Community and Household Renewables Initiative (SCHRI) still is in place (Walker, 2008).
- Discourse analytic approaches suggest that a **variety of different instrumental policy rationales** are related to the notion of 'community energy'. On this basis it has been suggest that a 'discourse coalition' (Hajer, 1995) has emerged – various actors with (perceived) shared interests and common framings, but without fundamental agreement on deeper values. The malleability of the term may be viewed as an opportunity for experimenting with different forms of community-related renewable energy projects but also as a threat eroding any substantive meaning of the term (Walker et al., 2007, Walker and Devine-Wright, 2008).

2.4 Germany

General issues

Flieger and Klemisch (2008), arguing for an increasing role of energy cooperatives in the (German) energy system, call attention to the *historic relevance* of energy cooperatives in Germany, ensuring electricity provision in rural areas in the early 20th century. About 40 such cooperatives are still active today, most of them situated in Bavaria. They notice a 'modest renaissance' of the idea of energy cooperatives in the 1980s – initially in the area of wind energy, but meanwhile increasingly also in the area of photovoltaics (PV). Unlike the cooperatives in the early 20th century these new cooperatives usually adhere to explicitly political goals in relation to regional ties and new energy concepts. They also provide a number of examples of 'new' energy cooperatives in Germany, among them also 'bioenergy villages' ("Bioenergiedörfer") organised as cooperatives, as particularly integrative approaches.

Toke, Breukers and Wolsink (2008), in their comparison of institutional frameworks for wind power deployment in various European countries, point out that most of German wind power capacity is owned by so-called 'Bürgerwindparks' (citizen wind parks) and suggest that this has in fact improved the political profile of wind power. Furthermore, they relate the diffusion of citizen-owned wind farms to a tradition of local energy activism based on the anti-nuclear

movement (like in Denmark and the Netherlands). Feed-in tariffs introduced in Germany in 1991 have generally provided a favourable condition for wind power diffusion.

Specific legal forms / specific ownership and participation models

Enzensberger, Fichtner and Rentz (2003) provide a detailed description of the development of different *citizen participation schemes* in the area of wind power in Germany. They take on a largely instrumental view on such schemes, regarding them as an 'important vehicle to develop wind energy business to its present state of market maturity' (p. 191).

They point to different parameters for economic design options of renewable energy projects in general, including the financing scheme, the legal form, ownership models, sales channels (e.g. direct sales, feed-in, auto-consumption) and task distribution. With regard to the legal form they point out that the choice needs to take into account liability issues (in case of project failure) and also note that the choice of a particular legal form influences accessibility of capital sources. Furthermore, Enzensberger et al. (2003) differentiate between three types of local citizen investors, namely private individuals owning and operating renewable energy facilities, small private investors owning shares of a project within a cooperative and small private investors owning shares within a project developed by a professional project developer.

Before going into further detail on the specific legal and economic setup of wind power participation schemes, the authors also review *general strategic aspects* of local citizen participation in renewable energy projects. As advantages they list the possibility to overcome public objection, access to an additional equity source (cumulative strength of many small investors, lower profitability expectations, limited investment alternatives), a potential political leverage effect (local citizen support conducive to political support) and operational advantages (locals will report unusual events). On the other hand they see disadvantages in high transaction costs (need to involve many small investors), unfamiliarity of small private investors inducing consulting needs, risk aversion due to lack of entrepreneurial background and the limited possibility of making use of risk mitigating effects by distributing investment across several projects.

As specific *favourable framework conditions* for citizen participation in wind farms in Germany Enzensberger et al. (2003) name the introduction of feed-in tariffs (risk mitigating effect), the availability of loan capital at preferential conditions (Deutsche Ausgleichsbank and European Recovery Programme) and favourable characteristics of the German society. The latter includes sensitivity to environmental issues, a tradition of acting in political groups and associations, but also the fact that Germany is densely populated with people of sufficient financial possibilities to invest.

The authors then describe in some detail different economic structures and legal forms that are common in Germany (and Austria) for local citizen wind farms:

- GmbH & Co. KG:
  This can be viewed as a ‚proven concept' both in Germany and Austria (with almost identical legal structure in both countries). It consists of a private limited partnership (Kommanditgesellschaft / KG) with a limited liability company (GmbH) taking on the role of the 'full partner' within the private limited partnership.[2] Thus, no partner is left with full liability. Further advantages include tax effects (income tax rather than corporate tax applies), easy manageability due to separation between project management (GmbH, usually set up by project-initiating investors) and a larger number of limited partners (further investors). In Austria there is an additional possibility for locals to become involved as small private lenders. As disadvantages the authors point out the need for the creation of two companies for every wind farm, the prohibition of bundling of several companies, possible high efforts for the search for interested local citizens, the impossibility of re-investing revenues in new projects and the lack of risk mitigation via distribution of investment over several projects. The following to modifications have emerged as response to these disadvantages:
- Closed-end wind funds [only in Germany?]:
  This modification emerged in the 1990s. It still involves a GmbH & Co. KG but with a separation of project development and the marketing of shares.[3] Shares are standardised as financial products. The focus thus no longer is explicitly on *local* residents which can result in increased public objection. (Therefore often ensuring sufficient degree of local involvement.)
- Private investor-owned wind portfolio companies (Austria and Germany):
  This is a merger of several wind farm-operating partnerships to larger corporations (Aktiengesellschaft). As advantages the authors refer to synergistic potentials between individual projects, the transferability of company shares, an improvement of the overall risk structure and the possibility to exploit new investment options without creating a new company (just issuing new shares). The authors discern a rather low penetration of this model in Germany [as of 2003?] but deem it likely that further wind farm projects will follow in transforming in this way.

Finally, Enzensberger et al. (2003) also attempt to assess the role of local citizen models in wind power in different market stages. Differentiating between the phases of pioneering,

[2] A private limited partnership (KG) requires at least one partner with full liability and can further include additional partners with limited liability.
[3] The GmbH and Co. KG constitutes the closed end wind fund, an additional 'external' GmbH acts as project developer, but the GmbH in the GmbH & Co KG usually is a 100% subsidiary of this project development company.

market creation, growth, market consolidation and market saturation they discern a strong role for local citizen models in the first two phases (citizens as the only actors prepared to invest). During the growth phase citizen-financed projects still dominated but project development increasingly moved into professionalized companies. At the time of writing (2003) the authors observe an increasing entry of utilities in the wind sector as well as increasing competition and resulting concentration (market consolidation).

The authors also point to 'new' wind markets in Spain, France and Italy, where hardly any local citizen participation models can be found. As a possible explanation they suggest that preconditions (lower population density and available income for investment, lower environmental concerns) are less favourable but also that the 'vehicle' of citizen participation is not needed anymore because other investor groups are now available.

Bolinger (2001), describing community wind ownership schemes in different countries, also provides an overview of developments in Germany. As he notes, feed-in regulation, first introduced in Germany in 1991, has made wind power projects very attractive in general, in particular community wind energy projects. As of 2001, roughly three quarters of installed wind capacity was community-owned. Bolinger (2001) notes a certain 'commercialization' even within such citizen-led initiatives with a shift in ownership from individual small private investors (mostly farmers) to companies based on limited partnerships with mainly wealthy individuals as investors. He attributes this relative commercial nature of citizen-led wind power projects to strong financial incentive structures, attracting 'a different investor class - those motivated primarily by profits, rather than (or perhaps in addition to) environmental or community concerns' (p. 31).

Furthermore, Bolinger (2001) points out that shared ownership in the legal form of cooperatives is rare, as the GmbH & Co. KG-model (see also Enzensberger et al. (2003) above) is financially more attractive. Apart from tax advantages, the same limited liability company (GmbH) can serve as the full partner for several projects (only requiring the set up of a new private limited partnership (KG), which entails rather low costs), thus reducing start-up costs. According to Bolinger, participation as limited partner typically is not restricted to local investors in such a scheme, with locals usually only making up 20-30% of all limited partners.

The author also provides a detailed description of the development of feed-in and grid interconnection regulations in Germany (up to the time of writing). Furthermore, the easy access to loans for wind projects via the government owned 'Deutsche Ausgleichsbank' is noted.

Bettzieche (2009b nonacadem.) presents an overview of different legal forms in Germany for medium-sized PV installations set up by groups of citizens. He notes that important issues to

consider when choosing the legal form for a project include liability issues, tax issues as well as the possibility to pass on shares. A basic distinction can be made between capital companies (Kapitalgesellschaften), such as cooperatives, limited liability companies and corporations, and business partnerships (Personengesellschaften), such as private partnerships (gesellschaft bürgerlichen Rechts / GbR) and private limited partnerships (Kommanditgesellschaft / KG). Different taxing regulations apply for capital companies and business partnerships (corporate tax / income tax on individual earnings). Regulations differ as well with respect to the payout of dividends for different legal forms. Subsequently, the advantages and disadvantages of various legal forms are discussed:

- Corporation: Not well suited for citizen led PV installation due to administrative burden.
- Private partnership (GbR): Many examples of the use of this form for citizen-led PV installations exist. Advantages include an easy founding process. Disadvantages lie in the full liability of all partners and the inflexibility with regard to the entry and leaving of members.
- Limited liability company (GmbH): The limited liability constitutes an advantage, the higher administrative burden a disadvantage. The case is similar for limited private partnerships (KG).
- Cooperatives: This is increasingly used as the legal form for citizen-led PV installations. It has flexibility advantages, namely that an unlimited amount of projects can be realized and new members can enter without complications at a later stage. Furthermore, cooperatives can be organised democratically. However the higher administrative burden (compared to GbR) also constitutes a disadvantage here.
- Bonds (Anleihen) or participation rights (Genussrechte) constitute another possibility, however with the disadvantage that investors do not have any voice. Also an official (investment-)prospectus needs to be issued.

Bettzieche (2009a nonacadem.) describes the development of PV investment funds for small private investors in Germany. According to the author they have developed very well in the years 2007-2009, with an increasing number of parties offering investment opportunities. However, further development appear somewhat unclear due to possible alterations to the German feed-in regulation. Bettzieche (2009a) also diagnoses a trend towards larger installations (smaller ones being in general more costly) and observes an increasing number of institutional investors and utility companies as PV investors. Several initiatives are moving away from a traditional citizen-participation model and are turning into investment companies (usually as closed end funds). One individual is cited naming prospectus regulations (also

applying to private partnerships) as the reason why they converted to an investment company.

Like Bettzieche (2009b nonacadem.), *Rutschmann (2009 nonacadem.)* observes that citizen-led PV installations have so far usually taken the form of private partnerships (GbR) but also points to the increasing number of cooperatives emerging in this area. As advantages of cooperatives she refers to the possibility to realise an unlimited amount of plants, the lower administrative burden (compared to GmbH and Co. KG), the high identification potential due to self-management, the democracy principle and easy entry and withdrawal of members. Citing Burghard Flieger as an interviewee, however, she notes that the effort for the prescribed financial assessment (Rechnungsprüfung) is only worthwhile if a certain size can be reached. Minimal shares are generally kept low to ensure easy accession of members, e.g. between 100 and 1000 €.

Rutschmann (2009) provides a list of approx. 40 cooperatives active in the area of PV in Germany at the time of writing (full list, but not including housing cooperatives of which some also have set up PV installations). Some particular cases of PV cooperatives are briefly described, including one that is accessible exclusively to women (Windfang eG), one example of a cooperative founded in cooperation between a community (Aichstetten, Baden-Württemberg) and a regional utility company (EnBW AG), one example where employees of a company (Volkswagen AG) founded a PV cooperative and mounted the installation on the roof of the production workshop and one example (FairPlanet eG) initiating PV installations worldwide, including also developing countries.

Rutschmann (2009) notes that originally much time was necessary for generating the required knowledge, counselling and recruitment of members, but meanwhile the founding of new cooperatives can be realised much faster due to the existence of specialised support / intermediary organisations. Concerning the recruitment of members the author suggests that the process may be easier for 'professionally organised' cooperatives, e.g. in cooperation with a regional energy utility or regional bank, due to a higher degree of visibility.

Finally, a brief description of the essentials of the legal form of cooperatives (Rutschmann 2009, box on p. 82) is provided. It is also pointed out that renewable-energy-related cooperatives can also be found in the area of trade with components for installations and energy distribution and sales.

Summary – country case Germany

- Citizen-led renewable energy installations have become very **widespread** in Germany. In wind energy, a large amount of installed capacity is owned by 'Bürgerwindparks' (citizen wind parks) (Bolinger, 2001, Toke et al., 2008,

Enzensberger et al., 2003). Also **shared ownership** of PV installations has become popular. Historically, a number of energy cooperatives ensured electricity provision in rural areas in the early 20th century (Flieger and Klemisch, 2008).

- A number of favourable **framework conditions** for citizen-led renewable energy installations in Germany have been identified: The feed-in tariff system, a tradition of local energy activism as well as a general tradition of acting in political groups and associations, the availability of loan capital at preferential conditions as well as a sufficient number of people with sufficient financial possibilities to invest and a relatively high sensitivity to environmental issues (Bolinger, 2001, Toke et al., 2008, Enzensberger et al., 2003).
- Several authors have pointed out that the **choice of the legal form** has implications for a number of aspects, including liability issues, tax issues, the administrative burden entailed, flexibility with respect to the number of projects that can be realised and with respect to the entry and withdrawal of members and finally also the management / governance issues (e.g. democratic self governance in cooperatives) (Rutschmann, 2009, Enzensberger et al., 2003, Bettzieche, 2009b).
- The dominant legal form for 'Bürgerwindparks' is that of a GmbH & Co. KG. Due to some flexibility restrictions (bundling of companies / projects, reinvestment of revenues in new projects) some alterations of this models have occurred, in particular closed end wind funds and private investor owned portfolio companies (corporations with shares owned by citizens) (Enzensberger et al., 2003). For shared ownership of PV installations private partnerships (GbR) are the most widespread model. Recently, however, an increasing number of cooperatives has also been founded (higher flexibility in number of projects and member entry / withdrawal) (Rutschmann, 2009, Bettzieche, 2009b). Furthermore an increasing number of PV investment funds are also being offered (Bettzieche, 2009a).
- Concerning development processes over time, two partly diverging trends appear to be discernible: On the one hand an increasing number of **'real' cooperatives** is emerging (i.e. shared ownership in the legal form of a cooperative), especially in the area of PV, often with explicit political goals related to local/regional ties and new energy concepts (Flieger and Klemisch, 2008, Rutschmann, 2009, Bettzieche, 2009b). This trend is further supported by the formation of specialised support organisations (Rutschmann, 2009). On the other hand, in the area of wind power, a trend towards **purely commercially oriented projects**, increasing concentration and a loosening of the ties to *local* participation can be observed (Enzensberger et al., 2003). However, also in the area of PV investment funds (with little or no regional

ties or political goals) are gaining in importance (Bettzieche, 2009a).

- It has also been noted that – compared to Denmark (and Sweden) – citizen-led wind energy projects in Germany were much more motivated by profitability expectations from the start. This may be attributed to strong financial incentives attracting a group of investors for which environmental and community motives played less of a role (Bolinger, 2001).

2.5 Austria

Madlener (2007) discusses framework conditions for the diffusion of rural biomass district heating (BDH) systems in Austria, typically set up in the form of farmers' cooperatives. Furthermore, the author provides a description of the diffusion of BDH systems in the province of Vorarlberg and a case study of a BDH plant in Rankweil (Vorarlberg).

As Madlener (2007) notes, rural BDH systems emerged in the mid 1980s in Austria and constituted a real innovation at that time. He argues that they can be seen as an outcome of both local initiatives and public policy made. The original policy goal in the support of BDH systems was related to the support of agriculture and forestry (additional income generation for farmers via BDH plants). Policy support consisted of capital grants and soft loans for agricultural cooperatives (lower grants for commercial operators) as well as the provision of technical performance guidelines and seminars.

Important actors included *local promoters* of BDH projects (typically 'well respected residents of village that are personally highly motivated' (p. 1995, quoting Rakos 2001), agents acting in each province as 'focal point' providing advice and general support and planners and installers. Furthermore, local and regional politicians authorising grants and the scientific community pushing the technological state-of-the-art played a decisive role. As many grants were only accessible to farmer cooperatives, utilities created new forms of cooperation with farmer cooperatives.

As Madlener (2007) concludes, 'the Austrian experience of a rapid diffusion of BDH plants was the outcome of a combination of high capital grants offered by several funding sources, local initiatives rooted in a mix of environmental concern and self-interest of forest-owning farmers, and the build-up of know-how and networking among the main stakeholders involved' (p. 2006).

[Remark: A large part of the material presented in this paper concerning the Austrian case in general (i.e. not specifically Vorarlberg and not specifically the case study in Rankweil) appears to be based on *Rakos (2001)*.]

Weiss (2004) discusses the diffusion of biomass district heating systems in Austria from an 'innovations systems' perspective. He suggests that it has developed from a regional innovation system dominated by a diversity of regionally based actors in the phase of technology development to a sectoral innovation system dominated by actors from the agricultural / silvicultural sector in the diffusion phase. He also notes the dominance of farmer cooperatives as owners of BDH systems, farmers thereby being able to earn additional income from wood residues that would otherwise be hard to sell. As Weiss (2004) points out ownership patterns of BDH plants developed quite differently in neighbouring countries, with municipalities typically operating such plants in Bavaria and consumer cooperatives emerging in South Tyrol.

Concerning more recent developments in the area of wind farms, *Enzensberger et al. (2003)* also provide some information on common citizen participation schemes in Austria, as they are in many ways similar to German models. In particular the GmbH & Co. KG model as well as private investor owned wind portfolio companies can also be found in Austria (see section 2.4 for details).

Summary – country Case Austria

- In contrast to the previously covered country cases, locally owned renewable energy installations can mainly be found in the area of **rural biomass district heating systems** in Austria. Typically they are organised as farmers' cooperatives. In some instances utilities also have formed partnerships with farmers' cooperatives (Madlener, 2007, Weiss, 2004, Rakos, 2001).
- More recently, citizen participation models have also appeared in the area of wind power, typically organised as a GmbH & Co KG (hybrid of limited private partnership and limited liability company) or as private investor owned wind portfolio companies in which citizens can buy shares (Enzensberger et al., 2003).

3 Institutional framework conditions (community wind)

This section presents an overview of literature on institutional framework conditions related to the establishment of ***community wind power*** *in Europe (and partly in the US). The emphasis on community wind mirrors the attention that has been given to this particular area in the literature but should also help to draw a broader picture of the conditions enabling or averting community projects.*

Bolinger (2001) providing an overview of community wind power names 'five primary factors' which from his view have enabled community ownership in Europe, especially in Denmark, Sweden and Germany. *Feed-in laws* create a stable, profitable and almost unlimited market. Furthermore they can be accessed at low transaction costs. Possible *tax advantages* include tax free generation, refund of energy and/or CO_2 taxes and favourable depreciation rules. Depreciation rules have enabled farmers to defer taxation on their other farming profits in Denmark and Sweden. In Germany limited partners can write off depreciation expenses against other forms of income. *Standard interconnection agreements* require utilities to interconnect small wind projects to the grid, according to a pre-determined set of rules and further reduce uncertainties. The *presence of a wind turbine manufacturing base* further spurred community wind power development in Denmark and Sweden, as representatives of turbine manufacturers often promoted or initiated community wind projects. Finally, Bolinger (2001) also finds a *familiarity with cooperative ownership structures* to be conducive to community wind development (history of agricultural cooperatives in Denmark, history of joint ownership of public goods in Sweden). Further details on the presence and development of these factors in the countries under focus are provided in the manuscript.

In a paper on the potentials of *'European-style community wind power'* in the US *Bolinger (2005)* names similar factors as historical drivers for community wind power in Northern European countries (feed-in laws, standardized grid interconnection rules, tax regulations, presence of a wind manufacturing industry, ownership restrictions (Denmark) and a push towards community wind due to a number of permitting denials (UK)). Bolinger (2005) points out that less favourable framework conditions exist in the US as federal support for wind power consist mainly of tax incentives that are only attractive for commercial players. However, at the level of individual states (Minnesota, Wisconsin, Iowa, Massachusetts) there has been an effort to enable community wind, e.g. via the development of innovative co-ownership structures involving small local investors as well as commercial players. These ownership structures are designed to allow for making use of the federal tax incentives while allowing for a considerable extent of local ownership. Further support that has been available from individual states includes a production incentive per kWh of

produced electricity for 10 years (Minnesota) or the establishment of development services for community wind in Massachusetts.

Breukers and Wolsink (2007) compare wind power installation achievements in the Netherlands, England and German state of North Rhine Westphalia (NRW). They argue that facilitating local ownership and institutionalising participation in project planning can be beneficial for the implementation process and conclude that this has worked better in NRW than in the Netherlands and England.

The comparative analysis of the process of institutional capacity building in the countries under focus looks at developments in three relevant policy domains (energy policy, spatial planning and environmental policy) and at the formation of a policy community for wind power (e.g. role of grassroots initiatives in mobilising political support). The concluding discussion highlights three aspects:

- *Mobilisation of capital and financial support*: The feed-in system in NRW (Germany) has been very effective, especially in combination with other support programmes that allowed a diversity of actors to become involved (in particular also small, independent initiatives). In contrast, in the Netherlands and England policies have favoured large players (such as utilities).
- *Institutional capacity building*: The authors point to a relatively successful development in NRW where developments started locally and support was mobilised bottom-up, thereby avoiding local opposition. However they also point to the emergence of opposition in recent years due to the prioritising of wind turbines in spatial planning. In England and the Netherlands the early policy focus on large-scale applications was less successful. However, the authors also point to an increase of wind power implementation as an 'unintended consequence' of liberalisation (i.e. 'weak capacity building […] did not completely prevent developments at a later stage' p. 2748)
- *Local planning* is described as the 'weak link', which has not been formally institutionalised in any of the countries under consideration. In NRW inclusive approaches only resulted from the types of projects realised.

Toke, Breukers and Wolsink (2008) compare Denmark, Spain, Germany, the Netherlands, England/Wales and Scotland in terms of institutional factors relevant for wind-power deployment. They point out that the quantity of wind resources is not a sufficient explanatory factor for differences in the amount of installed capacity in the countries under focus and discuss four institutional variables that are found to be relevant. Next to planning systems, systems of financial support and landscape protection organizations this also includes local ownership patterns.

Concerning planning systems the authors point to possible problems if planning decisions are taken at different (higher) levels of governance than the actual implementation and therefore argue for more collaborative approaches in planning. With respect to systems of financial support Toke et al. (2008) note the importance of consistent and generous support for wind power, which has been available in Denmark, Germany and Spain but lacking in the Netherlands and the UK. Furthermore, they point out that the design of financial incentive structures affects the degree to which grassroots initiatives can also be supported (discussion of feed-in vs. 'market based' instruments earlier in the paper but no explicit mention of feed-in system being more accessible to grassroots).

In terms of local ownership structures Toke et al. (2008) contrast Spain and the UK, dominated by corporate players, with Denmark, Germany and the Netherlands, where local ownership is quite common. They relate this to the existence of a tradition of energy activism and the anti-nuclear movement. Furthermore, the authors point out that wind power deployment has not been impeded by a lack of local ownership in Spain, as anti-wind farm networks and concerns over landscape protection are much weaker. However, for the UK they conclude that local ownership of wind power could be conducive to public acceptance of wind power.

Markard and Petersen (2009) analysing ownership structures in offshore wind power for Denmark, the UK and Germany, point out that electric utility companies as well as companies from the oil and gas industry dominate the scene while small investors only play a minor role. They note that this ownership pattern can be found irrespective of ownership patterns in onshore wind in the respective counties. They attribute this to specific technological characteristics of offshore wind (larger wind parks and correspondingly higher capital costs and also higher risks) but also to regulation effects favouring particular investors.

Olesen et al. (2004) provide an overview of the Danish history of community-based wind energy development, organised along different institutional framework conditions relevant to wind power deployment:

- *Legal system*: Relevant legislation aspects in Denmark include siting, technical aspects, taxation (favourable rules for small private investors), accepted ownership forms (originally restrictions on shares of private investors, see section 2.1) and feed-in regulation (prices, regulation on grid connection)
- *Financing*: Several banks have included financing of wind turbines for cooperatives / single investors in their standard portfolio, e.g. providing loans to finance a wind turbine without assessing the private economy of the buyer if the overall project is

trusted (shares / wind turbine act as security). Also insurance against lower electricity production of wind turbines is available from some insurance companies.

- *Planning procedures*: In 1994 all municipalities were asked to designate sites for turbine groups, since 1999 some national criteria for the siting of turbines apply and competence of wind power planning was given to counties' regional planning. The authors view this as a success for spatial planning but also point out that it has created more local opposition because it is now easier for professional investors to be involved.

Miles and Odell (2004) provide further details of spatial planning issues in Denmark in relation to wind power.

The following box not only summarises the most important conditions mentioned above, but also includes relevant points from Agterbosch et al. (2004), Agterbosch et al. (2009) (see section 2.2) and Enzensberger et al. (2003) as well (see section 2.4).

Summary – institutional framework conditions

- A number of papers and reports exists dealing with institutional framework conditions for wind power implementation, often with a specific focus or emphasis on institutional conditions for community wind projects. Indeed, some authors have pointed out that regulatory frameworks for wind power do not provide a neutral playing field for different actors but also influence the installation capacity of different players (Agterbosch et al., 2004, Markard and Petersen, 2009).
- In terms of policy issues, a number of authors point to **feed-in regulation**, **standardised rules for grid-connection** and **tax advantages** as factors that have been conducive to the development of community wind projects in countries such as Denmark, Germany and Sweden (Bolinger, 2005, Bolinger, 2001, Breukers and Wolsink, 2007, Olesen et al., 2004)
- The mobilisation of **sufficient capital** and **financial support** has been emphasised as an important issue. Apart from feed-in regulations, contributions towards this goal can also come from preferential conditions for the availability of loans and insurances (Olesen et al., 2004, Enzensberger et al., 2003) as well as by specific forms of co-ownership between commercial actors and local private investors (Bolinger, 2005). Furthermore Enzensberger et al. (2003) also refer to socio-demographic factors such as the presence of sufficient people with sufficient financial possibilities to invest.
- Some authors also have pointed to the importance of **cultural factors**, especially the

existence of an alternative energy / anti-nuclear movement (Toke et al., 2008, Breukers and Wolsink, 2007, Enzensberger et al., 2003) and familiarity with cooperative ownership structures (Bolinger, 2001).

- **Spatial planning** is referred to as an important factor for wind power implementation in general (not specifically community wind) by several authors (Toke et al., 2008, Breukers and Wolsink, 2007, Miles and Odell, 2004, Olesen et al., 2004). There are some indications based on experiences from Denmark and Germany that supporting wind power development via preferential spatial planning rules (e.g. municipalities obliged to designate suitable areas) can in fact trigger increased opposition and some authors have argued for more participative planning approaches on this basis (Toke et al., 2008, Breukers and Wolsink, 2007, Olesen et al., 2004)
- Finally, **local ownership** is sometimes seen as a favourable framework condition in itself that can counteract resistance to wind power deployment (Wolsink, 2007, Agterbosch et al., 2009, Toke et al., 2008, Breukers and Wolsink, 2007, see section 5 for further details).

4 Interactions at the micro-level

Walker, Devine-Wright, Hunter, High and Evans (2010) examine the role of *interpersonal and social trust* (trust in institutions) in community energy projects in the UK. The authors point to previous arguments in the literature conceiving of trust as both, a necessary characteristic and a potential outcome of cooperative behaviour. Furthermore, they note that in the case of community energy projects it has also been argued that they can enhance wider societal trust in renewable energy technologies. While the empirical work (case studies) conducted by Walker et al. (2010) generally confirms the importance of trust in community energy projects, they also critically question simplistic and rose-coloured notions of 'community'. As they point out, communities can also be exclusionary, or can change and fracture over the course of time.

The empirical material is derived from six community energy projects in the UK. Questionnaires distributed to local residents show that high levels of trust in project organisers correlate with the feeling that the project has only gone ahead because of community support and involvement, with the perception that the project has brought the community together and with the feeling of having been able to contribute to / to influence the project. Quite different levels of trust in project organisers can be found in the six case studies.

The authors then proceed to contrast two cases with particular high / low levels of trust in project organisers. Contrasting characteristics that may account for these outcomes to a certain extent include the implementation of unobtrusive vs. obtrusive technology (heat pump / wind turbines) and an even distribution of benefits (village hall restoration) vs. concentration of benefits on a small group of individuals (three farmers implementing wind turbines). In both cases interpersonal trust within the leading group was present, but in the 'negative' case there was high distrust between the leading group and some parts of the rest of the community. Here a strategic discourse of 'insiders' and 'outsiders' emerged with both sides mutually describing others as outsiders to community. Furthermore, the leading group (three farmers) was accused of illegitimately using the term 'community' for the wind energy project.

The authors thus suggest that 'Whilst trust may therefore be functional for the development of community RE and potentially can be enhanced by the adoption of a community approach, this cannot be either assured or assumed under the wide diversity of contexts' (p. 2655).

Hinshelwood (2001) looks at the process of project development of a community wind energy project in Wales, addressing in particular the (potential) role of external agencies / support organisations. The idea for the project was triggered by a LA 21 process conducted by the local authority and taken up and pursued further by a committed group of interested individuals. Hinshelwood (2001) notes that maintaining control over the project was a crucial

aspect as different external organisations (a local RE company, a charitable RE organisations) tried to enrol them in their agendas which would have meant compromising some of their ideas. The author therefore sees a need to actively seek appropriate support and make acceptable compromise rather than respond to inappropriate offers. Recommendations on how external organizations can support community groups include support in access to relevant information, training, logistical support, support in developing funding strategy etc.

Rakos (2001), describing the introduction of biomass district heating systems in Austria (to a large extent owned by agricultural cooperatives) notes that the success of this technology diffusion process was based on a bottom-up movement, but that also conflicts at the local level occurred during the implementation process. As he points out, public perception was particularly critical in order to gain sufficient customers. A survey revealed that the main reasons for residents to connect to biomass district heating systems were environmental protection, enhanced heating comfort but also support of local farmers. Rakos (2001) notes that 'successful local promoters are typically well respected young residents of the village that are personally highly motivated and that manage to create a consensus in the whole village to realise the project' (p. 5). Also, 'focal points' established at the level of individual provinces were important actors, providing advice to developers of new projects. (They were established at the agricultural chamber, within state-administration, within existing energy agencies or independently.) However, consultants were only trained in technical and economic issues and were not able to give appropriate advice on local conflicts. Nevertheless, Rakos (2001) concludes that the community aspect has been an important driver of biomass district heating network projects and also an opportunity to enhance community cohesion.

Weiss (2004), also describing the diffusion of biomass district heating systems in Austria points to the importance of convincing the mayor and the local council of a biomass district heating network project, as public buildings typically were needed to ensure a sufficiently large base-load demand. Furthermore, he also emphasises the importance of public relations in order to acquire businesses and households as further clients of the plant. Weiss also notes that sometimes farmers were not viewed as competent and could only acquire customers by cooperating with the regional utility company.

Karner, Rößl and Weismeier-Sammer (2010) investigate possible models of Public Citizen Partnerships (PCPs) in Austria in which municipalities and citizens collaborate to fulfil particular communal tasks. The focus is not on energy issues but rather on the fulfilment of communal tasks in the social sphere, such as childcare, care for the elderly or running

recreational facilities. Nevertheless, the study points to important aspects for cooperative activity at the local level that can also be of interest when investigating energy cooperatives. In particular possible cooperation types between the municipality and engaged citizens are outlined, depending on who initiates and who controls a PCP (municipality / citizens or both). The authors also highlight various problems and conflicts that might emerge over the issue of control. In particular the fear of losing control may prevent the municipality / the mayor from allowing citizens to become involved in the actual design and management of a PCP or even from engaging in any sort of PCP in the first place. Furthermore, PCPs may become regarded as associated with a particular political party, which can hamper interest in participation on the side of citizens. The authors also discuss the importance of social capital for the realisation of PCPs. Among other things, they note the importance of 'citizen promoters' of PCPs that push the project at the local level. They also note that the existence of a variety of associations in a community is beneficial for the realisation of PCPs.

Summary – interactions at the micro level

- Research on processes of social interaction around energy cooperatives / community energy projects has focussed on relationships between project organisers and the rest of the community (Walker et al., 2010, Weiss, 2004, Rakos, 2001) and has also emphasised the important role of specialised (regional) support organisations (Hinshelwood, 2001, Rakos, 2001).
- It has been pointed out that **trust** is an important condition for implementing locally owned renewable energy projects and a potential outcome of such a project (Walker et al., 2010, Rakos, 2001). Nevertheless, trust between local residents cannot be assumed as given. It may depend on factors such as the distribution of profits within the community, the obtrusiveness of the technology involved but also on previous conflicts or animosities within the community (Walker et al., 2010).
- In the case of biomass district heating systems, **local support** is particularly important, as local residents also constitute the potential customers of the plant (Weiss, 2004, Rakos, 2001). In some cases in Austria a lack of trust in the competencies of local farmers led to co-operations with regional energy utilities (Weiss, 2004).
- As it has been demonstrated for the case of local cooperatives fulfilling tasks in the social sphere (child care, etc.), the **relationship between the municipality** – in particular the mayor – **and active citizens** also is of crucial importance. Problems may arise from conflicts over control between the municipality and citizen groups (Karner et al., 2010).

5 Local ownership of renewable energy technologies and public acceptance

Attitudes towards *potential* community based projects

Barry and Chapman (2009) argue for the development of small-scale wind installations in addition to current large-scale developments in New Zealand, explicitly linking small-scale wind power to the possibility of community ownership (lower capital costs thus more affordable to smaller investors). They present a survey conducted among rural landowners in two regions of New Zealand covering attitudes towards large-scale and small-scale wind power development. In accordance with findings from other international studies (as the authors note) results indicate that landowners are significantly more positive towards small-scale wind.

Furthermore, the authors also discuss potential benefits of community ownership of wind power. Apart from increasing public acceptance they also refer to community ownership as an additional source of capital, as a contribution towards distributed generation benefits (reducing transmission costs / losses) as a means for the farming sector to offset its high levels of greenhouse gas emissions, as a means to strengthen and diversify local, rural economies and as a means of creating more competition in the electricity generation sector in New Zealand.

Devine-Wright (2005) investigates support for local involvement in relation to a planned community based wind energy project and the socio-demographic factors relevant to these beliefs (no indication whether the planned project has been realized). He finds a high level of support for wind energy development embedded in the local community (specifically for development in partnership with local community, local use of energy produced, profits put back into local community). Slightly lower levels of support were present for local ownership, but still a majority of respondents were in favour of such a model. Only weak socio-demographic effects could be found.

[Remark: Appears to be the same community project as described by Hinshelwood (2001).]

Rogers, Simmons, Convery and Weatherall (2008) provide an exploration of the attitudes of a small community (56 households) in the lake district in England towards a potential community energy project. Findings show that support for community energy project was more widespread than the desire to participate and indicate popularity of low-level participation. Most frequent reasons for people not wanting to participate include lack of time, interest or ability. Expected benefits can be grouped into social, environmental and economic aspects. Social aspects are strongest, in particular the aim to strengthen the community. At

the same time some people are skeptical whether a community energy project could be realized, given the existing rather weak community ties.

Attitudes towards *actual* community based projects

Maruyama, Nishikido and Iida (2007) present a study on attitudes towards and motivations for (non-)participation in three community wind projects in Japan (Hokkaido, Aomori and Akita). Citizens could participate via local funds but also via a 'Japan funding' scheme which enabled participation from across the country. The authors point to the importance of a sense of ownership which is provided for in these examples by the possibility for small investors to have their name inscribed on the tower.

The evaluation of a survey asking for the reasons for investment and non-investment via factor analysis reveals three relevant aspects influencing engagement, namely an 'environmental movement factor' (desire to contribute to a sustainable energy system), an 'economic incentive factor' (expectation of revenues) and a 'commitment factor' (sense of ownership, support of concept of citizen ownership). The relevance of these factors varies between different investor groups for different community projects. Overall the authors conclude that wind power offers incentives for different actors that are mutually complementary.

Warren and McFayden (2010) present a questionnaire based case study comparing attitudes of residents around a community owned and a developer-owned wind farm in Scotland. Results show positive attitudes in both communities, but more strongly positive ones around the community owned wind farm (only descriptive statistics, no statistical testing).

As the authors note, a 'NIMBY approach' is too simplistic to explain opposition to wind farms. Apart from the visual impact other factors to be considered include local perception of a wind power project's economic impact, the national political environment as well as institutional factors. Furthermore, they point out that apart from classical legal/economic ownership, a sense of ownership is also important.

Apart from increased public support Warren and McFayden (2010) refer to a number of further advantages of community involvement: fewer planning refusals, access to new sources of investment capital, electricity price stability, and harnessing the benefits of distributed generation. However, they also alert to a number of disadvantages, such as reduced economies of scale and a greater administrative burden.

Finally, the authors point out that in early wind-power developments the small size of early turbines matched community-ownership models well (Denmark). In their view, Scotland missed this window of opportunity as 'the wind industry has outgrown community involvement' (p. 211).

Olesen Maegaard and Kruse (2004), referring to an example of a rural municipality in Denmark that realised a community owned wind power project, point out that no local conflicts arose in this case. In fact an investigation showed increasing support the closer people lived to the windmills. The authors explain this by their economic participation. However, the authors see the question of conflict becoming urgent again in Denmark since the turn of the century, due to government incentives for taking down of old wind turbines and replacing them by fewer larger ones ('re-powering development'), often with a shift in ownership patterns away from local residents. With respect to the integration of wind power in spatial planning Olesen et al. (2004) see a success for spatial planning, but also criticise the current planning regime for making things easier for larger investors, thereby once again fuelling local opposition to wind power.

Local participation and ownership as institutional capacity building

Breukers and Wolsink (2007), comparing processes of institutional capacity building for wind power in the Netherlands, England and the German state of North Rhine Westphalia pay special attention on local planning contexts and problems with local social acceptance. They point out that previous research has indicated negative attitudes to wind power to be based on perceived visual impacts but point out that other factors such as discontent with decision-making processes and the management of facilities may also play a role.

Breukers and Wolsink (2007) consider local participation in planning procedures to be the 'weak link' in institutional capacity building for wind power, as it has not been institutionalised in any of the countries / provinces studied. Inclusive approaches in North Rhine Westphalia resulted from specific types of projects (citizen-led installations) rather than from institutionalised procedures. They also note that, while opposition to wind power has generally been low in North Rhine Westphalia due to the dominance of citizen-led projects, introducing a privileged position for wind power in spatial planning (municipalities obligated to designate areas for wind power development) has triggered some resistance.

Apart from arguing for community ownership and increased local participation in planning as a means for creating public acceptance, they also point to epistemic and normative grounds for fostering such approaches (relevant stakeholders bring in their knowledge, enhancement of democratic legitimacy). Furthermore, they note the local economic benefits of community ownership.

As has already been noted in section 2.2 (country case Netherlands) other authors have also challenged the concept of the 'NIMBY syndrome' in relation to wind power, highlighted the importance of local social conditions and emphasised the positive effects of local ownership and/or local involvement in planning and local acceptance (Agterbosch et al., 2009, Wolsink, 2000). Similarly *Toke, Breukers and Wolsink (2008)* note that 'a clear distinction must be

made between general attitudes towards wind power and the behaviours towards specific wind power schemes' (p. 1136) and that investors from outside of a community may be met with mistrust. Furthermore, the following summary also refers to points made by Enzenberger et al. (2003) and Bolinger (2001) (see sections 2.4and 3 respectively).

Summary – local ownership of renewable energy technologies and public acceptance

- With rising local opposition to the installation of wind farms, attention has turned towards **local participation and ownership** as a means to reduce such opposition.
- Some authors have investigated attitudes of people towards ***potential*** community-based wind energy projects in countries which have traditionally favoured large-scale commercial wind power installations (Devine-Wright, 2005, Barry and Chapman, 2009, case studies in UK and New Zealand respectively). Results indeed point towards high levels of support for small-scale, community based wind power. However research on potential renewable energy community projects in the UK also indicates preferences for low-level forms participation e.g. higher support for a partnership with the local community rather than for community ownership or reservations towards investing too much time (Devine-Wright, 2005, Rogers et al., 2008).
- Research on the acceptance of ***actual*** community based wind power installations also suggests a favourable influence on public acceptance (Olesen et al., 2004, Warren and McFadyen, 2010). Furthermore, some authors have pointed to the importance of a *sense of ownership*, rather than ownership in a strictly legal sense (Maruyama et al., 2007, Warren and McFadyen, 2010).
- **Local participation** in planning and/or **local ownership** has also been highlighted as an important aspect of institutional capacity building for wind power implementation. Various authors have challenged the 'NIMBY approach' and pointed out that local opposition to wind power not only stems from aesthetical objections but also from objection towards specific forms of decision making and economic benefit distribution (Wolsink, 2007, Agterbosch et al., 2009, Toke et al., 2008, Breukers and Wolsink, 2007).
- Apart from the instrumental rationale of reducing public opposition, especially in the case of wind energy, a number of further instrumental but also normative arguments have been put forward for local participation in / ownership of renewable energy projects. These include benefits from distributed generation, making use of an additional source of investment capital, harnessing the knowledge of additional stakeholders, political leverage effects (local citizen support conducive to political

support), operational advantages (locals reporting unusual events), strengthening and diversifying local economies and enhancing the democratic legitimacy of wind power projects (Breukers and Wolsink, 2007, Warren and McFadyen, 2010, Barry and Chapman, 2009, and see also Enzensberger et al. 2003 in section 2.5 and Bolinger 2001). Some authors also note some disadvantages of local or distributed ownership of wind energy projects, such as reduced economies of scale, higher transaction costs due to the large number of people involved and the limited possibility of making use of risk mitigating effects by distributing investment across several projects (Bolinger, 2001, Warren and McFadyen, 2010, Enzensberger et al., 2003)

6 Summary and Conclusion

This section both summarises important points from the literature review and draws particular attention to issues of interest for the further course of this research project. As a first step the table on pages 36 and 37 summarises and contrasts the individual 'country cases' reviewed in section 2. Of course, as different authors writing on different countries have emphasised different aspects of energy cooperatives in the respective country, not everything is easily comparable. Nevertheless, the table provides an overview of some key aspects of citizen ownership of renewable energy facilities in the countries under consideration. Table 2 on page 38 provides some supplementary background information on energy market structures in the countries under consideration.

The remainder of this section is devoted to the summarising of important points from this literature review in three areas: different ownership models, different rationales attached to energy cooperatives and development processes over time.

	Denmark	Netherlands	UK	Germany	Austria
Forms of citizen ownership	Small private investors (mostly farmers), general partnerships ('cooperatives')	Small private investors (mostly farmers), cooperatives	Broad variety of 'community energy' projects, some with citizen ownership. Partly co-ownership with commercial investor	Ownership of shares of project developed by professional developer (e.g. GmbH & Co KG), cooperative(-like) organisations	Farmer cooperatives, partly cooperating with utilities, more recently also ownership of shares in wind energy projects
Role of citizen ownership of RET	Central role for wind power development	Marginal role for cooperatives in terms of installed capacity, possibly important as catalyst actors. Small private investors most important entrepre-neurial group around 2000	Traditionally very low. Since 2000: development of various community energy projects	Historically: ensuring electricity provision in rural areas in early 20th century. Significant amount of installed capacity in wind power citizen-owned	Central role for diffusion of biomass district heating systems
Time span	From 1970s, esp. 1970s and 1980s	From late 1980s (Cooperatives esp. late 1980s and early 1990s)	From around 2000	From late 1980s	From 1980s
Main technology	Wind power	Wind power	RET in general	Wind power, PV	Biomass district heating, wind energy
Supporting factors	Strength of anti-nuclear movement, stepwise form of technology development, gradually emerging policy support, feed-in regulation, original ownership restrictions favouring local ownership, favourable tax and financing schemes	Strength of anti-nuclear movement, at later stage: favourable tax schemes, liberalisation of electricity markets, spatial planning pro-cedures (easier to handle for local actors)	Recent government support for community energy projects, regional funding and support agencies (funding discontinued in England in 2007)	Feed-in tariffs, tradition of energy-activism, tradition of acting in political associations, easy availability of loan capital, sufficient number of people with financial possibility to invest, environmental sensitivity	Interplay of local initiatives and public policy, policy goal to support agriculture and forestry, special grants made available to cooperatives

Table 1: Overview of country cases (continued on page 37)

	Denmark	Netherlands	UK	Germany	Austria
Inhibiting factors	In later stages: spatial planning procedures, incentives / demand for concentration	Volatile policy support for wind power, policy focus on large scale installations, originally need to negotiate remuneration price with regional utility, later demand for concentration	Traditional focus on large scale installations / corporate ownership, in particular also in renewable energy policy (Renewables Obligations), absence of strong alternative energy movement	Administrative burden with some of the possible legal forms	opposition from natural gas industry
Developments over time	From 1980s / 1990s: Industry taking over turbine development, process of concentration in ownership structures from 2002 ('repowering')	Positive effects of liberalisation and tax schemes in the 1990s but at the same time also demand for concentration	Still very recent development. Co-ownership with commercial investors could become widespread practice	Increasing commercialisation and concentration in wind energy, increasing importance of investment funds in PV but also increasing number of cooperatives in PV, emergence of specialised support organisations for energy cooperatives	from a regional innovation system (dominance of regionally based actors) to a sectoral innovation system (dominance of actors from the agricultural / silvicultural sector)
Role of utilities	Utilities 'forced' into wind power, originally reluctant to engage	National policy preference for large players, e.g. utilities Engagement in wind energy became attractive for them by late 1990s	Early liberalisation of energy markets. Main government policy focus on large commercial players, e.g. utilities	Increasing entry of utilities into wind power in early 2000s	Some cooperatives cooperate with utility companies (issue of consumer trust)

Table 1: Overview of country cases (continued from page 36)

Structure of electric energy industry prior to liberalisation (before 1989), data taken from Serrallés (2006 p. 2543), except data for Austria supplemented on the basis of http://gw.eduhi.at/thema/energie/liberal/liberal.htm, accessed 29 August 2010

	Denmark	**Netherlands**	**UK**	**Germany**	**Austria**
Primary fuel	Coal and gas	Gas and coal	Coal and nuclear	Coal and nuclear	Hydro
Ownership	Public and private	Public	Public	Public and private	Public
Geographical scope of energy utilities	National, regional and local	Regional and local	National and regional	Regional and local	National, regional, and local
Vertically integrated [4]	Partly	Partly	Partly	Fully and partly	Partly

Implementation of EU Electricity Directive (liberalisation), data taken from Serrallés (2006 p. 2548)

Full opening date	2003	2003	1999	1999	2001
Biggest three generators share of capacity	78%	59%	36%	64%	45%

Further national energy indices, data taken from Eurostat website http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/data/main_tables, accessed 29 August 2010:

Share of electricity consumption from renewables, 2007	29%	7,5%	5,1%	14,8%	60,5%
Share of energy consumption from renewables, 2007	17,3%	3,6%	2,1%	8,3%	23,8%
Dependency on energy imports, 2007[5]	-24,9%	38,9%	20,2%	58,6%	68,8%

Table 2: Overview of energy market structures

[4] Integration of generation, transmission and distribution
[5] Net imports divided by gross national consumption

6.1 Ownership models

Differentiation between different ownership models

A number of different ownership models for citizen-owned renewable energy facilities can be found. This includes small private investors (individuals – typically locals, often farmers, e.g. in Denmark and the Netherlands), cooperatives and cooperative-like organisations, citizen ownership of shares in a project or company led by a professional / commercial project developer as well as different models of co-ownership with a commercial investor (e.g. UK). Legal forms obviously vary between, but also within individual countries, with the legal form of a cooperative only being relevant in a limited number of settings (e.g. collective PV ownership in Germany, biomass district heating in Austria).

Enzensberger et al. (2003) differentiate between three types of local citizen investors along the dimensions individual/collective and citizen/professional project-lead: private individuals owning and operating renewable energy facilities, small private investors owning shares of a project within a cooperative and small private investors owning shares within a project developed by a professional project developer (p. 194). Walker also points to the frequent distinction between communities of interest and communities of locality (dispersed / concentrated collective ownership). The relevance of a 'community of locality' may increase further, if a project is designed not for feed-in to the national grid, but for local consumption of the energy produced, as in the case of biomass district heating systems (Weiss, 2004, Rakos, 2001). Furthermore, Maruyama et al (2007) and Warren and Mc Fayden (2010) draw attention to a *symbolic* dimension of citizen ownership, pointing out that a 'sense of ownership' can sometimes be more important than ownership in a strictly legal sense.

On this basis *the following dimensions seem to be of a certain relevance for the distinction between different types of citizen ownership of renewable energy facilities*:

- Individual (small private investor) / collective
- Locally concentrated / geographically dispersed collective (community of locality / community of interest)
- Energy produced for feed-in / local consumption
- Control over project lead / participation (project or company shares)
- Full ownership / co-ownership with professional investor
- Legal ownership / sense of ownership (may be additional to or instead of to legal ownership)

Pragmatic issues in relation to ownership models

With respect to the choice of a particular legal form a number of authors have pointed to some pragmatic aspects that need to be considered. Above all this clearly includes

restrictions in the national regulative framework, such as the initial Danish regulation that wind turbines had to be owned directly by electricity consumers, which excluded the legal form of a cooperative (Bolinger, 2001). Further pragmatic aspects include liability issues, tax advantages, start up costs, the administrative burden entailed, flexibility with respect to the number of projects that can be realised and with respect to the entry and withdrawal of members and management / governance issues (e.g. democratic self governance in cooperatives) (Bettzieche, 2009b, Bolinger, 2001, Enzensberger et al., 2003, Rutschmann, 2009). Furthermore, also trust from consumers may play a role, as was the case in Austria where a lack of trust in the competencies of local farmers led some farmers' cooperatives to co-operate with regional energy utilities (Weiss, 2004).

Ownership model and attached rationales

Different rationales have been attached to citizen ownership of renewable energy facilities by the people involved. It appears that, especially in Germany, initiatives in the legal form of a cooperative are often tied to explicitly political goals of democratisation and empowerment (Flieger and Klemisch, 2008) while citizen led wind power projects in the form of limited partnerships or the GmbH and Co. KG structure tend to be relatively commercially oriented (Enzensberger et al., 2003). For the British case, Walker et al. (Walker et al., 2007) find that the flexible interpretation of the term 'community energy' (also in terms of the rationales attached) has enabled experimentation with different ownership models.

Cooperative ownership models and size

One open issue of debate is the extent to which citizen-led, cooperative-like renewable energy projects are linked to small project sizes. While Barry and Chapman (2009) as well as Warren and McFayden (2010) explicitly link small-scale wind power to the possibility of community ownership, Toke (2005) argues that commercially sized community wind power projects are desirable and also feasible under the 'Renewables Obligation' (RO) policy in the UK. In his view, issues of ownership and size have become falsely linked because in Denmark larger projects typically are owned by utilities while smaller projects typically are owned by cooperatives or farmers - due to original legislative restrictions on the extent of ownership for individuals. Similarly Danielsen (1995) argued for the establishment of large-scale off-shore wind farms with the possibility of ownership by windmill guilds (not possible at the time of writing of the paper). Bolinger (2001) points to the Middelgrunden wind turbine partnership as an example of a commercially sized, though clearly exceptional example of a community wind project.

6.2 Different rationales attached to energy cooperatives

Different rationales for energy cooperatives or other forms of citizen-led renewable energy facilities have been pointed to in the literature. These rationales may be differentiated along

the dimension instrumental / normative as well as with respect to the actor group adhering to the rationales in question:

Instrumental rationales

With respect to *policy makers*, the following instrumental rationales have been referred to:

- Increasing public acceptance, especially in the area of wind power (Walker et al. 2007; Enzensberger et al. 2003; Bolinger 2005; Breukers and Wolsink 2007; Wolsink 2007; Agterbosch et al. 2009; Toke et al. 2008; Warren and McFayden 2010)
- Educating the public about renewable energy (Walker et al. 2007)
- Rural regeneration / support for agriculture and forestry (Barry and Chapman, 2009, Madlener, 2007, Walker et al., 2007)
- Distributed generation benefits (Barry and Chapman, 2009, Warren and McFadyen, 2010)
- A 'vehicle towards developing wind energy business to its present state of market maturity' (Enzensberger et al. 2003, p. 191)

Project developers may hold the following rationales towards citizen involvement:

- Gaining access to (additional) capital (Barry and Chapman, 2009, Enzensberger et al., 2003, Warren and McFadyen, 2010)
- Incrasing public acceptance (see above)
- Political leverage effect: local citizen support conducive to political support (Enzensberger et al., 2003)
- Profiting from additional (local) knowledge (Breukers and Wolsink, 2007)
- Operational advantages: locals reporting unusual events (Enzensberger et al. 2003)

Interestingly possible instrumental rationales of *the citizens involved* are discussed much less in the literature. However, reference has been made to the following aspects:

- Ecologically sensitive and/or profitable investment opportunity (Maruyama et al., 2007)
- Making use of economic 'spillover effects', e.g. utilisation of wood residues by farmers owning forests (Rakos, 2001, Weiss, 2004)
- Local community regeneration (Breukers and Wolsink, 2007, Devine-Wright, 2005)

Normative rationales

Normative rationales held by involved citizens (and, to some extent, policy makers) also are not discussed very extensively in the literature, but may be taken to encompass:

- Consumer empowerment (Flieger and Klemisch, 2008)

- Enhancement of democratic legitimacy (Breukers and Wolsink, 2007)
- Contribution to environmentally friendly energy generation (Agterbosch et al., 2004, Flieger and Klemisch, 2008, Maruyama et al., 2007)
- Enhancement of community cohesion (Rakos, 2001, Rogers et al., 2008, Walker et al., 2010)

Institutional framework conditions and dominant rationales

Some authors have hinted at the possibility, that dominant rationales towards citizen-led renewable energy facilities in a particular country may be influenced by institutional framework conditions. Thus Bolinger (2001) attributes the comparatively commercial nature of citizen-led wind power projects in Germany to strong financial incentive structures, attracting a group of private investors motivated more by profitability expectations than by empowerment and democratisation ideals. Toke et al. (2008) also points to cultural factors. They note that concerns over landscape protection are relatively strong in the UK, thus giving weight to the idea of achieving public acceptance by local ownership models. Spain, by contrast, has hardly experienced opposition to wind power related to concerns over landscape protection, thereby providing little ground for arguing for local ownership as a means to increase public acceptance.

Agterbosch et al. (2004) presents a somewhat reverse argument, suggesting that the fact that energy cooperatives in the Netherlands were characterised by an 'ideaslistic approach' (i.e. normative rationale of promoting a sustainable society) made them 'immune' to the institutional / regulatory framework, at least to a certain extent.

6.3 Development processes over time

Commercialisation and concentration

Several authors have noted processes of commercialisation and concentration in countries with a comparatively strong record of cooperative-like renewable energy initiatives (Denmark, Netherlands, Germany). The following aspects of such developments may be differentiated:

- Existing citizen-led initiatives becoming more commercially oriented (especially in Germany, see Bettzieche (2009a) for the case of PV and Enzensberger et al. (2003) for the case of wind power)
- Increasing entry of large commercial actors in areas (esp. wind power) where previously cooperative-like initiatives and small private investors dominated and an ensuing process of market concentration (Germany, Netherlands and Denmark, see Agterbosch et al., 2004, Bettzieche, 2009a, Boon, 2008, Enzensberger et al., 2003, Olesen et al., 2004)

- Professionalisation of technology development and supply: emergence of specialised industry (Jørgensen and Karnøe, 1995 for the case of wind energy in Denmark)
- A weakening of links to the alternative energy movement (Jørgensen and Karnøe, 1995 for the case of wind energy in Denmark)

In Germany, however, there also appears to be simultaneous counter-trend to commercialisation, with an increasing number of 'real' cooperatives emerging in the area of PV in recent years (Bettzieche, 2009b).

Institutional alignment and adaptation

In view of the developments of commercialisation and concentration described above, some authors have characterised citizen-led renewable energy initiatives merely as a temporally limited 'stepping stone' necessary to prepare the ground for other market actors (e.g. Enzensberger et al., 2003). However, a number of authors have also pointed to durable processes of institutional alignment and adaptation that occurred in response to the emergence and diffusion of cooperative-like renewable energy initiatives. The following hints / examples may be found in the literature:

- In Denmark the institutional setup in general shifted in favour of more decentralised systems (Jørgensen and Karnøe, 1995)
- In Denmark, utilities, initially reluctant towards engaging with wind energy, had to struggle to regain their former position and were somewhat 'forced' into wind energy business (Jørgensen and Karnøe, 1995)
- Spatial planning rules were adapted in various countries (Breukers and Wolsink, 2007, Danielsen, 1995)
- Specialised advice, financing and insurance schemes / support organisations emerged in various countries (see Olesen (2004) for Denmark, Rutschmann (2009) for Germany and Madlener (2007) for Austria)

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6. Work Package 2: Country Case Austria

Table of Contents

1 Introduction

With rising concerns over ecological sustainability as well as security of supply, the energy system has come under increasing pressure over the last years and various efforts have been made aiming at a transformation towards more sustainable systems of energy provision. At the grassroots level this has included the establishment of energy cooperatives and other forms of collective citizen ownership of renewable energy technologies. This report focuses on collective citizen ownership of renewable energy technologies in Austria and presents the findings from qualitative expert interviews within the project 'Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system'.

For various reasons a decision was made to focus on renewable energy plants in the area of green electricity (mainly wind power and photovoltaics). First of all, relevant actors and framework conditions differ considerably between renewable energy in the area of electricity and in the area of renewable heat (e.g. biomass district heating networks). Seeing previous research has already documented the development of energy cooperatives in the area of biomass district heating networks in Austria[1], a focus on green electricity appears to be more reasonable. Furthermore the project will also look at collective citizen ownership of renewable energy in Germany. Since such ownership models in Germany appear to be most widely spread in photovoltaics and wind power, a comparison will more easily be achieved by also focusing on these technology areas for the Austrian case.

As collective citizen ownership in the area of green electricity in Austria rarely takes the legal form of a cooperative (see section 3.1 below), the term *collective citizen ownership* of green electricity plants / of renewable energy technologies will be used (sometimes also abbreviated as 'citizen ownership', *collective* ownership of a group of people always being implied). As some models in fact do not involve citizen ownership in the strict sense but are rather based on a loan system (see section 3.1), the term *citizen participation* will sometimes also be used. These models have not been excluded from the analysis as they are generally understood to be closely related to citizen ownership models. In fact interviewees often use the term 'citizen participation' (Bürgerbeteiligung) both for actual citizen *ownership* and for weaker forms of participation, e.g. via loans. The term *local ownership*, as it is used in the project title, has been found to be rather impractical, as some companies based on citizen

[1] See Madlener, R. (2007). "Innovation diffusion, public policy, and local initiative: The case of wood-fuelled district heating systems in Austria." *Energy Policy* **35**(3): 1992-2008.

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ownership have undergone a development from being based on local ownership to a more geographically dispersed participation structure. Nevertheless the involvement of local citizens has remained an important aspect for all of the organizations considered here (see section 3.2). The term *independent power producers* is used as an umbrella term for companies based on collective citizen ownership and other privately owned companies acting as power producers (i.e. power producers that are not part of a public utility).

The next section after this introduction gives a brief overview of the material and the methods this report is based on. The following six sections present different aspects of the findings from the interviews. This includes different types of ownership models, institutional framework conditions, interests and rationales attached to collective citizen ownership models, technological developments, a short regional and international comparison and the examination of different actor roles around collective citizen ownership of renewable energy technologies.

2 Material and methods

The report is based on nine semi-structured interviews that were conducted from November 2010 to March 2011. Interviewees were mainly representatives of companies in Austria that set up renewable energy plants based on citizen ownership or are in the process of realizing such plants. An additional interview was conducted with representatives of the Austrian wind power interest group IG Windkraft.

In addition to the nine interviews that were conducted specifically for this project, material from three more interviews conducted in another project in July 2010, also partly pertaining to citizen ownership of renewable energy technologies, has been included in the analysis (Project BENE – Bürgerengagement für Erneuerbare Energie, funded by the Austrian Climate and Energy Fund in the program Neue Energien 2020). These additional interviews concern jointly owned photovoltaics (PV) plants in the federal state of Vorarlberg.

See the table below for an overview of all interviewees.

Name	*Organization*	*Technology (Emphasis)*
Karl Totter	SEBA Mureck Gmbh (SonnenEnergieBürgerInnenAnlage)	Photovoltaics (PV)
Robert Wilfurth	Solarzelle Waldviertel	Photovoltaics (PV)
Herbert Daberger	BEB Bioenergie AG	Biogas
Winfried Dimmel	Windkraft Simonsfeld AG	Wind power
Andreas Dangl	WEB Windenergie AG	Wind power

Friedrich Herzog	ÖkoEnergie GmbH	Wind power
Josef Schoissengeier	Zukunftsenergie GmbH Schenkenfelden	Wind power
Alfons Gstöttner	Windkraft Innviertel GmbH	Wind power
Stefan Moidl und Ursula Nährer	IG Windkraft	Wind power
Johann Punzenberger*	Arbeitsgemeinschaft Erneuerbare Energien Vorarlberg	Photovoltaics (PV)
Emanuel Gstach*	ee consult	Photovoltaics (PV)
Franz Rauch*	Municipality of Dünserberg	Photovoltaics (PV)

* Interviews conducted within the project BENE, see above

Interviewees were selected on the basis of an internet search and on the basis of further recommendations by the initial interviewees. Interviews typically took about one hour and were conducted face to face. In one case two interviewees took part in the interview, in all other cases a single person was interviewed.

All interviews were recorded, transcribed and evaluated with qualitative content analysis using ATLAS.ti. Some additional factual information was gathered from homepages, brochures and further information material provided by the organizations. Furthermore, were needed, information from interviews was backed up or complemented by factual information from an internet and literature research.

In the coding procedure individual passages from interviews have been assigned labels taking the form [n:k], where n denotes the number of an interview and k denotes the number of the quote from that interview. In the following these numbers are used to label verbatim quotes as well as to account for the sources of information for individual paragraphs. A ‘p’ instead of a quote number denotes information that was drawn from interview protocols (additional information that was given before or after recording the interview). For technical reasons interview numbers run from 9-10 and 12-21 (rather than 1 to 12). For anonymization purposes the numbering of interviews does *not* correspond to the sequence in which interviewees are listed above.

3 Ownership and Participation Models

3.1 Legal forms

A variety of different models of collective citizen ownership of green electricity plants can be found in Austria. In this section an overview of different models will be provided. In particular this covers the models of the organizations that were represented in the interviews. As far as can be judged from background research this should cover all types of collective citizen ownership models that are available in the area of wind power in Austria and a large proportion of models in the area of photovoltaics. In the area of photovoltaics, however, collective citizen ownership models have only developed recently and several projects are still in the development phase. Thus the situation is still more fluid and a number of additional ownership and participation models may still emerge.

Limited Partnership (GmbH & Co KG)

The model of a limited partnership (GmbH & Co KG) has been used quite widely in the area of wind power (Ökoenergie Wolkersdorf, Windkraft Innviertel, formerly also Windkraft Simonsfeld and WEB Windenergie) and has more recently also been used for a large PV plant (SEBA Mureck). A GmbH & Co KG is a limited partnership (KG) in which a limited liability company (GmbH) acts as the general partner. Typically individuals can become involved as limited partners (Kommanditisten) within this partnership. In some cases (Ökoenergie Wolkersdorf, Windkraft Innviertel) companies also offer additional forms of participation. This includes taking part as a dormant partner (stiller atypische Gesellschafter) or by providing loans to the company.

Limited liability company (GmbH)

In one case (Zukunfts-Energie GmbH) a citizen ownership model for a small local wind farm was set up via a limited liability company (GmbH). Citizens are involved as associates (Gesellschafter) or as dormant partners (stille atypische Gesellschafter). Furthermore several people provided loans to the company.

Stock company (Aktiengesellschaft, AG)

Two companies in the area of wind power that started in the form of a GmbH & Co KG (or as a group of such companies) eventually transformed to stock companies (WEB AG, Windkraft Simonsfeld AG). However they are not listed at the stock exchange. In order to avoid takeover by large investors both have introduced limits to the voting power of any individual shareholder (e.g. maximum 5 % voting power) and in at least one company the issuing of shares to new shareholders can be vetoed by the board of directors.

In addition to these two companies in the area of wind power a company in the area of biogas (BEB AG) was also set up as a stock company that is not listed at the stock exchange.

Private partnership (Gesellschaft bürgerlichen Rechts, GbR)

Private partnerships (GbR) are a very widespread model for collective citizen ownership of PV plants in Germany. In the municipality of Dünserberg in Vorarlberg three very small jointly owned PV plants were set up in this way (5 KWp, 2 – 4 partners per plant).

Loans repaid via company vouchers

In one case a trader of PV panels (Solarzelle Waldviertel) developed a participation model in which existing businesses (in one case a shoe manufacturer in the other case an organic farm) set up PV plants on their roofs. Citizens can participate by providing small loans (200 €) that are repaid through company vouchers over several years.

In general a variety of pragmatic reasons influence the choice of the legal structure of the ownership or participation model. This includes tax issues, liability issues, the administrative burden and the issue of risk distribution (e.g. lower risk for individuals if they are co-owners of several wind farms rather than a single one). In some cases the legal structure was also copied from other already existing models of collective citizen ownership of renewable energy technologies in Austria. [9:15, 13:8, 14:29, 14:49, 16:14, 19:8, 20:6]

Some project developers also strive to offer different participation models for people with different levels of willingness to take risks. Furthermore in many cases a goal is to set up a model that allows for broad citizen involvement and pre-empts dominance by few large investors. Thus, several models include either a limit to the shares that can be held by individuals or to the voting power that can be exercised (in the case of stock companies). Furthermore some initiatives or companies make a deliberate effort to keep the minimum contribution of capital low in order to be able to attract people without large financial resources. [9:14, 10:48, 14:18, 14:19, 16:21, 15:3, 16:22, 17:23].

Interestingly, the legal form of a cooperative is hardly used for collective citizen ownership in the area of green electricity plants in Austria. Some interviewees pointed out that cooperatives typically provide their members with benefits in kind rather than with financial revenues. Producing green electricity, however, can usually only be realized via feed-in to the grid, so co-owners typically cannot directly draw 'their' electricity from the plant. [9:15, 16:27]

> "In a cooperative (…), one can clearly define that there is a raw material and the products are made from this material. And (…) if we could define that this sun ray turns into exactly this [electricity] we could make a cooperative, but that doesn't work, we can't define it that way." [9:15]

Nevertheless two initiatives deliberately set up their model in a way such that individuals finance the production of an amount electricity that corresponds to the amount an average household consumes. [9:14, 15:3]

3.2 Participation structures

Interviewees were asked whether particular groups of people are over- or underrepresented in their company or initiative (age, gender, professions, etc.). Hardly any of the interviewees had ever evaluated such issues in a systematic way, but a number of them reported that in their experience people between 40 and 50 or between 35 and 55 form the largest group. They attribute this to the fact that this age group tends to have more free capital available. One interviewee also notes that more men participate than women. [10:51, 14:28, 16:21, 19:5, 20:19]

Almost all interviewees report that the involvement of the local and regional population is of particular importance to them. In small companies that have only set up one or two plants in their immediate surroundings the proportion of local and regional participants usually is very high (often around 90%). Out of three companies in the area of wind power that have turned into medium sized companies (or company groups) realising wind farms in different locales, one has decided to stick to a local participation structure, founding a separate company for every wind farm so that local people can become direct co-owners of the wind farm in their town. The other two have transformed into stock companies and their participation structure gradually shifted from being largely local to being spread out across the entire country. [9:6, 10:24, 10:57, 12:9, 13:20, 15:10, 16:18]

4 Institutional framework conditions

4.1 Feed in regulation and other subsidies

In general, the Austrian feed-in law for green electricity ('Ökostromgesetz') is considered to be *the* central policy framework by interviewees. Though not targeted specifically at citizen ownership models, this law, introduced in Austria at the national level in 2002, guarantees access to the grid and feed-in prices above market level for producers of green electricity. Nevertheless the regulation is heavily criticized by interviewees for involving a cap on the total funding volume, for providing too low feed-in tariffs for some renewable energy technologies (e.g. biogas) and for too short periods of support. The strongest criticism, however, concerns high uncertainties with respect to the conditions of support, due to frequent amendments of the law or due to suggestions for amendments that were circulated but never realised. [12:10, 12:42, 17:54, 21:54]

> "These economic framework conditions also are important for small operators and for citizen participation models because then it is easier for people to join together and to

> say, ok, now we have this feed-in-tariff, that is adjusted from year to year and it's not that it is available and then it is exhausted and then everything stands still again. I think, in general renewable energy needs a predictable prospect." [17:54]

Germany's renewable energy law (Erneuerbare Energien Gesetz, EEG) is frequently referred to as a good practice model that should be copied in Austria (see also section 7.2) [13:30, 17:47, 21:54].

In the area of photovoltaics, investment subsidies still play a role today, as PV plants below 5 KWp are not supported via the feed-in law. These small-scale installations are eligible for an investment subsidy (lump-sum payment) instead. Some Austrian federal states have also set up their own investment subsidy programs for photovoltaics. In 2008-2010 a particularly attractive subsidy for photovoltaics was available in Lower Austria, covering 50 % of investment costs. Nevertheless these subsidy programmes are also criticized for not providing security of investment, as they often change dramatically from one year to the other [13:30, 19:28.]

4.2 Further framework conditions pertaining to green electricity in general

Apart from various technical standards and regulations (brief treatment in section 4.4), further framework conditions pertaining to green electricity in general that were referred to by interviewees include spatial planning issues and political commitment and lobbying.

Spatial planning

Apart from feed-in regulation and other subsidies for renewable energy technologies, spatial planning is an important issue, especially in the area of wind power. As spatial planning is an issue that is regulated at the regional level, details vary between different federal states. In general, both the federal state government and the municipality need to agree to the designation of a particular area for the erection of a wind farm. Typically the designation of areas for particular uses (Flächenwidmung) occurs at the local level but needs to be confirmed at the federal state level.

Some general regulations at the level of federal states need to be taken into account in this process, including minimum distances between wind turbines and residential buildings and issues of landscape protection and nature conservation. The latter issue leaves some room for subjective appraisals. For example, in Upper Austria a staffing change in the federal state government had the effect that local-level designations of wind power areas started to be overturned by the federal state government on the basis of arguments concerning negative impacts on landscape protection and nature conservation. [21:56, 14:2, 10:45, 10:67]

Furthermore approaches in different federal states vary in the extent to which spatial planning for wind power is actively coordinated. One interviewee points out that such an

active coordination is desirable to avoid uncontrolled developments and thus a backlash in public opinion:

> "Currently there is a boom, a run for the remaining attractive sites for wind power, and in Burgenland this has been very strongly accompanied by political actors, it has positively been accompanied and coordinated. And in Lower Austria some wish for a clearer role of politics, otherwise an enormous amount of wind farms are planned all over the place and in the end that leads to something in the population that nobody wants. But apparently in Lower Austria politics are not prepared to designate priority areas." [10:54]

In the area of photovoltaics spatial planning only becomes an issue in the case of large-scale free-standing plants (i.e. not mounted on a building). However, few such plants exist in Austria to this date and the issue has therefore attracted little attention so far.[2]

Political commitment and Lobbying

Another issue frequently addressed by interviewees is political commitment and the influence of incumbent actors. Several interviewees note a discrepancy between pronounced political goals assuring support for renewables and measures effectively taken. A lack of political commitment to the expansion of renewable energies is criticised which is sometimes attributed to the influence of actors with opposing interests. This may include market actors (energy system incumbents) as well as state actors such as the regulatory authority 'E-Control' which is characterised by one actor as aiming exclusively at low energy prices and neglecting environmental concerns. [9:23, 12:41, 15:48, 15:49, 15:50, 21:53]

At the local level renewable energy projects, especially in the area of wind power, run the risk of producing polarised commitments from political parties. Thus a project embraced by one political party may be rejected by their political adversaries as part of local political skirmishes. [15:29]

Further framework conditions pertaining to green electricity technologies in general include the electricity industry law (Elektrizitätswirtschafts- und Organisationsgesetz, ElWOG), regulating, among other things, the fees for grid use to be paid by all market actors feeding into the grid. However, this regulation was contested by wind power operators and a law suit concerning these tariffs in November 2011 eventually overturned the regulations that were in force until recently.[3] In addition to that, the official energy strategy developed by the Austrian government in 2009/2010, the national action plan for renewable energy following the EU Renewables directive (2009/28/EC) which sets targets for the share of energy from renewable sources for individual member countries to be reached by 2020, as well as

[2] See ÖROK 2009 *Energie und Raumentwicklung*, Schriftenreihe der Österreichischen Raumordnungskonferenz (ÖROK) Nr. 178, Vienna, p. 80

[3] See http://www.windkraft-journal.de/2011/11/23/osterreich-verfassungsgerichtshof-kippt-netzgebuhren-fur-stromerzeuger/, accessed 20 December 2011

various authorisation procedures such as environmental impact assessments have a role to play. [21:55][4]

4.3 Framework conditions specific to collective citizen ownership models

This section deals with framework conditions specific to collective citizen ownership models (as opposed to framework conditions pertaining to green electricity in general). One issue that was referred to by several interviewees concerns prospectus requirements that affect any publicly advertised form of investment. This also applies to many forms of citizen ownership of green electricity plants in Austria (e.g. purchase of shares in a stock company, becoming a limited partner in a limited partnership, etc.). Capital market regulation requires companies to produce a prospectus that needs to conform to specific information requirements (investment risks, etc.) and needs to be approved by the Financial Market Authority (Finanzmarktaufsicht). This can be costly for companies based on citizen-ownership in the area of green electricity, due to the high costs for legal advice, especially since the handling of regulation in this area was tightened in 2007/2008 in the wake of a case of defraud of investors in a different business area. [10:86, 10:p, 16:43, 21:44].

> "Then very soon the issue of the financial market authority came up, prospectus control, financial market control issues. Such a participation ultimately also had to be inspected in a professional manner. That was a bit of a shock, because after all the volume was not that large and the prospectus control swallowed up a certain share of capital, 3, 4, 5 percent right away. But you had to pass through that." [16:43]

Some initiatives have managed to avoid this obligation by refraining from public advertising of participation options and relying on personal contacts and word of mouth for recruiting associates. [14:16, 15:54]

With respect to cultural issues some interviewees point out that Austrians generally are risk-averse in financial matters and holding company shares is not widespread practice. This reluctance to invest is judged to be particularly high towards stock companies that are not listed at the stock exchange, as is the case for a number of citizen ownership models in green electricity in Austria (see section 3.1). [10:39, 10:55, 12:35]

> "In Austria it is not very common to directly hold shares of a company, and if one holds shares then one rather buys shares from a company listed at the stock exchange. For us it is a bit more difficult with us not being listed at the stock exchange. As far as I know there are about half a dozen stock companies in Austria not listed at the stock exchange

[4] Further sources:
http://www.energiestrategie.at/ and http://en.wikipedia.org/wiki/Renewables_Directive (both accessed 20 December 2011) as well as
BMWFJ 2010 *Nationaler Aktionsplan 2010 für erneuerbare Energie für Österreich (NREAP-AT)* available at http://www.ebb-eu.org/legis/ActionPlanDirective2009_28/national_renewable_energy_action_plan_austria_de.pdf (as of 20 December 2011)

> that are in widely held stock, that are open corporations. That is something that is uncommon and that also brings along a higher requirement for explaining things." [10:55]

The environmental movement in the 1980s and early 1990s is referred to as a positive cultural factor enabling the installation of the first wind farms in Austria via citizen ownership models. Especially discussions around nuclear power, fuelled by the Austrian referendum on nuclear power in 1978 (tied up with the construction of the construction of a nuclear power plant in Zwentendorf) and the Tschernobyl catastrophe in 1986, served as a catalyst for citizen action in the area of renewable energy. [16:6, 13:33, 21:9, 21:53]

> "In the early 90s, what was happening? At that time the Chernobyl catastrophe was not so many years past and still very dominant and the nuclear power discussion around Zwentendorf together with the Chernobyl accident. At that time all these debates around energy politics were much closer than they are today. The people simply were in this energy, and there were many that said, well, in a way only talking also isn't good, let's do something together." [21:53]

It was, however, also noted that discussions on nuclear power in Austria nowadays are not as polarized as in Germany, since the consensus against nuclear power in Austria is quite strong. Therefore the impetus for renewable energy as the 'antithesis' to nuclear power also is somewhat weaker than in Germany. [21:53]

4.4 Dynamics of institutional framework conditions

This section deals with changes in institutional framework conditions over time and points to reason for these changes as well as to ways in which companies based on citizen ownership adapted to these changes.

Seeing that feed-in regulation is of central importance to citizen-owned green electricity plants, the introduction of the federal feed-in law in 2002 can be seen as an important turning point. Up to that point feed-in of electricity from independent power producers was either regulated at the federal state level or had to be negotiated on a case-by-case basis. For example, in Upper Austria citizen-owned wind farms with some political support managed to arrange deals with regional utilities in the 1990s. In Lower Austria capital grants and (comparatively low) feed-in tariffs were available in the late 1990s [14:3, 17:33, 10:49, 15:17, 21:12].

In general, the Austrian feed-in law introduced in 2002 is not seen as a direct reaction to the needs of independent power producers such as citizen owned power plants. [10:58, 21:12] Nevertheless they see themselves as having played a certain catalyzing role in creating political momentum leading towards the introduction or improvement of feed-in regulation:

> "I don't think that one mainly reacted to citizen participation models with the feed-in law. But I think companies based on citizen participation were particularly active (…). Also when it was about organizing forms of social interaction, like (…) a demonstration, well that is us. So in the time before the feed-in law was passed there were some small rallies on the Ballhausplatz [square in front of the Federal Chancellery] and who travelled there,

> who called shareholders, who was disproportionally present there? That was citizen participation companies like us." [10:58]

Interviewees report that especially at the local and regional level some political support can be traced back to their activities [16:25, 17:28]. Nevertheless utilities are considered much more powerful lobbyists that, after overcoming their reluctance towards engaging with renewable energy technologies beyond hydropower, can act as key actors in lobbying for favourable conditions.

Another change that has occurred in the regulative framework for wind power and biogas plants concerns the increase in technical requirements and safety regulations. Furthermore and partly related, early stage investment costs have risen significantly in the area of wind power. This is due to the need for expert reports establishing compliance with various requirements and due to earlier payment dates for securing grid-access. [10:49, 10:67, 12:5, 12:32, 10:11, 16:33]

> „When we started we set up a company with 50. – 100.000 [Austrian] Schillings [approx. 3.633 – 7.267 €] of risk capital for planning a wind farm. Today you almost need twice the sum in Euros for a wind farm to invest as risk capital in order to get expert reports and permits. That is a bit of the difficulty, probably also for regional companies, that are set up specifically for that purpose [i.e. setting up a wind farm]." [16:33]

Furthermore, as was mentioned in section 4.3, prospectus requirements, affecting various forms of publicly advertised financial participation in renewable energy installations, have also become tighter and require comprehensive expert advice.

Interviewees also provided some hints at the varying influence of public discourse. As already noted in section 4.3, discussions around nuclear power in the 1980s and early 1990s served as a catalyst for citizen action in the area of renewable energy. Furthermore the financial crisis of 2008 and the following years is seen as potentially beneficial to citizen ownership models in renewable energy, as people may become more sensitive towards the economic and ecological values of investments taken [21:29]

These changes in framework conditions triggered various responses and adaptation strategies on the side of the affected companies.

The increase in technical requirements and safety regulations as well as the rise in early stage investment costs certainly contributed to a process of professionalization, turning citizen-led initiatives (in the area of wind power) based on volunteer work into professional companies with specialized staff:

> "[In the beginning] we all had our job and we did this stuff without payment in the evening. (…) But that already changed when the projects grew larger, that happened around 2000. (…) Then we had our first staff members that were employed part-time, because the projects themselves were much more extensive and time consuming. (…) And now that is even worse (…). That is much more difficult and it now no longer works with volunteers as a side-job." [15:24]

This certainly also has heightened the entry barrier for (potential) new initiatives that want to set up citizen-owned projects in the area of wind power. Furthermore the rise in investment costs required in the early stage of the development of a wind farm has in some cases also affected recruitment strategies. During this early project stage, when plans for the next wind farm are still quite vague, it proves much harder to recruit new associates. This is seen as a factor making previous reliance on word-of-mouth recruitment insufficient and necessitating professional marketing campaigns (direct mailing etc.) [10:10, 10:59, 16:33].

The stop-and go policy in the area of feed-in regulation and other support mechanisms has proved difficult to handle for the companies. While some of the larger companies based on citizen ownership have been able to balance higher and lower revenues from projects realized during different policy periods, some smaller initiatives have had trouble getting off the ground or expanding their activities. Some of the larger companies also decided to start setting up projects abroad (e.g. Germany, Czech Republic) rather than in Austria, due to better framework conditions in those countries. Also it was noted that a further worsening of support mechanisms for green electricity could lead to an eradication of companies based on citizen ownership. A market concentration on the side of utilities could occur, as the latter are financially better prepared for surviving financially difficult times [12:10, 14:33, 21:17, 21:22, 21:37].

Interestingly, some interviewees viewed citizen ownership and citizen participation models in the area of photovoltaics as a way of setting up PV plants *in spite of* difficult framework conditions. In this view such models are seen as a means of mobilising sufficient capital and achieving a justifiable level of risk distribution for setting up PV plants (see also section 5.1, subsection ‘capital mobilisation’). [13:1, 13:32, 18:1, 18:20]

5 Interests and rationales attached to collective citizen ownership models

5.1 Interests and rationales of project developers (interviewees)

Diffusion of renewable energy in general vs. special value of collective citizen ownership

In general it can be said that people developing green electricity projects in the form of collective citizen ownership models are first and foremost interested in the further diffusion of renewable energy technologies. While a few interviewees see citizen ownership exclusively as a means to an ends, most of them do emphasize particular merits of citizen ownership models (regional value creation, identification, acceptance, etc. - see further below). Nevertheless they see themselves as sharing a joint mission with other developers of renewable energy projects. [13:14, 13:32, 14:36, 15:46, 16:32, 17:51, 21:23]

> "Every wind turbine or every alternative energy [installation] that is set up is a personal gain for me, regardless whether our company does that or another." [14:36]
>
> "Our main concern is that we implement as much renewable energy as possible, and [large] private investors usually are quicker in this area. Of course it would be nice if many participation models would exist, because that is much better secured and because value is created locally. But I think we don't have the time. We always used to demand that the utilities should do something [in the area of renewables] and now that they are at finally pulling themselves together, I don't think one should oppose that." [17:51]

Only in one case was the citizen ownership model in itself described as the main rationale of the project.

> "The priority issue is that the citizen himself (herself) also is a power producer. That is a daily need of life, that doesn't only encompass food, drink and shelter, but above all also energy. [We want that] the citizen actively picks up on this and says: I take responsibility for this and I want to join in here." [9:10]

Capital mobilisation:

During the 'pioneer phase' of wind power in the 1990s, when wind power was still new to Austria, its economic viability was uncertain and partly contested. Thus conventional forms of capital acquisition for the required investment, such as bank loans, were not available to people interested in developing wind farms. A citizen ownership or citizen participation model thus provided a way for mobilising a sufficient amount of capital for installing the first wind turbines in Austria. These models, copied from other countries such as Germany or Sweden, attracted people who were interested in supporting the diffusion of renewable energy technologies and were thus prepared to invest some money in wind turbines, at a time when returns on such an investment were still somewhat uncertain. [10:7, 10:50, 14:42, 16:2, 16:23, 17:9, 21:9]

> "In the early 90ies in Austria it wasn't possible from our point of view to finance the totally new wind power [technology] via bank credits. Either you had the equity capital, which we (…) didn't have, and therefore it was generally fascinating to try that with people that wanted to invest in this technology." [16:2]

Meanwhile wind power is reasonably well established, so that other modes of financing are available. Nevertheless various models of citizen ownership have persisted, albeit some of them have undergone modifications (e.g. transformation into a stock company, see section 3.1).

The situation is somewhat different in the area of photovoltaics. On the one hand PV plants are quite variable in scale, so small to medium sized installations can be set up at much lower start-up costs than wind turbines. On the other hand, the costs for PV plants relative to the amount of power produced are still much higher than those for wind turbines and also to this day feed-in tariffs and other subsidies hardly provide sufficient support to make them profitable (see section 4.1). Therefore various models of citizen ownership or citizen

participation are still seen as a way of capital mobilisation and risk distribution for implementing PV plants. [13:1, 13:32, 18:1, 18:20]

Participation, decentralisation and regional ties

As mentioned before, most project developers of citizen ownership models do also point to special merits of such ownership structures, especially highlighting issues of participation, democratisation, decentralisation and the establishment of regional ties and regional value creation. Also, in many cases efforts are made to specifically involve local residents as co-owners (see also section 3.2), thereby also increasing the degree of identification and acceptance. In Upper Austria these local ties are still felt very strongly in the area of wind power. Here citizen ownership models have remained strictly local (small companies owning one or two wind farms in the immediate surroundings) and interviewees note that selling the wind farm to a larger company would seem to them as a kind of betrayal. A small number of interviewees also point out that joint ownership of PV plants may also have a positive effect on local community ties. [9:7, 14:38, 17:44, 18:25]

> "In the small region people know each other, meet each other almost every day, yes, they may even be together during the weekend in the pub and discuss, or they are on the church square and discuss. So this project is very conducive for the community for the cohesion in the entire region." [9:7]

Political leverage, awareness raising and local acceptance

Finally, project developers of citizen ownership models also point to the positive effects collective citizen ownership can have on the promotion of renewable energy technologies. First of all this can include a political leverage effect, as a large number of participating individuals has the potential to affect political decisions in energy issues, especially at the local and regional levels [10:20, 16:45, 17:4, 21:46].

> "It's a huge difference whether I approach a federal state politician and say, well here we have a few companies that want to build something. Or I tell him (…) in Lower Austria there are five to six thousand people involved in wind power. That is a different message for a federal state politician than saying it's seven companies that want to build something." [21:46]

Secondly, some interviewees also point out that offering co-ownership of renewable energy installations to citizens can contribute to awareness rising for such technologies. Finally, especially in the area of wind power, *local* citizen ownership, is also seen as having a positive effect on the acceptance of wind farms. [9:10, 10:15, 10:20, 13:13, 15:11, 15:39, 15:40, 16:44, 17:1, 17:9, 21:19].

> "For us it is very important that people participate locally. After all, on the one hand they have to identify a bit with renewable energy and wind power and that can be done best by an installation in the village (town) or in the surroundings. And of course (…) we are also dependent on acceptance. Many people say, yes, I know, Ok, I very much support wind power or whatever, but not in our place. And this principle can only be broken by getting people on board locally." [15:11]

Nevertheless issues such as political leverage, awareness rising and local acceptance are usually characterised as positive side effects and not as the main rationale for a citizen ownership model.

5.2 Appraisal of interests and rationales of participating citizens

This section deals with the interests and rationales on the side of involved citizens (shareholders, providers of small loans, etc.) *as appraised by the interviewees* (project developers and other people centrally involved). The data thus differs from the previous section insofar as this is not a self-description but an outside assessment of motives of others.

Combining ecological ideals with economic investments

Several interviewees see a combination of idealistic, environmental goals and more down-to-earth economic interests of making a reasonable – albeit not necessarily exceedingly profitable – investment as the main factor motivating people to participate in a citizen owned green electricity plant. The emphasis in the combination of environmental and economic motivating factors has, however, certainly varied across time and between different technology areas. Thus, idealistic factors had a stronger role to play in the early days of wind power development in Austria in the 1990s. Economic viability was all that was expected (or hoped for) on the financial side. Meanwhile citizen ownership models in the area of wind power are increasingly seen as an investment that is judged in terms of its economic performance and that comes with an environmental added value. [10:30, 10:50, 14:22, 15:5, 16:6, 16:13, 19:24, 21:6]

> "All processes had to be professionalized and of course with the 3000 shareholders we have today the class of investors has changed. What in the beginning was the non-materially oriented investor meanwhile has become the professional investor for whom two things are important: Ecology still [is important] – I don't want to say that has weakened very much. It is also the ecologically oriented investor who knows what happens to his money. But of course he also expects professional structures like he is used to in other areas." [16:13]

For some prospective associates the limited tradability of shares (companies organised as stock companies are not listed on the stock exchange) also constitutes a serious drawback [12:34]. Nevertheless the original 'pioneers' still acting as company directors today are cautious about turning shareholding of the companies into a standard investment product traded at the stock exchange and hold certain expectations towards the motives of (prospective) associates.

> "The investor should not see it as a speculative element but rather as a long term investment. One invests into the company in order to be part of clean power production on the long term and because of the black figures." [16:16]

> "Some people ask, how high is he return? Only 5%, but I want at least 6 or 7%. Now, we don't want to have such people." [15:31]

In technology areas such as PV and biogas, where economic viability is more difficult to achieve under given framework conditions, idealistic, environmental motives still have an important role to play to this day.

These environmental motives have of course always encompassed a wish to contribute to the diffusion of renewable energy technologies. The discourse frames this goal has been embedded in have, however, shifted in emphasis from providing an alternative to nuclear power (1990s) to the present concerns over climate change mitigation.[5] Also the frame in which assessments of economic soundness may be changing in the light of the financial crisis of 2008 (and following years), as people have become more interested in the long-term economic value and security rather than going for short term speculative profits [17:16].

Identification

Another aspect that is named as being an important motivational factor is a certain degree of identification with the green electricity plant. This factor appears to be more salient for small companies with only one plant in a specific village rather than for companies operating several plants in various locales. Also, like environmental values, it tends to be more important where profitability expectations are or were relatively low (early developments in wind power, current developments in PV and biogas). Identification may involve different aspects: A feeling of pride for the green electricity plant as a distinctive element of the village, trust and support for the project developer which people may be personally acquainted with, or a satisfaction stemming from the physical tangibility of one's investment [10:8, 14:26, 20:13, 20:15, 20:20, 20:21]:

> "One maybe also participated [in our first wind farm] because [the initiator] was regarded very well in his hometown, as a trustworthy person and as someone who is realizing his dream, so to say." [10:8]

> "Identification is the crucial motivating factor, when I know I take some money and that isn't a savings account but rather I am in fact co-owner of a plant, of a real physical work, yes, a real estate, so to speak." [20:21]

Some issues of identification also appear to be tied up with the specific legal forms chosen for citizen ownership of a green electricity plants. For example, several associates were initially very critical of the conversion of companies originally organized as a limited partnership (GmbH and Co KG) or a group of such companies to a stock company and felt they would not be able to identify with such a legal form. They tended to associate stock companies with the image of a purely profit seeking company without any regional ties or

[5] Providing an alternative to nuclear power may, of course, have become an important discourse frame once again after the nuclear accident in Fukushima in March 2011. However, all interviews this report is based on were conducted before this incident.

environmental values. By contrast, the legal form of a cooperative was once characterized as particularly conducive to identification with the company. [16:12, 16:13, 16:34, 20:20, 21:6, 21:27]

Self sufficiency

Some interviewees also note that the idea of self-sufficiency (generating one's own electricity) can be attractive for people. At the same time some of them acknowledge that this motive can also be problematic, as green electricity plants typically feed in to the grid rather than directly supplying its owners with electricity. [14:41, 15:37, 19:24]

> "Of course if one has e.g. a PV plant at home, that really is my own electricity, so to speak, that gives you the feeling of independence. But if I only feed in via the grid of EVN [a regional utility company] (…), then it is difficult for me to see an additional, personal advantage with respect to [energy] security. Because if EVN doesn't like me, then they will disconnect me, so to speak. Many people have this psychological barrier. And one thing also is clear (…), I invest money in something, that is principally a good thing, but this direct relation is still missing." [15:37]

One may also interpret this as another aspect of identification: People would feel a stronger relation to the power plant they co-own if the technical set-up would allow them to directly draw electricity from their plant.

In some citizen ownership or citizen participation models an opportunity was provided to indirectly consume electricity from the plant, e.g. by selling the electricity to a particular green electricity utility company and providing a voucher for a certain amount of free electricity for participants if they are customers of that utility. [13:21, 15:41]

Participation and community ties

Some interviewees also see a wish to participate and (co-)shape future developments (especially in energy issues) as a factor contributing to a willingness to become an associate. Furthermore, especially in the context of small projects based in a particular village, some interviewees also acknowledge the importance of community ties for motivating people to participate [9:32, 18:24, 19:13, 20:13, 20:20].

One interviewee, however, also suggests that people can also be frightened off by too broad participation and that some people prefer small projects with a small number of co-owners. Another person notes that interest in participation in company-decisions dwindled after the pioneer phase of setting up the plant was over. [15:8, 18:12]

> "We also always had our annual assemblies and in the beginning very many people attended, especially in the pioneer phase, because after all we were the first wind farm in the area. But that declined soon, then hardly even 10% of the people came, even though we actually advertised it quite strongly. Because they said, well, now the wheel [turbine] is running, what decisions should I now participate in? I can't decide if the wind is blowing or not." [15:8]

Pioneering spirit

The last quote already hints at a further factor that may have contributed to motivating people towards engagement in early development phases, namely the attractiveness of being involved in an innovative project and the excitement of the 'pioneering spirit' that accompanied them, especially in the early phases of wind power development. During this 'incubation phase' individual associates could in some cases contribute substantially to the technical, economic and legal set up of the plants. Furthermore the novelty of such projects and the pioneering spirit appears to have been attractive to some people [10:30, 15:4, 15:6, 15:23, 16:4].

> "I think the first people also saw it very strongly as being part of an innovative project. Later it increasingly also was about something lucrative about doing something renewable, ecologically sensible, but I would say it as an added value for most people." [10:30]

5.3 Dynamics of interests and rationales

The previous section has already pointed towards some changes in the interests and rationales of the people involved in collective ownership of green electricity plants. In particular it was already noted that the salience of environmental ideals and economic interests has varied across time and between different technology areas. Here some further notes will be made concerning changes of interests and rationales over time.

Recruitment channels and legal form

First of all, the groups of people that can be mobilized for citizen ownership of renewable energy plants and their interests and rationales for involvement certainly depend on the recruitment channels that are used by project developers. For example, in wind power a certain shift has occurred from reliance on personal contacts and word-of mouth, concentrated in the village where a wind farm is to be set up, to larger marketing campaigns, directed at people spread out across Austria. This has contributed to an increase of the proportion of associates with interests that are more strongly investment driven and less oriented towards environmental ideals, and aspects of identification. The conversion of some of the companies into stock companies appears to have given some further impetus to this development. [10:30, 16:13, 21:29]

> "Of course with this modified breadth of our audience we are also entering a market that is similar to the financial market, where one is also judged in relation to shares of Verbund [Austria's largest electricity provider] or bonds from a German company or to a investment fund product (…). And of course that changes something. And now increasingly people come that also have expectations concerning financial returns, that see it more as an investment." [10:30]

Framework conditions

Also institutional framework conditions, in particular the level of public financial support, appear to have an influence on the groups of people that are attracted to citizen ownership of renewable energy plants. Not too surprisingly, under difficult and/or uncertain framework conditions (early phase of wind power, current situation in PV and biogas) such initiatives mainly attract people who are motivated by idealistic factors such as environmental ideals, identification and the pioneering spirit. The more framework conditions allow for the profitable operation of a green electricity plant, the more people with business-oriented motives are also attracted. [10:30, 10:50, 12:8, 13:33, 20:15]

Also macro-level societal discourses, such as discussions over nuclear power and, more recently climate change and the financial crisis, can shape the context in which people find it desirable (or not) to engage in a citizen owned renewable energy project. [17:16, 21:9, 21:29]

6 Technological developments - causes and implications

Of course some technological developments have also taken place during the last 15 years during which models of citizen ownership of green electricity plants have emerged and developed in Austria. In wind power the most notable change has been the increase in size of wind turbines from around 200-600 KW in the mid-1990s to currently 2 MW (i.e. 2000 KW). However, there are different views whether this has been a technology-push or market-pull development:

> "Of course there was technological development, but in fact the technology from 15 years ago and from today is identical. There were some optimizations, e.g. in blade geometry, there are improvements here and there (…) but generally speaking it isn't a complex, complicated technology. (…) So in actual fact [the increased size of turbines] has to do with the principal change in framework conditions." [15:22]

> "Above all [the reason why turbine size has increased] is technology, the scale that is. It also is a positive thing. In our early times 15 years ago electricity from wind was twice as expensive as it is today. Well, two thirds more expensive than today. And the reason why electricity from wind got cheaper was because the turbines became larger and more efficient." [16:33]

In any case it is clear that the increasing size of wind turbines has contributed to a significant rise in start-up costs for wind farms, making market access difficult for potential new entrants, especially small, regional initiatives based on citizen ownership. In the area of biogas some technical improvements could be achieved that have lowered the costs for the installation of a plant. However, a tightening of legal requirements has led to further technical changes and add-ons which have once again increased the costs for a biogas plant. [10:18, 10:34, 12:26, 12:32, 14:33, 15:25, 16:33, 17:35]

Seeing that citizen ownership models are most widespread in Austria in the area of wind power, one may also ask whether particular renewable energy technologies lend themselves more to citizen ownership than others. Some interviewees suggest that the prevalence of wind power in citizen ownership models can be explained mainly by financial structures: First of all feed-in tariffs for wind power generally allow for a profitable operation of a plant, which is not necessarily the case in the area of photovoltaics and biogas. Secondly wind turbines, if citizen-owned, require the pooling of financial resources, as they cannot be installed at the micro-level of individual households as in the case of PV.

7 Regional and international comparison

7.1 Comparison between different Austrian federal states (wind power)

Especially in the area of wind power, some differences can be made out between different Austrian federal states with respect to the extent and form of citizen ownership models. For a start, wind turbines have been set up in six of the nine Austrian federal states with the largest shares in Lower Austria (606,1 MW) and Burgenland (383 MW). Styria (54,8 MW) and Upper Austria (26,4 MW) also have an appreciable amount of total installed capacity, while in Vienna (7,4 MW) and Carinthia (0,5 MW) very few wind turbines have been set up.[6] However, with very few exceptions, citizen ownership models can only be found in Upper and Lower Austria.[7]

In Upper Austria all of the 10 wind farms currently in operation are based on citizen ownership models, typically in the form of a limited partnership or a limited liability company (GmbH & Co KG or GmbH). These companies operate at a local level, operating a maximum of two wind farms in their immediate surroundings. These wind farms are relatively small - apart from one exception the installed capacity of a single farm does not exceed 2 MW (two to three small or one large wind turbine).

In Lower Austria citizen ownership and citizen participation models also play an important role but co-exist with utility ownership and private investor ownership. Furthermore citizen ownership often takes a different form. There are three companies in Lower Austria that started with small local projects but have meanwhile grown and operate wind farms in various locations across Austria (mainly Lower Austria) and abroad. Almost half of total installed capacity in wind power in Lower Austria (approx. 275 MW of 606 MW) is owned by these three companies, offering various forms of citizen ownership (two stock companies and

[6] Source: Data provided by IG Windkraft, status as of December 2011

[7] One wind farm in Vienna is owned by the utility company oekostrom AG, a joint stock company not listed at the stock exchange. Furthermore one of the wind power companies with a citizen ownership model owns 20% of the company operating the largest wind farm in Styria (22,8 MW installed capacity).

one group of limited partnerships). Furthermore the regional utility company in Lower Austria started to operate wind farms in 2000 and has meanwhile reached a total installed capacity of 150,3 MW (i.e. about 25% of total installed capacity in Lower Austria).

By contrast, in Burgenland two thirds of the installed capacity (257,9 MW of 383 MW) are owned by a 100% subsidiary of the regional utility company. The remaining thirds is owned mainly by private investors. In Styria most wind farms are owned by private investors, partly in co-ownership with local utilities.

One may, of course, ask why such different ownership patterns have developed in different parts of Austria. The mere volume of wind power implementation in different regions certainly depends strongly on climatic and geographic conditions (average wind speed). These conditions are known to be best in Lower Austria and Burgenland. [17:41, 21:7]

However, additional factors explaining ownership patterns were also mentioned in interviews. Some interviewees referred to differences in the mentality of people, with regional ties being more important to people in Upper Austria [17:41, 16:42]:

> "I think in Upper Austria there would not be much wind power, if the issue of citizen participation wouldn't play a part in it. That is strongly rooted there. (…) It would have been looked at extremely critically, if somebody from outside would have wanted to do that. If a company from Burgenland, also if it had been in private hands, would have come to build a wind farm in Upper Austria, that would have almost been an impossible thing." [16:42]

Furthermore it was suggested that people in Burgenland see utility ownership of wind power as an indirect form of citizen ownership:

> "One can also see the AWP, the subsidiary company of BEWAG [regional utility company], as a participation model, because it actually belongs to the federal state. (…)That also strongly depends on the political culture, that it is perceived that way in Burgenland.
>
> [interviewer: These are our wind farms because they are owned by the federal state and therefore they belong to all of us?]
>
> Yes, in Burgenland I am sure, if you talk to people, that is the way things are." [21:7]

Another important factor is support or opposition towards wind power from key actors in the federal states, especially regional utilities, members of the federal state government and regional energy agencies. In particular, the regional government of Upper Austria is seen to have turned against wind power in decisions concerning spatial planning that require a weighting of interests (landscape protection vs. climate protection). The regional government of Lower Austria was criticized for not supporting wind power development by designating preferential areas for its development. [10:76, 12:37, 14:53, 17:31, 17:33, 17:58, 21:7, 21:38]

7.2 Comparison to Germany

Germany is generally regarded as a country with an exemplary feed-in law, allowing for security of investment and therefore long-term planning. In contrast, support for electricity from renewable sources in Austria is characterised as a 'Stop and Go' process (frequent changes in feed in regulation, on and off investment subsidies for PV). Although political goals are articulated they are not pursued consistently. In part this is attributed to lobbying from actors with opposing interests. Germany, however, is seen to pursue a consistent support policy for renewables, also withstanding changes of government. [12:44, 13:44, 15:51, 17:55, 21:36]

In the area of photovoltaics the lacking long-term support is seen as a reason for the low number and small size of jointly owned plants, as compared to Germany. In the area of wind power the situation is characterised as having achieved an installed capacity similar to many German regions *in spite of* lacking political support. Also, lacking security of investment is seen to have inhibited the development of a wind power industry in Austria, only a supply industry has developed. Also in the area of photovoltaics, industry development in Austria is seen to be lagging behind. In Germany, by contrast, this industry was acknowledged to be of political importance (export, jobs) early on. [13:34, 13:44, 15:51, 18:18, 21:30, 21:53]

Some suggestions are made that different levels of political support for green electricity in Austria and Germany also result in different rationales underlying the establishment of joint ownership projects, especially in the area of photovoltaics (e.g. issues of environmental protection being more salient in Austria, issues of financial profit and risk sharing being more salient in Germany [13:33, 18:21]).

Furthermore, in spite of fairly consistent support mechanisms for green electricity in Germany, discourse on renewable energy in Germany is seen to be more strongly characterised by conflict. On the one hand this is attributed to the fact that the conflict over nuclear power is much harsher in Germany than in Austria (discussions over phasing-out nuclear power in Germany, no nuclear power stations in Austria). This also rubs off on discussions over renewables, as such energy sources, in particular wind power, are often positioned as the 'antithesis' to nuclear power. This confrontational discourse can help to push support for renewables, as it increases the saliency of the issue. However, Austria has benefited from the fact that different actors in the wind power sector (utility companies, small local companies) have acted in concert to promote the technology field, while conflicts have arisen between such different actor types in Germany. [15:51, 21:53]

8 Actor roles

8.1 Actor roles project developers see for themselves

During the interviews, interviewees referred to a number of different roles they see for themselves in the field of renewable energy technologies.

Pioneer Actors

First of all, in wind power, companies based on citizen ownership can be seen as important pioneer actors, gathering and exchanging information, conducting wind measurements, lobbying for support and raising capital in times when utilities still ignored or worked against wind power development. As such they see themselves as enabling actors getting wind power off the ground in Austria. [10:6, 10:61, 21:11]

> „Well, we are quite convinced that wind power development in Austria would at least have occurred with a substantial delay without the pioneer idealists. (…) We certainly dynamized the market and certainly played a groundbreaking role, because the utilities really waited for a relative long time (…)." [10:61]

In other technology areas such as PV and biogas, initiators of citizen ownership projects also tend to see themselves as enablers, trying to move things forwards in the technology area they are active in. [12:48, 18:2, 18:7]

Professional business actors

In the area of wind power, some of the larger companies based on citizen ownership (companies in Lower Austria – see section 7.1) have meanwhile undergone a process of growth and professionalization, developing from groups of engaged citizens trying to set up wind turbines in their free time under highly uncertain conditions to professional business actors in a growing business sector. Apart from their core business of setting up and operating wind power plants, two of these companies have also developed specialised services such as technical plant management for other parties or acting as a utility company selling electricity to end users. Furthermore two of these companies also have also started to develop wind power plants abroad (Romania, Bulgaria, Germany, France, Czech Republic). One interviewee noted that in the context of these international activities their actor role has shifted as they are no longer perceived as a company based on (local) citizen ownership but rather as "an (international) investor like any other" [10:37].[8] Other wind power pioneers that succeeded in setting up wind power plants have decided not to pursue an expansionist strategy and simply continue to operate a small number of local wind turbines, without

[8] It was not considered feasible to offer ownership shares to citizens of foreign countries (higher complexity due to different legal regulations in the area of prospectus requirements and language barriers, scepticism as to whether a sufficiently large share of the population in countries such as Romania and Bulgaria have sufficient financial resources for involvement).

turning this into their main occupation. [10:37, 10:43, 14:37, 14:50, 15:23, 15:24, 15:55, 17:38]

Lobbyists

One continuous role these wind power actors have seen for themselves from the pioneering day up till today is acting as lobbyists for this technology. Due to their structure and culture companies based on citizen ownership models can also make use of particular repertoires of action more closely related to NGOs or social movements that are not available to utilities or other energy system incumbents (e.g. street protests, protest letter to member of federal state government, see also section 4.4). However, interviewees also assume that their political influence has been limited, especially when compared to the lobbying power of utilities. [12:37, 21:13]

8.2 Support actors

When asked for relevant support actors, interviewees refer mainly to associations that act as interest groups for a particular technology field such as the wind power interest group IG Windkraft. In one case an interviewee also referred to Eurosolar, an interest group for renewable energy at the European level, that supported the initiative by providing model contracts for the participation structure. Furthermore regional energy agencies (Energiesparverband Oberösterreich, Verein Energiewerkstatt, Energieagentur Waidhofen/Thaya) also provided support for some citizen ownership projects, e.g. by providing relevant information, organising excursions or conducting wind measurements). Finally, some project developers could draw on personal contacts with specialised expertise, in particular legal advice (e.g. university professor writing expert opinion that prospectus requirement does not apply, notary setting up contracts, tax advisor confirming economic viability required for approval by authorities). [13:26, 13:27, 14:1, 14:9, 14:16, 14:30, 17:3, 17:6, 17:14, 17:31].

Among the interest groups for different renewable energy technologies the Austrian Wind Power Association (IG Windkraft) deserves special attention, as it was set up and is still is strongly sustained by people that set up wind farms in the form of citizen ownership models. Therefore the IG Windkraft explicitly supports of the idea of citizen ownership. Nevertheless utilities and further actors in the field of wind power (component supply industry, planning agencies, etc.) have meanwhile also become members of the association and the organisation strives to represent all actors in the wind power business [10:77, 14:30, 15:42, 15:44, 16:38, 17:31, 21:31].

> "A very positive thing is that the [wind power] interest group IG Windkraft always, even though they wouldn't have to do that (…), highlighted the idea of citizen participation as something positive. (…) That also has to do a little with the fact that IG Windkraft was founded by people that also pushed citizen participation companies." [16:38]

8.3 Role of utilities

Interviewees referred to a number of different actor roles taken on by utilities in the context of collective citizen ownership of renewable energy technologies.

Business partners as grid operators

Before binding feed-in tariffs were introduced electricity generated in citizen-owned power plants typically was sold directly to regional utilities. Special feed-in contracts had to be arranged for every case. Furthermore, utilities are still relevant as buyers of electricity after the period of feed-in tariffs ends for a particular plant. [9:4, 14:3, 14:40] As owners of the power grid utilities also charge independent power producers fees for grid connection and maintenance [12:20].

From renewable-energy-obstructers to market competitors

Representatives of citizen-owned plants in the area of wind power report that utilities in Austria (especially EVN, BEWAG and Verbund) have undergone a development from being indifferent or even obstructive towards the implementation of wind power towards being seriously engaged in wind power themselves. Thus, some utilities have now become market competitors and at the same time also allies in lobbying for good framework conditions for wind power. [10:17, 10:36, 10:61, 12:20, 12:37, 15:18, 17:32, 21:4, 21:8]

> „At that time [a regional utility company] still was different, so they acted strongly against wind power, actually retarded things wherever possible (…). But then, after they looked into the issue of wind power themselves, they performed a U-turn and actually they [have become] active in this area themselves." [15:18]

For obvious reasons, utilities particularly resisted the emergence of independent power producers. In at least one case a regional utility went as far as offering to buy-out a citizen owned wind farm initiative in order to avert its realization. [10:61, 17:32]

Some interviewees note that utilities waited with their entry into the field of wind power until viability had been proven by pioneer actors and profitable framework conditions had been achieved. Also it was pointed out that the small scale wind farms that were the norm in the early days of wind power development were not well adjusted to the structure and profitability expectations of utilities that are used to handle large-scale power plants. [10:61, 17:42, 21:13]

Interviewees appear to be somewhat ambivalent towards the entry of utilities. On the one hand representatives of companies based on citizen ownership mainly want to contribute to the further diffusion of renewable energy technologies (see section 5.1) and used to criticize utilities for not engaging in that area. Therefore they all welcome the fact that utilities have now also become active in wind power. On the other hand some interviewees also lament the diminishing market share of companies based on citizen ownership. [15:45, 16:32]

> „[Ten years ago] I think 70, 80 % of installed capacity was organized via citizen participation companies of different kinds. (…) Then the utilities came, then the usual players came and in that respect the up side is that wind power in Austria is continuing to turn over dynamic market shares, that's good. The down side certainly is that we couldn't proceed with the idea from the initial phase [citizen participation] to the same extent." [16:32]

Utilities as financially and politically powerful actors

Several interviewees also point to the high lobbying power of utilities due to their strong connections to regional government (federal states holding majority ownership of regional utilities). Furthermore interviewees also note that utilities can rely on a stronger financial backing than citizen-owned companies. Thus, for utilities it is easier to implement wind power at large scales (at the international level this also includes offshore wind power). In fact market shares are already shifting in favour of utilities. [9:23, 10:61, 12:37, 16:32, 21:8]

Utilities as indirect form of citizen ownership

Finally, as has already been noted in section 7.1, it was suggested that people in Burgenland see utility ownership of wind power as an indirect form of citizen ownership [21:7].

8.4 Role of municipalities

Municipalities also often are important actors for the establishment of collectively owned green electricity plants. As was the case with utilities, interviewees also referred to a number of different roles taken on by municipalities.

Municipalities as decisive actors in spatial planning

First and foremost municipalities are of central importance for renewable energy plants (collective-citizen-owned or not) due to their decisive role in spatial planning (see also section 4.2). In particular, spatial planning rules apply to wind farms and large scale PV plants in the open space. In Austria local councils are responsible for zoning decisions (designation of land for a particular purpose). [9:18, 10:44, 15:27, 16:28, 17:27, 21:42, 21:43]

> „We need the municipalities, above all for the designation of areas [for wind power], so in effect the municipality has vetoing power. No wind farm can be implemented against the will of the local council, you cannot push through a wind farm in Austria like that. In this respect the mayor is a key actor." [10:44]

As can be seen from this quote, the mayor is seen to play a key role but another interviewee also points out that other committed individuals (local council members, deputy-mayor). Projects based on collective citizen-ownership can potentially benefit from stronger local support. In one case a mayor that initially opposed a citizen-owned wind farm swayed in favour of the project due to the high numbers of supporters in the village [15:27, 17:27].

Municipalities as initiators or promoters of a project

In some cases municipalities may also act as initiators or promoters of a citizen owned renewable energy installation. This may take the form of a municipality inviting a company based on collective citizen ownership to develop a wind farm project in their town, representatives of the municipality marshalling their persuasive power to support (or also oppose) the development of a biogas plant or simply the municipality itself being active in energy issues, thereby acting as a role model and sensitizing citizens towards energy issues. [12:12, 14:1, 16:9, 16:28, 18:5]

In some cases the municipality may benefit from the development of a (citizen-owned) renewable energy plant because this may enable membership in or further promotion within programmes honouring the contribution of municipalities to climate protection (Klimabündnis-gemeinden, e5 Programm für energieeffiziente Gemeinden). [17:27,18:7]

Municipalities as shareholders

Interviewees also referred to some cases where municipalities became directly involved as shareholders in a renewable energy plant (wind farm / PV plant) which is mainly based on citizen ownership. Such cases, however, appear to be exceptions rather than the norm. [15:21, 18:4]

7. Work Package 2: Country Case Germany

Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system

WP 2 Report Part 2: Country Case Germany

Anna Schreuer

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1 Introduction

With rising concerns over ecological sustainability as well as security of supply, the energy system has come under increasing pressure over the last years and various efforts have been made aiming at a transformation towards more sustainable systems of energy provision. At the grassroots level this has included the establishment of energy cooperatives and other forms of collective citizen ownership of renewable energy technologies. This report focuses on collective citizen ownership of renewable energy technologies in Germany and presents the findings from qualitative expert interviews within the project 'Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system'.

In line with the considerable number of citizen power plants in the area of wind power and photovoltaics in Germany, a decision was made to focus on these technology areas.

Seeing the project looks at various forms of collective citizen ownership, not only those organised as cooperatives, the term *collective citizen ownership* of green electricity plants / of renewable energy technologies will be used (sometimes also abbreviated as 'citizen ownership', *collective* ownership of a group of people always being implied). The term *local ownership*, as it is used in the project title, has been found to be rather impractical, as some companies based on citizen ownership have undergone a development from being based on local ownership to a more geographically dispersed participation structure (this is particularly the case for Austria which is considered in a separate country case study in this project). Nevertheless the involvement of local citizens has remained an important aspect for all of the organizations considered here. The term *independent power producers* is used as an umbrella term for companies based on collective citizen ownership and other privately owned companies acting as power producers (i.e. power producers that are not part of a public utility).

The next section after this introduction gives a brief overview of the material and the methods this report is based on. The following four sections present different aspects of the findings from the interviews. This includes different types of ownership models, the examination different actor roles around them, institutional framework conditions and interests and rationales attached to collective citizen ownership models.

2 Material and methods

The report is based on nine semi-structured interviews that were conducted from May 2011 to March 2012. Due to the large number of citizen power plants in Germany and the difficulty of selecting a 'representative sample', it was decided to focus mainly on people from support and intermediary organization, assuming that these individuals have a good overview of the field as a whole. However, some interviews were also conducted with representatives of companies operating power plants on the basis of collective citizen ownership who have been active in this field for many years. In some cases people are active both in support organizations and as initiators / managers of individual companies setting up citizen power plants. The following table gives an overview of the interviewees.

Name	*Organisation*
Holger Arntzen	windcomm
Michael Diestel	Agrokraft GmbH
Hans-Detlef Feddersen	Bürgerwindpark Lübke-Koog
Burghard Flieger	Innova eG, Solar-Bürger-Genossenschaft eG, Energie in Bürgerhand eG
Wolfgang George	ARGE Energiegenossenschaften, Andramedos eG
Andreas Markovsky	Ökostromgruppe Freiburg
Carlo Reeker	Bundesverband Windenergie
Nico Storz	fesa e.V.
Elisabeth Strobel	Verband der BürgerEnergiegenossenschaften Baden-Württemberg (VBBW)

Interviewees were selected on the basis of an internet search and on the basis of further recommendations by the initial interviewees. Interviews typically took about 45 minutes to one hour. Three interviews could be conducted face to face, the remaining six were conducted as telephone interviews.

All interviews were recorded, transcribed and evaluated with qualitative content analysis using ATLAS.ti. Some additional factual information was gathered from homepages, brochures and further information material provided by the organizations. Furthermore, where needed, information from interviews was backed up or complemented by factual information from an internet and literature research.

In the coding procedure individual passages from interviews have been assigned labels taking the form [n:k], where n denotes the number of an interview and k denotes the number of the quote from that interview. For anonymisation purposes the numbering of interviews does *not* correspond to the sequence in which interviewees are listed above. A small number of quotes have not been anonymised, as the context provides clear indications as to the speaker's identity. These quotes were authorised by the interviewees.

3 Ownership and participation models

A broad array of different ownership and participation models can be found among collectively owned green power plants in Germany. Two citizen ownership models have proved particularly successful and spread out considerably, on the one hand citizen owned wind farms ('Bürgerwindparks') and on the other hand citizen power plants organized as cooperatives (typically but not exclusively in the area of photovoltaics). Seeing one of these models is defined by its technological basis (wind power) and the other by its specific legal form (a cooperative) these are in principle overlapping categories. Nevertheless

the emergence and diffusion of Bürgerwindparks and of energy cooperatives can be separated analytically, seeing that only very few collectively owned wind farms take the legal form of a cooperative.

3.1 Bürgerwindparks

A number of authors have already pointed to the important role of bottom-up initiatives setting up citizen owned wind farms in the establishment of wind power in Germany (Bolinger 2001; Byzio et al. 2002; Toke et al. 2008). In Germany the term 'Bürgerwindpark' (citizens' wind farm) has become widely used to refer to such citizen-owned wind farms. It is, however, not an easy task to estimate the share of installed capacity owned by such initiatives, not least because different actors have different understandings of what constitutes a 'Bürgerwindpark'. As a first rough indication one may take that, according to study by trend:research (trend:research 2011), more than half of Germany's installed capacity in the area of onshore wind power (51,5%) is owned by private citizens as of 2010 (offshore wind across all groups of investors is still negligible).

A 'Bürgerwindpark' may, however, be defined more narrowly than a wind farm that is owned by a group of private individuals. Most importantly, several interviewees emphasise that in their view a wind farm referred to as a Bürgerwindpark needs to be exclusively or at least predominantly owned by the *local* population. Another possible criterion for a Bürgerwindpark is that the initiative for setting up the wind farm is taken by a local group of citizens rather than by an outside project developer (who may then offer ownership shares exclusively or preferentially to the local population). In particular, some interviewees decidedly object to referring to co-ownership with large investors (e.g. a large investor offering a small share of a large wind farm to local residents) as a Bürgerwindpark. Nevertheless, usage of the term is by no means consistent and is increasingly used (or *mis*used in the eyes of those advocating a narrower understanding of the concept) for other organisational setups. [4:14, 4:15, 8:17, 8:19, 9:9, 9:10]

In the narrow definition of the term outlined above, Bürgerwindparks mainly established themselves in the federal states of Schleswig-Holstein and Lower Saxony along the North Sea Coast of Germany from the early 1990s onwards. An important trigger for the emergence and further diffusion of such wind farms was the electricity feed-in law introduced in 1991, for the first time enabling the economic operation of wind farms by independent power producers (see section 5.1). [4:1, 4:7] (see also Byzio et al. 2002)

A particular concentration of activities could be noted in North Frisia, a district of Schleswig Holstein in the northernmost part of Germany. Here the first citizen owned wind farm, 'Bürgerwindpark Lübke-Koog', was set up by a group of farmers. After an outside investor had already set up a wind farm in this village, several farmers became interested in setting up wind farms on their own land. Following a suggestion from the municipality, these farmers teamed up to set up a joint wind farm and, in view of the considerable size of the project, also decided to open up the project to further interested citizens of the village. Through word of mouth the concept quickly spread to other municipalities and citizen groups in North Frisia, such that several similar projects were set up in the following years. Interestingly, in spite of the proximity to Denmark, where collective citizen ownership of wind farms had been an important

organisational model in the 1970s and 1980s, interviewees report that these models did not form a source of inspiration. [4:1, 4:4, 4:7, 8:1, 8:5, 8:8, 8:9, 9:11]

> „It was more the technological innovations that played a role at that time for orienting oneself towards Denmark and of course the legal framework with the feed-in remuneration. But that there really was contact and that groups went across and said, oh look, this is how a Bürgerwindpark works in Denmark, we'll also set up something like this in Germany, I didn't observe that anything happened in that way." [4:4]

The dominant legal form of such Bürgerwindparks (both in the narrower sense outlined above and also in more investment-oriented models) is that of a limited partnership (GmbH & Co KG). In some cases also cooperatives or general partnerships (Gesellschaft bürgerlichen Rechts, GbR) were formed, but these are generally considered to be less favourable in terms of tax and liability issues. Furthermore one interviewee also points to the dual structure of the limited partnership as an advantage, with the limited liability company (GmbH) in charge of day-to-day management decisions and the limited partners (Kommanditisten) as owners of the wind farm that are consulted only with respect to fundamental company decisions. [2:2, 2:4, 4:12, 8:10, 9:15]

> „As limited partners they are the owners, they also make the substantial decisions at the owners' assembly, so for example whether there is a [dividend] payout or not, but they don't need to see about the operational business, that is repairs, insurances, banking business and all that." [2:2]

3.2 Energy Cooperatives

Energy cooperatives in Germany have a history dating back to the early twentieth century when cooperatives were set up to assure electricity provision in rural areas, especially in Bavaria (Flieger & Klemisch 2008). In recent years a new generation of cooperatives has emerged in the area of renewable energy, especially photovoltaics. According to Holstenkamp and Ulbrich (2010) the number of cooperatives producing energy from PV plants has risen from four in 2007 to an estimated 200 in September 2010.

Most of the newly emerging energy cooperatives are active in the area of electricity generation from PV plants. However, energy producing cooperatives also exist in the areas of wind power, biogas and local district heating networks (biomass). Furthermore some utility companies offering green electricity are also organised as cooperatives and in addition to that there also are some cooperatives in the area of trade with components for renewable energy plants (e.g. PV panels), power supply, energy savings via contracting and even research. In some cases cooperatives start off with a PV project and later also become active in other areas.

> „Well, energy cooperatives often start with a PV plant. There are many reasons for that, one important reason is simply that a PV plant is quite easy for us in the preparation phase, it is quite clear how it can be represented in economic terms and therefore our cooperative can be registered within an acceptable timespan." [6:2]

As mentioned above, in the area of wind power the 'standard model' for collective citizen ownership is a limited partnership (GmbH & CO KG), but some citizen owned wind farms also take the legal form of a cooperative. Furthermore both in Bavaria and in Baden Württemberg there are currently plans to set up citizen owned wind farms which are jointly owned by several cooperatives – an ownership structure that

facilitates both identification (local cooperative) and allows raising a sufficient amount of capital for a wind farm. [5:13, 6:2, 7:15]

Quite generally, energy cooperatives operating green electricity plants often face the difficulty of being large enough to operate profitably, due to certain level of start-up costs and administrative costs (in particular auditing costs), while at the same time facilitating identification by focussing on (small) local projects. Broadly speaking two different approaches exist for solving this dilemma. One consists of supporting the development of several local cooperatives each located in a specific village or town. Specialised support organisations assist local initiatives in funding and running a local energy cooperative (see section 4.2.1). These cooperatives may then also join forces for larger projects such as wind farms.

A different approach consists in setting up a larger energy cooperative that operates several plants in different locales. One example is the ‚Solar-Bürger-Genossenschaft' in Baden-Württemberg. This cooperative intends to act as an umbrella structure which different local initiatives can use to set up their local projects:

> „The Solar-Bürger-Genossenschaft differs from most PV cooperatives in that it is not restricted to a narrow region, a town or a village. Rather, it is available as a platform for different local initiatives that only wants to set up one, two or three plants. Setting up a cooperative would be too costly or time consuming for them, they don't want to go into all that effort. The Solar-Bürger-Genossenschaft offers itself as an umbrella organisation to such groups. They then have to raise funds themselves and as far as possible also secure the deal for the roof [for the PV plant], but they get some support from us." [Burghard Flieger, board member of Solar-Bürger-Genossenschaft]

In this case membership in the cooperative and investment in a particular (local) power plant are separated; individual projects are financed via subordinate loans (Nachrangdarlehen)). [1:28, 3:14, 3:33, 7:4, 7:13]

One particular feature of cooperatives generating electricity is that they usually operate in a grid-integrated manner, i.e. they sell their electricity to the grid. This means they cannot provide benefits in kind to their members, as is usually the case for cooperatives. Some interviewees see this as somewhat problematic and would therefore favour models enabling direct electricity consumption by cooperative members. Others consider this issue unproblematic. [3:15, 6:12, 7:27]

Concerning the strong increase in the number of energy cooperatives since 2008, interviewees name a number of factors that may have contributed to this development:

- Assistance from specialized support organizations has become available. Some organizations in fact actively propagate the establishment of energy cooperatives (see section 4.2.1) [1:9, 7:33, 7:34]
- Cooperatives are exempt from prospectus requirements which were introduced in 2005 and apply to other forms of collective citizen ownership of renewable energy plants [1:40, 3:7]
- Some changes made to the cooperative law in 2006 made it slightly easier to set up and run small cooperatives (e.g. lower number of people required to set up a cooperative, reduced audits for small cooperatives). [1:40, 7:33]
- Compared to private partnerships (Gesellschaft bürgerlichen Rechts, GbR), another very wide spread model for collective citizen ownership of PV plants in Germany, a cooperative is much

better suited for setting up several plants (easy entry of additional members, liability of cooperative members can be restricted to their capital contribution) [1:40] (see also Rutschmann 2009)

- In view of the financial crisis several people consider cooperatives to be an attractive alternative form of economic activity, based on principles of solidarity and democracy [7:34]

3.3 Drawing boundaries

With the burgeoning number of citizen owned power plants and the diversity of models that have emerged, including more commercially oriented forms that are presented as 'green investments', it may not be too surprising that several actors have started to draw boundaries between what they see as genuine citizen power plants and models they perceived to be false or questionable imitations.

Cooperatives as more democratic forms of organisations

For one thing, advocates of cooperatives point to particular benefits of this legal form. One interviewee makes a case for cooperatives arguing that they contribute particularly strongly to regional value creation. In general, however, interviewees in favour of cooperatives emphasise the democratic decision making structures involved, in contrast to other legal forms where voting power is often dependent on the volume of an individual's investment and/or many decisions are taken by an executive board without consulting all shareholders. [1:41, 3:29, 7:10]

> „ Of course that hast the really nice advantage that cooperatives really are democratic models. Every shareholder has one vote, or every comrade (Genosse) so to speak. Compared to other types of enterprise that is quite a crisis-proof investment. Indeed, that basically is the most democratic type of enterprise I would think." [1:41]

Another interviewee, however, is sceptical whether grassroots democracy as it is practiced within cooperatives is a practical approach towards setting up citizen power plants. [2:3, 2:38]

> „The legal form [of a limited partnership] combines that the investor participates in [setting up] renewable energies, but without having to concern himself with the plants. Most participants also think that's a good thing but don't have the time to really take care of it. (…) Also there are not so many things in the company in the day-to-day operation that require participative management (…). If you participate in the decision whether the nail should be knocked in on the left or the right side, that doesn't provide any advantage to the people." [2:3]

Moreover, also within the field of cooperatives several actors are keen to distinguish between what they judge to be genuine bottom up activity and top down interventions. Thus several interviewees are rather critical of the activities of EnBW, one of the four large utility companies in Germany, to support the development of small energy cooperatives (see also section 4.3). [1:8, 1:10, 1:23, 2:9, 3:27, 4:13, 7:28]

Bürgerwindparks: local rooting vs. investment oriented models

Also in the area of citizen owned wind farms interviewees see a need to differentiate between the original model of a Bürgerwindpark based primarily on the involvement of the local and regional population and more investment oriented models in which shares are offered to geographically dispersed individuals. Apart from the geographical scope of participation some interviewees also name further criteria defining a Bürgerwindpark, such as the initiative emerging from the local population and

the wind farm being an independent enterprise rather than being based on co-ownership with a large investor. [4:11, 4:14, 4:15,8:17, 8:19, 9:9, 9:10]

> „I know, in North Rhine Westphalia there also are so-called citizen wind farms, there the municipal utility company set up a wind farm and one of the ten turbines was the citizen plant. That isn't a citizen wind warm in my eyes. That's a big wind farm with a small citizen participation." [9:10]

4 Actor roles

4.1 Collective citizen ownership initiatives

One interesting question concerning collective citizen ownership of green electricity power plants is to what extent they have contributed to the diffusion of renewable energy technologies in Germany. According to a study by trend:research, private citizens and farmers own a remarkable amount of total installed capacity of renewable energy technologies – just more than half of total installed capacity as of 2010 (50,7%) (trend:research 2011). In the area of wind power the ownership share of this actor group amounts to 53,3 %, in the area of photovoltaics even 60,5 %. It must be said, however, that this study does not differentiate between individual ownership (e.g. PV panels on single-family houses) and collective ownership, e.g. in cooperatives or limited partnerships. Furthermore the study does not differentiate between locally rooted and geographically dispersed models of citizen ownership, which several interviewees consider an important distinction between genuine citizen power plants and investment oriented approaches.[1] Nevertheless these figures serve to get an idea of the significant role of (collective) citizen ownership in the area of renewable energy in Germany.

Also some interviewees point to the important role of initiatives setting up collectively owned green electricity plants for the diffusion of these technologies, especially in the early stages of the diffusion of renewable energy technologies. At least in the early phases, several initiatives setting up collectively owned power plants were not so much driven by profit-motives but drew intrinsic motivation out of contributing to a more environmentally friendly system of energy provision (see also section 6) and therefore contributed to market formation when other actors had not yet entered the field.

> "Well, up till now [citizen participation models] had an exceedingly high relevance. That we managed in Germany within twenty years to move from 5 % renewables to 17 and that within the next years we will have around 30, that was quite decisively promoted by citizen participation models and by the commitment of citizens, that quite consciously invested in this area. The large utilities hardly made any contribution to this. In future the market will be much broader, but citizen participation will also have a role to play." [2:46]

Several interviewees expect the share of citizen power plants to diminish over the next years as a process of commercialisation takes place. Some interviewees, however, also see a growth potential for citizen power plants specifically in the area of energy *cooperatives,* a prognosis that may be supported by the recent boom of activities in this area. Furthermore, considering increasing problems with the siting of wind turbines, one interviewee also expects local ownership of wind turbines to grow in importance in

[1] It must be noted, however, that investment funds and banks are listed as a separate ownership group owning 11% of total installed capacity as of 2010.

the future, as this is seen as a means to increase local acceptance. [2:46, 3:51, 3:52, 5:27, 8:12, 7:42, 9:28]

Next to these direct effects on the diffusion of renewable energy technologies by setting up power plants, initiatives in the area of citizen power plants may have some indirect effects contributing to the diffusion of renewable energy technologies. First of all some interviewees pointed out that such initiatives made a strong contribution towards awareness rising for and acceptance of renewable energy technologies.

> "The [Bürgerwindparks] had an important role to play, because they contributed to high acceptance in the region for wind power. Because acceptance simply is very high if one sees that apart from the ecological benefit there also is a monetary benefit in the region, there is value creation." [4:28]
>
> "Well, since the cooperative model is gaining ground [renewable energy] plays a role in public perception. Seeing that we alone already have 5.500 active members (…), thereby I of course have multipliers." [6:24]

One interviewee also suggests that participation in a citizen owned power plant bridges the gulf between energy consumption and production and thereby produces higher awareness for energy issues in general among shareholders of a power plant. [1:25, 1:31, 4:28, 6:24]

Secondly initiatives in the area of collective citizen ownership of green electricity may have had a certain role to play in creating political leverage for supportive policy frameworks for renewable energy, in particular feed-in regulation. While most interviewees are rather sceptical towards the lobbying power of these initiatives in *establishing* this form of policy support, one interviewee emphasises the contribution of citizens engaged in collectively owned plants in *maintaining* this legislation and defending it against attempts to strongly reduce feed-in tariffs (e.g. participation in protests against unfavourable amendments of feed-in regulation). At the same time another interviewee suggests, that in case feed-in regulation dramatically changes for the worse, citizen initiatives may in fact once again constitute the actor group setting up green electricity power plants *in spite of* unfavourable framework conditions, due to the intrinsic (rather than economic) motivation of several of these groups. [3:51, 4:26, 4:28, 7:39, 8:38, 9:26]

4.2 Support Actors

Several organisations exist in Germany that provide support for initiatives in the area of citizen power plants. This is also visible from the large number of manuals that have been published that offer guidance on setting up such collectively owned plants. In 2011 alone, three manuals were published specifically dealing with energy *cooperatives* (DGRV & AEE 2011; George & Berg 2011; Staab 2011) and another one is due to appear in 2013 (Seiverth et al. in press). In addition to that a manual on Bürgerwindparks has been published (windcomm 2010, see also section 4.2.2 below) and some more manuals have been published dealing with citizen power plants in general (DAKS 2006; EnergieAgentur.NRW 2011).

4.2.1 Support actors in the area of energy cooperatives

Over the last few years a remarkably broad array of organisations has developed support services directed specifically at energy cooperatives.

> „Well, that is actually quite funny, in the area of energy cooperatives one can say meanwhile there almost is a kind of competition. That is, meanwhile there are several providers that offer similar services, similar support." [3:27]

In several cases these organisations were set up with the specific goal to support energy cooperatives, in some other cases existing organisations in the cooperatives sector (such as auditing associations) developed specific support programmes for energy cooperatives.

Auditing associations, however, appear to play a somewhat ambivalent role in supporting the establishment of energy cooperatives. Several interviewees note that for a long time auditing associations were indifferent or even obstructive to the establishment of energy cooperatives. Different reasons are named for this stance, in particular auditing associations not being reliant on new members and actually fearing the burden of having a large number of small cooperatives as members. One interviewee also sees a rather conservative sentiment prevailing in auditing associations, resulting in reservations towards cooperatives characterised by a communitarian spirit and oriented towards social and ecological goals. Interviewees, however, concede that meanwhile several auditing associations have started to support the establishment of new cooperatives in general and sometimes energy cooperatives in particular, e.g. by providing counselling services, templates for statutes or reducing start-up and auditing costs. [3:11, 3:27, 5:18, 6:7, 7:35]

One of the most important types of support is *know-how development, training and counselling* in order to enable individuals to set up and run energy cooperatives. Some interviewees emphasize that the first important step in this direction is familiarizing people with the cooperative as a business model.

> „Well, in the beginning there is the knowledge on what is required generally or what advantages, what opportunities are available via the cooperative [as a legal form], that is not very widespread knowledge." [3:24]

> „Of course we still have a communication gap, so to speak. The cooperative model simply was not present (visible) enough over the last 20, 30 years (…) and therefore the model requires explanation." [5:3]

Innova, an organisation supporting the establishment of cooperatives in various sectors, together with the German Protestant association for further education (Deutsche Evangelische Arbeitsgemeinschaft für Erwachsenenbildung) has set up a specialized course, training people to become project developers of energy cooperatives. Since its beginning in 2010 four instances of the training course have been carried out, the fifth course starting in March 2012. The courses involve several days of training and additional online learning schemes for about 25 participants each.[2] Further training courses directed primarily at municipal actors (mayors, employees of public institutions, etc.) are offered by the University of Applied Sciences Mittelhessen (Technische Hochschule Mittelhessen).[3]

Furthermore, in the federal state of Baden-Württemberg, counselling services and some financial support for establishing a local energy cooperative is also offered by EnBW, one of the four large utility companies in Germany. Several interviewees, however, are quite critical of this programme and see it primarily as an image campaign designed to commit mayors to the utility company. They question

[2] See http://www.energiegenossenschaften-gruenden.de/

[3] See http://www.thm.de/hzw/weiterbildung/angebots-portfolio/zertifikatslehrgang-kommunaler-energieprojektberater.html

whether the resulting cooperatives, which often are very small, will survive on the long term. [1:8, 1:10, 3:27, 6:3, 7:28]

A related but slightly different form of support consists of *providing ready-made concepts and templates* that assist in setting up an energy cooperative. For example Agrokraft, a company that grew out of the Bavarian farmers' association (Bayerischer Bauernverband), has developed a package that, together with a half-day workshop enables citizen groups to start off an energy cooperative in their village.

> „Well Raiffeisen developed the banking system for rural areas, the cooperative banks, and he actually established a structure how one can set up a bank in every village in a standardised way. Now we said, just like Raiffeisen said for each village its bank, the bank needs to see the church tower, we gave every village its Raiffeisen energy cooperative." [Michael Diestel, manager and founding member of Agrokraft]

The package consists of templates for various legal documents such as cooperative statutes and various contracts but also software for administrating the cooperative and design elements for an outside appearance (website, letter paper etc.). A similar package is also provided by the auditing association Weser Ems (Genossenschaftsverband Weser-Ems) in the federal state of Niedersachsen (Holstenkamp & Ulbrich 2010).[4]

Finally, two organizations were set up recently to *support networking and exchange* between energy cooperatives. At the regional level, the association of energy cooperatives in Baden Württemberg (Verband der Energiegenossenschaften Baden-Württemberg) was established in 2009. This association is intended to serve as a platform for exchange, for developing joint projects (e.g. larger installations such as a wind farm) and for organizing further training. Furthermore the association cooperates with EnBW in the area of providing counselling and start-up support for new energy cooperatives (see above). At the national level, the ARGE Energiegenossenschaften (working group of energy cooperatives) was formed in 2010, mainly for facilitating networking, exchange and mutual empowerment.

Most actors supporting the establishment of energy cooperatives not only want to contribute to the further diffusion of renewable energy technologies but specifically want to promote the organizational model of cooperatives. This is supported by two main arguments. Firstly they emphasize the potential of cooperatives in contributing to regional value creation and secondly they underline the aspect of democratisation and empowerment (see also section 3.3). [5:11, 3:4, 3:29, 7:11]

> „Regional value creation, which is seen as the backbone of every society by smart economists, (…) if you look how regional value creation is organized in different [organizational] formats, (…) then in the second or third step one will always turn towards the cooperative format and realize that that offers an almost un-negotiable enabling model." [5:11]

> „In energy cooperatives there are more real potentials of what I would call real citizen participation, than in investment oriented models. Because apart from the mere financial participation they are set up in a way to allow for people to participate in conceptual issues, to get actively involved." [3:29]

One interviewee, however, takes a decidedly pragmatic stance towards energy cooperatives and also sees limits of cooperatively organized systems of energy provision.

> "I clearly see that [the energy cooperative model] has its justification and I also fight for advancing a grassroots oriented cooperatives-model in the area of renewable energies. But I also clearly see limits

[4] See http://www.gvweser-ems.de/gvwe/DE/aktuelles/archiv-meldungen/24_2008/85_gvwe_15_photo.php

> to the cooperative model in the business arena. (…) Whether we should try, with this legal form, to think in larger structures, I'm not so sure about that, how quickly one simply reaches the limits of, let me say, the grassroots democracy of the cooperative model." [6:9, 6:11]

4.2.2 Further support actors

Apart from organisations dedicated specifically to the support of energy cooperatives, some organisations support initiatives in the area of collective citizen ownership of green electricity power plants more generally. For example, the association fesa in Freiburg, Baden-Württemberg, a regional association promoting the diffusion of renewable energy technologies, initiated some of the first collectively owned PV plants in Germany in the mid-1990s. Seeing such activities transformed from being idealistic, non-profit initiatives to economic enterprises, they were in 2001 transferred to a newly founded separate limited liability company, the fesa GmbH. Recently, however the fesa association has once again started to become active in this area and supports the development of the energy cooperative ‚Solar-Bürger-Genossenschaft' (see section 3.2).

In the area of wind power the Federal Association for Wind Power (Bundesverband Windenergie, BWE) represents the interests of the wind industry. As such it also has a positive stance towards plants operating on the basis of collective citizenship, especially in view of the higher local acceptance for wind power such models usually entail. However, as the BWE represents the entire wind industry (including also manufacturers and service providers such as project developers, lawyers etc.), it does not engage in specific lobbying for such models or argue for their preferential treatment. For similar reasons the activities of federal associations dedicated towards other renewable energy technologies are generally not considered to be relevant support actors for citizen power plants. BWE is, however, considering publishing a manual for setting up 'Bürgerwindparks' based on an already existing regional guideline for the federal state of Schleswig-Holstein. [3:28, 4:18, 4:20, 5:19, 6:8, 9:13]

The latter manual was published by the regional wind power agency windcomm. Windcomm was founded in 2004, originally only as an agency of the districts along the North Sea coast, where wind power and in particular Bürgerwindparks had first emerged. Meanwhile it acts as a wind power agency for the entire federal state of Schleswig-Holstein and among other things aims to spread the Bürgerwindpark-model beyond the boundaries of the district of North Frisia, where the model emerged and is particularly widespread (see section 3.1). The manual, together with information events, forms their most important contribution towards spreading the Bürgerwindpark-model and four to five thousand copies have already been distributed.

Another group of actors that has become important for initiatives aiming to set up collectively owned PV plants or wind farms are professional service providers such as project developers that take care of planning the installation and gathering all the required permits and technical and legal expert reports. Administrative and financial requirements for setting up a green electricity power plant (especially a wind farm) have risen over the last years, often necessitating citizens' initiatives to draw on such services. [3:27, 8:28, 9:18]

> „There are service providers, like we meanwhile are ourselves (…), and we then are available for such initiatives with the entire know-how from launch of a company to permits and financing and above all also the rules of the game in communication." [8:28]

In some cases administrative support and advice is also provided by representatives of initiatives that have already set up collectively owned green power plants.

> „What is also avaiable is support from those that have already managed or planned Bürgerwindparks. (…) I would say people here know the operators or managers of large Bürgerwindparks and we have a small pool [of people]. We have some mayors from villages with Bürgerwindparks, we have planners and we have managers (…) and those provide assistance." [9:18]

Finally, one interviewee pointed out that in Germany there are a large number of local agenda 21 groups and some citizen power plants emerged from these initiatives. [2:37]

4.3 Utilities

The electricity market in Germany is strongly dominated by four large utilities (RWE, EON, Vattenfall and EnBW) that together account for a market share of 65 – 70 %.[5] These large utilities, however, are hardly active in the area of renewable energy technologies. According to trend:research (2011) they only own 6.5 % of total installed capacity of renewable energy as of 2010. The largest part of this share comes from hydropower plants, but wind power is also growing in importance. Small local and regional utility companies taken together account for a smaller share of total installed capacity than these four large utilities (4.3 %) but if this is set in proportion to their market share it can be seen that they are in fact much more active in the area of renewable energy technologies than the large utility companies. Furthermore they also exhibit much stronger growth rates in this area (trend:research 2011).

Also several interviewees point out that to date renewable energy plants are largely owned by citizen collectives and medium sized enterprises. Large utilities are generally seen as adversaries that for a long time have tried to inhibit large-scale diffusion of renewable energy technologies and still have not become seriously engaged in this area. Several interviewees also are strongly supportive of the decentralised structures that have emerged so far. Thus a number of interviewees would in fact not necessarily welcome a stronger engagement of the large utilities in the area of green electricity, but rather see the decentralised structures involving, among other actors, citizen collectives as something that is to be defended. [1:22, 1:23, 3:3, 2:8, 2:36, 2:46, 2:48, 7:36, 8:12]

> „The large bulk of renewable energy is decentralised and in relatively small units. And if those are utilised and they belong to citizen participation companies or private individuals that have it mounted on their roof, then the large utilities every day loose market shares, power and money. And that leads to these enormous conflicts in energy supply in Germany, that the large energy companies are losing market shares every day, because they don't own the plants, they are owned by others. But we want the structural change, we want to break up the dependency on monopolies." [2:8]

This position must also be seen as being part of a larger societal conflict over energy issues, in particular the conflict over nuclear power. Large utilities have always been advocates of nuclear power plants while renewable energy has been positioned as the 'antithesis' to nuclear power in this conflict. Among renewable energy advocates large utilities thus have always been perceived as the enemies in the fight against nuclear power and for the further diffusion of renewable energy.

[5] See http://de.statista.com/statistik/daten/studie/154054/umfrage/marktanteil-der-energiekonzerne-am-strommarkt-2008/ and http://www.shortnews.de/id/913988/RWE-und-Co-verlieren-immer-mehr-Marktanteile (accessed 14 May 2012)

> „Here in Germany (…) energy supply is one of the largest economic area of conflict at all (…), well, it is the most important at all. No other sector can evoke such conflicts as energy supply." [1:23]

It is of course not unreasonable to assume, however, that large utilities will pay an increasing role in the area of electricity generation from renewable in the coming years, at least in the newly emerging area of offshore wind power. [2:9, 4:13]

Finally, it should also briefly be mentioned that there are also some initiatives that have realised or are planning to set up collective citizen ownership of utility companies. Most prominently this includes the 'Elektrizitätswerke Schönau', a citizens' initiative that took over the local grid in 1994 and meanwhile provide electricity for 115.000 households from renewable sources.[6] Another prominent example is Greenpeace Energy, a German utility company organised as a cooperative with currently around 21.000 members and serving about 110.000 customers.[7] Furthermore the initiative 'Energie in Bürgerhand' (energy in citizens' hands), organised as a cooperative, aimed to take over a significant share of Thüga, Germany's fifth largest utility company. However, after having failed to do so the cooperative is now attempting achieve citizen participation in local utility companies by acquiring ownership shares.

4.4 Municipalities

Municipalities usually have some sort of role to play in the establishment of power plants owned by a citizen collective, although their part may vary strongly.

The mayor or other representatives of the municipality may in some cases *initiate* a local community owned project. For example, the regional wind power agency windcomm in Schleswig-Holstein (see section 4.2.2) tries to support such municipal initiatives by targeted information on Bürgerwindparks to municipalities that have applied for parts of their municipal area to be designated for wind power. Some municipalities may then decide to promote a Bürgerwindpark-model and try to arrange a deal with land-owners guaranteeing that only a wind farm based on this local ownership model will be realised on their land, once it has been designated for wind power. [1:18, 1:32, 9:5, 9:6]

In the case of Germany's first Bürgerwindpark (Lübke-Koog) the municipality did not originally take on a proactive role, but after receiving several requests for permits of farmers for setting up individually owned wind turbines initiated *a coordination* of these activities, eventually leading to a collectively owned wind farm, also involving further people from the village. In this case the municipality itself in fact also became a *shareholder* of the wind farm. In most cases, however, municipalities do not become directly involved as co-owners of such projects but profit from the local business tax. [8:1, 8:42, 9:16]

In other cases the initiative for a citizen owned power plant may come from engaged citizens but they may succeed to gain *support from the municipality*, e.g. in the form allowing a jointly owned PV plant to be mounted on the roofs of municipal buildings. One example of this model is the energy cooperative in Rosenheim, Bavaria, where two PV plants could be mounted on the roof of a school building (Reiner 2011). [1:18]

[6] See http://www.ews-schoenau.de/ (accessed 28 March 2012)
[7] See http://www.greenpeace-energy.de/ (accessed 28 March 2012)

Finally, there are of course also cases in which the municipality is either *indifferent* or *obstructive* towards an initiative aiming at setting up a collectively owned green electricity plant. In the area of wind power, however, a passive stance of the municipality is hardly possible, as the municipality is involved in the designation of areas for wind power together with the federal states that bear the main responsibility for this task. [2:15]

5 Institutional framework conditions

5.1 Feed in regulation and other subsidies

Feed-in regulation, guaranteeing buy-off of green electricity at fixed tariffs, is considered to be the most important policy framework supporting the establishment of citizen owned green electricity plants. A first feed in law was introduced in Germany in 1991 (electricity feed-in law / 'Stromeinspeisegesetz') which enabled the economic operation of wind farms by independent power producers. While this feed-in law also subsidised electricity from PV plants, tariffs were still too low to make them economically viable. This changed with the reorganization of the feed-in system with the introduction of the renewable energy law (Erneuerbare Energien Gesetz, EEG) in 2000. [2:23, 3:45, 4:23, 5:25, 6:23, 7:37, 8:4, 9:25]

However, a small number of citizens' initiatives already set up green electricity plants before the feed-in law was introduced. They had to negotiate grid connection and tariffs on a case by case basis and often were dependent on other forms of subsidies. [1:13, 2:23]

> „[Before the electricity feed-in law] we had direct selling contracts, remuneration was miserable and dependency was high. (…) And that then changed fundamentally in 1990 with the electricity feed-in law. (…) That was the purchase obligation and the minimum rates for remuneration. (…) From then on it actually got going, that one could set up citizen participation models." [2:23]

Several interviewees pointed out that feed-in regulation is particularly important to facilitate collective citizen ownership models, seeing that it provides the financial security that is crucial for them – more so than for other market actors capable of large investments with certain risks. Apart from reducing the risk for individual citizens of losing the money they invested, it also enables citizens' groups to take up bank loans. Furthermore, subsidised tariffs in combination with guaranteed grid access and buy-off of electricity is seen as an important measure to level the playing field, enabling small, independent power producers to access electricity markets without being hindered by large incumbents. [2:23, 2:28, 4:23, 8:35]

> „Whether the EEG was particularly relevant for Bürgerwindparks? (…) Yes, certainly by all means. (…) Because it gives them a clear legal framework that states that they can feed-in, that there is a requirement to accept this feed-in, that they have to a get fixed price. That provides the high degree of security to these companies that they need. That is different with the large energy companies, that can take on the risk or can act themselves via a marketing system or something like that." [4:23]

However, interviewees generally do not view the introduction of feed-in regulation as a deliberate response to the needs of citizen-led green electricity plants [1:25, 2:34, 8:38, 9:25]

One interviewee in fact pointed out that with the recent interest of policy actors in supporting the development of offshore wind power, feed-in regulation may shift to the disadvantage of citizen

ownership models. Seeing that offshore wind farms are difficult to handle via collective citizen ownership, offering attractive feed in tariffs for offshore wind farms at the cost of reducing tariffs for electricity from onshore wind farms would probably reduce the market share of citizen ownership models. [2:9]

5.2 Bureaucratic hurdles and prospectus requirement

Another problem several interviewees point to is the large amount bureaucratic work involved in setting up a company, putting together applications and acquiring various permits needed for the installation of wind farms and (large) PV plants. Interviewees point out that these requirements are particularly hard to meet for citizens' initiatives often (initially) operating on the basis of voluntary work. Nevertheless one interviewee also concedes that strict planning requirements also help to avoid planning mistakes such as setting up a wind turbine too close to settlement areas. [1:19, 2:27, 2:28, 3:18, 3:45, 6:22]

A particular salient problem among these bureaucratic issues is the prospectus requirement. In legal terms, publicly advertising co-ownership of a green electricity plant amounts to advertising a particular investment option and thus is treated like any other publicly advertised form of investment. In view of some problematic cases of investor-deceit (largely unrelated to the renewable energy sector), regulations concerning prospectus requirements were tightened in 2005. Complying with these requirements is considered to be both costly and time-consuming and to be particularly burdensome for small to medium-sized projects.

> „If you want to set up a plant now, that falls under the Federal Financial Supervisory Authority. There you have to compile a prospectus and have that reviewed and so on. You can do that for a wind turbine, but for a PV plant you can forget about it, it's not worth the effort. The investment costs you face there are so high that it is not worthwhile for one thing, and for another thing, it takes so long that any normal investor simply is quicker." [1:14]

One interviewee points out that too strict requirements have in fact had perverse effects as prospectus becomes very elaborate and incomprehensible, counteracting the goal of greater transparency and consumer protection. As cooperatives are exempt from the prospectus requirement, the tightening of this legislation has contributed to the increasing attractiveness of the legal form of a cooperative (see also section 3.2). Furthermore, projects in which project developers refrain from public advertising of participation opportunities and co-owners are only recruited via personal contacts can avoid the prospectus requirement. [1:14, 1:19, 2:29, 3:47, 4:25]

Another problem emerges when a municipality is prepared to lease a roof to a local citizens' initiative for the purpose of setting up a PV plant at preferential conditions. At least for large roof areas the municipality is legally required to issue a call for tenders and select the bidder making the best offer rather than directly arranging an agreement with a local citizens' group. [3:32]

5.3 Social and cultural contexts

Interviewees also referred to a number of social and cultural issues that shape the opportunities for citizen owned green electricity power plants. At a general level the awareness for renewable energy technologies has risen strongly over the last 10-15 years. While originally only considered a crazy idea or niche phenomenon pursued by environmental idealists and technology tinkerers, renewable energy

technologies are meanwhile taken as a serious and indeed necessary alternative to conventional forms of energy generation. Among other things this has improved the standing of initiatives aiming to set up citizen owned power plants in relation to banks and policy makers (possibly a virtuous circle, as citizen power plants are themselves seen as a factor contributing to increased support for renewable energy, see section 4.1). [1:21, 2:19, 2:30, 2:33]

More specifically, the environmental and antinuclear movement certainly had an important role to play in establishing collective citizen ownership of green electricity plants in Germany. Several early collectively owned plants can be interpreted as attempts to develop environmentally friendly alternatives of energy generation. In this context it must be noted that the environmental movement was comparatively strong in Germany. [2:30, 2:37, 3:30, 3:48, 4:27, 9:27]

> „Well, I don't really know if that is so pronounced in other countries, or so broad, the environmental movements. Anyway in Southern Germany (…) and also in other areas, these are now people who started this 30 years ago, who are now partly established but who still stick to the thoughts and also have the required means in order maybe to invest a little. Because of that it does have a strong basis I would say." [3:48]

Sometimes singular events may play a decisive role in shaping public perceptions and discourses. For example, the nuclear accident in March 2011 in Fukushima has of once again reinforced public interest in renewable energy and the rejection of nuclear power. Furthermore it once again discursively positioned the installation of renewable energy plants in the context of the phase-out of nuclear power, after discourses had centered more on the issue of climate change over the last few years. Several interviewees also refer to the massive protests in Stuttgart in 2010 against the construction of a new railway station which protestors oppose on the basis of high costs, a perception of lacking benefits for railway passengers and ecological impacts. Interviewees interpret this as an event epitomizing citizens' frustration with top-down infrastructure planning decisions and perceive a renewed interest in citizen involvement in infrastructure development on the side of policy makers and project developers, also extending to renewable energy installations such as wind farms. [2:30, 2:33, 2:39, 3:5, 8:36, 9:28]

Finally, some interviewees report that the financial crisis starting in 2008 has increased public interest in alternative forms of economic organization such as cooperatives. Furthermore people now have turned to less profitable but secure forms of investment, which may take the form of membership in a renewable energy cooperative. [1:30, 6:19, 7:21, 7:32]

5.4 Framework conditions specific to cooperatives

Apart from feed in regulation, citizen participation models taking the legal form of a cooperative are subject to some framework conditions specific to this legal form. The legal framework for cooperatives is defined by the cooperative law. In 2006 some amendments were made to this law making it somewhat easier to found and run small cooperatives (e.g. only three people required for founding cooperative instead of previously seven, reduced auditing costs for small cooperatives). While welcoming these changes in principle, some interviewees consider them as not going far enough. [3:9, 5:11, 5:25, 7:37]

> „In 2006 there was the amendment to the cooperative law. But from my point of view (…) it did not bring about any noteworthy easing. Well, it did reduce some, let me say, excessive cost demands for the cooperative [as a legal form], but, well, from my point of view, the only positive thing about this amendment was that cooperatives were brought up as an issue." [3:9]

Furthermore some interviewees note that for a long time many auditing associations were not particularly supportive of new, small cooperatives. However they notice improvements in recent years, with some auditing associations actively supporting the establishment of new cooperatives. [3:11, 5:18]

In some cases also federal states have started to support the establishment of new cooperatives. For example, the federal state of Baden-Württemberg launched a programme supporting the establishment of new cooperatives in 2010 in cooperation with the regional auditing association BWGV. This includes subsidies for founding costs and for auditing costs during the first five years as free counselling services and an information campaign. [5:8, 6:18] (see also Schorr 2010)

6 Interests and rationales attached to collective citizen ownership models

6.1 Interests of initiators and support actors

Diffusion of renewable energy technologies

An important factor motivating the initiators of citizen owned green electricity plant certainly is to contribute to the diffusion of renewable energy technologies and providing an alternative to nuclear power.

> „Well, our company group was founded in order to take part in the energy transition (Energiewende) and to set up plants that produce electricity from renewable sources. (…) That is the goal, that people also participate and that energy supply is transformed. That's why our company was founded and that is our business." [2:1]

Especially many of the early citizen power plant projects in the 1990s were idealistic pioneer projects not promising a great profit margin. [1:2, 1:15, 2:1, 2:17, 2:32, 3:25, 3:30, 6:9, 7:14, 7:18, 8:11, 9:19]

Regional value creation and decentralisation

Strongly linked with the idea of renewable energy diffusion in Germany is the idea of a decentralisation of the energy sector. Shifting from fossil fuels and nuclear power to renewable energy is also seen as moving away from centralised structures depending on large utility companies to small and medium sized companies, which includes citizen ownership models. [2:7, 2:46, 2:48, 3:3, 7:18]

Interviewees also emphasise the benefits of regional value creation that can be achieved through such a process of decentralisation. [1:32, 3:4, 4:5, 7:16, 8:11]

> „Well, the reason [for setting up Bürgerwindparks] of course is that one realized that value creation can be achieved through the generation of wind power and that one noticed that it is of course important to keep this value creation in the region as far as possible. In particular because wind turbines are visible, that isn't something that takes place underground or in small units, rather that is a big area. So that one says, the region should profit from that." [4:5]

Regional value creation through citizen power plants can involve a number of different aspects. Apart from direct revenues for the local citizens that are shareholders of a plant, the municipality also benefits from the business tax of a locally registered company. Furthermore in several cases local or regional banks and businesses are involved in financing and setting up such a plant. One interviewee sees value

creation via local cooperatives, including energy cooperatives, as a means to work against migration from rural areas to larger cities. [1:16, 1:44, 5:2, 5:11, 5:17, 7:14, 7:16, 7:42]

Democratisation and empowerment

Some interviewees view this process of decentralisation not only in the economic terms of regional value creation but also emphasise the political aspect of democratisation and empowerment. This particularly holds true for people engaged in the area of citizen power plants taking the form of a cooperative. In fact some see energy cooperatives as a means to revive the grassroots character of citizen owned power plants in face of a process of commercialisation.

> "A commercialization, a de-ideologisation, that has clearly taken place. In that respect one can say that cooperatives are kind of an attempt to defend this original pioneering spirit in the field. To defend this field of renewable energy a little against commercialization." [1:29]

For example, cooperatives frequently adhere to the principle of 'one person one vote'. However, similar principles are sometimes also implemented within other legal forms, e.g. by limiting the maximum share any individual may hold within a limited partnership and thus avoiding domination by large investors. [1:5, 1:29, 2:12, 3:3, 3:4]

Capital mobilisation

In the 1990s, citizen ownership models also provided a means of raising sufficient capital for green electricity plants, as loans from banks were still difficult to obtain and only few other investors had entered the field. Meanwhile, however, this factor is not as important anymore because other modes of financing are more easily available. [1:2, 1:16, 2:17, 2:20]

Acceptance and awareness rising

While the aspect of capital mobilisation has declined in importance, the aspect of acceptance and awareness rising for renewable energy technologies via citizen power plants has gained prominence.

> „It wasn't a problem for us to raise the capital. First of all one also gets loans for that and secondly there are also many investors that would invest there, for example municipal utilities (Stadtwerke) or also large utilities or pension funds. That isn't the issue, but if we set up the participation models, we basically turn everybody who participates into a potential ally for the energy transition (Energiewende)." [2:7]

One interviewee points out that, apart from increasing acceptance among the general population, local decision makers such as mayors are also more likely to support a project if it involves financial benefits for local people. Especially actors in the area of wind power consider acceptance to be an important benefit of citizen owned power plants, as resistance against wind farms has turned into a serious problem for wind power development over the last years. [1:16, 1:33, 1:44, 2:7, 2:17, 2:32, 4:28, 4:29, 6:9, 6:26, 7:16, 7:38, 8:19, 9: 8, 9:12, 9:28]

6.2 Interests of participants

Most interviewees see a combination of environmental ideals and an interest in financial returns to motivate people to become a co-owner of a citizen power plant. [2:3, 7:19, 9:21]

> „Most of those who participate have two motives: The one thing is, they consciously want to get involved in the area of renewable energies, but they also want a reasonable return. That can indeed be accomplished." [2:3]

The relative importance of these two factors has, however, changed over time. It is clear that the first citizen power plants set up in the 1990s were often carried by an idealistic spirit and drew people opposed to nuclear power and wishing to develop alternative and more environmentally friendly ways of power generation. During this phase people participating in a citizen power plant initiative were prepared to invest money before the economic viability had been proven. Meanwhile financial interests have become more important and people with motivations characterised more strongly by financial returns are increasingly also drawn to such participation models. [1:2, 2:31, 8:14, 8:16, 9:21]

One interviewee points out that the motivations of the people who get engaged also depend on the participation model or on the way it is advertised. For example, some citizen owned power plants are initiated by banks and are typically presented as a form of investment. These projects tend to draw people whose motives are more strongly characterised by financial interest. By contrast, citizen power plants initiated by politically oriented citizens' groups may frame co-ownership of a PV plant as being a contribution to a more environmentally friendly and democratically organized energy system and attract further people who share these political goals. Another interviewee points out that the geographic participation structure of a project is related to the motivational structure of the people involved. In geographically more dispersed forms of joint ownership financial returns tend to be more important, for locally owned projects environmental and social aspects tend to be higher on the agenda. [3:35, 4:17]

Some interviewees, however, also observe different motivations of people *within* a particular initiative. These different rationales for becoming engaged in a citizen power plant are usually characterised as a positive aspect enabling the mobilization of different groups rather than contributing to internal conflicts. [6:16, 9:21]

> „That also reflects the diversity of the population. In rural structures (areas) we do in fact [manage] (…), that really all fractions, all generations participate in the energy cooperative and also engage financially. Of course there are the most diverse motivations there." [6:16]

Aside from environmental and economic factors, identification with a particular project also has an important role to play. Several interviewees note that it enables mobilisation if people live in close proximity to the plant, making the project visible and tangible to them.

> "We also have remarkable dynamics emerging here, if we consider how important it is to people to express this regional relation (connection) also in the projects, in the realization of projects to say, OK, we can walk past them, we can go there we can watch how it is mounted, I own one part of that. Maybe that is related to the most deep-rooted interest of people, yes, to identify [with things]" [6:13]

Also drawing electricity from the jointly owned plant can increase this identification, but feed-in to the grid usually tends to be technically and economically more viable. [2:5, 3:33, 6:13, 6:14]

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8. Work Package 3: International Comparison

Table of Contents

1 Introduction

With rising concerns over ecological sustainability as well as security of supply, the energy system has come under increasing pressure over the last years and various efforts have been made aiming at a transformation towards more sustainable systems of energy provision. At the grassroots level this has included the establishment of energy cooperatives and other forms of collective citizen ownership of renewable energy technologies. This report focuses on collective citizen ownership of renewable energy technologies in Austria and Germany and presents the findings from qualitative expert interviews within the project 'Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system'. Furthermore the report also includes a literature based comparison to developments in Denmark and UK.

For various reasons a decision was made to focus on renewable energy plants in the area of green electricity (mainly wind power and photovoltaics). First of all, relevant actors and framework conditions differ considerably between renewable energy in the area of electricity and in the area of renewable heat (e.g. biomass district heating networks). Seeing previous research has already documented the development of energy cooperatives in the area of biomass district heating networks in Austria (Rakos 2001; Weiss 2004; Madlener 2007), a focus on green electricity appears to be more reasonable. Furthermore in Germany citizen ownership of renewable energy is particularly widespread in the area of wind power and photovoltaics.

Seeing the project looks at various forms of collective citizen ownership, not only those organised as cooperatives, the term *collective citizen ownership* of green electricity plants / of renewable energy technologies will be used (sometimes also abbreviated as 'citizen ownership', *collective* ownership of a group of people always being implied). As some models in fact do not involve citizen ownership in the strict sense but are rather based on a loan system (see section 3.1.1), the term *citizen participation* will sometimes also be used. These models have not been excluded from the analysis as they are generally understood to be closely related to citizen ownership models. In fact in the Austrian case interviewees often use the term 'citizen participation' (Bürgerbeteiligung) both for actual citizen *ownership* and for weaker forms of participation, e.g. via loans. The term *local ownership*, as it is used in the project title, has been found to be rather impractical, as some companies based on citizen ownership have undergone a development from being based on local ownership to a more geographically dispersed participation structure. Nevertheless the involvement of local citizens has remained an important aspect for all of the organizations considered here. The term *independent power producers* is used as an umbrella term for companies based on collective citizen ownership and other privately owned companies acting as power producers (i.e. power producers that are not part of a public utility).

The next section after this introduction gives a brief overview of the material and the methods this report is based on. The following two sections (sections 3 and 4) present the Austrian and the German case studies respectively, based on the interviews conducted within the project. Each of these sections discusses ownership and participation models, actor roles, institutional framework conditions and the interests and rationales attached to collective citizen ownership of green electricity plants. The Austrian case study furthermore contains a brief comparison between different federal states. Section 5 then

attends to the similarities and differences between the two country case studies and section 6 adds a literature based comparison to Denmark and the UK.

2 Material and methods

The report is based on 21 semi-structured interviews (12 interviews for the Austrian case, 9 interviews for the German case) and a literature review. Out of the twelve interviews for the Austrian case, nine interviews were conducted specifically for this project from November 2010 to March 2011. In addition to that, material from three more interviews conducted in another project in July 2010, also partly pertaining to citizen ownership of renewable energy technologies, has been included in the analysis (Project BENE – Bürgerengagement für Erneuerbare Energie, funded by the Austrian Climate and Energy Fund in the program Neue Energien 2020). These additional interviews concern jointly owned photovoltaics (PV) plants in the federal state of Vorarlberg. Austrian interviewees were mainly representatives of companies in Austria that set up renewable energy plants based on citizen ownership or are in the process of realizing such plants. An additional interview was conducted with representatives of the Austrian wind power interest group IG Windkraft.

The nine interviews for the German case were conducted from May 2011 to March 2012. Due to the large number of citizen power plants in Germany and the difficulty of selecting a 'representative sample', it was decided to focus mainly on people from support and intermediary organization, assuming that these individuals have a good overview of the field as a whole. However, some interviews were also conducted with representatives of companies operating power plants on the basis of collective citizen ownership who have been active in this field for many years. In some cases people are active both in support organizations and as initiators / managers of individual companies setting up citizen power plants.

Interviewees were selected on the basis of an internet search and on the basis of further recommendations by the initial interviewees. In one case two interviewees took part in the interview, in all other cases a single person was interviewed. Interviews typically took about 45 minutes to one hour. The interviews for the Austrian case were all conducted face to face. For the German case three interviews could be conducted face to face, the remaining six were conducted as telephone interviews.

All interviews were recorded, transcribed and evaluated with qualitative content analysis using ATLAS.ti. Some additional factual information was gathered from homepages, brochures and further information material provided by the organizations. Furthermore, where needed, information from interviews was backed up or complemented by factual information from an internet and literature research.

In the coding procedure individual passages from interviews have been assigned labels taking the form [n:k], where n denotes the number of an interview and k denotes the number of the quote from that interview. A small number of quotes have not been anonymised, as the context provides clear indications as to the speaker's identity. These quotes were authorised by the interviewees.

3 Country Case Austria

3.1 Ownership and Participation Models

3.1.1 Legal forms

A variety of different models of collective citizen ownership of green electricity plants can be found in Austria. In this section an overview of different models will be provided. In particular this covers the models of the organizations that were represented in the interviews. As far as can be judged from background research this should cover all types of collective citizen ownership models that are available in the area of wind power in Austria and a large proportion of models in the area of photovoltaics. In the area of photovoltaics, however, collective citizen ownership models have only developed recently and several projects are still in the development phase. Thus the situation is still more fluid and a number of additional ownership and participation models may still emerge.

Limited Partnership (GmbH & Co KG)

The model of a limited partnership (GmbH & Co KG) has been used quite widely in the area of wind power (Ökoenergie Wolkersdorf, Windkraft Innviertel, formerly also Windkraft Simonsfeld and WEB Windenergie) and has more recently also been used for a large PV plant (SEBA Mureck). A GmbH & Co KG is a limited partnership (KG) in which a limited liability company (GmbH) acts as the general partner. Typically individuals can become involved as limited partners (Kommanditisten) within this partnership. In some cases (Ökoenergie Wolkersdorf, Windkraft Innviertel) companies also offer additional forms of participation. This includes taking part as a dormant partner (stiller atypische Gesellschafter) or by providing loans to the company.

Limited liability company (GmbH)

In one case (Zukunfts-Energie GmbH) a citizen ownership model for a small local wind farm was set up via a limited liability company (GmbH). Citizens are involved as associates (Gesellschafter) or as dormant partners (stille atypische Gesellschafter). Furthermore several people provided loans to the company.

Corporation (Aktiengesellschaft, AG)

Two companies in the area of wind power that started in the form of a GmbH & Co KG (or as a group of such companies) eventually transformed to corporations (WEB AG, Windkraft Simonsfeld AG). However they are not listed at the stock exchange. In order to avoid takeover by large investors both have introduced limits to the voting power of any individual shareholder (e.g. maximum 5 % voting power) and in at least one company the issuing of shares to new shareholders can be vetoed by the board of directors.

In addition to these two companies in the area of wind power a company in the area of biogas (BEB AG) was also set up as a corporation that is not listed at the stock exchange.

Private partnership (Gesellschaft bürgerlichen Rechts, GbR)

Private partnerships (GbR) are a very widespread model for collective citizen ownership of PV plants in Germany. In the municipality of Dünserberg in Vorarlberg three very small jointly owned PV plants were set up in this way (5 KWp, 2 – 4 partners per plant).

Loans repaid via company vouchers

In one case a trader of PV panels (Solarzelle Waldviertel) developed a participation model in which existing businesses (in one case a shoe manufacturer in the other case an organic farm) set up PV plants on their roofs. Citizens can participate by providing small loans (200 €) that are repaid through company vouchers over several years.

In general a variety of pragmatic reasons influence the choice of the legal structure of the ownership or participation model. This includes tax issues, liability issues, the administrative burden and the issue of risk distribution (e.g. lower risk for individuals if they are co-owners of several wind farms rather than a single one). In some cases the legal structure was also copied from other already existing models of collective citizen ownership of renewable energy technologies in Austria. [11:15, 13:8, 14:29, 14:49, 16:14, 19:8, 20:6]

Some project developers also strive to offer different participation models for people with different levels of willingness to take risks. Furthermore in many cases a goal is to set up a model that allows for broad citizen involvement and pre-empts dominance by few large investors. Thus, several models include either a limit to the shares that can be held by individuals or to the voting power that can be exercised (in the case of corporations). Furthermore some initiatives or companies make a deliberate effort to keep the minimum contribution of capital low in order to be able to attract people without large financial resources. [11:14, 10:48, 14:18, 14:19, 16:21, 15:3, 16:22, 17:23].

Interestingly, the legal form of a cooperative is hardly used for collective citizen ownership in the area of green electricity plants in Austria. Some interviewees pointed out that cooperatives typically provide their members with benefits in kind rather than with financial revenues. Producing green electricity, however, can usually only be realized via feed-in to the grid, so co-owners typically cannot directly draw 'their' electricity from the plant. [11:15, 16:27]

> "In a cooperative (…), one can clearly define that there is a raw material and the products are made from this material. And (…) if we could define that this sun ray turns into exactly this [electricity] we could make a cooperative, but that doesn't work, we can't define it that way." [11:15]

Nevertheless two initiatives deliberately set up their model in a way such that individuals finance the production of an amount electricity that corresponds to the amount an average household consumes. [11:14, 15:3]

3.1.2 Participation structures

Interviewees were asked whether particular groups of people are over- or underrepresented in their company or initiative (age, gender, professions, etc.). Hardly any of the interviewees had ever evaluated such issues in a systematic way, but a number of them reported that in their experience people between 40 and 50 or between 35 and 55 form the largest group. They attribute this to the fact that this age group tends to have more free capital available. One interviewee also notes that more men participate than women. [10:51, 14:28, 16:21, 19:5, 20:19]

Almost all interviewees report that the involvement of the local and regional population is of particular importance to them. In small companies that have only set up one or two plants in their immediate

surroundings the proportion of local and regional participants usually is very high (often around 90%). Out of three companies in the area of wind power that have turned into medium sized companies (or company groups) realising wind farms in different locales, one has decided to stick to a local participation structure, founding a separate company for every wind farm so that local people can become direct co-owners of the wind farm in their town. The other two have transformed into corporations and their participation structure gradually shifted from being largely local to being spread out across the entire country. [11:6, 10:24, 10:57, 12:9, 13:20, 15:10, 16:18]

3.2 Actor roles

3.2.1 Actor roles project developers see for themselves

During the interviews, interviewees referred to a number of different roles they see for themselves in the field of renewable energy technologies.

Pioneer Actors

First of all, in wind power, companies based on citizen ownership can be seen as important pioneer actors, gathering and exchanging information, conducting wind measurements, lobbying for support and raising capital in times when utilities still ignored or worked against wind power development. As such they see themselves as enabling actors getting wind power off the ground in Austria. [10:6, 10:61, 21:11]

> „Well, we are quite convinced that wind power development in Austria would at least have occurred with a substantial delay without the pioneer idealists. (…) We certainly dynamized the market and certainly played a groundbreaking role, because the utilities really waited for a relative long time (…).“ [10:61]

In other technology areas such as PV and biogas, initiators of citizen ownership projects also tend to see themselves as enablers, trying to move things forwards in the technology area they are active in. [12:48, 18:2, 18:7]

Professional business actors

In the area of wind power, some of the larger companies based on citizen ownership (companies in Lower Austria – see section 3.1.1) have meanwhile undergone a process of growth and professionalization, developing from groups of engaged citizens trying to set up wind turbines in their free time under highly uncertain conditions to professional business actors in a growing business sector. Apart from their core business of setting up and operating wind power plants, two of these companies have also developed specialised services such as technical plant management for other parties or acting as a utility company selling electricity to end users. Furthermore two of these companies also have also started to develop wind power plants abroad (Romania, Bulgaria, Germany, France, Czech Republic). One interviewee noted that in the context of these international activities their actor role has shifted as they are no longer perceived as a company based on (local) citizen ownership but rather as “an (international) investor like any other” [10:37].[1] Other wind power pioneers that succeeded in setting up wind power

[1] It was not considered feasible to offer ownership shares to citizens of foreign countries (higher complexity due to different legal regulations in the area of prospectus requirements and language barriers, scepticism as to whether a sufficiently large share of the population in countries such as Romania and Bulgaria have sufficient financial resources for involvement).

plants have decided not to pursue an expansionist strategy and simply continue to operate a small number of local wind turbines, without turning this into their main occupation. [10:37, 10:43, 14:37, 14:50, 15:23, 15:24, 15:55, 17:38]

Lobbyists

One continuous role these wind power actors have seen for themselves from the pioneering day up till today is acting as lobbyists for this technology. Due to their structure and culture companies based on citizen ownership models can also make use of particular repertoires of action more closely related to NGOs or social movements that are not available to utilities or other energy system incumbents (e.g. street protests, protest letter to member of federal state government, see also section 3.3.4). However, interviewees also assume that their political influence has been limited, especially when compared to the lobbying power of utilities. [12:37, 21:13]

3.2.2 Support actors

When asked for relevant support actors, interviewees refer mainly to associations that act as interest groups for a particular technology field such as the wind power interest group IG Windkraft. In one case an interviewee also referred to Eurosolar, an interest group for renewable energy at the European level, that supported the initiative by providing model contracts for the participation structure. Furthermore regional energy agencies (Energiesparverband Oberösterreich, Verein Energiewerkstatt, Energieagentur Waidhofen/Thaya) also provided support for some citizen ownership projects, e.g. by providing relevant information, organising excursions or conducting wind measurements). Finally, some project developers could draw on personal contacts with specialised expertise, in particular legal advice (e.g. university professor writing expert opinion that prospectus requirement does not apply, notary setting up contracts, tax advisor confirming economic viability required for approval by authorities). [13:26, 13:27, 14:1, 14:9, 14:16, 14:30, 17:3, 17:6, 17:14, 17:31].

Among the interest groups for different renewable energy technologies the Austrian Wind Power Association (IG Windkraft) deserves special attention, as it was set up and is still is strongly sustained by people that set up wind farms in the form of citizen ownership models. Therefore the IG Windkraft explicitly supports of the idea of citizen ownership. Nevertheless utilities and further actors in the field of wind power (component supply industry, planning agencies, etc.) have meanwhile also become members of the association and the organisation strives to represent all actors in the wind power business [10:77, 14:30, 15:42, 15:44, 16:38, 17:31, 21:31].

> "A very positive thing is that the [wind power] interest group IG Windkraft always, even though they wouldn't have to do that (…), highlighted the idea of citizen participation as something positive. (…) That also has to do a little with the fact that IG Windkraft was founded by people that also pushed citizen participation companies." [16:38]

3.2.3 Role of utilities

Interviewees referred to a number of different actor roles taken on by utilities in the context of collective citizen ownership of renewable energy technologies.

Business partners as grid operators

Before binding feed-in tariffs were introduced electricity generated in citizen-owned power plants typically was sold directly to regional utilities. Special feed-in contracts had to be arranged for every case. Furthermore, utilities are still relevant as buyers of electricity after the period of feed-in tariffs ends for a particular plant. [11:4, 14:3, 14:40] As owners of the power grid utilities also charge independent power producers fees for grid connection and maintenance [12:20].

From renewable-energy-obstructers to market competitors

Representatives of citizen-owned plants in the area of wind power report that utilities in Austria (especially EVN, BEWAG and Verbund) have undergone a development from being indifferent or even obstructive towards the implementation of wind power towards being seriously engaged in wind power themselves. Thus, some utilities have now become market competitors and at the same time also allies in lobbying for good framework conditions for wind power. [10:17, 10:36, 10:61, 12:20, 12:37, 15:18, 17:32, 21:4, 21:8]

> „At that time [a regional utility company] still was different, so they acted strongly against wind power, actually retarded things wherever possible (…). But then, after they looked into the issue of wind power themselves, they performed a U-turn and actually they [have become] active in this area themselves." [15:18]

For obvious reasons, utilities particularly resisted the emergence of independent power producers. In at least one case a regional utility went as far as offering to buy-out a citizen owned wind farm initiative in order to avert its realization. [10:61, 17:32]

Some interviewees note that utilities waited with their entry into the field of wind power until viability had been proven by pioneer actors and profitable framework conditions had been achieved. Also it was pointed out that the small scale wind farms that were the norm in the early days of wind power development were not well adjusted to the structure and profitability expectations of utilities that are used to handle large-scale power plants. [10:61, 17:42, 21:13]

Interviewees appear to be somewhat ambivalent towards the entry of utilities. On the one hand representatives of companies based on citizen ownership mainly want to contribute to the further diffusion of renewable energy technologies (see section 3.4.1) and used to criticize utilities for not engaging in that area. Therefore they all welcome the fact that utilities have now also become active in wind power. On the other hand some interviewees also lament the diminishing market share of companies based on citizen ownership. [15:45, 16:32]

> „[Ten years ago] I think 70, 80 % of installed capacity was organized via citizen participation companies of different kinds. (…) Then the utilities came, then the usual players came and in that respect the up side is that wind power in Austria is continuing to turn over dynamic market shares, that's good. The down side certainly is that we couldn't proceed with the idea from the initial phase [citizen participation] to the same extent." [16:32]

Utilities as financially and politically powerful actors

Several interviewees also point to the high lobbying power of utilities due to their strong connections to regional government (federal states holding majority ownership of regional utilities). Furthermore interviewees also note that utilities can rely on a stronger financial backing than citizen-owned companies. Thus, for utilities it is easier to implement wind power at large scales (at the international

level this also includes offshore wind power). In fact market shares are already shifting in favour of utilities. [11:23, 10:61, 12:37, 16:32, 21:8]

Utilities as indirect form of citizen ownership

Finally, as has already been noted in section **Fehler! Verweisquelle konnte nicht gefunden werden.**, it was suggested that people in Burgenland see utility ownership of wind power as an indirect form of citizen ownership [21:7].

3.2.4 Role of municipalities

Municipalities also often are important actors for the establishment of collectively owned green electricity plants. As was the case with utilities, interviewees also referred to a number of different roles taken on by municipalities.

Municipalities as decisive actors in spatial planning

First and foremost municipalities are of central importance for renewable energy plants (collective-citizen-owned or not) due to their decisive role in spatial planning (see also section 3.3.2). In particular, spatial planning rules apply to wind farms and large scale PV plants in the open space. In Austria local councils are responsible for zoning decisions (designation of land for a particular purpose). [11:18, 10:44, 15:27, 16:28, 17:27, 21:42, 21:43]

> „We need the municipalities, above all for the designation of areas [for wind power], so in effect the municipality has vetoing power. No wind farm can be implemented against the will of the local council, you cannot push through a wind farm in Austria like that. In this respect the mayor is a key actor." [10:44]

As can be seen from this quote, the mayor is seen to play a key role but another interviewee also points out that other committed individuals (local council members, deputy-mayor). Projects based on collective citizen-ownership can potentially benefit from stronger local support. In one case a mayor that initially opposed a citizen-owned wind farm swayed in favour of the project due to the high numbers of supporters in the village [15:27, 17:27].

Municipalities as initiators or promoters of a project

In some cases municipalities may also act as initiators or promoters of a citizen owned renewable energy installation. This may take the form of a municipality inviting a company based on collective citizen ownership to develop a wind farm project in their town, representatives of the municipality marshalling their persuasive power to support (or also oppose) the development of a biogas plant or simply the municipality itself being active in energy issues, thereby acting as a role model and sensitizing citizens towards energy issues. [12:12, 14:1, 16:9, 16:28, 18:5]

In some cases the municipality may benefit from the development of a (citizen-owned) renewable energy plant because this may enable membership in or further promotion within programmes honouring the contribution of municipalities to climate protection (Klimabündnisgemeinden, e5 Programm für energieeffiziente Gemeinden). [17:27,18:7]

Municipalities as shareholders

Interviewees also referred to some cases where municipalities became directly involved as shareholders in a renewable energy plant (wind farm / PV plant) which is mainly based on citizen ownership. Such cases, however, appear to be exceptions rather than the norm. [15:21, 18:4]

3.3 Institutional framework conditions

3.3.1 Feed in regulation and other subsidies

In general, the Austrian feed-in law for green electricity ('Ökostromgesetz') is considered to be *the* central policy framework by interviewees. Though not targeted specifically at citizen ownership models, this law, introduced in Austria at the national level in 2002, guarantees access to the grid and feed-in prices above market level for producers of green electricity. Nevertheless the regulation is heavily criticized by interviewees for involving a cap on the total funding volume, for providing too low feed-in tariffs for some renewable energy technologies (e.g. biogas) and for too short periods of support. The strongest criticism, however, concerns high uncertainties with respect to the conditions of support, due to frequent amendments of the law or due to suggestions for amendments that were circulated but never realised. [12:10, 12:42, 17:54, 21:54]

> "These economic framework conditions also are important for small operators and for citizen participation models because then it is easier for people to join together and to say, ok, now we have this feed-in-tariff, that is adjusted from year to year and it's not that it is available and then it is exhausted and then everything stands still again. I think, in general renewable energy needs a predictable prospect." [17:54]

Germany's Renewable Energy Act (Erneuerbare Energien Gesetz, EEG) is frequently referred to as a good practice model that should be copied in Austria (see also section5) [13:30, 17:47, 21:54].

In the area of photovoltaics, investment subsidies still play a role today, as PV plants below 5 KWp are not supported via the feed-in law. These small-scale installations are eligible for an investment subsidy (lump-sum payment) instead. Some Austrian federal states have also set up their own investment subsidy programs for photovoltaics. In 2008-2010 a particularly attractive subsidy for photovoltaics was available in Lower Austria, covering 50 % of investment costs. Nevertheless these subsidy programmes are also criticized for not providing security of investment, as they often change dramatically from one year to the other [13:30, 19:28.]

3.3.2 Further framework conditions pertaining to green electricity in general

Apart from various technical standards and regulations (brief treatment in section 3.3.4), further framework conditions pertaining to green electricity in general that were referred to by interviewees include spatial planning issues and political commitment and lobbying.

Spatial planning

Apart from feed-in regulation and other subsidies for renewable energy technologies, spatial planning is an important issue, especially in the area of wind power. As spatial planning is an issue that is regulated at the regional level, details vary between different federal states. In general, both the federal state government and the municipality need to agree to the designation of a particular area for the erection of

a wind farm. Typically the designation of areas for particular uses (Flächenwidmung) occurs at the local level but needs to be confirmed at the federal state level.

Some general regulations at the level of federal states need to be taken into account in this process, including minimum distances between wind turbines and residential buildings and issues of landscape protection and nature conservation. The latter issue leaves some room for subjective appraisals. For example, in Upper Austria a staffing change in the federal state government had the effect that local-level designations of wind power areas started to be overturned by the federal state government on the basis of arguments concenrig negative impacts on landscape protection and nature conservation. [21:56, 14:2, 10:45, 10:67]

Furthermore approaches in different federal states vary in the extent to which spatial planning for wind power is actively coordinated. One interviewee points out that such an active coordination is desirable to avoid uncontrolled developments and thus a backlash in public opinion:

> "Currently there is a boom, a run for the remaining attractive sites for wind power, and in Burgenland this has been very strongly accompanied by political actors, it has positively been accompanied and coordinated. And in Lower Austria some wish for a clearer role of politics, otherwise an enormous amount of wind farms are planned all over the place and in the end that leads to something in the population that nobody wants. But apparently in Lower Austria politics are not prepared to designate priority areas." [10:54]

In the area of photovoltaics spatial planning only becomes an issue in the case of large-scale free-standing plants (i.e. not mounted on a building). However, few such plants exist in Austria to this date and the issue has therefore attracted little attention so far.[2]

Political commitment and Lobbying

Another issue frequently addressed by interviewees is political commitment and the influence of incumbent actors. Several interviewees note a discrepancy between pronounced political goals assuring support for renewables and measures effectively taken. A lack of political commitment to the expansion of renewable energies is criticised which is sometimes attributed to the influence of actors with opposing interests. This may include market actors (energy system incumbents) as well as state actors such as the regulatory authority 'E-Control' which is characterised by one actor as aiming exclusively at low energy prices and neglecting environmental concerns. [11:23, 12:41, 15:48, 15:49, 15:50, 21:53]

At the local level renewable energy projects, especially in the area of wind power, run the risk of producing polarised commitments from political parties. Thus a project embraced by one political party may be rejected by their political adversaries as part of local political skirmishes. [15:29]

Further framework conditions pertaining to green electricity technologies in general include the electricity industry law (Elektrizitätswirtschafts- und Organisationsgesetz, ElWOG), regulating, among other things, the fees for grid use to be paid by all market actors feeding into the grid. However, this regulation was contested by wind power operators and a law suit concerning these tariffs in November

[2] See ÖROK 2009 *Energie und Raumentwicklung*, Schriftenreihe der Österreichischen Raumordnungskonferenz (ÖROK) Nr. 178, Vienna, p. 80

2011 eventually overturned the regulations that were in force until recently.[3] In addition to that, the official energy strategy developed by the Austrian government in 2009/2010, the national action plan for renewable energy following the EU Renewables directive (2009/28/EC) which sets targets for the share of energy from renewable sources for individual member countries to be reached by 2020, as well as various authorisation procedures such as environmental impact assessments have a role to play. [21:55][4]

3.3.3 Framework conditions specific to collective citizen ownership models

This section deals with framework conditions specific to collective citizen ownership models (as opposed to framework conditions pertaining to green electricity in general). One issue that was referred to by several interviewees concerns prospectus requirements that affect any publicly advertised form of investment. This also applies to many forms of citizen ownership of green electricity plants in Austria (e.g. purchase of shares in a corporation, becoming a limited partner in a limited partnership, etc.). Capital market regulation requires companies to produce a prospectus that needs to conform to specific information requirements (investment risks, etc.) and needs to be approved by the Financial Market Authority (Finanzmarktaufsicht). This can be costly for companies based on citizen-ownership in the area of green electricity, due to the high costs for legal advice, especially since the handling of regulation in this area was tightened in 2007/2008 in the wake of a case of defraud of investors in a different business area. [10:86, 10:p, 16:43, 21:44].

> "Then very soon the issue of the financial market authority came up, prospectus control, financial market control issues. Such a participation ultimately also had to be inspected in a professional manner. That was a bit of a shock, because after all the volume was not that large and the prospectus control swallowed up a certain share of capital, 3, 4, 5 percent right away. But you had to pass through that." [16:43]

Some initiatives have managed to avoid this obligation by refraining from public advertising of participation options and relying on personal contacts and word of mouth for recruiting associates. [14:16, 15:54]

With respect to cultural issues some interviewees point out that Austrians generally are risk-averse in financial matters and holding company shares is not widespread practice. This reluctance to invest is judged to be particularly high towards corporations that are not listed at the stock exchange, as is the case for a number of citizen ownership models in green electricity in Austria (see section 3.1.1). [10:39, 10:55, 12:35]

> "In Austria it is not very common to directly hold shares of a company, and if one holds shares then one rather buys shares from a company listed at the stock exchange. For us it is a bit more difficult with us not being listed at the stock exchange. As far as I know there are about half a dozen

[3] See http://www.windkraft-journal.de/2011/11/23/osterreich-verfassungsgerichtshof-kippt-netzgebuhren-fur-stromerzeuger/, accessed 20 December 2011

[4] Further sources:
http://www.energiestrategie.at/ and http://en.wikipedia.org/wiki/Renewables_Directive (both accessed 20 December 2011) as well as
BMWFJ 2010 *Nationaler Aktionsplan 2010 für erneuerbare Energie für Österreich (NREAP-AT)* available at http://www.ebb-eu.org/legis/ActionPlanDirective2009_28/national_renewable_energy_action_plan_austria_de.pdf
(as of 20 December 2011)

> corporations in Austria not listed at the stock exchange that are in widely held stock, that are open corporations. That is something that is uncommon and that also brings along a higher requirement for explaining things." [10:55]

The environmental movement in the 1980s and early 1990s is referred to as a positive cultural factor enabling the installation of the first wind farms in Austria via citizen ownership models. Especially discussions around nuclear power, fuelled by the Austrian referendum on nuclear power in 1978 (tied up with the construction of the construction of a nuclear power plant in Zwentendorf) and the Tschernobyl catastrophe in 1986, served as a catalyst for citizen action in the area of renewable energy. [16:6, 13:33, 21:9, 21:53]

> "In the early 90s, what was happening? At that time the Chernobyl catastrophe was not so many years past and still very dominant and the nuclear power discussion around Zwentendorf together with the Chernobyl accident. At that time all these debates around energy politics were much closer than they are today. The people simply were in this energy, and there were many that said, well, in a way only talking also isn't good, let's do something together." [21:53]

It was, however, also noted that discussions on nuclear power in Austria nowadays are not as polarized as in Germany, since the consensus against nuclear power in Austria is quite strong. Therefore the impetus for renewable energy as the 'antithesis' to nuclear power also is somewhat weaker than in Germany. [21:53]

3.3.4 Dynamics of institutional framework conditions

This section deals with changes in institutional framework conditions over time and points to reason for these changes as well as to ways in which companies based on citizen ownership adapted to these changes.

Seeing that feed-in regulation is of central importance to citizen-owned green electricity plants, the introduction of the federal feed-in law in 2002 can be seen as an important turning point. Up to that point feed-in of electricity from independent power producers was either regulated at the federal state level or had to be negotiated on a case-by-case basis. For example, in Upper Austria citizen-owned wind farms with some political support managed to arrange deals with regional utilities in the 1990s. In Lower Austria capital grants and (comparatively low) feed-in tariffs were available in the late 1990s [14:3, 17:33, 10:49, 15:17, 21:12].

In general, the Austrian feed-in law introduced in 2002 is not seen as a direct reaction to the needs of independent power producers such as citizen owned power plants. [10:58, 21:12] Nevertheless they see themselves as having played a certain catalyzing role in creating political momentum leading towards the introduction or improvement of feed-in regulation:

> "I don't think that one mainly reacted to citizen participation models with the feed-in law. But I think companies based on citizen participation were particularly active (…). Also when it was about organizing forms of social interaction, like (…) a demonstration, well that is us. So in the time before the feed-in law was passed there were some small rallies on the Ballhausplatz [square in front of the Federal Chancellery] and who travelled there, who called shareholders, who was disproportionally present there? That was citizen participation companies like us." [10:58]

Interviewees report that especially at the local and regional level some political support can be traced back to their activities [16:25, 17:28]. Nevertheless utilities are considered much more powerful

lobbyists that, after overcoming their reluctance towards engaging with renewable energy technologies beyond hydropower, can act as key actors in lobbying for favourable conditions.

Another change that has occurred in the regulative framework for wind power and biogas plants concerns the increase in technical requirements and safety regulations. Furthermore and partly related, early stage investment costs have risen significantly in the area of wind power. This is due to the need for expert reports establishing compliance with various requirements and due to earlier payment dates for securing grid-access. [10:49, 10:67, 12:5, 12:32, 10:11, 16:33]

> „When we started we set up a company with 50. – 100.000 [Austrian] Schillings [approx. 3.633 – 7.267 €] of risk capital for planning a wind farm. Today you almost need twice the sum in Euros for a wind farm to invest as risk capital in order to get expert reports and permits. That is a bit of the difficulty, probably also for regional companies, that are set up specifically for that purpose [i.e. setting up a wind farm]." [16:33]

Furthermore, as was mentioned in section 3.3.3, prospectus requirements, affecting various forms of publicly advertised financial participation in renewable energy installations, have also become tighter and require comprehensive expert advice.

Interviewees also provided some hints at the varying influence of public discourse. As already noted in section 3.3.3, discussions around nuclear power in the 1980s and early 1990s served as a catalyst for citizen action in the area of renewable energy. Furthermore the financial crisis of 2008 and the following years is seen as potentially beneficial to citizen ownership models in renewable energy, as people may become more sensitive towards the economic and ecological values of investments taken [21:29]

These changes in framework conditions triggered various responses and adaptation strategies on the side of the affected companies.

The increase in technical requirements and safety regulations as well as the rise in early stage investment costs certainly contributed to a process of professionalization, turning citizen-led initiatives (in the area of wind power) based on volunteer work into professional companies with specialized staff:

> "[In the beginning] we all had our job and we did this stuff without payment in the evening. (…) But that already changed when the projects grew larger, that happened around 2000. (…) Then we had our first staff members that were employed part-time, because the projects themselves were much more extensive and time consuming. (…) And now that is even worse (…). That is much more difficult and it now no longer works with volunteers as a side-job." [15:24]

This certainly also has heightened the entry barrier for (potential) new initiatives that want to set up citizen-owned projects in the area of wind power. Furthermore the rise in investment costs required in the early stage of the development of a wind farm has in some cases also affected recruitment strategies. During this early project stage, when plans for the next wind farm are still quite vague, it proves much harder to recruit new associates. This is seen as a factor making previous reliance on word-of-mouth recruitment insufficient and necessitating professional marketing campaigns (direct mailing etc.) [10:10, 10:59, 16:33].

The stop-and go policy in the area of feed-in regulation and other support mechanisms has proved difficult to handle for the companies. While some of the larger companies based on citizen ownership have been able to balance higher and lower revenues from projects realized during different policy periods, some smaller initiatives have had trouble getting off the ground or expanding their activities.

Some of the larger companies also decided to start setting up projects abroad (e.g. Germany, Czech Republic) rather than in Austria, due to better framework conditions in those countries. Also it was noted that a further worsening of support mechanisms for green electricity could lead to an eradication of companies based on citizen ownership. A market concentration on the side of utilities could occur, as the latter are financially better prepared for surviving financially difficult times [12:10, 14:33, 21:17, 21:22, 21:37].

Interestingly, some interviewees viewed citizen ownership and citizen participation models in the area of photovoltaics as a way of setting up PV plants *in spite of* difficult framework conditions. In this view such models are seen as a means of mobilising sufficient capital and achieving a justifiable level of risk distribution for setting up PV plants (see also section 3.4.1, subsection 'capital mobilisation'). [13:1, 13:32, 18:1, 18:20]

3.4 Interests and rationales attached to collective citizen ownership models

3.4.1 Interests and rationales of project developers (interviewees)

Diffusion of renewable energy in general vs. special value of collective citizen ownership

In general it can be said that people developing green electricity projects in the form of collective citizen ownership models are first and foremost interested in the further diffusion of renewable energy technologies. While a few interviewees see citizen ownership exclusively as a means to an ends, most of them do emphasize particular merits of citizen ownership models (regional value creation, identification, acceptance, etc. - see further below). Nevertheless they see themselves as sharing a joint mission with other developers of renewable energy projects. [13:14, 13:32, 14:36, 15:46, 16:32, 17:51, 21:23]

> "Every wind turbine or every alternative energy [installation] that is set up is a personal gain for me, regardless whether our company does that or another." [14:36]

> "Our main concern is that we implement as much renewable energy as possible, and [large] private investors usually are quicker in this area. Of course it would be nice if many participation models would exist, because that is much better secured and because value is created locally. But I think we don't have the time. We always used to demand that the utilities should do something [in the area of renewables] and now that they are at finally pulling themselves together, I don't think one should oppose that." [17:51]

Only in one case was the citizen ownership model in itself described as the main rationale of the project.

> "The priority issue is that the citizen himself (herself) also is a power producer. That is a daily need of life, that doesn't only encompass food, drink and shelter, but above all also energy. [We want that] the citizen actively picks up on this and says: I take responsibility for this and I want to join in here." [11:10]

Capital mobilisation:

During the 'pioneer phase' of wind power in the 1990s, when wind power was still new to Austria, its economic viability was uncertain and partly contested. Thus conventional forms of capital acquisition for the required investment, such as bank loans, were not available to people interested in developing wind farms. A citizen ownership or citizen participation model thus provided a way for mobilising a sufficient amount of capital for installing the first wind turbines in Austria. These models, copied from other countries such as Germany or Sweden, attracted people who were interested in supporting the diffusion

of renewable energy technologies and were thus prepared to invest some money in wind turbines, at a time when returns on such an investment were still somewhat uncertain. [10:7, 10:50, 14:42, 16:2, 16:23, 17:9, 21:9]

> "In the early 90ies in Austria it wasn't possible from our point of view to finance the totally new wind power [technology] via bank credits. Either you had the equity capital, which we (…) didn't have, and therefore it was generally fascinating to try that with people that wanted to invest in this technology." [16:2]

Meanwhile wind power is reasonably well established, so that other modes of financing are available. Nevertheless various models of citizen ownership have persisted, albeit some of them have undergone modifications (e.g. transformation into a corporation, see section 3.1.1).

The situation is somewhat different in the area of photovoltaics. On the one hand PV plants are quite variable in scale, so small to medium sized installations can be set up at much lower start-up costs than wind turbines. On the other hand, the costs for PV plants relative to the amount of power produced are still much higher than those for wind turbines and also to this day feed-in tariffs and other subsidies hardly provide sufficient support to make them profitable (see section 3.3.1). Therefore various models of citizen ownership or citizen participation are still seen as a way of capital mobilisation and risk distribution for implementing PV plants. [13:1, 13:32, 18:1, 18:20]

Participation, decentralisation and regional ties

As mentioned before, most project developers of citizen ownership models do also point to special merits of such ownership structures, especially highlighting issues of participation, democratisation, decentralisation and the establishment of regional ties and regional value creation. Also, in many cases efforts are made to specifically involve local residents as co-owners (see also section 3.1.2), thereby also increasing the degree of identification and acceptance. In Upper Austria these local ties are still felt very strongly in the area of wind power. Here citizen ownership models have remained strictly local (small companies owning one or two wind farms in the immediate surroundings) and interviewees note that selling the wind farm to a larger company would seem to them as a kind of betrayal. A small number of interviewees also point out that joint ownership of PV plants may also have a positive effect on local community ties. [11:7, 14:38, 17:44, 18:25]

> "In the small region people know each other, meet each other almost every day, yes, they may even be together during the weekend in the pub and discuss, or they are on the church square and discuss. So this project is very conducive for the community for the cohesion in the entire region." [11:7]

Political leverage, awareness raising and local acceptance

Finally, project developers of citizen ownership models also point to the positive effects collective citizen ownership can have on the promotion of renewable energy technologies. First of all this can include a political leverage effect, as a large number of participating individuals has the potential to affect political decisions in energy issues, especially at the local and regional levels [10:20, 16:45, 17:4, 21:46].

> "It's a huge difference whether I approach a federal state politician and say, well here we have a few companies that want to build something. Or I tell him (…) in Lower Austria there are five to six thousand people involved in wind power. That is a different message for a federal state politician than saying it's seven companies that want to build something." [21:46]

Secondly, some interviewees also point out that offering co-ownership of renewable energy installations to citizens can contribute to awareness rising for such technologies. Finally, especially in the area of wind power, *local* citizen ownership, is also seen as having a positive effect on the acceptance of wind farms. [11:10, 10:15, 10:20, 13:13, 15:11, 15:39, 15:40, 16:44, 17:1, 17:9, 21:19].

> "For us it is very important that people participate locally. After all, on the one hand they have to identify a bit with renewable energy and wind power and that can be done best by an installation in the village (town) or in the surroundings. And of course (…) we are also dependent on acceptance. Many people say, yes, I know, Ok, I very much support wind power or whatever, but not in our place. And this principle can only be broken by getting people on board locally." [15:11]

Nevertheless issues such as political leverage, awareness rising and local acceptance are usually characterised as positive side effects and not as the main rationale for a citizen ownership model.

3.4.2 Appraisal of interests and rationales of participating citizens

This section deals with the interests and rationales on the side of involved citizens (shareholders, providers of small loans, etc.) *as appraised by the interviewees* (project developers and other people centrally involved). The data thus differs from the previous section insofar as this is not a self-description but an outside assessment of motives of others.

Combining ecological ideals with economic investments

Several interviewees see a combination of idealistic, environmental goals and more down-to-earth economic interests of making a reasonable – albeit not necessarily exceedingly profitable – investment as the main factor motivating people to participate in a citizen owned green electricity plant. The emphasis in the combination of environmental and economic motivating factors has, however, certainly varied across time and between different technology areas. Thus, idealistic factors had a stronger role to play in the early days of wind power development in Austria in the 1990s. Economic viability was all that was expected (or hoped for) on the financial side. Meanwhile citizen ownership models in the area of wind power are increasingly seen as an investment that is judged in terms of its economic performance and that comes with an environmental added value. [10:30, 10:50, 14:22, 15:5, 16:6, 16:13, 19:24, 21:6]

> "All processes had to be professionalized and of course with the 3000 shareholders we have today the class of investors has changed. What in the beginning was the non-materially oriented investor meanwhile has become the professional investor for whom two things are important: Ecology still [is important] – I don't want to say that has weakened very much. It is also the ecologically oriented investor who knows what happens to his money. But of course he also expects professional structures like he is used to in other areas." [16:13]

For some prospective associates the limited tradability of shares (companies organised as corporations are not listed on the stock exchange) also constitutes a serious drawback [12:34]. Nevertheless the original 'pioneers' still acting as company directors today are cautious about turning shareholding of the companies into a standard investment product traded at the stock exchange and hold certain expectations towards the motives of (prospective) associates.

> "The investor should not see it as a speculative element but rather as a long term investment. One invests into the company in order to be part of clean power production on the long term and because of the black figures." [16:16]
>
> "Some people ask, how high is he return? Only 5%, but I want at least 6 or 7%. Now, we don't want to have such people." [15:31]

In technology areas such as PV and biogas, where economic viability is more difficult to achieve under given framework conditions, idealistic, environmental motives still have an important role to play to this day.

These environmental motives have of course always encompassed a wish to contribute to the diffusion of renewable energy technologies. The discourse frames this goal has been embedded in have, however, shifted in emphasis from providing an alternative to nuclear power (1990s) to the present concerns over climate change mitigation.[5] Also the frame in which assessments of economic soundness may be changing in the light of the financial crisis of 2008 (and following years), as people have become more interested in the long-term economic value and security rather than going for short term speculative profits [17:16].

Identification

Another aspect that is named as being an important motivational factor is a certain degree of identification with the green electricity plant. This factor appears to be more salient for small companies with only one plant in a specific village rather than for companies operating several plants in various locales. Also, like environmental values, it tends to be more important where profitability expectations are or were relatively low (early developments in wind power, current developments in PV and biogas). Identification may involve different aspects: A feeling of pride for the green electricity plant as a distinctive element of the village, trust and support for the project developer which people may be personally acquaintance with, or a satisfaction stemming from the physical tangibility of one's investment [10:8, 14:26, 20:13, 20:15, 20:20, 20:21]:

> "One maybe also participated [in our first wind farm] because [the initiator] was regarded very well in his hometown, as a trustworthy person and as someone who is realizing his dream, so to say." [10:8]
>
> "Identification is the crucial motivating factor, when I know I take some money and that isn't a savings account but rather I am in fact co-owner of a plant, of a real physical work, yes, a real estate, so to speak." [20:21]

Some issues of identification also appear to be tied up with the specific legal forms chosen for citizen ownership of a green electricity plants. For example, several associates were initially very critical of the conversion of companies originally organized as a limited partnership (GmbH and Co KG) or a group of such companies to a corporation and felt they would not be able to identify with such a legal form. They tended to associate corporations with the image of a purely profit seeking company without any regional ties or environmental values. By contrast, the legal form of a cooperative was once characterized as particularly conducive to identification with the company. [16:12, 16:13, 16:34, 20:20, 21:6, 21:27]

Self sufficiency

Some interviewees also note that the idea of self-sufficiency (generating one's own electricity) can be attractive for people. At the same time some of them acknowledge that this motive can also be problematic, as green electricity plants typically feed in to the grid rather than directly supplying its owners with electricity. [14:41, 15:37, 19:24]

[5] Providing an alternative to nuclear power may, of course, have become an important discourse frame once again after the nuclear accident in Fukushima in March 2011. However, all interviews this report is based on were conducted before this incident.

> "Of course if one has e.g. a PV plant at home, that really is my own electricity, so to speak, that gives you the feeling of independence. But if I only feed in via the grid of EVN [a regional utility company] (…), then it is difficult for me to see an additional, personal advantage with respect to [energy] security. Because if EVN doesn't like me, then they will disconnect me, so to speak. Many people have this psychological barrier. And one thing also is clear (…), I invest money in something, that is principally a good thing, but this direct relation is still missing." [15:37]

One may also interpret this as another aspect of identification: People would feel a stronger relation to the power plant they co-own if the technical set-up would allow them to directly draw electricity from their plant.

In some citizen ownership or citizen participation models an opportunity was provided to indirectly consume electricity from the plant, e.g. by selling the electricity to a particular green electricity utility company and providing a voucher for a certain amount of free electricity for participants if they are customers of that utility. [13:21, 15:41]

Participation and community ties

Some interviewees also see a wish to participate and (co-)shape future developments (especially in energy issues) as a factor contributing to a willingness to become an associate. Furthermore, especially in the context of small projects based in a particular village, some interviewees also acknowledge the importance of community ties for motivating people to participate [11:32, 18:24, 19:13, 20:13, 20:20].

One interviewee, however, also suggests that people can also be frightened off by too broad participation and that some people prefer small projects with a small number of co-owners. Another person notes that interest in participation in company-decisions dwindled after the pioneer phase of setting up the plant was over. [15:8, 18:12]

> "We also always had our annual assemblies and in the beginning very many people attended, especially in the pioneer phase, because after all we were the first wind farm in the area. But that declined soon, then hardly even 10% of the people came, even though we actually advertised it quite strongly. Because they said, well, now the wheel [turbine] is running, what decisions should I now participate in? I can't decide if the wind is blowing or not." [15:8]

Pioneering spirit

The last quote already hints at a further factor that may have contributed to motivating people towards engagement in early development phases, namely the attractiveness of being involved in an innovative project and the excitement of the 'pioneering spirit' that accompanied them, especially in the early phases of wind power development. During this 'incubation phase' individual associates could in some cases contribute substantially to the technical, economic and legal set up of the plants. Furthermore the novelty of such projects and the pioneering spirit appears to have been attractive to some people [10:30, 15:4, 15:6, 15:23, 16:4].

> "I think the first people also saw it very strongly as being part of an innovative project. Later it increasingly also was about something lucrative about doing something renewable, ecologically sensible, but I would say it as an added value for most people." [10:30]

3.4.3 Dynamics of interests and rationales

The previous section has already pointed towards some changes in the interests and rationales of the people involved in collective ownership of green electricity plants. In particular it was already noted that the salience of environmental ideals and economic interests has varied across time and between different technology areas. Here some further notes will be made concerning changes of interests and rationales over time.

Recruitment channels and legal form

First of all, the groups of people that can be mobilized for citizen ownership of renewable energy plants and their interests and rationales for involvement certainly depend on the recruitment channels that are used by project developers. For example, in wind power a certain shift has occurred from reliance on personal contacts and word-of mouth, concentrated in the village where a wind farm is to be set up, to larger marketing campaigns, directed at people spread out across Austria. This has contributed to an increase of the proportion of associates with interests that are more strongly investment driven and less oriented towards environmental ideals, and aspects of identification. The conversion of some of the companies into corporations appears to have given some further impetus to this development. [10:30, 16:13, 21:29]

> "Of course with this modified breadth of our audience we are also entering a market that is similar to the financial market, where one is also judged in relation to shares of Verbund [Austria's largest electricity provider] or bonds from a German company or to a investment fund product (…). And of course that changes something. And now increasingly people come that also have expectations concerning financial returns, that see it more as an investment." [10:30]

Framework conditions

Also institutional framework conditions, in particular the level of public financial support, appear to have an influence on the groups of people that are attracted to citizen ownership of renewable energy plants. Not too surprisingly, under difficult and/or uncertain framework conditions (early phase of wind power, current situation in PV and biogas) such initiatives mainly attract people who are motivated by idealistic factors such as environmental ideals, identification and the pioneering spirit. The more framework conditions allow for the profitable operation of a green electricity plant, the more people with business-oriented motives are also attracted. [10:30, 10:50, 12:8, 13:33, 20:15]

Also macro-level societal discourses, such as discussions over nuclear power and, more recently climate change and the financial crisis, can shape the context in which people find it desirable (or not) to engage in a citizen owned renewable energy project. [17:16, 21:9, 21:29]

3.5 Regional comparison

Especially in the area of wind power, some differences can be made out between different Austrian federal states with respect to the extent and form of citizen ownership models. For a start, wind turbines have been set up in six of the nine Austrian federal states with the largest shares in Lower Austria (557,3 MW) and Burgenland (369,2 MW). Styria (49,8 MW) and Upper Austria (26,4 MW) also have an appreciable amount of total installed capacity, while in Vienna (7,4 MW) and Carinthia (0,5 MW) very

little wind turbines have been set up.[6] However, with very few exceptions, citizen ownership models can only be found in Upper and Lower Austria.[7]

In Upper Austria all of the 10 wind farms currently in operation are based on citizen ownership models, typically in the form of a limited partnership or a limited liability company (GmbH & Co KG or GmbH). These companies operate at a local level, operating a maximum of two wind farms in their immediate surroundings. These wind farms are relatively small - apart from one exception the installed capacity of a single farm does not exceed 2 MW (two to three small or one large wind turbine).

In Lower Austria citizen ownership and citizen participation models also play an important role but co-exist with utility ownership. Furthermore citizen ownership takes a different form, typically as shareholding in a company that operates several wind farms of varying sizes in different locations. More than half of total installed capacity in wind power (approx 300 MW of 557,3 MW) is owned by three companies that offer various forms of citizen ownership (two corporations and one group of limited partnerships). They also started with small local projects but have meanwhile grown and operate wind farms in various locations across Lower Austria and partly also outside of Austria. Furthermore the regional utility company in Lower Austria started to operate wind farms in 2000 and now owns seven wind farms with a total installed capacity of 116,3 MW (i.e. about 20% of total installed capacity in Lower Austria).

By contrast, in Burgenland all wind farms are owned by a 100% subsidiary of the regional utility company. In Styria most wind farms are owned by large private investors, partly in co-ownership with local utilities.[8]

One may, of course, ask why such different ownership patterns have developed in different parts of Austria. The mere volume of wind power implementation in different regions certainly depends strongly on climatic and geographic conditions (average wind speed). These conditions are known to be best in Lower Austria and Burgenland. This may, however, also have influenced ownership patterns, as utility companies, accustomed to large scale power plants, only get engaged in regions where large-scale plants are viable. Indeed, Lower Austria and Burgenland are the only federal states where the respective regional utilities have engaged in wind power production at a significant scale. Also, companies based on citizen ownership in Lower Austria were able to develop an increasing number of increasingly large wind power projects. Conversely, the comparatively small wind farms that could be set up in Upper Austria may have lent themselves to strictly local citizen ownership models. [17:41, 21:7]

However, additional factors explaining ownership patterns were also mentioned in interviews. Some interviewees referred to differences in the mentality of people, with regional ties being more important to people in Upper Austria [17:41, 16:42]:

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[6] Source: IG Windkraft 2010 *Windenergie in Österreich 2010*, available for download at http://www.igwindkraft.at/index.php?xmlval_ID_KEY[0]=1047 as of 20 December 2011

[7] One wind farm in Vienna is owned by the utility company oekostrom AG, a joint corporation not listed at the stock exchange. Furthermore one of the wind power companies with a citizen ownership model owns 20% of the company operating the largest wind farm in Styria (22,8 MW installed capacity).

[8] Additional sources: Map of the IG Windkraft at http://www.igwindkraft.at/landkarte/ accessed 20 December 2011 and http://www.regioenergy.at/Windkraft, accessed 20 December 2011

> "I think in Upper Austria there would not be much wind power, if the issue of citizen participation wouldn't play a part in it. That is strongly rooted there. (…) It would have been looked at extremely critically, if somebody from outside would have wanted to do that. If a company from Burgenland, also if it had been in private hands, would have come to build a wind farm in Upper Austria, that would have almost been an impossible thing." [16:42]

Furthermore it was suggested that people in Burgenland see utility ownership of wind power as an indirect form of citizen ownership:

> "One can also see the AWP, the subsidiary company of BEWAG [regional utility company], as a participation model, because it actually belongs to the federal state. (…)That also strongly depends on the political culture, that it is perceived that way in Burgenland.
>
> [interviewer: These are our wind farms because they are owned by the federal state and therefore they belong to all of us?]
>
> Yes, in Burgenland I am sure, if you talk to people, that is the way things are." [21:7]

Another factor that was referred to as relevant is support or opposition towards wind power from key actors in the federal states, especially regional utilities, members of the federal state government and regional energy agencies. In particular, the regional government of Upper Austria is seen to have turned against wind power in decisions concerning spatial planning that require a weighting of interests (landscape protection vs. climate protection). The regional government of Lower Austria was criticized for not supporting wind power development by designating preferential areas for its development. [10:76, 12:37, 14:53, 17:31, 17:33, 17:58, 21:7, 21:38]

4 Country Case Germany

4.1 Ownership and participation models

A broad array of different ownership and participation models can be found among collectively owned green power plants in Germany. Two citizen ownership models have proved particularly successful and spread out considerably, on the one hand citizen owned wind farms ('Bürgerwindparks') and on the other hand citizen power plants organized as cooperatives (typically but not exclusively in the area of photovoltaics). Seeing one of these models is defined by its technological basis (wind power) and the other by its specific legal form (a cooperative) these are in principle overlapping categories. Nevertheless the emergence and diffusion of Bürgerwindparks and of energy cooperatives can be separated analytically, seeing that only very few collectively owned wind farms take the legal form of a cooperative.

4.1.1 Bürgerwindparks

A number of authors have already pointed to the important role of bottom-up initiatives setting up citizen owned wind farms in the establishment of wind power in Germany (Bolinger 2001; Byzio et al. 2002; Toke et al. 2008). In Germany the term 'Bürgerwindpark' (citizens' wind farm) has become widely used to refer to such citizen-owned wind farms. It is, however, not an easy task to estimate the share of installed capacity owned by such initiatives, not least because different actors have different understandings of what constitutes a 'Bürgerwindpark'. As a first rough indication one may take that, according to study by trend:research (trend:research 2011), more than half of Germany's installed

capacity in the area of onshore wind power (51,5%) is owned by private citizens as of 2010 (offshore wind across all groups of investors is still negligible).

A 'Bürgerwindpark' may, however, be defined more narrowly than a wind farm that is owned by a group of private individuals. Most importantly, several interviewees emphasise that in their view a wind farm referred to as a Bürgerwindpark needs to be exclusively or at least predominantly owned by the *local* population. Another possible criterion for a Bürgerwindpark is that the initiative for setting up the wind farm is taken by a local group of citizens rather than by an outside project developer (who may then offer ownership shares exclusively or preferentially to the local population). In particular, some interviewees decidedly object to referring to co-ownership with large investors (e.g. a large investor offering a small share of a large wind farm to local residents) as a Bürgerwindpark. Nevertheless, usage of the term is by no means consistent and is increasingly used (or *mis*used in the eyes of those advocating a narrower understanding of the concept) for other organisational setups. [4:14, 4:15, 8:17, 8:19, 9:9, 9:10]

In the narrow definition of the term outlined above, Bürgerwindparks mainly established themselves in the federal states of Schleswig-Holstein and Lower Saxony along the North Sea Coast of Germany from the early 1990s onwards. An important trigger for the emergence and further diffusion of such wind farms was the electricity feed-in law introduced in 1991, for the first time enabling the economic operation of wind farms by independent power producers (see section 4.3.1). [4:1, 4:7] (see also Byzio et al. 2002)

A particular concentration of activities could be noted in North Frisia, a district of Schleswig Holstein in the northernmost part of Germany. Here the first citizen owned wind farm, 'Bürgerwindpark Lübke-Koog', was set up by a group of farmers. After an outside investor had already set up a wind farm in this village, several farmers became interested in setting up wind farms on their own land. Following a suggestion from the municipality, these farmers teamed up to set up a joint wind farm and, in view of the considerable size of the project, also decided to open up the project to further interested citizens of the village. Through word of mouth the concept quickly spread to other municipalities and citizen groups in North Frisia, such that several similar projects were set up in the following years. Interestingly, in spite of the proximity to Denmark, where collective citizen ownership of wind farms had been an important organisational model in the 1970s and 1980s, interviewees report that these models did not form a source of inspiration. [4:1, 4:4, 4:7, 8:1, 8:5, 8:8, 8:9, 9:11]

> „It was more the technological innovations that played a role at that time for orienting oneself towards Denmark and of course the legal framework with the feed-in remuneration. But that there really was contact and that groups went across and said, oh look, this is how a Bürgerwindpark works in Denmark, we'll also set up something like this in Germany, I didn't observe that anything happened in that way." [4:4]

The dominant legal form of such Bürgerwindparks (both in the narrower sense outlined above and also in more investment-oriented models) is that of a limited partnership (GmbH & Co KG). In some cases also cooperatives or general partnerships (Gesellschaft bürgerlichen Rechts, GbR) were formed, but these are generally considered to be less favourable in terms of tax and liability issues. Furthermore one interviewee also points to the dual structure of the limited partnership as an advantage, with the limited liability company (GmbH) in charge of day-to-day management decisions and the limited partners

(Kommanditisten) as owners of the wind farm that are consulted only with respect to fundamental company decisions. [2:2, 2:4, 4:12, 8:10, 9:15]

> „As limited partners they are the owners, they also make the substantial decisions at the owners' assembly, so for example whether there is a [dividend] payout or not, but they don't need to see about the operational business, that is repairs, insurances, banking business and all that." [2:2]

4.1.2 Energy Cooperatives

Energy cooperatives in Germany have a history dating back to the early twentieth century when cooperatives were set up to assure electricity provision in rural areas, especially in Bavaria (Flieger & Klemisch 2008). In recent years a new generation of cooperatives has emerged in the area of renewable energy, especially photovoltaics. According to Holstenkamp and Ulbrich (2010) the number of cooperatives producing energy from PV plants has risen from four in 2007 to an estimated 200 in September 2010.

Most of the newly emerging energy cooperatives are active in the area of electricity generation from PV plants. However, energy producing cooperatives also exist in the areas of wind power, biogas and local district heating networks (biomass). Furthermore some utility companies offering green electricity are also organised as cooperatives and in addition to that there also are some cooperatives in the area of trade with components for renewable energy plants (e.g. PV panels), power supply, energy savings via contracting and even research. In some cases cooperatives start off with a PV project and later also become active in other areas.

> „Well, energy cooperatives often start with a PV plant. There are many reasons for that, one important reason is simply that a PV plant is quite easy for us in the preparation phase, it is quite clear how it can be represented in economic terms and therefore our cooperative can be registered within an acceptable timespan." [6:2]

As mentioned above, in the area of wind power the 'standard model' for collective citizen ownership is a limited partnership (GmbH & CO KG), but some citizen owned wind farms also take the legal form of a cooperative. Furthermore both in Bavaria and in Baden Württemberg there are currently plans to set up citizen owned wind farms which are jointly owned by several cooperatives – an ownership structure that facilitates both identification (local cooperative) and allows raising a sufficient amount of capital for a wind farm. [5:13, 6:2, 7:15]

Quite generally, energy cooperatives operating green electricity plants often face the difficulty of being large enough to operate profitably, due to certain level of start-up costs and administrative costs (in particular auditing costs), while at the same time facilitating identification by focussing on (small) local projects. Broadly speaking two different approaches exist for solving this dilemma. One consists of supporting the development of several local cooperatives each located in a specific village or town. Specialised support organisations assist local initiatives in funding and running a local energy cooperative (see section 0). These cooperatives may then also join forces for larger projects such as wind farms.

A different approach consists in setting up a larger energy cooperative that operates several plants in different locales. One example is the ‚Solar-Bürger-Genossenschaft' in Baden-Württemberg. This cooperative intends to act as an umbrella structure which different local initiatives can use to set up their local projects:

> „The Solar-Bürger-Genossenschaft differs from most PV cooperatives in that it is not restricted to a narrow region, a town or a village. Rather, it is available as a platform for different local initiatives that only wants to set up one, two or three plants. Setting up a cooperative would be too costly or time consuming for them, they don't want to go into all that effort. The Solar-Bürger-Genossenschaft offers itself as an umbrella organisation to such groups. They then have to raise funds themselves and as far as possible also secure the deal for the roof [for the PV plant], but they get some support from us." [Burghard Flieger, board member of Solar-Bürger-Genossenschaft]

In this case membership in the cooperative and investment in a particular (local) power plant are separated; individual projects are financed via subordinate loans (Nachrangdarlehen)). [1:28, 3:14, 3:33, 7:4, 7:13]

One particular feature of cooperatives generating electricity is that they usually operate in a grid-integrated manner, i.e. they sell their electricity to the grid. This means they cannot provide benefits in kind to their members, as is usually the case for cooperatives. Some interviewees see this as somewhat problematic and would therefore favour models enabling direct electricity consumption by cooperative members. Others consider this issue unproblematic. [3:15, 6:12, 7:27]

Concerning the strong increase in the number of energy cooperatives since 2008, interviewees name a number of factors that may have contributed to this development:

- Assistance from specialized support organizations has become available. Some organizations in fact actively propagate the establishment of energy cooperatives (see section 0) [1:9, 7:33, 7:34]
- Cooperatives are exempt from prospectus requirements which were introduced in 2005 and apply to other forms of collective citizen ownership of renewable energy plants [1:40, 3:7]
- Some changes made to the cooperative law in 2006 made it slightly easier to set up and run small cooperatives (e.g. lower number of people required to set up a cooperative, reduced audits for small cooperatives). [1:40, 7:33]
- Compared to private partnerships (Gesellschaft bürgerlichen Rechts, GbR), another very wide spread model for collective citizen ownership of PV plants in Germany, a cooperative is much better suited for setting up several plants (easy entry of additional members, liability of cooperative members can be restricted to their capital contribution) [1:40] (see also Rutschmann 2009)
- In view of the financial crisis several people consider cooperatives to be an attractive alternative form of economic activity, based on principles of solidarity and democracy [7:34]

4.1.3 Drawing boundaries

With the burgeoning number of citizen owned power plants and the diversity of models that have emerged, including more commercially oriented forms that are presented as 'green investments', it may not be too surprising that several actors have started to draw boundaries between what they see as genuine citizen power plants and models they perceived to be false or questionable imitations.

Cooperatives as more democratic forms of organisations

For one thing, advocates of cooperatives point to particular benefits of this legal form. One interviewee makes a case for cooperatives arguing that they contribute particularly strongly to regional value

creation. In general, however, interviewees in favour of cooperatives emphasise the democratic decision making structures involved, in contrast to other legal forms where voting power is often dependent on the volume of an individual's investment and/or many decisions are taken by an executive board without consulting all shareholders. [1:41, 3:29, 7:10]

> „ Of course that hast the really nice advantage that cooperatives really are democratic models. Every shareholder has one vote, or every comrade (Genosse) so to speak. Compared to other types of enterprise that is quite a crisis-proof investment. Indeed, that basically is the most democratic type of enterprise I would think." [1:41]

Another interviewee, however, is sceptical whether grassroots democracy as it is practiced within cooperatives is a practical approach towards setting up citizen power plants. [2:3, 2:38]

> „The legal form [of a limited partnership] combines that the investor participates in [setting up] renewable energies, but without having to concern himself with the plants. Most participants also think that's a good thing but don't have the time to really take care of it. (…) Also there are not so many things in the company in the day-to-day operation that require participative management (…). If you participate in the decision whether the nail should be knocked in on the left or the right side, that doesn't provide any advantage to the people." [2:3]

Moreover, also within the field of cooperatives several actors are keen to distinguish between what they judge to be genuine bottom up activity and top down interventions. Thus several interviewees are rather critical of the activities of EnBW, one of the four large utility companies in Germany, to support the development of small energy cooperatives (see also section 4.2.3). [1:8, 1:10, 1:23, 2:9, 3:27, 4:13, 7:28]

Bürgerwindparks: local rooting vs. investment oriented models

Also in the area of citizen owned wind farms interviewees see a need to differentiate between the original model of a Bürgerwindpark based primarily on the involvement of the local and regional population and more investment oriented models in which shares are offered to geographically dispersed individuals. Apart from the geographical scope of participation some interviewees also name further criteria defining a Bürgerwindpark, such as the initiative emerging from the local population and the wind farm being an independent enterprise rather than being based on co-ownership with a large investor. [4:11, 4:14, 4:15,8:17, 8:19, 9:9, 9:10]

> „I know, in North Rhine Westphalia there also are so-called citizen wind farms, there the municipal utility company set up a wind farm and one of the ten turbines was the citizen plant. That isn't a citizen wind warm in my eyes. That's a big wind farm with a small citizen participation." [9:10]

4.2 Actor roles

4.2.1 Collective citizen ownership initiatives

One interesting question concerning collective citizen ownership of green electricity power plants is to what extent they have contributed to the diffusion of renewable energy technologies in Germany. According to a study by trend:research, private citizens and farmers own a remarkable amount of total installed capacity of renewable energy technologies – just more than half of total installed capacity as of 2010 (50,7%) (trend:research 2011). In the area of wind power the ownership share of this actor group amounts to 53,3 %, in the area of photovoltaics even 60,5 %. It must be said, however, that this study does not differentiate between individual ownership (e.g. PV panels on single-family houses) and collective ownership, e.g. in cooperatives or limited partnerships. Furthermore the study does not

differentiate between locally rooted and geographically dispersed models of citizen ownership, which several interviewees consider an important distinction between genuine citizen power plants and investment oriented approaches.[9] Nevertheless these figures serve to get an idea of the significant role of (collective) citizen ownership in the area of renewable energy in Germany.

Also some interviewees point to the important role of initiatives setting up collectively owned green electricity plants for the diffusion of these technologies, especially in the early stages of the diffusion of renewable energy technologies. At least in the early phases, several initiatives setting up collectively owned power plants were not so much driven by profit-motives but drew intrinsic motivation out of contributing to a more environmentally friendly system of energy provision (see also section 4.4) and therefore contributed to market formation when other actors had not yet entered the field.

> "Well, up till now [citizen participation models] had an exceedingly high relevance. That we managed in Germany within twenty years to move from 5 % renewables to 17 and that within the next years we will have around 30, that was quite decisively promoted by citizen participation models and by the commitment of citizens, that quite consciously invested in this area. The large utilities hardly made any contribution to this. In future the market will be much broader, but citizen participation will also have a role to play." [2:46]

Several interviewees expect the share of citizen power plants to diminish over the next years as a process of commercialisation takes place. Some interviewees, however, also see a growth potential for citizen power plants specifically in the area of energy *cooperatives,* a prognosis that may be supported by the recent boom of activities in this area. Furthermore, considering increasing problems with the siting of wind turbines, one interviewee also expects local ownership of wind turbines to grow in importance in the future, as this is seen as a means to increase local acceptance. [2:46, 3:51, 3:52, 5:27, 8:12, 7:42, 9:28]

Next to these direct effects on the diffusion of renewable energy technologies by setting up power plants, initiatives in the area of citizen power plants may have some indirect effects contributing to the diffusion of renewable energy technologies. First of all some interviewees pointed out that such initiatives made a strong contribution towards awareness rising for and acceptance of renewable energy technologies.

> "The [Bürgerwindparks] had an important role to play, because they contributed to high acceptance in the region for wind power. Because acceptance simply is very high if one sees that apart from the ecological benefit there also is a monetary benefit in the region, there is value creation." [4:28]

> "Well, since the cooperative model is gaining ground [renewable energy] plays a role in public perception. Seeing that we alone already have 5.500 active members (…), thereby I of course have multipliers." [6:24]

One interviewee also suggests that participation in a citizen owned power plant bridges the gulf between energy consumption and production and thereby produces higher awareness for energy issues in general among shareholders of a power plant. [1:25, 1:31, 4:28, 6:24]

Secondly initiatives in the area of collective citizen ownership of green electricity may have had a certain role to play in creating political leverage for supportive policy frameworks for renewable energy, in

[9] It must be noted, however, that investment funds and banks are listed as a separate ownership group owning 11% of total installed capacity as of 2010.

particular feed-in regulation. While most interviewees are rather sceptical towards the lobbying power of these initiatives in *establishing* this form of policy support, one interviewee emphasises the contribution of citizens engaged in collectively owned plants in *maintaining* this legislation and defending it against attempts to strongly reduce feed-in tariffs (e.g. participation in protests against unfavourable amendments of feed-in regulation). At the same time another interviewee suggests, that in case feed-in regulation dramatically changes for the worse, citizen initiatives may in fact once again constitute the actor group setting up green electricity power plants *in spite of* unfavourable framework conditions, due to the intrinsic (rather than economic) motivation of several of these groups. [3:51, 4:26, 4:28, 7:39, 8:38, 9:26]

4.2.2 Support Actors

Several organisations exist in Germany that provide support for initiatives in the area of citizen power plants. This is also visible from the large number of manuals that have been published that offer guidance on setting up such collectively owned plants. In 2011 alone, three manuals were published specifically dealing with energy *cooperatives* (DGRV & AEE 2011; George & Berg 2011; Staab 2011) and another one is due to appear in 2013 (Seiverth et al. in press). In addition to that a manual on Bürgerwindparks has been published (windcomm 2010, see also section 4.2.2 below) and some more manuals have been published dealing with citizen power plants in general (DAKS 2006; EnergieAgentur.NRW 2011).

Support actors in the area of energy cooperatives

Over the last few years a remarkably broad array of organisations has developed support services directed specifically at energy cooperatives.

> „Well, that is actually quite funny, in the area of energy cooperatives one can say meanwhile there almost is a kind of competition. That is, meanwhile there are several providers that offer similar services, similar support." [3:27]

In several cases these organisations were set up with the specific goal to support energy cooperatives, in some other cases existing organisations in the cooperatives sector (such as auditing associations) developed specific support programmes for energy cooperatives.

Auditing associations, however, appear to play a somewhat ambivalent role in supporting the establishment of energy cooperatives. Several interviewees note that for a long time auditing associations were indifferent or even obstructive to the establishment of energy cooperatives. Different reasons are named for this stance, in particular auditing associations not being reliant on new members and actually fearing the burden of having a large number of small cooperatives as members. One interviewee also sees a rather conservative sentiment prevailing in auditing associations, resulting in reservations towards cooperatives characterised by a communitarian spirit and oriented towards social and ecological goals. Interviewees, however, concede that meanwhile several auditing associations have started to support the establishment of new cooperatives in general and sometimes energy cooperatives in particular, e.g. by providing counselling services, templates for statutes or reducing start-up and auditing costs. [3:11, 3:27, 5:18, 6:7, 7:35]

One of the most important types of support is *know-how development, training and counselling* in order to enable individuals to set up and run energy cooperatives. Some interviewees emphasize that the first important step in this direction is familiarizing people with the cooperative as a business model.

> „Well, in the beginning there is the knowledge on what is required generally or what advantages, what opportunities are available via the cooperative [as a legal form], that is not very widespread knowledge." [3:24]
>
> „Of course we still have a communication gap, so to speak. The cooperative model simply was not present (visible) enough over the last 20, 30 years (…) and therefore the model requires explanation." [5:3]

Innova, an organisation supporting the establishment of cooperatives in various sectors, together with the German Protestant association for further education (Deutsche Evangelische Arbeitsgemeinschaft für Erwachsenenbildung) has set up a specialized course, training people to become project developers of energy cooperatives. Since its beginning in 2010 four instances of the training course have been carried out, the fifth course starting in March 2012. The courses involve several days of training and additional online learning schemes for about 25 participants each.[10] Further training courses directed primarily at municipal actors (mayors, employees of public institutions, etc.) are offered by the University of Applied Sciences Mittelhessen (Technische Hochschule Mittelhessen).[11]

Furthermore, in the federal state of Baden-Württemberg, counselling services and some financial support for establishing a local energy cooperative is also offered by EnBW, one of the four large utility companies in Germany. Several interviewees, however, are quite critical of this programme and see it primarily as an image campaign designed to commit mayors to the utility company. They question whether the resulting cooperatives, which often are very small, will survive on the long term. [1:8, 1:10, 3:27, 6:3, 7:28]

A related but slightly different form of support consists of *providing ready-made concepts and templates* that assist in setting up an energy cooperative. For example Agrokraft, a company that grew out of the Bavarian farmers' association (Bayerischer Bauernverband), has developed a package that, together with a half-day workshop enables citizen groups to start off an energy cooperative in their village.

> „Well Raiffeisen developed the banking system for rural areas, the cooperative banks, and he actually established a structure how one can set up a bank in every village in a standardised way. Now we said, just like Raiffeisen said for each village its bank, the bank needs to see the church tower, we gave every village its Raiffeisen energy cooperative." [Michael Diestel, manager and founding member of Agrokraft]

The package consists of templates for various legal documents such as cooperative statutes and various contracts but also software for administrating the cooperative and design elements for an outside appearance (website, letter paper etc.). A similar package is also provided by the auditing association Weser Ems (Genossenschaftsverband Weser-Ems) in the federal state of Niedersachsen (Holstenkamp & Ulbrich 2010).[12]

[10] See http://www.energiegenossenschaften-gruenden.de/
[11] See http://www.thm.de/hzw/weiterbildung/angebots-portfolio/zertifikatslehrgang-kommunaler-energieprojektberater.html
[12] See http://www.gvweser-ems.de/gvwe/DE/aktuelles/archiv-meldungen/24_2008/85_gvwe_15_photo.php

Finally, two organizations were set up recently to *support networking and exchange* between energy cooperatives. At the regional level, the association of energy cooperatives in Baden Württemberg (Verband der Energiegenossenschaften Baden-Württemberg) was established in 2009. This association is intended to serve as a platform for exchange, for developing joint projects (e.g. larger installations such as a wind farm) and for organizing further training. Furthermore the association cooperates with EnBW in the area of providing counselling and start-up support for new energy cooperatives (see above). At the national level, the ARGE Energiegenossenschaften (working group of energy cooperatives) was formed in 2010, mainly for facilitating networking, exchange and mutual empowerment.

Most actors supporting the establishment of energy cooperatives not only want to contribute to the further diffusion of renewable energy technologies but specifically want to promote the organizational model of cooperatives. This is supported by two main arguments. Firstly they emphasize the potential of cooperatives in contributing to regional value creation and secondly they underline the aspect of democratisation and empowerment (see also section 4.1.3). [5:11, 3:4, 3:29, 7:11]

> „Regional value creation, which is seen as the backbone of every society by smart economists, (…) if you look how regional value creation is organized in different [organizational] formats, (…) then in the second or third step one will always turn towards the cooperative format and realize that that offers an almost un-negotiable enabling model." [5:11]

> „In energy cooperatives there are more real potentials of what I would call real citizen participation, than in investment oriented models. Because apart from the mere financial participation they are set up in a way to allow for people to participate in conceptual issues, to get actively involved." [3:29]

One interviewee, however, takes a decidedly pragmatic stance towards energy cooperatives and also sees limits of cooperatively organized systems of energy provision.

> "I clearly see that [the energy cooperative model] has its justification and I also fight for advancing a grassroots oriented cooperatives-model in the area of renewable energies. But I also clearly see limits to the cooperative model in the business arena. (…) Whether we should try, with this legal form, to think in larger structures, I'm not so sure about that, how quickly one simply reaches the limits of, let me say, the grassroots democracy of the cooperative model." [6:9, 6:11]

Further support actors

Apart from organisations dedicated specifically to the support of energy cooperatives, some organisations support initiatives in the area of collective citizen ownership of green electricity power plants more generally. For example, the association fesa in Freiburg, Baden-Württemberg, a regional association promoting the diffusion of renewable energy technologies, initiated some of the first collectively owned PV plants in Germany in the mid-1990s. Seeing such activities transformed from being idealistic, non-profit initiatives to economic enterprises, they were in 2001 transferred to a newly founded separate limited liability company, the fesa GmbH. Recently, however the fesa association has once again started to become active in this area and supports the development of the energy cooperative ‚Solar-Bürger-Genossenschaft' (see section 4.1.2).

In the area of wind power the Federal Association for Wind Power (Bundesverband Windenergie, BWE) represents the interests of the wind industry. As such it also has a positive stance towards plants operating on the basis of collective citizenship, especially in view of the higher local acceptance for wind power such models usually entail. However, as the BWE represents the entire wind industry (including

also manufacturers and service providers such as project developers, lawyers etc.), it does not engage in specific lobbying for such models or argue for their preferential treatment. For similar reasons the activities of federal associations dedicated towards other renewable energy technologies are generally not considered to be relevant support actors for citizen power plants. BWE is, however, considering publishing a manual for setting up 'Bürgerwindparks' based on an already existing regional guideline for the federal state of Schleswig-Holstein. [3:28, 4:18, 4:20, 5:19, 6:8, 9:13]

The latter manual was published by the regional wind power agency windcomm. Windcomm was founded in 2004, originally only as an agency of the districts along the North Sea coast, where wind power and in particular Bürgerwindparks had first emerged. Meanwhile it acts as a wind power agency for the entire federal state of Schleswig-Holstein and among other things aims to spread the Bürgerwindpark-model beyond the boundaries of the district of North Frisia, where the model emerged and is particularly widespread (see section 4.1.1). The manual, together with information events, forms their most important contribution towards spreading the Bürgerwindpark-model and four to five thousand copies have already been distributed.

Another group of actors that has become important for initiatives aiming to set up collectively owned PV plants or wind farms are professional service providers such as project developers that take care of planning the installation and gathering all the required permits and technical and legal expert reports. Administrative and financial requirements for setting up a green electricity power plant (especially a wind farm) have risen over the last years, often necessitating citizens' initiatives to draw on such services. [3:27, 8:28, 9:18]

> „There are service providers, like we meanwhile are ourselves (…), and we then are available for such initiatives with the entire know-how from launch of a company to permits and financing and above all also the rules of the game in communication." [8:28]

In some cases administrative support and advice is also provided by representatives of initiatives that have already set up collectively owned green power plants.

> „What is also avaiable is support from those that have already managed or planned Bürgerwindparks. (…) I would say people here know the operators or managers of large Bürgerwindparks and we have a small pool [of people]. We have some mayors from villages with Bürgerwindparks, we have planners and we have managers (…) and those provide assistance." [9:18]

Finally, one interviewee pointed out that in Germany there are a large number of local agenda 21 groups and some citizen power plants emerged from these initiatives. [2:37]

4.2.3 Utilities

The electricity market in Germany is strongly dominated by four large utilities (RWE, EON, Vattenfall and EnBW) that together account for a market share of 65 – 70 %.[13] These large utilities, however, are hardly active in the area of renewable energy technologies. According to trend:research (2011) they only own 6.5 % of total installed capacity of renewable energy as of 2010. The largest part of this share comes from hydropower plants, but wind power is also growing in importance. Small local and regional utility

[13] See http://de.statista.com/statistik/daten/studie/154054/umfrage/marktanteil-der-energiekonzerne-am-strommarkt-2008/ and http://www.shortnews.de/id/913988/RWE-und-Co-verlieren-immer-mehr-Marktanteile (accessed 14 May 2012)

companies taken together account for a smaller share of total installed capacity than these four large utilities (4.3 %) but if this is set in proportion to their market share it can be seen that they are in fact much more active in the area of renewable energy technologies than the large utility companies. Furthermore they also exhibit much stronger growth rates in this area (trend:research 2011).

Also several interviewees point out that to date renewable energy plants are largely owned by citizen collectives and medium sized enterprises. Large utilities are generally seen as adversaries that for a long time have tried to inhibit large-scale diffusion of renewable energy technologies and still have not become seriously engaged in this area. Several interviewees also are strongly supportive of the decentralised structures that have emerged so far. Thus a number of interviewees would in fact not necessarily welcome a stronger engagement of the large utilities in the area of green electricity, but rather see the decentralised structures involving, among other actors, citizen collectives as something that is to be defended. [1:22, 1:23, 3:3, 2:8, 2:36, 2:46, 2:48, 7:36, 8:12]

> „The large bulk of renewable energy is decentralised and in relatively small units. And if those are utilised and they belong to citizen participation companies or private individuals that have it mounted on their roof, then the large utilities every day loose market shares, power and money. And that leads to these enormous conflicts in energy supply in Germany, that the large energy companies are losing market shares every day, because they don't own the plants, they are owned by others. But we want the structural change, we want to break up the dependency on monopolies." [2:8]

This position must also be seen as being part of a larger societal conflict over energy issues, in particular the conflict over nuclear power. Large utilities have always been advocates of nuclear power plants while renewable energy has been positioned as the 'antithesis' to nuclear power in this conflict. Among renewable energy advocates large utilities thus have always been perceived as the enemies in the fight against nuclear power and for the further diffusion of renewable energy.

> „Here in Germany (…) energy supply is one of the largest economic area of conflict at all (…), well, it is the most important at all. No other sector can evoke such conflicts as energy supply." [1:23]

It is of course not unreasonable to assume, however, that large utilities will pay an increasing role in the area of electricity generation from renewable in the coming years, at least in the newly emerging area of offshore wind power. [2:9, 4:13]

Finally, it should also briefly be mentioned that there are also some initiatives that have realised or are planning to set up collective citizen ownership of utility companies. Most prominently this includes the 'Elektrizitätswerke Schönau', a citizens' initiative that took over the local grid in 1994 and meanwhile provide electricity for 115.000 households from renewable sources.[14] Another prominent example is Greenpeace Energy, a German utility company organised as a cooperative with currently around 21.000 members and serving about 110.000 customers.[15] Furthermore the initiative 'Energie in Bürgerhand' (energy in citizens' hands), organised as a cooperative, aimed to take over a significant share of Thüga, Germany's fifth largest utility company. However, after having failed to do so the cooperative is now attempting achieve citizen participation in local utility companies by acquiring ownership shares.

[14] See http://www.ews-schoenau.de/ (accessed 28 March 2012)
[15] See http://www.greenpeace-energy.de/ (accessed 28 March 2012)

4.2.4 Municipalities

Municipalities usually have some sort of role to play in the establishment of power plants owned by a citizen collective, although their part may vary strongly.

The mayor or other representatives of the municipality may in some cases *initiate* a local community owned project. For example, the regional wind power agency windcomm in Schleswig-Holstein (see section 0) tries to support such municipal initiatives by targeted information on Bürgerwindparks to municipalities that have applied for parts of their municipal area to be designated for wind power. Some municipalities may then decide to promote a Bürgerwindpark-model and try to arrange a deal with land-owners guaranteeing that only a wind farm based on this local ownership model will be realised on their land, once it has been designated for wind power. [1:18, 1:32, 9:5, 9:6]

In the case of Germany's first Bürgerwindpark (Lübke-Koog) the municipality did not originally take on a proactive role, but after receiving several requests for permits of farmers for setting up individually owned wind turbines initiated *a coordination* of these activities, eventually leading to a collectively owned wind farm, also involving further people from the village. In this case the municipality itself in fact also became a *shareholder* of the wind farm. In most cases, however, municipalities do not become directly involved as co-owners of such projects but profit from the local business tax. [8:1, 8:42, 9:16]

In other cases the initiative for a citizen owned power plant may come from engaged citizens but they may succeed to gain *support from the municipality*, e.g. in the form allowing a jointly owned PV plant to be mounted on the roofs of municipal buildings. One example of this model is the energy cooperative in Rosenheim, Bavaria, where two PV plants could be mounted on the roof of a school building (Reiner 2011). [1:18]

Finally, there are of course also cases in which the municipality is either *indifferent* or *obstructive* towards an initiative aiming at setting up a collectively owned green electricity plant. In the area of wind power, however, a passive stance of the municipality is hardly possible, as the municipality is involved in the designation of areas for wind power together with the federal states that bear the main responsibility for this task. [2:15]

4.3 Institutional framework conditions

4.3.1 Feed in regulation and other subsidies

Feed-in regulation, guaranteeing buy-off of green electricity at fixed tariffs, is considered to be the most important policy framework supporting the establishment of citizen owned green electricity plants. A first feed in law was introduced in Germany in 1991 (electricity feed-in law / 'Stromeinspeisegesetz') which enabled the economic operation of wind farms by independent power producers. While this feed-in law also subsidised electricity from PV plants, tariffs were still too low to make them economically viable. This changed with the reorganization of the feed-in system with the introduction of the Renewable Energy Act (Erneuerbare Energien Gesetz, EEG) in 2000. [2:23, 3:45, 4:23, 5:25, 6:23, 7:37, 8:4, 9:25]

However, a small number of citizens' initiatives already set up green electricity plants before the feed-in law was introduced. They had to negotiate grid connection and tariffs on a case by case basis and often were dependent on other forms of subsidies. [1:13, 2:23]

> „[Before the electricity feed-in law] we had direct selling contracts, remuneration was miserable and dependency was high. (…) And that then changed fundamentally in 1990 with the electricity feed-in law. (…) That was the purchase obligation and the minimum rates for remuneration. (…) From then on it actually got going, that one could set up citizen participation models." [2:23]

Several interviewees pointed out that feed-in regulation is particularly important to facilitate collective citizen ownership models, seeing that it provides the financial security that is crucial for them – more so than for other market actors capable of large investments with certain risks. Apart from reducing the risk for individual citizens of losing the money they invested, it also enables citizens' groups to take up bank loans. Furthermore, subsidised tariffs in combination with guaranteed grid access and buy-off of electricity is seen as an important measure to level the playing field, enabling small, independent power producers to access electricity markets without being hindered by large incumbents. [2:23, 2:28, 4:23, 8:35]

> „Whether the EEG was particularly relevant for Bürgerwindparks? (…) Yes, certainly by all means. (…) Because it gives them a clear legal framework that states that they can feed-in, that there is a requirement to accept this feed-in, that they have to a get fixed price. That provides the high degree of security to these companies that they need. That is different with the large energy companies, that can take on the risk or can act themselves via a marketing system or something like that." [4:23]

However, interviewees generally do not view the introduction of feed-in regulation as a deliberate response to the needs of citizen-led green electricity plants [1:25, 2:34, 8:38, 9:25]

One interviewee in fact pointed out that with the recent interest of policy actors in supporting the development of offshore wind power, feed-in regulation may shift to the disadvantage of citizen ownership models. Seeing that offshore wind farms are difficult to handle via collective citizen ownership, offering attractive feed in tariffs for offshore wind farms at the cost of reducing tariffs for electricity from onshore wind farms would probably reduce the market share of citizen ownership models. [2:9]

4.3.2 Bureaucratic hurdles and prospectus requirement

Another problem several interviewees point to is the large amount bureaucratic work involved in setting up a company, putting together applications and acquiring various permits needed for the installation of wind farms and (large) PV plants. Interviewees point out that these requirements are particularly hard to meet for citizens' initiatives often (initially) operating on the basis of voluntary work. Nevertheless one interviewee also concedes that strict planning requirements also help to avoid planning mistakes such as setting up a wind turbine too close to settlement areas. [1:19, 2:27, 2:28, 3:18, 3:45, 6:22]

A particular salient problem among these bureaucratic issues is the prospectus requirement. In legal terms, publicly advertising co-ownership of a green electricity plant amounts to advertising a particular investment option and thus is treated like any other publicly advertised form of investment. In view of some problematic cases of investor-deceit (largely unrelated to the renewable energy sector), regulations concerning prospectus requirements were tightened in 2005. Complying with these

requirements is considered to be both costly and time-consuming and to be particularly burdensome for small to medium-sized projects.

> „If you want to set up a plant now, that falls under the Federal Financial Supervisory Authority. There you have to compile a prospectus and have that reviewed and so on. You can do that for a wind turbine, but for a PV plant you can forget about it, it's not worth the effort. The investment costs you face there are so high that it is not worthwhile for one thing, and for another thing, it takes so long that any normal investor simply is quicker." [1:14]

One interviewee points out that too strict requirements have in fact had perverse effects as prospectus becomes very elaborate and incomprehensible, counteracting the goal of greater transparency and consumer protection. As cooperatives are exempt from the prospectus requirement, the tightening of this legislation has contributed to the increasing attractiveness of the legal form of a cooperative (see also section 4.1.2). Furthermore, projects in which project developers refrain from public advertising of participation opportunities and co-owners are only recruited via personal contacts can avoid the prospectus requirement. [1:14, 1:19, 2:29, 3:47, 4:25]

Another problem emerges when a municipality is prepared to lease a roof to a local citizens' initiative for the purpose of setting up a PV plant at preferential conditions. At least for large roof areas the municipality is legally required to issue a call for tenders and select the bidder making the best offer rather than directly arranging an agreement with a local citizens' group. [3:32]

4.3.3 Social and cultural contexts

Interviewees also referred to a number of social and cultural issues that shape the opportunities for citizen owned green electricity power plants. At a general level the awareness for renewable energy technologies has risen strongly over the last 10-15 years. While originally only considered a crazy idea or niche phenomenon pursued by environmental idealists and technology tinkerers, renewable energy technologies are meanwhile taken as a serious and indeed necessary alternative to conventional forms of energy generation. Among other things this has improved the standing of initiatives aiming to set up citizen owned power plants in relation to banks and policy makers (possibly a virtuous circle, as citizen power plants are themselves seen as a factor contributing to increased support for renewable energy, see section 4.2.1). [1:21, 2:19, 2:30, 2:33]

More specifically, the environmental and antinuclear movement certainly had an important role to play in establishing collective citizen ownership of green electricity plants in Germany. Several early collectively owned plants can be interpreted as attempts to develop environmentally friendly alternatives of energy generation. In this context it must be noted that the environmental movement was comparatively strong in Germany. [2:30, 2:37, 3:30, 3:48, 4:27, 9:27]

> „Well, I don't really know if that is so pronounced in other countries, or so broad, the environmental movements. Anyway in Southern Germany (…) and also in other areas, these are now people who started this 30 years ago, who are now partly established but who still stick to the thoughts and also have the required means in order maybe to invest a little. Because of that it does have a strong basis I would say." [3:48]

Sometimes singular events may play a decisive role in shaping public perceptions and discourses. For example, the nuclear accident in March 2011 in Fukushima has of once again reinforced public interest in renewable energy and the rejection of nuclear power. Furthermore it once again discursively positioned

the installation of renewable energy plants in the context of the phase-out of nuclear power, after discourses had centered more on the issue of climate change over the last few years. Several interviewees also refer to the massive protests in Stuttgart in 2010 against the construction of a new railway station which protestors oppose on the basis of high costs, a perception of lacking benefits for railway passengers and ecological impacts. Interviewees interpret this as an event epitomizing citizens' frustration with top-down infrastructure planning decisions and perceive a renewed interest in citizen involvement in infrastructure development on the side of policy makers and project developers, also extending to renewable energy installations such as wind farms. [2:30, 2:33, 2:39, 3:5, 8:36, 9:28]

Finally, some interviewees report that the financial crisis starting in 2008 has increased public interest in alternative forms of economic organization such as cooperatives. Furthermore people now have turned to less profitable but secure forms of investment, which may take the form of membership in a renewable energy cooperative. [1:30, 6:19, 7:21, 7:32]

4.3.4 Framework conditions specific to cooperatives

Apart from feed in regulation, citizen participation models taking the legal form of a cooperative are subject to some framework conditions specific to this legal form. The legal framework for cooperatives is defined by the cooperative law. In 2006 some amendments were made to this law making it somewhat easier to found and run small cooperatives (e.g. only three people required for founding cooperative instead of previously seven, reduced auditing costs for small cooperatives). While welcoming these changes in principle, some interviewees consider them as not going far enough. [3:9, 5:11, 5:25, 7:37]

> „In 2006 there was the amendment to the cooperative law. But from my point of view (…) it did not bring about any noteworthy easing. Well, it did reduce some, let me say, excessive cost demands for the cooperative [as a legal form], but, well, from my point of view, the only positive thing about this amendment was that cooperatives were brought up as an issue." [3:9]

Furthermore some interviewees note that for a long time many auditing associations were not particularly supportive of new, small cooperatives. However they notice improvements in recent years, with some auditing associations actively supporting the establishment of new cooperatives. [3:11, 5:18]

In some cases also federal states have started to support the establishment of new cooperatives. For example, the federal state of Baden-Württemberg launched a programme supporting the establishment of new cooperatives in 2010 in cooperation with the regional auditing association BWGV. This includes subsidies for founding costs and for auditing costs during the first five years as free counselling services and an information campaign. [5:8, 6:18] (see also Schorr 2010)

4.4 Interests and rationales attached to collective citizen ownership models

4.4.1 Interests of initiators and support actors

Diffusion of renewable energy technologies

An important factor motivating the initiators of citizen owned green electricity plant certainly is to contribute to the diffusion of renewable energy technologies and providing an alternative to nuclear power.

> „Well, our company group was founded in order to take part in the energy transition (Energiewende) and to set up plants that produce electricity from renewable sources. (…) That is the goal, that people also participate and that energy supply is transformed. That's why our company was founded and that is our business." [2:1]

Especially many of the early citizen power plant projects in the 1990s were idealistic pioneer projects not promising a great profit margin. [1:2, 1:15, 2:1, 2:17, 2:32, 3:25, 3:30, 6:9, 7:14, 7:18, 8:11, 9:19]

Regional value creation and decentralisation

Strongly linked with the idea of renewable energy diffusion in Germany is the idea of a decentralisation of the energy sector. Shifting from fossil fuels and nuclear power to renewable energy is also seen as moving away from centralised structures depending on large utility companies to small and medium sized companies, which includes citizen ownership models. [2:7, 2:46, 2:48, 3:3, 7:18]

Interviewees also emphasise the benefits of regional value creation that can be achieved through such a process of decentralisation. [1:32, 3:4, 4:5, 7:16, 8:11]

> „Well, the reason [for setting up Bürgerwindparks] of course is that one realized that value creation can be achieved through the generation of wind power and that one noticed that it is of course important to keep this value creation in the region as far as possible. In particular because wind turbines are visible, that isn't something that takes place underground or in small units, rather that is a big area. So that one says, the region should profit from that." [4:5]

Regional value creation through citizen power plants can involve a number of different aspects. Apart from direct revenues for the local citizens that are shareholders of a plant, the municipality also benefits from the business tax of a locally registered company. Furthermore in several cases local or regional banks and businesses are involved in financing and setting up such a plant. One interviewee sees value creation via local cooperatives, including energy cooperatives, as a means to work against migration from rural areas to larger cities. [1:16, 1:44, 5:2, 5:11, 5:17, 7:14, 7:16, 7:42]

Democratisation and empowerment

Some interviewees view this process of decentralisation not only in the economic terms of regional value creation but also emphasise the political aspect of democratisation and empowerment. This particularly holds true for people engaged in the area of citizen power plants taking the form of a cooperative. In fact some see energy cooperatives as a means to revive the grassroots character of citizen owned power plants in face of a process of commercialisation.

> "A commercialization, a de-ideologisation, that has clearly taken place. In that respect one can say that cooperatives are kind of an attempt to defend this original pioneering spirit in the field. To defend this field of renewable energy a little against commercialization." [1:29]

For example, cooperatives frequently adhere to the principle of 'one person one vote'. However, similar principles are sometimes also implemented within other legal forms, e.g. by limiting the maximum share any individual may hold within a limited partnership and thus avoiding domination by large investors. [1:5, 1:29, 2:12, 3:3, 3:4]

Capital mobilisation

In the 1990s, citizen ownership models also provided a means of raising sufficient capital for green electricity plants, as loans from banks were still difficult to obtain and only few other investors had

entered the field. Meanwhile, however, this factor is not as important anymore because other modes of financing are more easily available. [1:2, 1:16, 2:17, 2:20]

Acceptance and awareness rising

While the aspect of capital mobilisation has declined in importance, the aspect of acceptance and awareness rising for renewable energy technologies via citizen power plants has gained prominence.

> „It wasn't a problem for us to raise the capital. First of all one also gets loans for that and secondly there are also many investors that would invest there, for example municipal utilities (Stadtwerke) or also large utilities or pension funds. That isn't the issue, but if we set up the participation models, we basically turn everybody who participates into a potential ally for the energy transition (Energiewende)." [2:7]

One interviewee points out that, apart from increasing acceptance among the general population, local decision makers such as mayors are also more likely to support a project if it involves financial benefits for local people. Especially actors in the area of wind power consider acceptance to be an important benefit of citizen owned power plants, as resistance against wind farms has turned into a serious problem for wind power development over the last years. [1:16, 1:33, 1:44, 2:7, 2:17, 2:32, 4:28, 4:29, 6:9, 6:26, 7:16, 7:38, 8:19, 9: 8, 9:12, 9:28]

4.4.2 Interests of participants

Most interviewees see a combination of environmental ideals and an interest in financial returns to motivate people to become a co-owner of a citizen power plant. [2:3, 7:19, 9:21]

> „Most of those who participate have two motives: The one thing is, they consciously want to get involved in the area of renewable energies, but they also want a reasonable return. That can indeed be accomplished." [2:3]

The relative importance of these two factors has, however, changed over time. It is clear that the first citizen power plants set up in the 1990s were often carried by an idealistic spirit and drew people opposed to nuclear power and wishing to develop alternative and more environmentally friendly ways of power generation. During this phase people participating in a citizen power plant initiative were prepared to invest money before the economic viability had been proven. Meanwhile financial interests have become more important and people with motivations characterised more strongly by financial returns are increasingly also drawn to such participation models. [1:2, 2:31, 8:14, 8:16, 9:21]

One interviewee points out that the motivations of the people who get engaged also depend on the participation model or on the way it is advertised. For example, some citizen owned power plants are initiated by banks and are typically presented as a form of investment. These projects tend to draw people whose motives are more strongly characterised by financial interest. By contrast, citizen power plants initiated by politically oriented citizens' groups may frame co-ownership of a PV plant as being a contribution to a more environmentally friendly and democratically organized energy system and attract further people who share these political goals. Another interviewee points out that the geographic participation structure of a project is related to the motivational structure of the people involved. In geographically more dispersed forms of joint ownership financial returns tend to be more important, for locally owned projects environmental and social aspects tend to be higher on the agenda. [3:35, 4:17]

Some interviewees, however, also observe different motivations of people *within* a particular initiative. These different rationales for becoming engaged in a citizen power plant are usually characterised as a positive aspect enabling the mobilization of different groups rather than contributing to internal conflicts. [6:16, 9:21]

> „That also reflects the diversity of the population. In rural structures (areas) we do in fact [manage] (…), that really all fractions, all generations participate in the energy cooperative and also engage financially. Of course there are the most diverse motivations there." [6:16]

Aside from environmental and economic factors, identification with a particular project also has an important role to play. Several interviewees note that it enables mobilisation if people live in close proximity to the plant, making the project visible and tangible to them.

> "We also have remarkable dynamics emerging here, if we consider how important it is to people to express this regional relation (connection) also in the projects, in the realization of projects to say, OK, we can walk past them, we can go there we can watch how it is mounted, I own one part of that. Maybe that is related to the most deep-rooted interest of people, yes, to identify [with things]" [6:13]

Also drawing electricity from the jointly owned plant can increase this identification, but feed-in to the grid usually tends to be technically and economically more viable. [2:5, 3:33, 6:13, 6:14]

5 Comparison between Austria and Germany

5.1 Ownership and participation models

The German and the Austrian case show some similarities but also differences with respect to ownership and participation models in the area collective citizen ownership of green electricity plants. In both countries such citizen ownership models first emerged in the area of wind power; in Germany from the late 1980ies and early 1990ies onwards, in Austria from the mid-1990ies onwards. In both countries the legal form of a limited partnership (GmbH & Co KG) initially established itself as the standard model for implementing such citizen owned wind farms (see also Enzensberger et al. 2003; Hantsch & Nährer 2006). Some citizen owned wind farms, however, were also established using different legal forms (e.g. in Germany also two citizen wind farms organized as cooperatives, in Austria also limited liability companies). Furthermore in Austria two companies setting up wind farms based on citizen ownership later transformed into a corporation (not listed at the stock exchange).

In recent years a new emphasis on citizen owned PV plants has emerged. In particular, Germany has seen a boom in the number of PV cooperatives being set up since 2008 (see also Rutschmann 2009; Holstenkamp & Ulbrich 2010; Stappel 2011)). This boom of cooperatives is totally absent in Austria. However, also in Austria there has also been an increased interest in citizen ownership and citizen participation models in the area of PV plants. Models applied here include limited liability companies (GmbH), limited partnerships (GmbH & Co KG), private partnerships (GbR) and participation via loans. Furthermore several utility companies are developing 'sale and lease back models' where money for large PV plants is raised by selling individual PV modules to citizens that then lease back the module to the utility that operates the plant.

5.2 Actor roles

Collective citizen ownership initiatives

Both in Austria and in Germany citizen initiatives setting up green electricity power plants have contributed to the diffusion of renewable energy technologies (in particular wind power and PV) in various ways:

They were critical *pioneer actors* and significantly contributed to market development in the early phases of technology diffusion. First of all this involved the overall exploration of possibilities and potentials to set up plants (collecting and exchanging information, conducting wind measurements, etc.) and secondly the actual implementation of wind farms and PV plants. Among other things citizen participation models constituted a way to raise sufficient capital for setting up wind farms and PV plants in these early development phases, when other actors (in particular energy system incumbents) were still reluctant to engage with renewable energy (Hantsch & Nährer 2006).

Furthermore the broad involvement of citizens also contributed to a certain political leverage effect. To be sure, feed-in tariffs in both Austria and Germany cannot be seen as a direct reaction to the needs of citizen initiatives that had set up power plants or were planning to do so. However, the mobilising force of such initiatives (e.g. engaging in public protests and putting together petitions) has contributed to defending feed in tariffs when plans to restrict or repeal them were discussed. Furthermore at regional and local levels, policy support for wind farms can in some cases be traced back to broad citizen involvement. Finally, citizen ownership of green electricity plants also had positive effects on the local acceptance of wind farms and may also have contributed to awareness rising for energy issues in general.

Support organisations:

In Germany a broad array of support services for setting up and running citizen owned green electricity plants have emerged over the last years. Especially in the area of energy *cooperatives* specialized support organization are available that offer training and counseling or even provide ready-made concept and templates for setting up an energy cooperative. The associations representing the interests of particular technologies (such as wind power and PV) are, however, not considered to be of particular relevance as support organizations for citizen owned power plants. This is different in Austria, where no specialized support organizations for citizen power plants exist. Here the interest groups representing particular renewable energy technologies (especially the Austrian Wind Power Association) alongside with regional energy agencies have a greater role to play.

Utilities

Both in Austria and Germany utility companies were initially reluctant to engage with renewable energy technologies. Activities by independent initiatives to produce electricity from wind turbines and PV panels were often met with outright hostility (see also Jacobsson & Lauber 2006 for the German case). In Germany this hostile sentiment between the large utilities and independent power producers in the area of green electricity (especially citizen power plants) has persisted. This may be attributed to the fact that the German electricity market is strongly dominated by four large utilities, all of which are strongly engaged in the area of nuclear power. These utilities have hardly become active in the area of renewable

energy. Due to this dominant market position and the utilities' involvement in nuclear power (often positioned as the 'anti-thesis' to renewable energy in public discourse) the large utilities are generally viewed as opponents by advocates of green electricity citizen ownership models. Advocates of citizen ownership models would generally not welcome a stronger involvement of the large utilities in renewable energy technologies but rather want decentralized structures in this area to spread further (see also section 5.4).

The situation in Austria is quite different. Several large utility companies have meanwhile also become seriously engaged in the area of wind power. Most representatives of citizen ownership models see this positively, as a welcome contribution to the shared goal of renewable energy diffusion. Joint interests such as good framework conditions for operating wind farms in Austria are emphasized over differing organizational models (centralized / decentralized).

Municipalities

Both in Austria and in Germany municipalities are usually important actors for setting up citizen power plants and can take on different roles (municipality as decision maker in spatial planning, as initiator, as shareholder, as coordinator of different actors, as support actor; see sections 3.2.3 and 4.2.4).

5.3 Institutional Framework conditions

Both in Austria and in Germany feed-in tariffs constitute the most important policy support for citizen owned green electricity plants. Even though this policy was not specifically developed as a support tool for *citizen owned* green power plants it is particularly important for that actor group as it provides the high security that this actor group (citizen-investors) usually requires. Furthermore it enables citizen groups to access bank loans for setting up green electricity plants.

Nevertheless some differences exist in the way feed-in tariffs were implemented in Austria and Germany. From an Austrian perspective, Germany is generally regarded as a country with an exemplary feed-in law, allowing for security of investment and therefore long-term planning. In contrast, support for electricity from renewable sources in Austria is characterised as a 'Stop and Go' process (frequent changes in feed in regulation, on and off investment subsidies for PV). Although political goals are articulated they are not pursued consistently. In part this is attributed to lobbying from actors with opposing interests. Germany, however, is seen to pursue a consistent support policy for renewables, also withstanding changes of government. [12:44, 13:44, 15:51, 17:55, 21:36]

In the area of photovoltaics the lacking long-term support is seen as a reason for the low number and small size of jointly owned plants, as compared to Germany. In the area of wind power the situation is characterised as having achieved an installed capacity similar to many German regions *in spite of* lacking political support. Also, lacking security of investment is seen to have inhibited the development of a wind power industry in Austria, only a supply industry has developed. Also in the area of photovoltaics, industry development in Austria is seen to be lagging behind. In Germany, by contrast, this industry was acknowledged to be of political importance (export, jobs) early on. [13:34, 13:44, 15:51, 18:18, 21:30, 21:53]

A barrier for the development of collectively owned green power plants that emerged in recent years in both Germany and Austria is the prospectus requirement that usually applies to advertising such models (see sections 3.3.3 and 4.3.2). This regulation was tightened in both countries over the last years. In Germany cooperatives are exempt from this requirement, which appears to be one of the reasons for the recent boom of cooperatives.

Another factor contributing to the boom of energy cooperatives in Germany are the changes that were made to the cooperative law in 2006 making it easier to set up and run small cooperatives. This has led to general rise in the number of newly established cooperatives in Germany, with renewable energy cooperatives constituting one of the most important sectors of startup activity (Stappel 2011). In Austria nothing comparable can be observed. Although the 1980s and 1990s saw a rapid diffusion of biomass district heating networks, which often are organized as farmers' cooperatives (Rakos 2001; Weiss 2004; Madlener 2007), the cooperative model has hardly been applied in the area of photovoltaics.[16]

5.4 Discourses and ideas

In spite of fairly consistent support mechanisms for green electricity in Germany, discourse on renewable energy in Germany is more strongly characterised by conflict. On the one hand this can be attributed to the fact that the conflict over nuclear power is much harsher in Germany than in Austria (discussions over phasing-out nuclear power in Germany, no nuclear power stations in Austria). This also rubs off on discussions over renewables, as such energy sources, in particular wind power, are often positioned as the 'antithesis' to nuclear power. This confrontational discourse can help to push support for renewables, as it increases the saliency of the issue. However, Austria has benefited from the fact that different actors in the wind power sector (utility companies, small local companies) have acted in concert to promote the technology field, while conflicts have arisen between such different actor types in Germany. [15:51, 21:53]

As part of the more confrontational discourse on renewables in Germany, citizen power plants position themselves both as a technological alternative to conventional power systems (renewable energy instead of nuclear power) *and* as a socio-economic alternative (decentralized structures, regional value creation). The latter aspect certainly is less salient in Austria – initiators of citizen owned power plants mainly want to contribute to the diffusion of renewable energy technologies, alternative socio-economic structures appear to be more of a side-issue. But also the former aspect has a different flavor in Austria: While renewables certainly also are positioned as an alternative to conventional power systems in Austria, this is not so strongly tied up with the societal conflict over nuclear power, due to the strong societal consensus against nuclear power and the absence of nuclear power plants.

Nevertheless debates over nuclear power were still more salient in Austria in the late 1980s and 1990s and certainly contributed to the willingness of many citizens to become involved with setting up wind farms as a way of actively developing alternatives to nuclear power in the wake of the Chernobyl disaster.

[16] To the author's knowledge there is currently one PV plant owned by a cooperative in Austria (Regionale Energie Anlage in Bregenz owned by the Talentegenossenschaft, in operation since June 2012) and one more cooperative that has recently been set up (in Judendorf-Straßengel) and is planning to install PV plants.

5.5 Development processes

Both in Austria and in Germany collective citizen ownership models spread out in various ways. This included replication of successful models, growth of individual initiatives and the entry of new actors.

- Replication: Both in Austria and in Germany the first citizen wind farms typically emerged from small, local initiatives setting up a wind farm in their village or in close proximity to it. The model spread via information exchange and word of mouth. Sometimes a local initiative also made an excursion to another place where such a wind farm had already been set up. In Austria models from other countries (in particular Germany, Sweden) played a role in this process. Interestingly in Germany, in particular in Northern Frisia at the border to Denmark, where the first German 'Bürgerwindparks' were set up, Danish examples of collective ownership do not appear to have had a significant influence. Currently replication of successful citizen ownership models can be observed in the area of PV cooperatives in Germany.
- *Growth*: In Austria (not so much in Germany) some of the initiatives that started as small, local citizen wind farms have meanwhile turned into medium sized enterprises developing wind farms in various location across Austria as well as abroad (see section 3.2.1).
- *Entry of new actors*: Over the last years new actors also have entered the field with citizen participation models that are more commercially oriented. In Austria there are an increasing number of citizen participation PV plants operated by utilities, usually as a 'sale and lease back' models (see section 5.1). In Germany some utilities offer co-ownership of wind farms to local citizens. At the most commercial end of citizen participation models, wind and PV closed end funds are offered to citizens as largely anonymous investment options (Enzensberger et al. 2003; Bettzieche 2009).

As can already be seen from the latter two forms of diffusion of citizen ownership models, this diffusion process has also brought along a process of professionalization and commercialization, especially in the area of wind power. Several factors contributed to these developments, including the introduction of feed-in tariffs that allowed for the profitable operation of wind farms, the increasing size of wind turbines that required larger amounts of capital to be raised and the tightening of regulations concerning wind farms (spatial planning, safety requirements, etc.) making the planning process more expensive and time consuming.

Several developments can be understood to be part of this process of professionalization and commercialization:

- Small, local initiatives turning into medium sized enterprises (see above)
- Centrally involved individuals turning their voluntary work for setting up wind farms into their full time job (less so with PV plants)
- With the improvement of framework conditions an increasing number of people participate who are motivated more strongly by profitability expectations than by environmental ideals
- This investment-orientation also goes along with a more geographically dispersed participation structure
- In Austria two companies setting up wind farms on the basis of citizen participation transform from a limited partnership (GmbH & Co KG) to corporations (not listed at the stock exchange)

- Entry of more commercially actors also offering some sort of citizen participation in green electricity power plants (see above)

The boom of energy cooperatives in Germany, however, can be interpreted as a counter-trend to this process of commercialization. These cooperatives typically are run on the basis of voluntary work and social and environmental values typically play an important role for cooperative members (Volz 2011).

Concerning possible future developments, the most recent amendment to the Austrian feed-in law coming into force in July 2012 will provide a larger overall funding volume for wind farms and PV plants, which is expected to boost these technology areas in Austria in general. Falling prices for PV panels are further contributing to the increasing attractiveness of setting up PV plants (Janzing 2011; ÖGUT 2012).

Indeed, this is also mirrored in the sharp rise in the number of collectively owned PV plants that have gone into operation or are in the planning stage over the last two years. In the area of wind power a further diffusion of citizen owned wind farms can mainly be expected to take place via a further growth of the three medium sized enterprises that are based on citizen participation and developed out of initially small, local projects. Due to the high costs and the expertise that is meanwhile required for setting up wind farms it currently seems rather unlikely that new, strictly locally owned wind farms will be set up.

6 Literature based comparison to Denmark and UK

6.1 Denmark

When looking at collective citizen ownership of green electricity plants, Denmark is a particularly important country, as it was here that such ownership models first emerged, in particular in the area of wind power. Indeed, Denmark is the country that has contributed most strongly to the development of modern wind turbines and several authors have argued that the small-scale stepwise approach to turbine development was decisive for the success of Danish turbine designs (Danielsen 1995; Kemp et al. 2001; Garud & Karnøe 2003). Garud and Karnoe (2003) show how various actor groups had an important role to play in this gradual innovation process in the 1970s and 1980s, among them early 'owner-users' of wind turbines, in particular farmers and cooperatives. These early owner-users formed the Danish Wind Turbine Owners' Association which was important for giving inputs on design improvements to manufacturers and for negotiating agreements with utilities. The close proximity of cooperative members to their wind turbines helped to detect malfunctioning of turbines and thus to develop knowledge on possible design improvements. Furthermore wind power cooperatives facilitated information exchange and political lobbying and contributed to market development by increasing demand (Heymann 1998). Thus in Denmark wind cooperatives not only developed new ownership models for power plants but also contributed to technology development itself.

According to Danielsen (1995) 80% of wind power capacity in Denmark was owned by citizen-led initiatives as of 1995, only 20% by big power utilities that were rather forced into wind power and rather reluctant to engage with it. A report published by the British Department of Trade and Industry in 2004

(DTI 2004) notes that at that time 23% of Denmark's wind power capacity (600 MW) were owned by cooperatives with a total of 100.000 members owning 3.200 turbines (p. 17).

Although the collective ownership models of wind farms in Denmark are typically referred to as cooperatives in the literature, some authors point out that for tax reasons they are not cooperatives in a legal sense but rather general partnerships (Interessentskab). In their actual functioning they are however very similar to cooperatives (Tranæs 1996; Bolinger 2001; Olesen et al. 2004). The geographic participation structure of early citizen owned wind farms originally was strictly local. This is similar to Austria and Germany, but was in fact implemented far more consistently in Denmark, as legislation originally required cooperative members to live within close proximity (approx. three kilometres) from the turbines. This 'criterion of residence' was later extended to 10 kilometres and finally abandoned altogether (Tranæs 1996). Furthermore the maximum share individuals could hold was for some time restricted by law and roughly corresponded to one's own electricity consumption('Consumption criterion) (Tranæs 1996; Heymann 1999). It is interesting to note that both of these legal requirements are similar to the rules that several initiatives setting up citizen-owned wind farms in Austria and Germany imposed on themselves (priority in distribution of shares given to local residents, restriction of maximum share or voting power).

Apart from avoiding that citizen owned wind-power merely becomes something for well-off individuals living far away from turbine sites, these restrictions on wind turbine ownership in Denmark were in line with the interests of Danish utilities that wanted to delimit the potential market shares of independent power producers. Indeed, like in Austria and Germany, utilities originally proved to be quite reluctant to engage with wind power (1970s and early 1980s). In the mid-1980s, however, utilities adopted a new strategy attempting to gain control over wind power development in Denmark and negotiated a 100 MW installation programme with the Danish government (Heymann 1999). Heymann (1999)suggests that restrictions on ownership (criterion of residence and consumption criterion) were introduced as a concession to the utilities in return for their preparedness to engage in wind power themselves.

Several framework conditions contributed to the emergence and impressive expansion of wind power cooperatives in the 1970s and 1980s. At a general level, due to its strong reliance on fossil fuel imports, Denmark was hit particularly hard by the oil crises in the 1970s. Reducing reliance on fossil fuel imports thus became an important goal in Danish energy policy (DTI 2004). This coincided with a strong anti-nuclear movement and a strong tradition of working in cooperatives, especially in rural areas (Jørgensen & Karnøe 1995; Tranæs 1996; DTI 2004). In the 1970s, however, cooperatives were starting to disappear from the villages. Some authors have suggested that this may have in fact proved beneficial for the emergence of wind power cooperatives, as people missed the sense of community that was created by cooperatives (Tranæs 1996; DTI 2004). A further aspect that has supported wind power development in Denmark was that wind mills had already been in use in the 19th century. Therefore the first modern small-scale wind turbines owned by farmers and cooperatives hardly proved controversial (DTI 2004). Finally a number of authors have highlighted the continuously adapted policy support that responded to the stepwise, learning-by-doing approach to turbine development as an important factor for the success of wind power development in Denmark (Jørgensen & Karnøe 1995; Kemp et al. 2001; Garud & Karnøe 2003).

Like in Austria and Germany a process of professionalization and commercialization has also taken place over time, marked by the emergence of a specialised industry, and in terms of dominant ownership models for wind farms, marked by the entry of professional investors and by utilities being 'forced' into wind power projects. This also resulted in a weakening of links to the alternative energy movement. These changes in actor constellations were partly induced by policy adaptations but also by technological developments (larger turbines) and increasing profitability expectations (Jørgensen & Karnøe 1995; Olesen et al. 2004; Boon 2008).

6.2 UK

The UK is very different from the cases considered so far (Austria, Germany and Denmark). Until recently there were very little citizen owned wind farms and PV plants. Especially in the area of wind power this has been attributed to an energy policy that has been very much in favour of large scale installations and corporate ownership and to the absence of a strong alternative energy movement (Toke 2002; Hain et al. 2005; Breukers & Wolsink 2007; Toke et al. 2008). For a long time support for renewable was available mainly via the Non-Fossil-Fuel Obligation (NFFO) and later the Renewables Obligation (RO); a support mechanism that was hardly accessible for small independent power producers.

However, in the 1990s UK energy policy also developed an interest in energy localism and 'community energy' projects. Starting from around 2000, several support programmes (mainly grant programmes) were put forward to support community energy projects. This included the Community Action for Energy (2001) followed by the Community Renewables Initiative (2002) the Scottish Community and Households Renewables Initiative (2002), the Photovoltaics Programme by the Energy Savings Trust (2002), the Clear Skies programme (2003) and the Big Green Challenge (a programme put forward by the charity NESTA in 2007) (Hielscher 2011a).

It appears that an important factor contributing to policy interest in community energy initiatives, including in particular collective citizen ownership of wind turbines, were the experiences with public opposition to wind farms. Initially, project developers of wind farms paid little attention to the needs of the local population. After several plans for wind farms from large investors from the private sector failed due to difficulties with gaining planning consent, public participation and local citizen ownership or co-ownership emerged as one possible approach to overcome such opposition (Hain et al. 2005).

Community energy, however, is a term that encompasses much more than collective citizen ownership of renewable energy plants. Walker (2008) points out that projects carried out under the label 'community energy' have varied widely in terms of ownership structure, legal forms and forms of community involvement. In fact Walker et al. (2007) note that the broad array of community energy initiatives that has emerged over the last years may also be due to that fact that government support for such initiatives was not based on a 'grand coordinating plan'. They find that the openness of the notion of community ownership has enabled experimentation with different models of project management, ownership and distribution of benefits. Park (2011)defines community energy quite broadly as 'community-based projects which aim to generate renewable, low-carbon energy, reduce energy demand, raise energy awareness and change behaviours' (p.1).

However, with the introduction of feed in tariffs in the UK in 2010, a new emphasis of community energy initiatives in the area of social enterprises producing energy from renewable sources has occurred. Hielscher (2011) points out that feed in tariffs have made community energy initiatives less reliant on grants and have enabled them to invest in green electricity plants (Hielscher 2011a; Hielscher 2011b).

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9. Work Package 4: Cooperative Solutions for Renewable Energy Production – The Case of v-energie

This case study is part of the project

Energy cooperatives and local ownership in the field of renewable energy technologies as social innovation processes in the energy system

jointly carried out by the RiCC and the
IFZ – Inter-University Research Centre for Technology, Work and Culture

Project supervisor: **Prof. Dietmar Roessl**

Project financing: **Anniversary Fund of the Austrian National Bank**
(Jubiläumsfonds der Oesterreichischen Nationalbank)

Background

With rising concerns over ecological sustainability as well as security of supply, the energy system has come under increasing pressure over the last years and various efforts have been made aiming at a transformation towards more sustainable systems of energy provision. At the grassroots level this has included the establishment of energy cooperatives and other forms of local or community based ownership. These initiatives and organisations can be viewed as a social innovation introducing new forms of socio-economic organisation of energy provision and also enabling a specific kind of governance process in the energy sector – in many cases channelling the interests of 'green' consumers and thereby attempting to contribute to a transformation process in the energy system.

Project Goals and research questions

The project aims to apply a dynamic perspective to the analysis of energy cooperatives and to develop a conceptual framework that helps understand activities in this area as innovation processes. – Both as a process of social innovation, involving alternative forms of socio-economic organisation in the field of energy provision and as part of a larger transformation process in the energy system towards more sustainable systems of energy provision. This will also help to assess the potential of these alternative forms of energy production and distribution.

The project thereby aims to investigate the following research questions:

- What different types of community ownership of renewable energy technologies can be distinguished, not only on the basis of legal structures, but also on the basis of pursued strategies and roles taken on in systems of energy provision?
- How do processes of network formation and the management of stakeholder relations unfold within cooperatives or locally owned enterprises in this field? How are strategies formed and resources mobilised at this micro-level?
- Which institutional barriers and incentives promote or impede the development of energy cooperatives and local ownership in the area of renewable energy technologies?
- What potentials do energy cooperatives and other forms of local ownership of renewable energy technologies have to contribute to a shift towards more sustainable systems of energy provision?

CONTENT

1. INTRODUCTION

Rising concerns over ecological sustainability and security of supply put the energy system under increasing pressure. This situation has brought forward the development of energy cooperatives as well as other forms of local or community-based ownership of renewable energy technologies. Typical ways of energy provision usually bear highly centralized energy infrastructures, whereas locally and cooperatively owned models can constitute a different model of energy provision and distribution (e.g. Olesen, Maegaard, and Kruse, 2004).

In public-citizen-partnerships (PCP; Karner, Roessl, and Weismeier-Sammer, 2010), local politicians and citizens try to adequately provide a public service, promoting a culture of self-help rather than a culture of dependency (Mayo, 1997; Pestoff, 2009). Citizen participation seems to be a fruitful approach not only for the provision of public services, but for the implementation of renewable energy in local communities as well. And with its specific governance structures and commitment to self-help (Spear, 2004), the cooperative represents a suitable form for promoting citizen participation (Somerville, 2007; Lang and Roessl, 2009).

Against this background, we pose the following research question: *How can organizations built on cooperative principles contribute to the diffusion of renewable energy in Austria?*

For our study we chose a qualitative research approach (Stake, 1995), particularly with regard to existing research gaps regarding cooperative governance structures (Cornforth, 2004; Spear et al., 2009), in order to gain insights into the structures of local energy cooperatives. Our case study is situated in the Austrian region of Vorarlberg. The energy cooperative under investigation*, v-energie*, was founded two years ago with the overall target to establish a platform for investors, activists, and customers in Vorarlberg. The analysis of our case study allows for deeper insights into several aspects of cooperative energy production on local or community level.

Our paper is structured as follows: First, we elaborate on the status quo in Austria and Germany regarding renewable energy provision with citizen participation. Second, we present the methodological approach and afterwards provide a detailed description of our case, the *v-energie*. The presentation of our case analysis builds the core section of our paper, and is followed by a conclusion and suggestions for further research in the field.

2. RENEWABLE ENERGY PROVISION: STATUS QUO IN AUSTRIA AND GERMANY

We focused on Austria and Germany as the renewable energy domain in the German-speaking part of Europe has developed under different circumstances as other European regions like Scandinavia (Schreuer & Weismeier-Sammer, 2010).

In Germany, energy cooperatives have already been established in the early twentieth century to ensure electricity provision in rural areas (Flieger & Klemisch, 2008). Wind parks emerged in the 1980s with citizen participation. A certain tradition of local energy activism in Germany is based on the anti-nuclear movement (Toke, Breukers, & Wolsink, 2008). In Austria, the renewable or alternative energy domain developed more slowly and in different forms – due to institutional restrictions that will be discussed in detail later on. In the mid 1980s, biomass district heating (BDH) emerged as a real innovation and is viewed as an important outcome of both, local initiatives and public policy (Madlener, 2007).

Today, especially Germany exhibits specific innovations in the renewable energy system, such as “bio-energy villages” (Bioenergiedörfer) and “citizen wind parks” (Bürgerwindparks), which improved the political profile of renewable and sustainable energy production (Toke, Breukers, & Wolsink, 2008). In Germany, more than 140 energy cooperatives have been recently founded (Müller & Rommel, 2010). Compared to other European regions and Germany, in Austria rural biomass district heating systems currently are the main locally owned renewable energy installations, which are typically organized as cooperatives (Schreuer & Weismeier-Sammer, 2010). Some exceptional cases are presented for example by Enzensberger, Fichtner, and Rentz (2003) in the area of wind power, although typically organized in the legal form of a “GmbH & Co. KG”, which can be described as a hybrid of limited private partnership and limited liability company, or totally private investor-owned (in form of portfolio companies, where citizens can buy shares from).

In a recent explorative study, Müller and Rommel (2010) identified several factors as being important for cooperatives compared to other organizational forms. Over all, the revised German cooperative law, product differentiation (green electricity, where does electricity come from?), rising interaction between consumers and producers, as well as increasing civil society activities turned out to be most important for the strong growth of electricity cooperatives in Germany. Additionally, framework

conditions in Germany are favorable for renewable energy projects especially regarding the following aspects (Schreuer & Weismeier-Sammer, 2010)[1]:

- Feed-in tariff system
- Tradition of local energy activism
- General tradition of acting in political groups and associations
- Availability of loan capital at preferential conditions
- Sufficient number of investors

Unfortunately, the situation in Austria is much less favorable, as our case study will show. Regarding cooperative renewable energy projects, no best practice-example could be found in the literature (Schreuer & Weismeier-Sammer, 2010).

Nonetheless, the co-production of public services through public-private-partnerships (PCP) has recently increased in Austria and Germany (cf. Flieger, 2003 for German examples), although in different areas such as childcare, education, and recreational facilities. In general, the term PCP defines organizational forms of cooperation between municipalities and their citizens for the co-production of public services (Karner, Roessl, & Weismeier-Sammer, 2010). PCPs further seem to be a promising organizational form for the provision of renewable energy, as they are rather social capital-based organizations (Lang, Roessl, & Weismeier-Sammer, 2010), which is reflected by the social orientation of their governance principles such as mutual self-help, democratic control, voluntary and open membership or community orientation (Valentinov, 2004; ICA, 2006; Somerville, 2007; Spear, 2004).

3. METHODOLOGICAL APPROACH

The aim of this paper is to gain deeper insight in the contribution of organizations built on cooperative principles to the diffusion of renewable energy in Austria. Particularly with regard to existing research gaps regarding cooperative governance structures (Cornforth, 2004; Spear, Cornforth, and Aiken, 2009), we chose a qualitative approach in order to gain first in-depth insights (Stake, 1995) into the structures of cooperative energy organizations with citizen participation.

[1] Furthermore, Müller and Rommel (2010) give a detailed overview of the political, economical, social and technological factors impacting electricity generation and trading in Germany.

After a desk research to track suitable cases in Austria, we quickly got aware of a cooperative called *v-energie* in the Western Austrian province of Vorarlberg. In the following sub-sections we will present the history of the cooperative in greater detail.

We conducted four interviews with relevant actors in Vorarlberg. Basically, interviews were semi-structured with a mix of single and group interviews. Interviewee 1 is chairman of *v-energie* and member of the Green Party, Interviewee 2 works at the *Vorarlberger Energieinsitut* (Energy Institute of Vorarlberg), Interviewee 3 is owner of a consultancy and chairman of the *Talentegenossenschaft*, which is affiliated with *v-energie*, and the last interview was arranged as a group interview. Interviewees were the director of the *Arbeitsgemeinschaft Erneuerbare Energie Vorarlberg* and one member of the *Talentegenossenschaft*. Furthermore, we were able to access some archival data (mainly press articles and internal reports). Data was collected in May 2010, when also an on-site visit at the central office of *v-energie* took place. All interviews were tape-recorded and transcribed afterwards, in order to have a solid database available for the following qualitative content analysis in line with Mayring (2008).

In the following sub-sections we discuss results of our case analysis. First, we start with a description of the project under review, the *v-energie*, situated in Bregenz, Vorarlberg.

4. CASE DESCRIPTION: V-ENERGIE

4.1. INITIAL SITUATION IN VORARLBERG

Within this section, we present the initial situation in the Austrian province of Vorarlberg where our case study is located in. Afterwards, we present the different actors directly or indirectly connected with *v-energie*.

Vorarlberg is one of nine provinces in Austria. It is located in the West of the country, bordering Switzerland and Germany. It covers an area of 2,061 km^2 with about 370,000 inhabitants. In terms of size and population, Vorarlberg ranks 8^{th} out of nine Austrian provinces. Energy consumption in Vorarlberg amounts to approx. 9,400 GWh per year. Currently, almost 30 % of energy consumed stems from renewable energy sources, such as wood, water or solar energy; an amount which bears the potential to be increased by 35 % (Land Vorarlberg, 2011).

In general, Vorarlberg focuses more on energy conservation than on the expansion of renewable energy systems, as the reduction of the energy-demand is considered

to exhibit a greater impact on the environment. Energy efficiency is aimed to be achieved through improving the thermal insulation of existing private buildings or by funding new buildings with energy-efficient insulation (Land Vorarlberg, 2010). Furthermore, for example the city of Bregenz (the capital of Vorarlberg) is heavily engaged in supporting a greater diffusion of renewable energy. Since 2008, Bregenz is member of the *e5-network* of energy-efficient communities, a project assisting municipalities in modernization and enhancement of their energy politics (e5-Gemeinden, 2011).

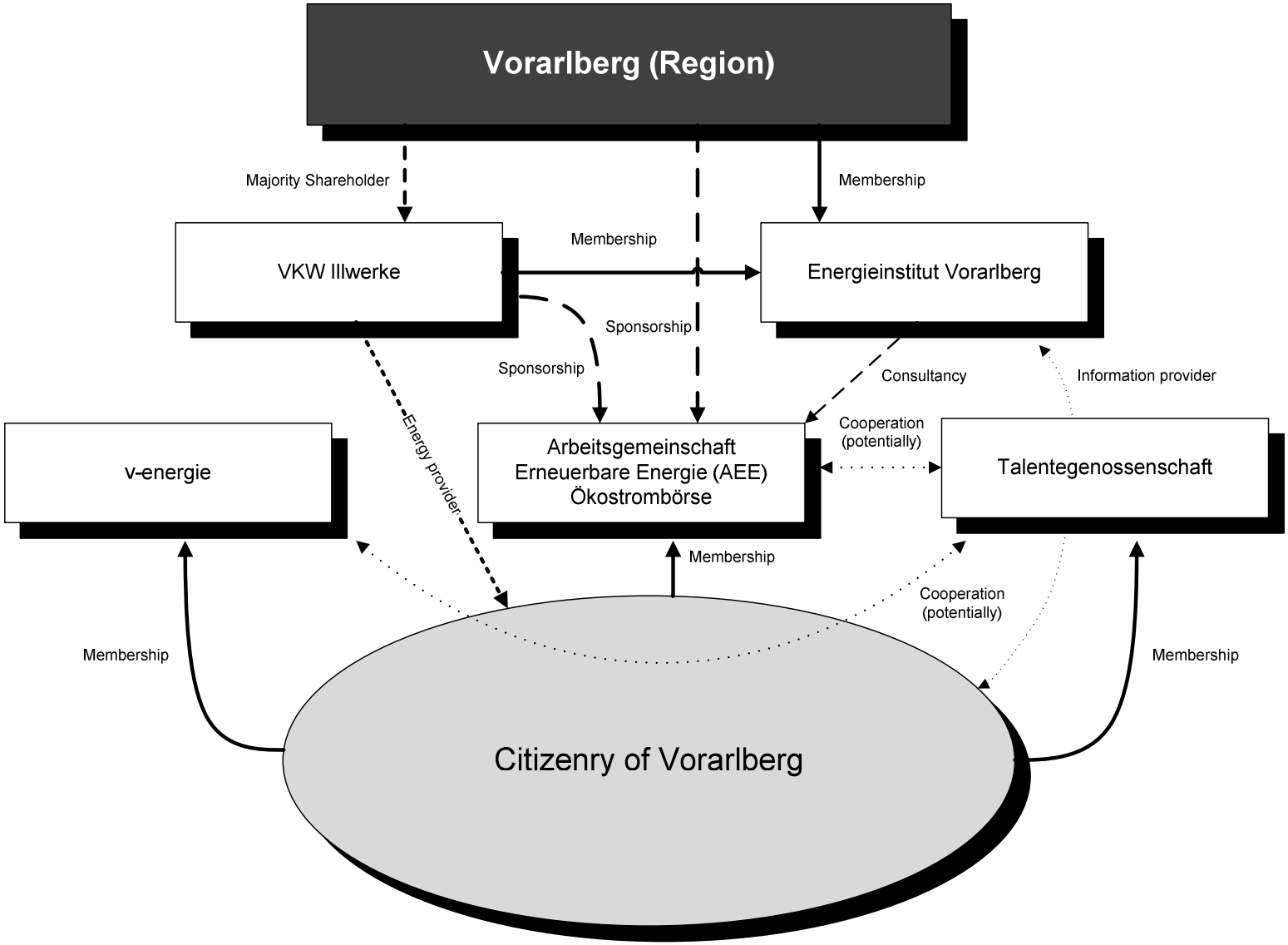
In 2010, the city council decided to promote the use of renewable energies. In doing so, small-scale biomass installations in residential buildings, district heating network lines, solar thermal systems in residential buildings, photovoltaic and other "green" installations are encouraged and actively supported. For the next 20 years, the city of Bregenz pursues a distinct energy strategy promoting and supporting renewable energy (Bregenz 2011). However, the explicit target of Vorarlberg is energy autonomy, achieved through both approaches: the development of renewable energy systems as well as through improvement of energy efficiency (Land Vorarlberg, 2011).

A big share of power production in Vorarlberg is delivered by large hydropower plants (90 %). In 2009, the following green-electricity plants were in use in Vorarlberg: 912 photovoltaic plants, 12 small hydroelectric power plants, 31 biogas plants, 8 (solid and liquid) biomass plants, and 7 sewage and landfill gas plants (Energiebericht, 2010). The largest feed-in capacity is delivered by biomass plants (44.3 GWh), whereas the big group of photovoltaic plants feeds in only 7.4 GWh.

4.2. V-ENERGIE AND RELATED ACTORS

Figure 1 gives a brief overview of relevant actors in our case study and their relations with *v-energie*. As it is to be seen, all actors aim at involving citizens in some way. The *Energieinstitut* plays the role of an intermediary between politics politics and the citizens. One of the most important actors is the *AEEV* (Arbeitsgemeinschaft Erneuerbare Energie Vorarlberg). The *AEEV* is also the operator of the *Ökostrombörse*, which is providing a platform for gathering donations to support of renewable energy facilities.

Figure 1: v-energie and related actors



Many people support green energy by using the *Ökostrombörse* or get their own small-scale energy generation facilities supported. Remarkably, it is also sponsored by the *VKW Illwerke* and the regional government. Nevertheless, the *Ökostrombörse* wants to actively change the energy policy of the region, which is quite surprising given such involvement of the main energy actors. At the moment, it is not clear if the "grassroots organizations" – which all have the same target group - will cooperate and if so in what way.

In order to untangle the network presented in figure 1, we present the relevant actors in greater detail in the following sub-sections.

VKW Illwerke

The *VKW Illwerke* is the largest energy service company in Vorarlberg. In 2001, it took over the *Vorarlberger Kraftwerke AG* (VKW, approx. 170,000 customers) and now acts as the main provider not only in Vorarlberg, but also in parts of Southern Germany. The principal owner of *VKW Illwerke* is the province of Vorarlberg, holding 95.5% of all shares.

In 2001, the *Illwerke Alternative Energie* (Illwerke Alternative Energy) was founded as a 100% subsidiary of *VKW Illwerke*. The company's strategic objectives are "the long-term use of indigenous energy sources in the province of Vorarlberg, the exploitation of the water as food and the regional implementation of measures of energy efficiency." (Vorarlberger Illwerke AG, 2011).

Energie Institut Vorarlberg (EIV)

The *Energie Institut Vorarlberg* (Vorarlberg Energy Institute, EIV) was founded in 1985 and is registered as an association with a declared non-profit character. Currently, the *EIV* has 40 employees. The total budget in 2008 was 3.4 million Euros. The declared objective of *EIV* is: "We advise, educate and conduct research for sensible energy use and renewable energy sources." Several Vorarlbergian institutions are members of the *EIV*, such as the province of Vorarlberg, the VKW, and the chamber of commerce.

In general, anyone may become a member of the institute, but particularly institutional memberships are aimed for. The work of the EIV is financed by

membership fees, fees for services, project funding, fees for programs of participants / members, other incomes and sponsor contributions.

ARGE Erneuerbare Energie Vorarlberg (AEEG)

The *ARGE Erneuerbare Energie Vorarlberg* (Consortium Renewable Energy, AEEV) was founded in 1999 to act as a regional advocacy for all producers of renewable energy. In other provinces of Austria, there are also spin-offs of the national parent institution *ARGE Erneuerbare Energie*, AEE, which was founded in 1980 to promote solar energy. The *AEEV* is organized as a charitable organization, funded by membership fees, services and sponsorship (primarily from the province of Vorarlberg and the *VKW Illwerke*). Supporters of the association are also the *European Agricultural Fund* and *leader austria* (a funding scheme for regional development by the European Union in collaboration with Austrian counterparts).

The *AEEV* is politically independent and thus tries to cover a wide range of interests. The areas of engagement of *AEEV* are diverse: public relations, networking, education and the implementation of the projects. It also acts as an operator of the *Ökostrombörse Vorarlberg*.

Ökostrombörse Vorarlberg

The *Ökostrombörse* (an exchange for green electricity) is an essential pillar of the *AEEV*. Currently, there are three such energy market institutions in Austria: Besides the *Ökostrombörse Vorarlberg* there are the exchange of the province of Salzburg and the nation-wide Ökostrombörse Austria. The *Ökostrombörse Vorarlberg* is the oldest and most established one.

The main idea behind the set-up of the exchange is to enable the financing of green power plants and to provide transparency in funding issues. This is achieved through voluntary surplus payments that customers make with respect to their electricity bills. This money is used for supporting small-scale producers of green electricity. It is important that customers can decide which system they want to support with their additional payment. The *Ökostrombörse* serves as the respective marketplace, where such payments are settled and cleared. (ARGE Erneuerbare Energie Vorarlberg 2011).

v-energie

The *v-energie* was founded in 2008 as an association by two politicians of the Green Party. It has been designed as a project to promote the use of renewable energy. For a short time, it was considered to set up an own cooperative. The establishment of such a cooperative failed though because of the excessive costs that would originate from an appropriate set up process, particularly at the legal level.

Thus, from the start an association proved easier to handle. Another reason that worked against the set up of a cooperative was the fact that at the same time in Vorarlberg there was a so called *Talente-Genossenschaft* (talent cooperative) that was appealing to a similar group of (potential) members. It was considered unfavourable if there were two similar cooperatives. Nevertheless, it was considered to merge in order to "join forces". Meanwhile, cooperation between the *Talente-Genossenschaft* and the *v-energie* exists. The association *v-energie* is now responsible for developing project-ideas which are then wind up by the cooperative. The main field of activity is the support of pv-systems and small hydro power stations.

5. CASE ANALYSIS

Our case study aims at answering the research question: How can organizations built on cooperative principles contribute to the diffusion of renewable energy in Austria? Therefore, we analyzed the data gathered from qualitative interviews with members of *v-energie* by applying content analysis (Mayring 2008) along the following categories:

- General framework conditions (5.1)
  - Situation in Austria (5.1.1)
  - Changes needed (5.1.2)
- Resources (5.2)
- Actor roles (5.3)
  - Promoters (5.3.1)
  - Investors (5.3.2)
  - Cooperative members (5.3.3)
- Organization of renewable energy projects and initiatives (5.4)
  - Objectives (5.4.1)
  - Supporting factors for renewable energy projects (5.4.2)
  - Problematic areas in renewable energy projects (5.4.3)
- Cooperative (5.5)
  - Problematic areas concerning cooperatives (5.5.1)
  - Comparison of the cooperative with other legal forms (5.5.2)

The analysis of our case study allows for deeper insights into several aspects of cooperative energy production on local or community level. Therefore, we focus on determinants of the developing process of *v-energie*, by describing the relevant *framework conditions* for the establishment of the *v-energie* project. After that, we elaborate the *resources* relevant for this development and identify different *roles of actors involved* in this process. Furthermore, we concentrate on the *organizational forms* renewable energy projects might exhibit, and elaborate on objectives, as well as supporting factors and problematic areas in this field. Finally, we focus on the legal form *cooperative* in order to elaborate distinct requirements occurring for energy projects from choosing this legal form.

5.1. GENERAL FRAMEWORK CONDITIONS FOR RENEWABLE ENERGY PROJECTS

5.1.1. SITUATION IN AUSTRIA

In general, renewable energy in Austria comprises a great investment volume (BR28[2]). Nonetheless, projects in this area are facing a rather hostile environment, with many decision makers criticizing the general conditions they are embedded in (in our case this is the energy market in Vorarlberg/Western Austria). This is mainly true for pv-panels. Contrary to this fact, Austria plays an important role in the field of solar energy and biomass.

However, by now there is no really free market for electricity available, as large energy providers try to defend their position in the market and possess great influence on it (BR2). Additionally, the federal state policy of Vorarlberg is affected by its business actors, which means that large companies also influence energy policy in Vorarlberg (BR21). Although the federal state government does not avert alternative energy projects, it does not support them intensely either. In general, it does not seem to support such projects until they are successful (BR45). Therefore, it is not surprising that projects in their initial phases (without having a solid basis) are facing problems getting funds from the provincial government (BB61). Although there are initiatives possible like the *v-energie* or the *AEEV*.

Compared to other European countries (e.g. Germany, Italy or Switzerland), the conditions for green electricity projects are underdeveloped due to hold-ups in the development of renewable energy alternatives over the past decades (BB39). The basic conditions in Germany are interpreted as being completely different (JM18), due to attractive feed-in tariffs. For example pv-plants boomed over the last years (BR24) and therefore initiated a whole new line of business (e.g. installation, maintenance). The underdeveloped situation in Austria already shows negative impacts on the national economy: German installation businesses provide better conditions for private pv-plants, which has already been recognized by Austrian consumers (BR25).

Regarding the legal conditions for green electricity in Austria, or more precisely in Vorarlberg, it can be noted that the Austrian Ökostromgesetz (green electricity law)

[2] Initials and numbers in brackets after statements refer to interpretations of the single interviews.

constitutes a major obstructive factor for the diffusion of renewable energy plants and the development of a free energy market (BB4, BB38, BR3). Furthermore, legal conditions in Austria seem to block out private initiatives in renewable energy (BB37). Legal conditions constrain the diffusion of alternative energy projects and policy actors show a low level of interest in topics like renewable energy or energy efficiency (BB51). For Austrian supporters of renewable energy the motivation of political actors is incomprehensible, as other countries (like Germany) provide evidence that capital spending in renewable energy can be profitable in the long run (BB74). Therefore, activists blame political parties for being "short-sighted" regarding renewable energy projects (BB74). One interview partner, working for *AEEV* describes the problem as follows:

> *„The problem is not the feasibility [of renewable energy diffusion in Vorarlberg], as this has been proved several times. It is the allocation of power. [In such cases] it's about new power structures, new power dispersion and new dependencies" (BR29).*

Although amendments and alignments of the Austrian law to the German example are planned, their implementation is not intensely supported so far as there are in fact no influential lobbies for renewable energy available (BB41). Large energy suppliers in Vorarlberg possess a kind of monopoly in the state and are intensely intertwined with the federal state government, which affects the development of a market for renewable energy negatively (BR21). The large energy suppliers in Vorarlberg have a long tradition in the state and are interested in assuring their strong position, as the energy market in Vorarlberg is built around them. Therefore, they block out approaches for decentralized supply and show no interest in a change of the market situation they are embedded in. Decentralization seems to be only favorable for these large suppliers if it is arranged by means of their own supply channels (BB72). At the same time, private energy suppliers are dependent on them, as they do not possess direct market access for their green electricity (BR7). The chairman of *v-energie* describes this as "building a glass-ceiling" by the federal state government and large energy suppliers (BB73):

> *"This dispute is located behind the scenes. On the one hand [large energy suppliers] allow for decentralization to some degree, in order to prevent a 'bad mood' of people actively engaged in energy initiatives. On the other hand, they try to delimitate it, so that the admission [of alternative projects] does not endanger their position."*

Therefore, the relationship between private energy initiatives and traditional energy suppliers is problematic (BB34), as the latter view private suppliers as an immediate threat (BB35).

Besides institutional constraints for private renewable energy projects, several other obstructive factors could be determined:

- Citizens notice little emotional pressure to assume responsibility for the diffusion of renewable energy. Energy is cheap and unlimited available, so the great proportion of the population does not recognize any need for a change in the energy system (BS2).
- Investment in pv-panels in Austria seems to bear no economic benefit (JM5), which is probably due to the limited public subsidies.
- Furthermore, Austrian politics focus more on energy efficiency than on renewable energy (BS7).
- Finally, in economically difficult times it is difficult for alternative energy suppliers to find sponsors for their projects (BR50).

5.1.2. CHANGES NEEDED

The general conditions for renewable energy in Austria described above imply a number of proposals for change.

Currently, it seems as if the legal conditions for renewable energy projects will not change significantly within the next years. Therefore, such projects require promotion on a federal state- or community-level in order to enable their implementation (BB60). There have been many changes of the Ökostromgesetz in the past, but they were not appropriate to support green electricity. Furthermore, a broad change in perception of the population as well as a certain linking-up of activists will be needed (BB70) to build a “strong backbone” for renewable energy diffusion in Austria.

Another approach for sustainable energy usage is to first and foremost increase energy efficiency, as the responsible usage of energy shows immediate outcomes (JM21) and will be able to provide a solid basis for further discussion of the implementation of renewable energy throughout the country. It will be important to start a broad public discussion and of course controversy about renewable energy (BB71) in order to change conditions for such projects. At the same time, the

installation of best practice plants may as well encourage political actors to join the discussion about renewable energy. Furthermore, positive examples for renewable energy bring forward follow-up projects in this area (JM21).

Nonetheless, small private suppliers need to actively contribute to a change in conditions for renewable energy, instead of passively wait for this change to come (BB31). Additionally, a change in the general conditions is dependent on the support of large energy suppliers on the federal state level. Support is especially needed in the formation of a decentralized energy supply-system which includes small private suppliers as well (BR59). Nonetheless, a change in the general conditions for renewable energy needs to be initiated by politics in the first line. Instead of staying dependent on conventional energy, resources of regional renewable energy have to be made useable (BR22).

5.2. RESOURCES

Analysis of the interviews conducted in the case of *v-energie* yielded to a number of resources required for the implementation of renewable energy (with citizen involvement) in Austria.

First of all, social resources play an important role for projects initiated by citizens as alternatives to conventional energy supply. Social capital, which in the case of *v-energie* is defined as the intensive interconnectedness of activists and people interested in the topic, serves as a crucial prerequisite in order to ensure guidance, for comparison of perspectives and for the evaluation of options for implementation (BB49). Furthermore, networks of promoters and other activists are needed to attract investors in alternative projects (BB59). Nevertheless, it is difficult to include institutions dependent on the (federal state) government in such networks, as governmental and non-governmental groups regularly have different views on what changes in the general (legal) conditions for renewable energy are needed (BB70).

Regarding technological resources needed for the diffusion of renewable energy, it can be noted that in general the technical implementation of renewable energy plants or tools for single households is not problematic (BR51), as the technologies needed are already available. Especially photovoltaic systems can be implemented easily (BB52, BB66). Nonetheless, it is important to involve architects in the issue of renewable energy, in order to ensure that photovoltaic systems are included in the concept for new buildings from the beginning (BR5). In Vorarlberg there is a large

market for single family houses with high design standards, but aspects of green electricity such as the integration of photovoltaic panels have often been ignored by architects so far (BR5). There is also a big market for passive houses.

Besides the installation of photovoltaic panels in individual housing, small-scale hydro power might serve as an interesting and reasonable alternative in Vorarlberg (BB65). Nonetheless, small-scale hydro power does not seem to be suitable for projects like *v-energie*, as it requires high financial investment, which cannot be guaranteed by initiatives in their start-up phase (BB67).

Furthermore, it has to be said that Vorarlberg would also have the potential for wind energy projects (cf. Dobesch et al. 2003). The interviews and the case study still focus on pv-panels, since these are the most important renewable energy sources used in the small-scale segment yet.

Projects in renewable energy require high financial investment in the beginning and are expected to amortize after approx. 15-25 years or later (photovoltaic systems) (BB29, BR52). Therefore, projects need a long-term financial background and require investors who are willing to provide capital for the long run (BR46).

5.3. ACTOR ROLES

In general, analysis of the case of *v-energie* resulted in the differentiation of three different types of actors fulfilling different roles in the formation process of renewable energy projects:

(1) *Promoters* are people who initiate projects in renewable energy and are highly involved in the (pre) start-up phases of energy cooperatives. They promote the idea of renewable energy and support projects by using their personal networks to attract members and investors.

(2) *Investors:* Their main task is to provide a solid financial background for new projects. Investors in renewable energy are predominantly driven by the idea of renewable energy, and not solely motivated by possible profits.

(3) *Cooperative members* join the energy cooperative and are personally interested in consuming renewable energy.

Promoters, investors and cooperative members in renewable energy projects can frequently not be separated accurately. Hence, promoters can act as investors and

cooperative members at the same time or vice versa. In this case study, we decided to separate the different actors from each other analytically, which enables us to present the characteristics of each type more precisely. They share three basic characteristics:

- First of all, the three types of actors involved have a high level of dissatisfaction with the current situation on the Austrian energy market (BB2).
- Second, they all seem to feel an urgent "need for achievement" and are ready to get their projects started (BB8).
- Third, it seems that a politically predominant "green" attitude can be found in all of the three types (BB2).

Additionally, each type of actor exhibits distinct characteristics which are described in the following sub-sections.

5.3.1. PROMOTERS

Promoters of renewable energy projects possess certain alertness for urgent problems in their surroundings and have a "feeling" for attracting the right people for their projects (BB5). New projects are dependent on the active commitment of promoters, especially in their (pre)start-up phases (BB20). If the commitment of promoting people gets lost, the whole (new) project is at risk (BB20). Promoters of projects may not be single person, but occur in teams (BB9), who need to have a high degree of interconnectedness in order to build up and make use of social capital (BB49). This social capital, e.g. in the form of personal contacts of promoters, can be used to acquire investors for new projects (BB59), in order to assure a solid financial background. Furthermore, members (activists or potential cooperative members) can be found via the promoter's network (BB53). Therefore, promoters need to extensively make use of their personal contacts to attract enough activists and members for new projects.

The involvement of political parties (or members of political parties as promoters) might be a special challenge for projects in renewable energy, as even projects (or promoters) initialized by political parties need to prove their reliability to people interested in the topic and of course in the project (BR46).

5.3.2. INVESTORS

Attracting investors (and activists) for new projects is a main task of promoters (see above), although this seems to be one of the most difficult tasks, particularly in the beginning of new projects (BR52).

Investors share a common attitude towards renewable energy projects: They are convinced that green electricity (*Ökostrom*) "makes sense" and that quick, decentralized and independent energy supply is important (BB45). Investors know about the problems regarding the general (legal) conditions concerning renewable energy; they know that their investment will not lead to high earnings (BB30). Summarizing, the idea of producing renewable („green") electricity is a general attitude in their life (BB45). To put it in the words of the chairman of *v-energie*:

> *"Investors say: 'It [renewable energy] is so important for me, it is worth to me.' Therefore, they have a certain readiness – well, that's the main thing for them" (BB45).*

Therefore, investors show great idealism when it comes to renewable energy, high earnings and profit is no important reason for their commitment (JM4), as projects amortize after 15-25 years at the earliest (BB29, BR 52). Nonetheless, some investors hope that energy tariffs will rise significantly over the next years and therefore invest in renewable energy (BB31).

Comparing investors to "normal" members of energy cooperatives or activists in renewable energy projects, it has to be noted that investors might also be persons who do not directly benefit from the energy produced (as consumers) (JM3). As mentioned above, they simply want to financially support such projects because of a "shared vision" for the future.

Renewable energy projects require a great number of investors willing to financially support them in order to ensure an appropriate financial background for the construction of renewable energy plants (BR46). Therefore, projects in their start-up phase need to be built on a solid basement (promoters, supporters); the involvement of political parties might be helpful to attract investors (BB59).

5.3.3. COOPERATIVE MEMBERS

First of all, cooperative members are interested heavily in renewable energy and energy efficiency (BB2). It seems that activists (like investors) are first and foremost

attracted by the idea of renewable energy and do not have concrete expectations beforehand (BB16, JM4). Of course they act as investors by paying a certain membership fee. Cooperative members can choose between two alternatives of earning a profit from the project: (1) their membership enables them to directly obtain electricity (e.g. from their own photovoltaic system installed – extra electricity not consumed can then be compensated by feed-in to the main electricity network or (2) enhancement in value of their cooperative share (BB32), which puts them into the role of investors (see above, JM3).

5.4. ORGANIZATION OF RENEWABLE ENERGY PROJECTS AND INITIATIVES

In order to organize renewable energy initiatives with citizen participation, first of all an organizational framework for coordination and planning is needed (BB13). In this respect, it might be helpful to found a platform, giving investors and other interested people space for information exchange and project planning (BB7), as otherwise the forming of a tight network structure cannot be ensured. Furthermore, it seems to be fruitful in terms of cost efficiency to combine related projects (BB19); special care has to be taken that this step takes place only when the platform is already established and "built on solid ground" (BB21). In doing this, special care must be taken to ensure balance between weaker and stronger projects and initiatives (BB20). Platforms organizing renewable energy projects furthermore need to ensure that all institutions involved have the same goals and do not perform as "solitary actors" (JM22), although they need to beware their own identity (BB28) and maintain a strict regulation between investors and plant owners (BR68).

5.4.1. OBJECTIVES

Platforms for renewable energy projects can be viewed as networks, containing single projects and initiatives, which share one vision and combine their resources and contacts in order to achieve their goals. In the initiating phase of such platforms, this goal might be to realize a certain amount of plants and of course cost recovery (BB14). Further objectives might be:

- Establishment of flagship projects to show a broad public what renewable energy is able to achieve (BB50).

- Kicking-off a political discussion about renewable energy (BB50), enabling citizens to participate the design of general conditions (BR16).
- Overcoming political shortfalls by initializing new models and instruments for renewable energy-production (BR3).
- Enabling successful private initiatives to gain a better basis for negotiation against big energy suppliers (BR16).
- Changing structures in a way that cooperation with private energy suppliers becomes a real alternative for energy customers (BR16), so that market structures change as well (BR 21).
- Achieving renewable energy facilities to become a “matter of course” for individual housing (BR6).

Summarizing, it can be noted that initiatives like *v-energie* do not primarily focus on nation-wide (or federal state-wide) diffusion of renewable energy, but target an advancement of general conditions and acceptance towards renewable energy projects by setting a positive example (BB68).

5.4.2. SUPPORTING FACTORS FOR RENEWABLE ENERGY PROJECTS

First of all, cooperation between interested citizens and institutions seems to be a crucial prerequisite for achieving a common goal in renewable energy (BR48). Additionally, the interviewees considered it to be of utmost importance that citizens start to demonstrate their values concerning renewable energy in public, in order to enable a change of values and initiate the involved dynamics (BR58). Regarding renewable energy projects it is of utmost importance to underline the common ground that connects interested citizens and officials (BR73): First, this independence from other forms of energy (nuclear power or oil). Second, ecological aspects play a crucial role, too. Especially regarding the current situation in Japan and the resulting discussion on energy efficiency and nuclear power, might present a promising starting point for renewable energy.

Another factor supporting renewable energy project is seen in the participation of women in related initiatives: A great proportion of voluntary services (especially regarding citizen participation) is dominated by men (BS3). Women might be able to contribute a different perspective on the topic (BS4). Therefore, it is recommended to aim for an according women’s quota in renewable energy projects, as this seems to

be a fruitful approach for the success of such projects (BS3). Furthermore, women are said to embrace the "cooperative thought" more than men, and appreciate solidarity (BS5).

5.4.3. PROBLEMATIC AREAS IN RENEWABLE ENERGY PROJECTS

In first line, projects need to be autonomous, as dependence from official funds puts projects on a politically influenced level, which might affect processes negatively (BR57). Furthermore, initiatives have problems capturing a clear position towards renewable energy, as the initiatives are dependent on the "good will" and/or funds from communities or the federal state (BB70), as political institutions might stop funding without further notice, if they do not agree with the project's goals or the initiative becomes too powerful (BB58). Additionally, political influence might result in disturbance through "oppositionelle Machtspiele" ("power games of the opposition", BB70). On the other hand, assistance from political parties or institutions might of course help to put the project on a higher established level (BB70).

In renewable energy projects, because of the close cooperation among different people and institutions involved, some social problems on a personal level might occur (BR49), especially regarding mutual trust and the formulation of common targets (BR70).

5.5. COOPERATIVE

In general, common objectives do not necessarily need a strict contract, even though it may be helpful in many cases. For renewable energy projects it is important to build mutual trust early. Nonetheless, in case of conflicts it may of course be useful to use a contract to support the initiation of a larger project (BR71). The legal form of a cooperative might be such a kind of "contract" to ensure common achievement of objectives (BR40).

The cooperative bears huge potential for the organization and governance of renewable energy projects (BB10, BB17, JM12). Especially, it enables collective decision making (BR33) within a large number of members. One big advantage of the legal form cooperative is the easy handling of the access /emission (without extra costs) of their members. Hence, the cooperative offers valuable opportunities for public participation, which is a big issue in the field of energy cooperatives.

Anyhow, it is without doubt that the costs of the legal form are a critical point. Regarding the annual costs of a cooperative in Austria (approx. € 3,000), cooperatives in the area of renewable energy need a certain "critical size" in order to ensure cost efficiency and the building of a useful structure aligned to its objectives (BB53). If this critical size is reached though, the opportunities to generate involvement are relatively high compared with other legal forms. Each member has to sign at least one cooperative share and participates thus in the value of the cooperative. The cooperative share enhances the members' commitment to the project.

In Austria, only little interest in the legal form of the cooperative exists (JM9). This is mainly the result of an antiquated image (BR33) and the relatively high costs of the legal form. Furthermore, there are particular advocacy groups behind the cooperative in Austria (the so called *Genossenschaftsverbände*) that also act as a one-stop shop in services for the foundation and development of already existing cooperatives. This makes this legal form rather unique compared with other options like various forms of companies or associations.

The auditing associations (*Revisionsverbände*) of course would have the opportunity to reduce these costs and thus to contribute in making this legal form more attractive even for smaller projects, e.g. in renewable energy (JM8, see below). Naturally, the many cooperatives in the field of biomass mainly in rural areas where cooperatives have a long tradition should keep in mind.

5.5.1. PROBLEMATIC AREAS CONCERNING COOPERATIVES

In general, it seems that regarding cooperatives as legal forms for renewable energy projects two main problem areas arise: (1) Costs of the legal form, and (2) cooperative law and auditing associations.

a) Costs of the legal form

The Austrian cooperative law (*Genossenschaftsgesetz/GenG*) stipulates that each cooperative has to be member in an auditing association. In general, cooperatives have high fixed costs for annual auditing and membership fees in these auditing associations (BB11). These costs amounting at approx. € 3,000 per year are obstructive for smaller renewable energy projects (JM1) when choosing a legal form (JM11, B11). The obligatory membership in the auditing association acts as an advantage and disadvantage of cooperatives simultaneously: On the one hand, the

legally intended audit guarantees reliability for the cooperative members and their business partners. On the other hand though, in comparison to other legal forms the fees sometimes may cause a problem, in particular for small cooperatives. Nevertheless, it has to be considered that each legal form causes certain fees. E.g. most of the registered associations or companies of limited liability also need cost-causing legal and tax advices or marketing consultancy, although they have not to be member in an association.

This in turn means that even if the cooperative principles provide an adequate governance structure for renewable energy projects, initiators or responsible persons might choose another legal form (e.g. an unincorporated association, cf. 8.2).

b) Cooperative law and auditing associations

The cooperative law in Austria is viewed as being obstructive in the area of renewable energy projects (BB11) or in areas with citizen participation in general. Furthermore, auditing associations are said to impede the foundation of cooperatives in innovative areas, like in renewable energy (JM3) because of antiquated structures (JM7). The founding of a cooperative in Austria is time-consuming, although founders get support from auditing associations (JM6).

5.5.2. COMPARISON OF THE COOPERATIVE WITH OTHER LEGAL FORMS

The cooperative as a legal form bears some advantages over other legal forms (JM15, JM16):

- Members can easily join the cooperation (entry and exit of members)
- External control through auditing associations
- Lower capital assets necessary in the founding process (compared to other legal forms like limited companies; in future, the so-called “small limited company” might become a “rival” for cooperatives in renewable energy (JM14))

On the other hand, it turned out from our interviews that founding an unincorporated association is viewed as being superior to the cooperative (BB12). For instance, cooperatives are interpreted as being more “formal” or “official” than associations, and interested people are frightened off because they fear responsibility (BR35). Furthermore, unincorporated associations are rather typical for citizen initiatives in a broad range of areas (BR36). Nonetheless, cooperatives and unincorporated associations are sometimes viewed having long and complicated ways of decision making due to member participation (BR38).

6. DISCUSSION

Results of our case study show that there are a lot of different problematic areas that impede the dispersion of renewable energy plants and projects in Austria.

Although Austrian municipalities claim to increasingly seek the support of citizens in the delivery of public services (Moedlhammer, 2009), it seems as if the production of renewable energy is heavily affected by "big players" in the electricity sector, trying to maintain their market share and influence. Members of alternative projects like *v-energie* therefore call for more support from the federal state. Furthermore, legal restrictions for green electricity seem to block out private initiatives and therefore constrain the diffusion of alternative energy. Results show that a number of changes in the general framework conditions of Austria are needed to support the installation of alternative electricity plants. Most prominent, a call for a change in the legal conditions (*Ökostromgesetz*) could be noted.

Concerning an appropriate resource basis for energy projects, our results show that social resources (e.g. in the form of social capital) play an important role for the participation of citizens. Furthermore, this holds true if energy projects are to be organized based on cooperative principles. In the case of *v-energie*, social capital serves as an important prerequisite for the linking-up of interested people, as it is of utmost importance for citizen-based organizations whether citizens who are initially involved can access complementary resources through their own personal networks (Lang & Roessl, 2009). In doing so, initial members – promoters – use their networks to attract members and investors, helping to build a solid basis for future work.

Results of our case study demonstrate the importance of considering the personal component of PCPs in the renewable energy sector. Actors in renewable energy projects share common characteristics, no matter if they are promoters, investors, or "just" cooperative members. Together with a commonly shared high level of dissatisfaction with the current energy market, actors feel an urgent "need for achievement" and share a predominantly pro-green political attitude. The production and consumption of green energy collectively gives a certain additional "sense" in their lives, as Müller and Rommel (2010) note: "Producing one's own electricity seems to make a difference. The electricity produced by a cooperative feels different from electricity purchased from a private company" (p. 9). A change in consumer-producer relations can be noted, and the cooperative might provide an adequate organizational framework for reducing information asymmetries, giving members and consumers the possibility to know *how* and *by whom* their electricity is produced (Müller & Rommel, 2010).

Summarizing, our study provides evidence that cooperatives provide an adequate legal form for the organization of renewable energy projects. The easy handling of entry or exit of members offers important opportunities for citizen participation. Nonetheless, little interest in founding cooperatives in Austria exists, due to an antiquated image and high costs of the legal form. But empirical studies (e.g. Karner, Rößl, & Weismeier-Sammer, 2010; Lang, Rößl, & Weismeier-Sammer, 2010) provide evidence, that citizen participation in the form of cooperatively organized public citizen partnerships (PCP) bears a huge potential in public service delivery. As our case study of *v-energie* shows, this seems to hold true for the provision of renewable energy as well.

7. IMPLICATIONS FOR PRACTICE AND FURTHER RESEARCH

The organization of renewable energy projects with citizen participation is a quite new field of cooperative research. Furthermore, especially regarding the situation in Austria, little to no empirical evidence for cooperative energy projects exists. Therefore, our case study has an explorative character in order to elaborate generally how cooperative principles might contribute in diffusing renewable energy projects with citizen participation in Austria. Furthermore, results of the case study might be helpful for other countries or areas, where the initial situation in the area of renewable energy cooperatives is comparable to the one in Austria (especially regarding problematic general framework conditions).

Analysis of our qualitative data collected showed that in general five major subject areas demonstrate relevant areas for the diffusion of renewable energy with citizen participation in Austria. These categories might provide important input for other regions or countries as well, by raising the following questions:

- *General framework conditions*: How do legal and political circumstances impact the foundation of cooperatives in the renewable energy sector?
- *Resources*: How does social capital support the development of cooperatives in the renewable energy sector and to which extent might it be useful?
- *Actor roles*: What are the characteristics of actors involved in renewable energy cooperatives? How might they be attracted to join projects?
- *Objectives*: Which objectives might platforms or networks for renewable energy provision follow? Which objectives seem to be fruitful in order to push the diffusion of renewable energy projects?

- *Cooperative*: How can cooperative governance structures support the organization of projects for renewable energy production and consumption? Which problematic areas arise regarding the legal form of cooperatives?

As can be seen from the categories above, results of our case study bear implications for practice as well. For example, it seems to be fruitful to concentrate on the legal conditions in Austria to support renewable energy provision. Therefore, a revision of the Austrian cooperative law might encourage more activists to choose the cooperative as an appropriate legal form for their projects. Furthermore, auditing associations (*Revisionsverbände*) might initialize campaigns assuring citizens that cooperatives are a modern and democratic way for organizing citizen participation.

Nonetheless, our case study has a strong explorative character. For further research, it might be fruitful to analyze other good practice examples, e.g. in in-depth multiple case studies to draw a more fine-grained picture of the role of cooperatives in renewable energy production.

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10. Work Package 4: Die Entwicklungsgeschichte einer BürgerENERGIEgenossenschaft – Solargenossenschaft Rosenheim

Inhaltsverzeichnis

1. Energiewende Deutschland

Deutschland ist nach China das Land mit dem höchsten Investitionsvolumen im Bereich der erneuerbaren Energie. Im Jahr 2010 investierte Deutschland 41,2 Mrd. Euro in erneuerbare Energien und liegt somit in der Gesamtsumme noch vor den USA (Deutschlandfunk 2011). Die Atomkatastrophe in Fukushima als Folge des Erdbebens vor der japanischen Küste vom 11.03.2011 führte weltweit und vor allem auch in Deutschland zu einer Neuorientierung der deutschen Energiepolitik (Monopolkommission 2011, 21). In Deutschland gingen in den folgenden Monaten tausende Menschen auf die Straße, um gegen Atomkraft zu protestieren.

Diese öffentliche Protestwelle bedeutete eine Stärkung der „Ökostrombewegung", die ihren historischen Ursprung im Anti-Atomkraft-Aktivismus der Friedensbewegung hat. Durch die potentielle militärische Nutzung von Atomkraft war das Thema auch für die Friedensbewegung relevant. Es gibt kaum ein vergleichbares Thema, zu dem über einen so langen Zeitraum eine derartige Mobilisierung stattgefunden hat (Roose 2010, 79). Die anfängliche Euphorie für die preiswerte Energieerzeugung in der Nachkriegszeit war in den 1970er Jahren der Angst vor Atomwaffen und Atomunfällen gewichen. Es formierten sich lokale Widerstandsbewegungen gegen den Bau von Atomkraftwerken. Die Protestbewegungen wurden meist von Akteuren vor Ort geleitet, trotzdem formierten sich zunehmend auch Massenproteste. Protestmärsche wie in Hannover im Jahr 1979, wo über 100.000 Menschen zusammenkamen, trugen dazu bei, dass aus der anfänglich kleinen Anti-Atomkraft-Bewegung eine nationale politische Größe wurde. Die teilweise radikalen Strömungen in der Bewegung führten jedoch auch zu einem Konfliktpotential mit der breiteren Öffentlichkeit.

Eine neuerliche Wende in der öffentlichen Wahrnehmung trat durch den Super-GAU im sowjetischen Reaktor von Tschernobyl im Jahr 1986 ein. Roose führt an, dass es in der Debatte überraschenderweise keine Rolle spielte, dass die Unfallursache ein kapitaler Bedienungsfehler war. Mitte der 1990er Jahre sind vor allem die Atommülltransporte Auslöser für neuerliche Protestaktionen. Mit der rot-grünen Koalition unter Bundeskanzler Gerhard Schröder wurde erstmals der Atomausstieg als Zielbestimmung in das Regierungsprogramm aufgenommen. Mit den Energieversorgern werden Verhandlungen über den schrittweisen Ausstieg geführt.

Roose führt aus, dass das Thema Atomkraft nicht nur als ein Konflikt um Risiken und Formen der Energieerzeugung zu interpretieren ist, sondern auch als Konflikt um die Entscheidungsbefugnisse des Staates und die Verflechtung von wirtschaftlichen und politischen Interessen

(Roose 2010, 80ff). Bundeskanzlerin Angela Merkel bezeichnete die Atomkraft lange als „Brückentechnologie, bis wir durch erneuerbare, rentable Energien den Umstieg schaffen“ (vgl. www.finanz.net, 14.09.2009; Bundesregierung 2010). Unter anderem mit dieser Argumentationslinie und der Tatsache, dass Atomkraft CO_2-neutral ist, wurde von der schwarz-gelben Koalition unter Angela Merkel 2010 wiederum eine Laufzeitverlängerung der deutschen Atomkraftwerke beschlossen.

Die politischen Ereignisse nach der Atomkatstrophe im japanischen Fukushima im Frühjahr 2011 bestätigen die von Roose beschriebene Analyse der Bedeutung der Anti-Atom-Bewegung in Deutschland und die ungewöhnliche Dauer des Konflikts. Bei den traditionellen friedenspolitischen deutschen Ostermärschen im Frühjahr 2011 zeigte sich beispielsweise, dass das Thema Atompolitik auch im aktuellen Kontext mehr Mobilisierungspotential als beispielsweise der Libyenkonflikt bietet (Morath/Schmidt 2011). Roose konstatiert in seinem Schlusskapitel: „Es bleibt abzuwarten, wann bzw. ob es langfristig gelingen wird, den Atomkonflikt für eine Seite endgültig zu entscheiden.“ (Roose 2010, 99). Die jüngsten Ereignisse rund um die Atomkatastrophe in Japan zeigen, wie schnell ein lang anhaltender Konflikt aufgrund von plötzlichen Ereignissen und dem darauffolgenden gesellschaftlichen Druck letztendlich entschieden werden kann.

Die Situation im Bereich erneuerbare Energie unterscheidet sich in Deutschland demnach in mehreren Punkten von der in Österreich. Unter einer ähnlichen Gemengelage an Motivationen gelang es einer Massenbewegung mit Protesten, eine Volksabstimmung über das von der sozialdemokratischen Alleinregierung beschlossene und gebaute Atomkraftwerk Zwentendorf zu erzwingen. Die Niederlage der Regierung, einhergehend mit der Nicht-Inbetriebnahme des einzigen potenziellen österreichischen Atomkraftwerks, veränderte den Charakter der österreichischen Anti-Atom-Bewegung jedoch erheblich. Entlang einer starken Stützung durch Boulevardmedien ist die Bewegung mittlerweile im Mainstream angekommen und gehört auch auf Regierungsebene zu einem zentralen „Glaubensbekenntnis“ der Republik Österreich. Dementsprechend sind das Konfliktpotenzial, und damit auch das Potenzial zu praktischen Initiativen, die dieses Potenzial katalysieren, ausgesprochen gering.

In Deutschland ist es in den letzten Jahren zu einem deutlichen Zuwachs von Energieprojekten mit Bürgerbeteiligung gekommen (GVB 2010, 40; Volz 2011). Viele dieser Projekte organisieren sich in der Rechtsform der Genossenschaft. Aus diesen Gründen liegt es nahe, dass die zweite Fallstudie des Projekts eine Energiegenossenschaft aus *Deutschland* näher beleuchtet.

1.1. Erneuerbare-Energien-Gesetz

Die deutsche Bundesregierung hat mit dem Energiekonzept eine Gesamtstrategie bis zum Jahr 2050 verabschiedet (BMWi/BMU 2010). Als einer der wesentlichen Ansatzpunkte gilt vor allem der Ausbau der erneuerbaren Energie. Eine zentrale Rolle spielt dabei das Fördersystem (Sensfuss et al. 2009), wenn sich auch die Monopolkommission in ihrem aktuellen Sondergutachten dafür ausspricht, erneuerbare Energien möglichst mit „marktlichen, wettbewerbsneutralen Mechanismen zu fördern". Damit soll einer Verzerrung des Wettbewerbs der verschiedenen Energieträger durch den auf CO_2-Emissionen fokussierten Emissionshandel entgegengewirkt werden (Monopolkommission 2011, 9).

Derzeit wird die Stromversorgung in Deutschland hauptsächlich durch fossile Energieträger (vor allem Kohle) und Kernenergie gesichert (BMWi/BMU 2010, 14). Langfristig soll sich das aber ändern. Der Windenergie wird dabei das größte Potential zugeschrieben. Die deutsche Bundesregierung setzt derzeit auf den Bau von Windparks in der Nord- und Ostsee. Allerdings verläuft der Ausbau alles andere als reibungslos. Der Stromnetzbetreiber Tennet warnte im November 2011 die Bundesregierung, dass es bei der Anbindung der neuen Offshore-Windparks Finanzierungsschwierigkeiten gebe (vgl. Die Zeit, 16.11.2011). Ein weiterer Grund für den schleppenden Ausbau der Windkraft ist die Angst der großen Energiekonzerne, dass sich ihre milliardenschweren Investitionen in die Windkraftwerke nicht über den Stromverkauf amortisieren. Kohle- und Kernkraftwerke machen immer noch einen ungleich höheren Gewinnanteil aus (Brück 2011).

Den Grundstein für das Bekenntnis zu Energiewende hat in den 1990er Jahren das Stromeinspeisungsgesetz (heute Erneuerbare-Energien-Gesetz, EEG) gelegt, das vor allem den großen Vorteil der Investitionssicherheit brachte (BMWi/BMU 2010, 7). Das EEG wurde zuletzt im Sommer 2011 novelliert, mit dem Ziel den Ausbau der erneuerbaren Energien weiter voranzutreiben: Bis 2020 sollen mindestens 35% der Stromversorgung durch erneuerbare Energien bereitgestellt werden (BMU 2010). Laut dem Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit dient das deutsche EEG für viele andere Länder als Vorbild, ist aber auch innerhalb Deutschlands immer wieder in Kritik geraten (ebd.). Die Monopolkommission sieht im Erneuerbaren-Energien-Gesetz und auch im Kraft-Wärme-Kopplungsgesetz sogar „keinen eigenständigen Beitrag zum Klimaschutz" (Monopolkommission 2011, 8). Die Einspeiseregelungen gelten als effektive und preiswertere Möglichkeit, um die Stromerzeugung aus erneuerbaren Energieträgern zu unterstützen. Die Förderbeträge müssen aber immer wieder gekürzt werden, da beispielsweise die Errichtung von Solaranlagen

immer günstiger wird. Ziel der Bundesregierung ist die Marktfähigkeit, also eine Ökoenergie, die ohne Förderungen auskommt (Ökostromförderung 2011). Derzeit leisten alle Energieverbraucher in Deutschland eine so genannte EEG-Umlage, die im Oktober auf 3,59 Cent/Kilowattstunde angehoben wurde (Tenbrock 2011).

Die Förderung von Ökostrom wird teilweise kritisch und als nicht zweckmäßig gesehen. Der Energieexperte Florian Haslauer vom Beratungsunternehmen A.T. Kearney meint etwa, dass zwar derzeit noch öffentliche Förderungen notwendig sind um die Energiewende zu erreichen, es jedoch zielführender wäre, wenn die Förderungen direkt von der EU vergeben würden. Die nationale Energiepolitik solle ihr Hauptaugenmerk auf die Energieeffizienz legen, wo deutlich mehr Einsparungspotential liege. Das gelte besonders für Österreich, das derzeit neben Spanien, Deutschland und Italien am meisten öffentliche Gelder für die Förderung von Ökostrom ausgibt (vgl. Die Presse, 14.07.2011).

1.2. Atomausstieg

Der Begriff „Energiewende“ hat nach der Atomkatastrophe von Fukushima im Frühjahr 2011 noch stärker an Bedeutung gewonnen. Mittlerweile umfasst die Energiewende auch den Atomausstieg, der nun bis 2022 vollzogen werden soll. Wie bereits ausgeführt war ursprünglich die Laufzeit der Atomkraftwerke schon wieder verlängert worden, die Ereignisse in Japan brachten aber eine „Wende von der Wende“. Zwar war vorgesehen, dass es langfristig zu einem Atomausstieg kommen soll, die politische Entscheidung fiel jedoch aufgrund der Atomkatastrophe und des medialen und gesellschaftlichen Drucks überraschend und schnell.

Das Kapitel „Kernenergie“ des Energiekonzepts der Bundesregierung 2010 ist somit bereits nicht mehr aktuell. Ursprünglich war von einer weiterhin bestehenden Notwendigkeit der Kernenergie ausgegangen worden. Der Atomausstieg hat auch klimapolitische Auswirkungen. Die Laufzeitverkürzung der CO_2-freien Kernkraftwerke führt zumindest kurzfristig zu einer Erhöhung der Emissionen, da zunächst wieder mehr fossile Kraftwerke ans Netz gehen werden. Die genauen Zahlen sind abhängig davon, mit welchen Energieformen die dann fehlenden Kapazitäten geschlossen werden. Jedenfalls ergäben sich durch den Atomausstieg (kurzfristig gesehen) keine direkten Klimaschutzwirkungen (Monopolkommission 2011, 23). Ein weiterer Effekt ist aller Wahrscheinlichkeit nach, dass neue Stromanbieter den Markteintritt wagen werden (ebd., 25). Gerade der Energiemarkt ist durch hohe Investitionskosten und lange Genehmigungsverfahren geprägt, die dadurch umso mehr nach langfristig vorhersehbaren rechtlichen und politischen Rahmenbedingungen verlangen. Die Monopol-

kommission konstatiert in ihrem Sondergutachten, dass diese Rahmenbedingungen nicht gegeben sind.

Die deutsche Monopolkommission sieht zudem wettbewerbspolitische Auswirkungen durch den Atomausstieg. Als unmittelbare Folgen befürchten sie den Anstieg der Strompreise sowie Defizite in der Versorgungssicherheit und der Netzstabilität. So sind einige der deutschen Subnetze derzeit nicht in der Lage, Spitzenproduktionsphasen etwa im Bereich der Windenergie ohne die Gefahr von Netzüberlastungen weiterzuleiten. Auch fehlt es an entsprechenden Speicherkapazitäten.

Dies betreffe auch die Nachbarstaaten, daher auch Österreich (ebd., 3). Ähnlich problematisch sieht die aktuellen Entwicklungen auf dem Energiemarkt der Vorstand der österreichischen Energiebehörde E-Control, Walter Boltz. Das derzeit bestehende Problem betreffe, so Boltz, weniger die Kapazität der Kraftwerke als die Transportwege. Es fehle an Hochspannungsleitungen, die die Elektrizität über eine lange Distanz von den Produzenten zu den Abnehmern brächten. Wind- und Solarparks sind meist über eine große Fläche verteilt, für den Transport fehle es derzeit jedoch an zusätzlichen Leitungen (ebd., 24; Wetz 2011).

Der deutsche Großversorger RWE hat bereits im März 2011 beim Verfassungsgerichtshof in Kassel geklagt (RWE Power AG 2011). Zwei weitere der großen deutschen Energiekonzerne, E.ON und Vattenfall, planen ebenfalls, gegen den Atomausstieg rechtliche Schritte einzuleiten. E.ON forciert eine Verfassungsbeschwerde, Vattenfall plant Ende 2011 eine milliardenschwere Schadenersatzklage vor dem Schiedsgericht für Investitionsstreitigkeiten (in Washington) einzureichen. Diese rechtlichen Androhungen könnten dazu führen, dass ein Vergleich geschlossen und möglicherweise eine Gesamtlösung für Atomkonzerne gefunden wird (Werner 2011).

In Deutschland haben sich mittlerweile so viele kleine Projekte gebildet, dass bereits von einer „neuen Protestkultur“ gesprochen wird (Locke 2010). Viele Projekte werden rund um das Thema Energiewende und Atomausstieg gegründet. Als zweites fällt auf, dass viele Initiativen als Genossenschaften gegründet werden und Bürger/innen beteiligt sind. Bei vielen Projekten steht die Bürgerbeteiligung und nicht die Kapitalgewinnung (wie zum Beispiel bei Solarfonds) im Vordergrund. Ein weiterer wichtiger Aspekt ist die „Langfristigkeit“. Diese steht sowohl bei dem deutschen Energiekonzept im Mittelpunkt als auch bei vielen Bürgergenossenschaften. Es soll längerfristig eine Veränderung eintreten: Der Ausbau der erneuerba-

ren Energieträger ist dabei ein zentrales Anliegen, aber auch die Energieeffizienz, die eines der größten Potentiale darstellt (BMU 2010, 11ff.).

1.3. Herausforderungen beim Ausbau der erneuerbaren Energieträger

Die Erhöhung des Anteils erneuerbarer Energieträger muss zwingend mit einer Änderung der Netzinfrastruktur und Speichertechnologien einhergehen. Als notwendig wird weiterhin die „schrittweise Heranführung an das Marktgeschehen" und das „Schaffen von Anreizen" erachtet (ebd., 18). Geplant ist beispielsweise die Einführung einer so genannten optionalen Marktprämie. Die Anlagebetreiber könnten dann frei wählen, ob sie entweder die feste EEG-Vergütung in Anspruch nehmen oder lieber selbst den Strom direkt verkaufen. In diesem Fall erhalten sie statt der festen EEG-Vergütung eine Marktprämie (zusätzlich zu dem am Markt erzielten Erlös, siehe ebd., 20).

Momentan gibt es keinen Anreiz, den erzeugten Strom selbst zu vermarkten, da man so um die EEG-Vergütung umfallen würde. Das führt zu der Situation, dass beispielsweise der selbst erzeugte Strom einer Energiegenossenschaft ins Netz eingespeist werden muss. Die Genossenschaft muss daher, wenn sie auch als Energieversorger tätig sein möchte, den Ökostrom „extern" beziehen. Mit der geplanten Änderung könnte sich diese Situation grundlegend ändern (vgl. dazu auch die Studie „Förderung der Direktvermarktung und der bedarfsgerechten Einspeisung von Strom aus Erneuerbaren Energien", R2B Energy Consulting GmbH/Consentec GmbH 2010).

Die Monopolkommission sieht indes die derzeit tatsächlich möglichen Auswirkungen der optionalen Marktprämie auf das Einspeismanagement erneuerbarer Energien sowie den Anreiz für den Bau von Energiespeichern als eher gering an. Weitere Auswirkungen wären Mitnahmeeffekte und eine weitere Zunahme der Komplexität des EEG-Systems, das von der Monopolkommission ganz grundsätzlich als „marktfern" erachtet wird (Monopolkommission 2011, 10).

Weitere zentrale Elemente der Energiewende sind *Dezentralisierung* und *Rekommunalisierung*. Photovoltaik (PV) Anlagen gelten als dezentrales Mittel im Kampf gegen die wenigen marktbeherrschenden Stromkonzerne. Der Ökonom Hohmeyer führt im Interview mit „Die Zeit" ins Treffen, dass die Photovoltaik in der letzten Zeit eine extreme Konjunktur erlebt habe und immer öfter riesige Solarparks beantragt werden würden. Es geht hier zunehmend um Milliardeninvestitionen, die mit dezentraler Technik nichts mehr zu tun hätten (Vorholz 2011).

Unter Rekommunalisierung wird die Entwicklung verstanden, dass die Energieversorgung aus privater Hand wieder in die Hände der Städte und Gemeinden übergeht. Dies wird vor allem dadurch möglich, dass derzeit viele Netzbetriebskonzessionen auslaufen und neu vergeben werden müssen. Von der Monopolkommission wird dieser „Trend" als problematisch erachtet. Einerseits seien die tatsächlichen Einflussmöglichkeiten der Kommunen auf die Märkte für leitungsgebundene Energien geringer als oft angenommen, andererseits bestehe auch ein typischer Interessenskonflikt des Staates bei der Schaffung von effizienten Rahmenbedingungen für den Wettbewerb und dem dadurch tangierten Unternehmertum (Monopolkommission 2011, 3, 26). Für die Rekommunalisierung sprechen könnte, dass dadurch der Wettbewerb auf dem Energiemarkt belebt wird und die dominante Stellung der großen Energieunternehmen aufgeweicht werden könnte.

Derzeit sind vor allem die Wertschöpfungsstufen Netz und Vertrieb von der Rekommunalisierung erfasst. Die Erzeugung findet weiterhin sehr konzentriert statt (ebd., 32). Für Österreich sieht Boltz hier einen ähnlich kritischen Zugang und übt massive Kritik an den Träumen österreichischer Politiker von energieautarken Gemeinden, Städten und Ländern. Er bezeichnet diese Vision als „grundfalsch und grob fahrlässig" (Wetz 2011).

1.4. Die Besonderheit des Gutes „Strom"

Strom ist eines der wenigen Güter, das für den Kunden immer von gleich bleibender Qualität ist, egal welche Produktionsmethode (Kernenergie, Photovoltaik, …) oder welcher Anbieter (E.ON, Energiegenossenschaft, …) dahintersteht. Strom wird deshalb auch als „homogenes Gut" bezeichnet. Dadurch wird der Strompreis zu der maßgeblichen entscheidungsrelevanten Größe, zusammen mit der sich aus der in Mitteleuropa zumeist noch jungen und schlecht verankerten Liberalisierung des Marktes bedingten Präferenz für den traditionellen Versorger. Für einen Teil der Kunden können jedoch auch weitere Informationen eine Rolle spielen: Wie wird der Strom erzeugt? Handelt es sich um Ökostrom? Wie gut ist die Kundenberatung?

Da der Anteil der Kunden, der Ökostrom beziehen möchte, in den letzten Jahren zugenommen hat, haben so gut wie alle Energiekonzerne „grünen" Strom im Portfolio. Im Gegensatz zu anderen Produkten ist es bei Strom auch so, dass das „Bioprodukt" nicht sichtbar ist, weil der sprichwörtliche Strom, der aus der Steckdose kommt, immer ein „Strommix" ist (Monopolkommission 2011, 36). Der Bezug von Ökostrom funktioniert somit nur buchhalterisch über den Erwerb von Zertifikaten.

Das führt dazu, dass für einen Großteil der Kunden wohl der dann höhere Preis das einzige Erkennungsmerkmal darstellt. Für ein „Bioprodukt“ zu zahlen, ohne dann im Gegenzug tatsächlich eines zu bekommen, erfordert somit eine erhöhte Identifikation mit dem Thema erneuerbare Energien. Zudem ist der Begriff „Ökostrom“ nicht einheitlich definiert. Er ist keine geschützte Produktbezeichnung. Die vielen verschiedenen Zertifikate werden teilweise sogar als irreführend erachtet (Stiftung Warentest 2011; vgl. Einordnung der Ökostromlabels von A.T. Kearny 2011).

1.5. Beteiligungsmodelle und Identität

Der Ausbau erneuerbarer Energien benötigt eine breite Akzeptanz in der Bevölkerung und bei den unterschiedlichen Akteuren, um marktgerecht funktionieren zu können (Rau/Zöllner 2010, 5). Verschiedene Forschungsprojekte kommen zu dem Schluss, dass lokale und regionale Beteiligung auf verschiedenen Ebenen, wie Mitsprache an spezifischen Planungs- und Entscheidungsprozessen oder die Form von finanziellen Beteiligungen an Anlagen zur Erzeugung von erneuerbarer Energien, Schlüsselfaktoren für eine solche Akzeptanz darstellen (Schweizer-Ries et al. 2009, 7). Ein häufig verwendetes Stichwort ist hier die Notwendigkeit von „bottom-up“ Prozessen, die jedoch oft „top-down“ initiiert werden. Bürgerbeteiligung wird so oft als politisches Mittel verwendet, um strittige Vorhaben durchzusetzen (vgl. Walter et al. 2011, 2). Besonders der Bau von großen Windparks, der mit relevanten optischen Beeinträchtigungen und Lärmschutzproblematiken einhergeht, benötigt Akzeptanz in der Bevölkerung, da sich sonst *Anti*-Erneuerbare-Energie-Bürgerprojekte formieren (vgl. Walter et al. 2011, 2; Wüstenhagen et al. 2007, siehe auch www.windkraftgegner.de).

Für konventionelle Energieunternehmen und Stadtwerke bieten Beteiligungsmodelle die Möglichkeit, die Kunden an das Unternehmen zu binden. Ein weiterer Vorteil ist, dass eine neue Finanzierungsquelle entsteht. Im Gegenzug dazu bekommen die Bürger/innen das Gefühl, „mitgestalten“ zu können (vgl. Haag/Lang 2010, 10). Wieweit die tatsächliche Mitgestaltungswirkung bei solchen Beteiligungsprojekten tatsächlich geht ist jedoch fraglich.

Bürgerbeteiligungsprojekte gibt es auf beiden Seiten: Sowohl bei den Befürwortern als auch bei den Gegnern von Erneuerbare-Energie-Projekten. Photovoltaik-Anlagen auf Dächern von privaten oder öffentlichen Gebäuden polarisieren weit weniger als beispielsweise Windparks, da sie weder auffallend sichtbar noch lärmerzeugend sind. Nicht jedes Bundesland eignet sich aber gleich gut für jede Form von erneuerbarer Energie (vgl. beispielsweise GVB 2011, 4f.). Die Projekte müssen sich an die natürlichen Gegebenheiten anpassen, um ökonomisch erfolg-

reich sein zu können. Generell sind aufgrund der geografischen Gegebenheiten im Süden Deutschlands mehr PV-Projekte und im Norden Deutschlands mehr Windkraftprojekte zu finden. Das mögliche Engagement und der Beteiligungsgrad von Bürger/innen können daher sehr unterschiedlich ausgestaltet sein.

Offensichtlich ist, dass das Thema der erneuerbaren Energien mit unterschiedlichen Emotionen verbunden ist. Aber beschäftigen sich auch tatsächlich viele Personen in ihrer Freizeit mit diesem Thema? Der deutsche Hauptbericht des Freiwilligensurvey 2009 führt beispielsweise an, dass nur 2,8% der Befragten im Bereich Umwelt- und Tierschutz engagiert sind. Der Bereich der Erneuerbaren Energie wurde hier nicht gesondert abgefragt (vgl. Gensicke/Geiss 2010).

Hinsichtlich der Rechtsformwahl hat ein Forschungsprojekt von Rau/Zoellner gezeigt, dass diese von den Zielsetzungen und Bedürfnissen der Initiative abhängt, jedoch meist nicht Ausgangspunkt des Vorhabens ist. Die Entscheidung für die Rechtsform ist Teil des Entstehungsprozess und hängt von verschiedenen Faktoren ab (vgl. Rau/Zoellner 2010, 99). Rau/Zoellner identifizieren als hemmende Faktoren bei der Entstehung von Beteiligungsprojekten „unprofessionelle Strukturen“ und „Anfangseuphorie“ der Beteiligten.

Ein weiteres Problem ist die Ehrenamtlichkeit, die schnell zu Abnützungserscheinungen führen kann (vgl. ebd., 102). Der Nutzen für die beteiligten Bürger kann in der nachhaltigen Kapitalanlage und im aktiven Beitrag für den Klimaschutz gesehen werden (vgl. ebd., 116). Eine wichtige Rolle bei der Umsetzung von Beteiligungsprojekten kommt aber vor allem auch Politik und Verwaltung zu (Wüstenhagen et al. 2007, 2685). Diese können die Projekte unterstützen, indem sie beispielsweise öffentliche Dächer für die Installierung von PV-Anlagen zur Verfügung stellen. Ebenso können langwierige und komplexe Verwaltungswege jedoch die Entstehung von Beteiligungsprojekten hemmen.

Eine Studie von A.T. Kearney spricht sogar von einem Trend zur „partizipativen Energiewirtschaft“, der als Basis für neue Geschäftsmodelle dient. Die Energieunternehmen seien gefordert, ihre Modelle an die zunehmende dezentrale Erzeugung weiter anzupassen, um Margenverlusten auszuweichen (A.T. Kearney 2009).

Die Anti-Atomkraft-Bewegung in Deutschland übte in den 1970er Jahren einen so starken Einfluss auf Politik und Gesellschaft aus, dass sie vermutlich ursächlich für die Gründung vieler Bürgerbeteiligungsprojekte im Bereich erneuerbare Energien in Deutschland zu sehen ist. Die Thematik ist in den Medien und der Bevölkerung nachhaltig verankert. Nach der

durch das Erdbeben ausgelösten Atomkatastrophe in Japan im Frühjahr 2011 wurde ersichtlich, welche Bedeutung das Thema auch in Europa einnimmt. Obwohl in Europa keine direkten Auswirkungen spürbar waren (vgl. dazu den kritischen Beitrag von Jessen 2011) war das Entsetzen über die Katastrophe so groß, dass sich unmittelbar eine „neue" Anti-Atom-Bewegung formierte. Der Druck auf die deutsche Bundesregierung wurde schließlich so massiv, dass der Atomausstieg beschlossen wurde, in dem Sinn, dass die zuvor beschlossenen Laufzeitverlängerungen wieder zurückgenommen wurden, was langfristig den Atomausstieg bedeutet.

Das Engagement für erneuerbare Energie hat mit Identität und einer bestimmten Wertehaltung zu tun. Ähnlich wie beim dem Kauf von Bio- und Regionalprodukten spielt es offenbar eine wichtige Rolle, „ein Zeichen zu setzen". Bei der Installation einer PV-Anlage auf dem eigenem Haus handelt es sich um ein *sichtbares* und *langfristiges* Zeichen. Jeder kann sehen, dass dem Betreffenden die Umwelt „etwas wert ist". PV-Anlagen sind trotz Förderungen immer noch mit hohen Kosten verbunden. Bis zu einem gewissen Grad kann eine PV-Anlage somit auch als Statussymbol gesehen werden - vor allem, wenn sie auf dem „eigenen" Dach zu finden ist.

Das Thema Erneuerbare Energie ist aufgrund seiner starken Verankerung im Bewusstsein einer breiten Öffentlichkeit geeignet, identitätsstiftende Wirkung zu entfalten, was wiederum die Grundlage für Engagement und Bürgerbeteiligungsprojekte bildet.

Von Bürgerenergiegenossenschaften fühlen sich oft gerade Personen angesprochen, die nicht die Möglichkeit für eine eigene PV-Anlage haben. Die Genossenschaft eröffnet mit ihrem Organisationsrahmen die Möglichkeit, sich trotzdem an einer PV-Anlage beteiligen zu können. Die Gründe, warum sich Bürger/innen an einem solchen Projekt beteiligen, sind unterschiedlich und bislang nur unzureichend erforscht. Bürgerbeteiligungsprojekte ermöglichen jedenfalls aufgrund ihrer Beteiligungsstruktur, dass sich der Einzelne gegenüber den großen Stromkonzernen behaupten und in einem Teilbereich des alltäglichen Lebens Unabhängigkeit von „kapitalistischen Strukturen" gewinnen kann.

2. Methode

Zur Beantwortung der Forschungsfrage („Warum engagieren sich Personen in einer Energiegenossenschaft?“) wurde ein qualitativ-quantitativer Zugang gewählt. Im Zuge der Literaturrecherche wurde die Solargenossenschaft Rosenheim als interessante Fallstudie identifiziert. Nach der Kontaktaufnahme per Email und einem Telefonat mit dem Vorstandsvorsitzenden der *Solargenossenschaft Rosenheim* im Juni 2011 zeigte sich die Genossenschaft damit einverstanden, an dem Projekt mitzuwirken. Das Untersuchungsobjekt scheint aus mehreren Gründen geeignet: Es handelt sich um eine reine Bürgergenossenschaft, die die erste Energiegenossenschaft in Bayern war und bereits seit mehreren Jahren mit einem ähnlichen Mitgliederstand besteht. Zugleich besteht in Deutschland eine vergleichsweise lange Geschichte der Ökostrombewegung, die durch die Ereignisse in Japan im Frühjahr 2011 und die darauf folgende „Energiewende“ eine zusätzliche aktuelle Brisanz bekam.

Im Juli 2011 wurden in Rosenheim fünf Interviews mit relevanten Akteuren der Genossenschaft geführt. Die Gespräche wurden als problemzentrierte Interviews (Froschauer/Lueger 2003) gestaltet. Dabei wird das zentrale Thema des Gesprächs zu Beginn grob umrissen, um das Gespräch thematisch zu fokussieren. Der weitere Gesprächsverlauf wird durch einen thematisch gegliederten Leitfaden strukturiert und auf Tonband aufgenommen (Atteslander 2003, 156 ff; Thomas 2011, 161ff). Die im Haus (Geschäftsadresse der *Solargenossenschaft Genossenschaft*) des Vorstandsvorsitzenden geführten Interviews ermöglichten einen authentischen Gesprächsrahmen. Die transkribierten Interviews (siehe Anhang) dienen als solide Datenbasis für eine qualitative Inhaltsanalyse nach Mayring, in deren Zentrum die Entwicklung eines Kategorienschemas steht (Mayring 2008).

Um die Ergebnisse der Interviewauswertungen überprüfen zu können wurde entschieden, eine Thesenüberprüfung anhand eines Fragebogens durchzuführen. Der Fragebogen wurde auf Basis der Interviews erstellt und richtete sich an die Genossenschaftsmitglieder, die für den Erfolg eines Bürgerbeteiligungsprojekts von wesentlicher Bedeutung sind. Im Zentrum der Erhebung standen die persönliche Einstellung der Mitglieder zu erneuerbarer Energie, der Rechtsform der Genossenschaft und die Intention für die Genossenschaftsmitgliedschaft.

Um einen möglichst hohen Rücklauf zu generieren wurde eine schriftliche Befragung durchgeführt. Aus Datenschutzgründen wurden die Fragebögen in gesammelter Form inklusive freigemachten Rückkuverts an den Vorstand der Genossenschaft übermittelt. Dieser übernahm dann die Versendung an die einzelnen Genossenschaftsmitglieder. Die ausgefüllten Fragebögen wurden von den Mitgliedern mittels des freigemachten Rückkuverts an die For-

schungsstätte (WU Wien) zurückgesandt und im Dezember 2011 ausgewertet. Zur Abrundung des Forschungsvorhabens fand im Januar 2012 ein Workshop in Rosenheim mit den Mitgliedern der Genossenschaft statt. Im Zentrum standen dabei die Ergebnisse der Fragebogenerhebung und das weitere Entwicklungspotential der *Solargenossenschaft Rosenheim.* Die Ergebnisse des Workshops werden in Kapitel 5 kurz dargestellt.

3. Fallstudie Solargenossenschaft Rosenheim1

3.1. Umfeld und Gründung

Energiegenossenschaften haben in Bayern eine lange Tradition. Vor mehr als hundert Jahren wurden meist an Wasserläufen Elektrizitätsgenossenschaften gegründet. Die Genossenschaften waren so zentrales Element der Elektrifizierung und trugen zur regionalen Entwicklung bei (GVB 2011, 2). Die Idee, dass Bürger/innen die Energieversorgung selbst in die Hand nehmen, ist also nicht neu.

Die *Solargenossenschaft Rosenheim* wurde 2003 gegründet. Die Projektidee ist innerhalb der Projektgruppe „Energie" des kommunalen „Lokale Agenda 21" Projekts entstanden. Die Stadt Rosenheim befindet sich in Bayern, Deutschland, und hat laut aktueller Statistik 61.014 Einwohner/innen. Seit 1990 verfügt die Stadt Rosenheim über ein Umweltamt, das für einen effizienten Umweltschutz in Rosenheim zuständig ist. Es orientiert sich an den Grundsätzen und Zielen der „Lokalen Agenda 21" (vgl. Stadt Rosenheim 2003), deren Ziele auch von der Bayerischen Staatsregierung unterstützt werden.

Bayern forcierte bereits im Jahr 1997 mit der so genannten „Bayern-Agenda 21" eine Nachhaltigkeitsstrategie. Ein wichtiger Punkt ist dabei die „Energieversorgung mit regenerativen Energie". Angeführte Maßnahmen, um die definierten Ziele zu erreichen, sind dabei etwa die „Unterstützung von Bürgerenergieanlagen zur Nutzung von Biomasse, Wind und Sonne durch Herausgabe eines entsprechenden Leitfadens"[2] und die „verstärkte Bereitstellung von Dächern staatlicher Gebäude für Solaranlagen, insbesondere Bürgersolaranlagen und Empfehlungen an die Kommune, mit ihren Liegenschaften ebenso zu verfahren" (vgl. Bayerische Staatsregierung 2011).

Die Maßnahmen der Bayrischen Staatsregierung legen offen, dass das Engagement von Bürger/innen beim Thema Energie als öffentlich erwünscht gesehen wird. In Deutschland sind in den letzten Jahren so viele Bürger-Energie-Projekte entstanden, die sich erfolgreich als Nischenplayer am Markt halten können, dass diese Situation auch für die Politik nicht mehr negierbar ist. Von Seiten der Politik wird den Projekten eine Relevanz auf dem Weg zur Energiewende zugestanden. Die Entstehungsgeschichten der Bürgerprojekte sind dabei überaus unterschiedlich: Teilweise handelt es sich eher um „Protestaktionen", teilweise werden sie

[1] Die Fallstudie basiert auf im Sommer 2011 persönlich geführten Interviews mit Akteuren der Solargenossenschaft Rosenheim.
[2] Ob dieser Leitfaden tatsächlich herausgegeben wurde; ist leider nicht bekannt.

sogar mit Unterstützung öffentlicher Einrichtungen gegründet, was für die Politik den Vorteil hat, dass sich diese Projekte leichter „beobachten“ und „lenken“ lassen.

Die Elektrizitätswerke Schönau (EWS) sind beispielsweise aus einer Bürgerinitiative, die nach dem Atomunfall in Tschernobyl gegründet wurde, entstanden. Das langanhaltende Engagement der „Schönauer Stromrebellen“ führte schließlich dazu, dass auf bemerkenswerte Weise das örtliche Stromnetz 1996 übernommen werden konnte. Seitdem werden von der GmbH über 50.000 Kunden nachhaltig erfolgreich mit Ökostrom beliefert. Inzwischen gibt es auch die so genannte „Netzkauf EWS eG“. Diese ist als Genossenschaft organisiert und hat zum Ziel, die Versorgungsnetze zu erweitern. Die EWS fördert die Anlagen ihrer Kunden. So sind bisher rund 1.800 Bürger-Ökokraftwerke entstanden, die „Rebellenkraftwerke“ heißen. (vgl. EWS 2011).

An der Geschichte der EWS ist vieles bemerkenswert. Besonders auffallend ist aber das gute Marketing, das vor allem das „Revolutionäre“ an dem Projekt betont. Mit Hilfe dieser Zuschreibungen wird ein Gemeinschaftsgefühl erzeugt und das Gefühl vermittelt, als Kunde von EWS zum „Rebellen“ zu werden. Die EWS Schönau erfüllen mit ihrer Strategie perfekt die beispielsweise von A.T. Kearney empfohlene Entwicklungsstrategie für Ökostromanbieter, sich klar von den Konkurrenten abzugrenzen (A.T. Kearney 2011, 21). Die „Schönauer Stromrebellen“ sind eines der am längsten bestehenden Bürgerkraftwerke und dienten vielen Folgeprojekten als Vorbild – und vermutlich einigen Kommunen als „Schreckgespenst“.

Die Stadt Rosenheim bietet ihren Bürger/innen über das eigenen kommunale Unternehmen Stadtwerke Rosenheim eine lokale Energieversorgung an. Seit der Liberalisierung des deutschen Energiemarkts 1998 besteht die Möglichkeit, sich am Markt frei für einen der vielen Anbieter zu entscheiden. Zwischen den verschiedenen Anbietern herrscht freier Wettbewerb was die Energieerzeugung, den Energiehandel und die Energielieferung anbelangt. Eine Energieregulierung wird von der Bundesnetzagentur vorgenommen. Den Netzbetreibern kommt für ihr Gebiet eine Monopolstellung zu. Daher wird dieser Bereich durch die Bundesnetzagentur reguliert, um in den anderen Teilbereichen dennoch den freien Wettbewerb zu ermöglichen (Bundesnetzagentur 2011).

Bei der Gründung von Genossenschaften kommt den Genossenschaftsverbänden und Genossenschaftsbanken eine zentrale Rolle zu. Viele Projekte werden finanziell beispielsweise durch die KfW-Bank (Kreditanstalt für Wiederaufbau) unterstützt, die auch spezielle Förderprogramme für die Energiewende hat (vgl. KfW 2011). Den Kommunen kommt ebenfalls

eine wichtige Rolle zu, da sie mit verschiedenen Maßnahmen die Rahmenbedingungen für Bürgerprojekte beeinflussen können. Hinzu kommt, dass die Energieversorgung grundsätzlich in den kommunalen Verantwortungsbereich gehört.

Kommunale Energieversorger sehen sich seit einigen Jahren einem Wettbewerb ausgesetzt, wo sie früher noch eine Vormachtstellung eingenommen hatten. Verständlicherweise werden lokale Bürgerenergieprojekte skeptisch betrachtet. So klein sie auch sein mögen, bis zu einem gewissen Grad handelt es sich trotzdem um Mitbewerber am Strommarkt. Das Beispiel der EWS Schönau hat zudem vergleichsweise deutlich gezeigt, welche Größenordnung eine zu Beginn kleine Bürgerinitiative erreichen kann.

Seit 1993 gibt es in Rosenheim einen Solarförderverein, der mit einer Vielzahl an Aktivitäten den Boden für die Gründung der Solargenossenschaft Rosenheim aufbereitet hat. Der Verein hat derzeit um die 200 Mitglieder und nimmt eine wichtige Multiplikatorrolle ein, der über die Ausrichtung verschiedener energiepolitischer Veranstaltungen unterschiedliche Personenkreise zum Thema erneuerbare Energie informiert. Die Gründung der *Solargenossenschaft Rosenheim* ging schließlich vergleichsweise still über die Bühne. Obwohl die Idee in der „kommunalen Ideenwerkstatt“ Lokale Agenda (LA) 21 ihren Ursprung hatte, entwickelte sich daraus ein eigenständiges und unabhängiges Projekt. Relativ schnell war klar, dass wesentliches Element des Projekts die Bürgerbeteiligung sein soll. Wichtig war den Gründern von Beginn an, dass es das Projekt langfristig geben soll. Den Wunsch der „Langfristigkeit“ und die teilweise eigenen Erfahrungen mit der Rechtsform der Genossenschaft führten schließlich dazu, dass die Projektidee in der Rechtsform Genossenschaft umgesetzt wurde.

Die öffentlichen Förderungen im Bereich von PV-Anlagen bergen grundsätzlich die Gefahr von Mitnahmeeffekten, der mit der stabilen und wirtschaftlich ausgerichteten Rechtsform der Genossenschaft und der ihr eigenen verantwortlichen Mitgliederstruktur entgegengetreten werden sollte. Die Genossenschaft eignet sich aufgrund ihrer rechtlichen Strukturen gut für Beteiligungsprojekte. Für den Erfolg eines Bürgerprojektes ist auch die gewählte Rechtsform entscheidend. Potentielle Mitglieder müssen sich in erster Linie für den Projektinhalt interessieren, sie müssen sich aber auch mit der Organisationsform identifizieren können.

Die Genossenschaft gilt als „nicht spekulative“ Rechtsform, was die Zielgruppe von Energiegenossenschaftsprojekten anspricht. Die Tatsache, dass zwei der GründerInnen als Rechtsanwalt tätig sind, erleichterte zudem die professionelle Umsetzung des Projekts. Der Gründungsprozess konnte so schnell und reibungslos über die Bühne gebracht werden. Ein weite-

res Gründungsmitglied hat ein eigenes Unternehmen für Solar & Energietechnik und kann so das notwendige technische Fachwissen zur Verfügung stellen. Ein weiteres Vorstandsmitglied ist ebenfalls seit vielen Jahren wissenschaftlich mit den Themen befasst.

Der fachliche Hintergrund der Gründungspersönlichkeiten zeigt auch, welche Bedeutung fachspezifisches Wissen für einen erfolgreichen Gründungsprozess hat. „Eigeninteressen" der Handlungsakteure wirken sich positiv auf das Projekt aus, da so eine erhöhte Identifikation mit dem langfristigen Erfolg des Projekts gegeben ist. Im Jahr 2004 wurde die Genossenschaft schließlich als erste neue Bürgerenergiegenossenschaft Bayerns in das Genossenschaftsregister des Bayrischen Genossenschaftsverbands aufgenommen. Der Mitgliederstand von ungefähr hundert Personen wurde relativ schnell erreicht und ist bis heute ungefähr gleich geblieben.

Der seit der Gründung ähnliche Mitgliederbestand lässt mehrere Rückschlüsse zu: Einerseits entfaltet ein solches Projekt vor allem im unmittelbaren Gründungsprozess seine Anziehungskraft. Die Personen, die sich für das Thema Energie interessieren und dann auch bereit sind, Geld in das Projekt zu investieren, sind somit schnell gefunden. Die Mitglieder benötigen intrinsische Motive, da, obwohl eine Dividende ausgeschüttet wird, die finanziellen Vorteile sehr gering sind. Bei der *Solargenossenschaft Rosenheim* kam hinzu, dass ein Teil der Personen in der LA-21 aktiv und somit von Beginn an in die Entwicklung der Projektidee eingebunden war. Dass in den Folgejahren kein nennenswerter Mitgliederzuwachst zu verzeichnen war liegt primär daran, dass gleich zu Beginn die Mitgliederzahl relativ hoch war, wenig Geld in Werbung investiert werden konnte und es nur zwei Beteiligungsprojekte gibt.

Ein kritischer Punkt für die Weiterentwicklung des Projekts ist, dass das Geschäftsmodell der *Solargenossenschaft Rosenheim* und auch anderer Energieprojekte relativ wenig Raum lässt, dass sich die Mitglieder aktiv einbringen, was wiederum dazu führt, dass sich die Mehrzahl der Mitglieder eher „passiv" verhält. Dadurch besteht die Gefahr, dass die Identifikation mit dem Projekt eher abnimmt und zu einem späteren Zeitpunkt möglicherweise die Bereitschaft sinkt, neue Genossenschaftsanteile zu zeichnen. Würden mehr Genossenschaftsanteile ausgegeben werden, würde das die jährliche Dividende vermindern.

Aus diesem Grund hat sich die Genossenschaft entschieden, erst neue Investitionsprojekte zu finden bevor die Möglichkeit eröffnet wird, dass neue Genossenschaftsanteile gezeichnet werden können. In einem solchen Fall werden die aktuellen Genossenschaftsmitglieder „bevorzugt" behandelt und als erstes über die Zeichnungsmöglichkeit informiert. Als nächstes

würden die Kunden von *rostrom* (das Produkt der Genossenschaft, siehe S. 21f.) informiert werden.

Konkret heißt das, dass die Genossenschaft Dächer benötigt, damit PV-Anlagen installiert werden können. Derzeit ist das Finden von geeigneten Dächern eines der größten Probleme für die Weiterentwicklung der Genossenschaft. Die zwei bisher installierten PV-Anlagen befinden sich auf den Schuldächern der Stadt Rosenheim. Obwohl von der Bayrischen Staatsregierung (siehe oben) offenbar gewünscht wird, dass vermehrt PV-Anlagen auf öffentlichen Dächern installiert werden, ist die Bereitschaft derzeit dazu eher gering. Die meisten Anlagen sind immer noch auf privaten Gebäuden zu finden. Das Fehlen von geeigneten Investitionsprojekten für die Genossenschaft wirkt sich daher auf das Entwicklungspotential der *Solargenossenschaft Rosenheim* hemmend aus.

3.2. Geschäftstätigkeit der Genossenschaft

Die Genossenschaft hat mehrere Unternehmensgegenstände: Bau und Betrieb von Bürgersolarkraftwerken, günstiger Stromeinkauf, günstiger Bezug von Solar- und Photovoltaikanlagen, Energie(spar)beratung, Förderung der Nutzung regenerativer Energien und die Erbringung von sonstigen Energiedienstleistungen (vgl. §2 Z 2 der Satzung der Solargenossenschaft Rosenheim). Zwar betreibt die Genossenschaft bisher nur PV-Anlagen, grundsätzlich möchte die Genossenschaft aber erneuerbare Energie und Energieeffizienz allgemein fördern. Es wird derzeit auch überlegt, ob sich die Genossenschaft im Bereich des Einsparcontractings engagieren soll.[3]

Tatsache ist, dass die Ausgestaltung der jeweiligen Förderbedingungen starken Einfluss darauf nimmt, in welche Technologien investiert wird. Der mittels der auf dem Schuldach installierten Anlagen erzeugte Strom wird in das lokale Stromnetz eingespeist und nach den damals aktuellen EEG-Sätzen vergütet. Langfristig gesehen ist es durchaus denkbar, dass der erzeugte Strom von der Genossenschaft direkt vermarktet wird. Solange es aber noch fixe Einspeistarife gibt ist es ökonomischer, den Strom einzuspeisen. Trotzdem führt das EEG so zu der paradoxen Situation, dass die „Ökoenergieversorger" den Strom aus dem Ausland zukaufen, da der im Inland erzeugte „grüne" Strom nicht für den freien Handel zur Verfügung steht.

[3] Das Thema „Einsparcontracting" wurde im Rahmen des Workshops am 13.1.2012 in Rosenheim diskutiert.

Gemäß § 37 Z 1 der Satzung beträgt der Geschäftsanteil € 500,-, was für ein Bürgerbeteiligungsprojekt eher hoch ist. Momentan gibt es etwa 220 Geschäftsanteile. Unabhängig von der Anzahl der gezeichneten Geschäftsanteile hat jedes Mitglied in der Generalversammlung eine Stimme (vgl. § 26 Z 2 der Satzung). Das Prinzip „ein Kopf eine Stimme" verkörpert eine demokratische Grundhaltung, die für die Bereitschaft, sich an einem Bürgerbeteiligungsprojekt zu beteiligen, von hohem Wert ist. Das Kopfstimmrecht stellt ebenfalls sicher, dass trotz Kapitaleinsatzes das Projekt nicht „übernommen" werden kann. Über die von den Mitgliedern gezeichneten Anteile konnten die ersten beiden PV-Anlagen-Projekte finanziert werden. Im Gegenzug erhalten die Mitglieder eine jährliche Dividende, die bei ungefähr 4% des investierten Kapitals liegt. Neben den ideellen Gründen, sich an einem solchen Projekt zu beteiligen, spielen also auch finanzielle Gründe mit. Statt € 500.- auf ein Sparbuch zu legen, kann auch ein Genossenschaftsanteil gezeichnet werden. Beide Anlageformen sind relativ sicher und in etwa ähnlich in der Verzinsung. Auf jeden Fall muss den Personen aber das Thema erneuerbare Energie am Herzen liegen.

Einen Genossenschaftsanteil zu zeichnen bedeutet auch, unternehmerisch tätig zu sein. Das heißt, dass auch ein gewisses – jedoch kalkulierbares – Risiko eingegangen wird. Gemäß § 40 der Satzung haftet jedes Mitglied der Genossenschaft mit seinem Geschäftsanteil. Würde die Genossenschaft insolvent werden besteht für die Mitglieder aber keine Nachschusspflicht. Zudem gilt die Genossenschaft in Deutschland als insolvenzsicherste Rechtsform (GVB 2011, 6), was zu ihrer Eignung für (kommunale) Bürgerprojekte beiträgt.

Die *Solargenossenschaft Rosenheim* begnügt sich nicht damit, mittels PV-Anlagen selbst Strom zu erzeugen, der dann in das lokale Netz eingespeist wird. Seit einigen Jahren hat die Genossenschaft mit *rostrom* ein eigenes Produkt und ist so als lokaler Stromanbieter tätig. Die Genossenschaft selbst sieht sich nicht in einer Konkurrenzsituation zu den Stadtwerken oder anderen Anbietern, sondern als Ergänzung. *Rostrom* liefert zertifizierten Strom aus erneuerbarer Energie. Um seinen Strom von *rostrom* zu beziehen ist die Mitgliedschaft in der Genossenschaft auch keine Voraussetzung. Überraschenderweise ist auch nur ein geringer Anteil der Genossenschaftsmitglieder auch Kunde von *rostrom*, was den Schluss nahelegt, dass die Gründe für die Mitgliedschaft in einer Energiegenossenschaft und den Bezug von Ökostrom nicht vollständig deckungsgleich sind.

Grundsätzlich wäre eher davon auszugehen, dass die Genossenschaftsmitglieder *natürlich* auch ihren Strom über *rostrom* beziehen, da diese ja das gemeinsame Unternehmen ist. Die zukünftigen Gewinne von *rostrom sollen* zu 100% reinvestiert werden. Die Einspeise-

gewinne aus den zwei PV-Anlagen werden in Form der jährlichen Dividende an die Mitglieder ausgeschüttet. Diese Divergenz in der Mitglieds-/Kundenstruktur lässt die vorsichtige Vermutung zu, dass der Identifikationsgrad mit der Genossenschaft bei einem Teil der Mitglieder eher gering ausgeprägt ist, was wiederum dadurch erklärt werden kann, dass das Geschäftsfeld einer Energiegenossenschaft (zum Beispiel im Vergleich mit einer Nahversorgungsgenossenschaft) tendenziell abstrakt wirkt. Bis auf die jährliche Generalversammlung gibt es wenig gemeinsame Tätigkeitsfelder. Der eigentliche Zweck der Genossenschaft – die Erzeugung von erneuerbarer Energie – geschieht ohne das aktive Zutun der Mitglieder.

Einen Großteil der notwendigen administrativen Tätigkeiten im Geschäftsalltag der *rostrom* übernehmen die Stadtwerke Schwäbisch Hall, die ihr Dienstleistungsangebot in den letzen Jahren für die zunehmende Zahl von dezentralen Akteuren erweitert hat. Für Geschäftskunden bieten die Stadtwerke Schwäbisch Hall die so genannte „Energieabrechnung Sherpa“ an und übernehmen ein umfangreiches Angebot an Dienstleistungen: Strom- und Erdgasbeschaffung, Lieferantenwechselprozess, Netznutzungsmanagement, Kundenbetreuung und die Abrechnung werden von den Stadtwerken Schwäbisch Hall für die kleinen Anbieter übernommen. Referenzpartnerunternehmen von Sherpa ist die Greenpeace Energy e.G., deren 10.000 KundInnen bereits seit dem Jahr 2000 betreut werden (vgl. Stadtwerke Schwäbisch Hall 2011).

Die Elektrizitätswerke Schönau werden ebenfalls von den Stadtwerken Schwäbisch Hall betreut. Für „kleine“, gänzlich ehrenamtliche Akteure wie die *Solargenossenschaft Rosenheim* wäre es ohne ein solches Service fast unmöglich, als Energieversorger tätig sein. Die Stadtwerke Schwäbisch Hall haben die neuen Entwicklungen und die dadurch entstandene Marktlücke am Energiemarkt rechtzeitig erkannt und innovativ und konstruktiv reagiert. *Rostrom* hat derzeit hundert Stromkund/innen. Die Kundenentwicklung geht langsamer voran als erwartet, was jedoch den Vorteil bietet, dass die grundlegenden Prozesse in einem überschaubaren Rahmen „erprobt“ werden können.

Die Solargenossenschaft bewegt sich mit ihrem Geschäftsmodell in einem Spannungsfeld zwischen idealistischen Zwecksetzungen und Gewinnbestrebungen. Die Satzung sieht ganz allgemein die Förderung von erneuerbarer Energie vor. Die derzeit bestehenden PV-Anlagen werfen ebenfalls einen nur geringen Betrag ab: Für das Jahr 2011 wurde den Mitgliedern eine Verzinsung von ungefähr 4% ihres jeweiligen Geschäftsanteils gewährt. *Rostrom* als Unter-

nehmen der *Solargenossenschaft Rosenheim* wirtschaftet hingegen mit eindeutiger Gewinnabsicht. Ziel ist es, möglichst viele Kunden gewinnen zu können.

Trotz der zugekauften Unterstützungsleistung der Stadtwerke Schwäbisch Hall verlangt die Tätigkeit „Stromversorger" nach einem hohen Professionalisierungsgrad. Diese Anforderungen lassen sich wiederum nur schwer mit der ehrenamtlichen Ausübung wesentlicher Tätigkeiten in der Genossenschaft verbinden. Um mehr Kunden an *rostrom* binden und damit mehr Gewinn erwirtschaften zu können würde das Unternehmen deutlich mehr Werbung betreiben müssen, was jedoch sowohl Zeit wie auch Geld in Anspruch nehmen würde. Gleichzeitig steht die ehrenamtliche Tätigkeit (vermeintlich) im Einklang mit den „eigentlichsten" Zwecksetzungen der Genossenschaft. Es stellt sich die Frage, inwieweit die Mitglieder der Genossenschaft überhaupt einer entgeltlichen Tätigkeit beispielsweise des Vorstands wohlwollend gegenüberstehen würden. So entsteht eine Situation, in der das „Ehrenamt" Determinante einer im weiten Sinn „sozialen" Organisation ist, aber gleichzeitig deren innovative Weiterentwicklung hemmt.

4. Ergebnisse der Fragebogenerhebung

4.1. Fakten zur Fragebogenerhebung

Befragung Solargenossenschaft Rosenheim	
Befragungstitel	„Meinungsumfrage zur Mitgliedschaft in der Solargenossenschaft Rosenheim“
Befragungsgegenstand	Einstellungen der Mitglieder zum Thema Energie und der Mitgliedschaft in der Genossenschaft
Befragungsinstrument	Fragebogen (siehe Anhang)
Befragungsmodus	Postalisch
Befragungszeitraum	Aussendung am 18.11.2011 von Rosenheim/D 10 Tage Rücklaufzeit
Grundgesamtheit	Alle Mitglieder der Solargenossenschaft Rosenheim (95)
Stichprobengröße sowie Rücklauf	n ges. = 95 n korr. = 94 (1Fragebogen unzustellbar) Rücklauf ges. = 40 Rücklaufquote = 42%
Auswertung	Dezember 2011 am RiCC
Auswertungsmethoden	SPSS

Zum Ablauf der Befragung kann als überraschend positiv angeführt werden, dass der Rücklauf der Erhebung (42%) als sehr hoch einzustufen ist (vergleichbare Befragungen bewegen sich häufig bei weniger als 10%). Dies kann einerseits dadurch erklärt werden, dass eine Vollerhebung bei einem weitgehend geschlossenen Personenkreis durchgeführt wurde, nämlich alle Mitglieder der *Solargenossenschaft Rosenheim.* Zugleich deutet der hohe Rücklauf aber jedenfalls auch auf eine hohe Identifikation mit der Genossenschaft und den gemeinsamen Zielen hin. Die Mitglieder fühlen sich mit der Genossenschaft, aber vor allem auch mit dem Thema erneuerbare Energie verbunden. Aus diesem Grund ist die Unterstützung eines Forschungsprojekts zum Thema Energiegenossenschaften naheliegend wenn auch keinesfalls selbstverständlich.

Im Folgenden werden die markantesten Befragungsergebnisse diskutiert.

4.2. PV-Anlage und Eigenheim

Der Großteil der Befragten (29 Personen) verfügt über *keine* eigene PV-Anlage. 11 Personen haben eine eigene Anlage. 30 Personen wohnen in einem Haus in Eigentum. Im Vorfeld der Befragung wurde vermutet, dass ein Großteil der Personen keine eigene PV-Anlage hat und darin eine Motivation zu sehen sein könnte, sich an einer Solargenossenschaft zu beteiligen –

schließlich liegt hier die Möglichkeit für eine aktive Beteiligung an konkreter „grüner“ Energieproduktion vor, auch wenn keine eigenen Produktionsmittel dafür vorhanden sind.
Die Mitgliedschaft ermöglicht zudem, sich mit einem relativ geringen finanziellen und organisatorischen Aufwand an einer PV-Anlage beteiligen zu können. Die Tatsache, dass 75% in einem eigenen Haus wohnen, jedoch nur 27,5% eine eigene PV-Anlage installiert haben, verwundert im ersten Moment. Das Ergebnis lässt sich möglicherweise dadurch erklären, dass die finanziellen Aufwendungen für ein Haus *und* die Errichtung einer PV-Anlage für viele Personen zu hoch sind – und der mögliche Gewinn respektive die gegebene Ersparnis durch die Stromproduktion zu gering ausfallen. Interessant ist, dass sich immerhin 27,5% der Befragten trotz eigener PV-Anlage zusätzlich mit einem Genossenschaftsanteil an einer Gemeinschaftsanlage beteiligen.

4.3. Gründe für eine PV-Anlage

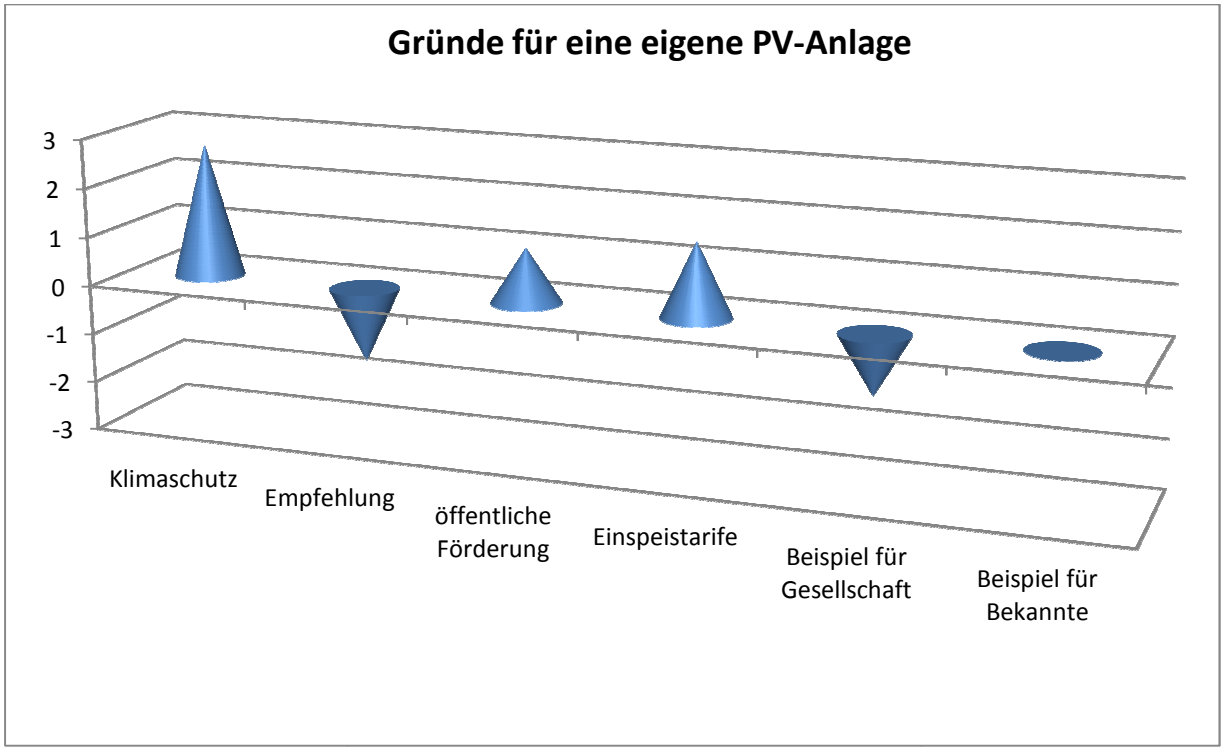

Abbildung 1

Abbildung 1 zeigt das Ergebnis der Frage 2 („Welche Faktoren haben dabei eine Rolle gespielt?“), die von 10 Personen beantwortet wurde. Der Nullwert repräsentiert dabei eine neutrale Einstellung zum Statement, positive Werte signalisieren Zustimmung, negative Werte eine tendenzielle Ablehnung eines Statements.

Es zeigt sich, dass der wichtigste Grund für eine eigene PV-Anlage der Beitrag zum Klimaschutz ist. Dem Beitrag zum Klimaschutz wird eine Bedeutung von „wichtig“ oder „sehr wichtig“ beigemessen. Die öffentliche Förderung spielt eine „neutrale“ bis „eher wichtige“ Rolle. Trotzdem lasst sich hier nur schwer ableiten, ob die PV-Anlagen auch ohne Förderungen errichtet werden würden.
Die Zustimmung für die Statements „Es wurde mir von Freunden/Bekannten/Nachbarn empfohlen“, „Andere Personen können sehen, dass ich etwas für die Umwelt tue“, „Ich erzähle Freunden/Bekannten gerne von meiner PV-Anlage“ war gering ausgeprägt.

4.4. Einkaufsentscheidungen

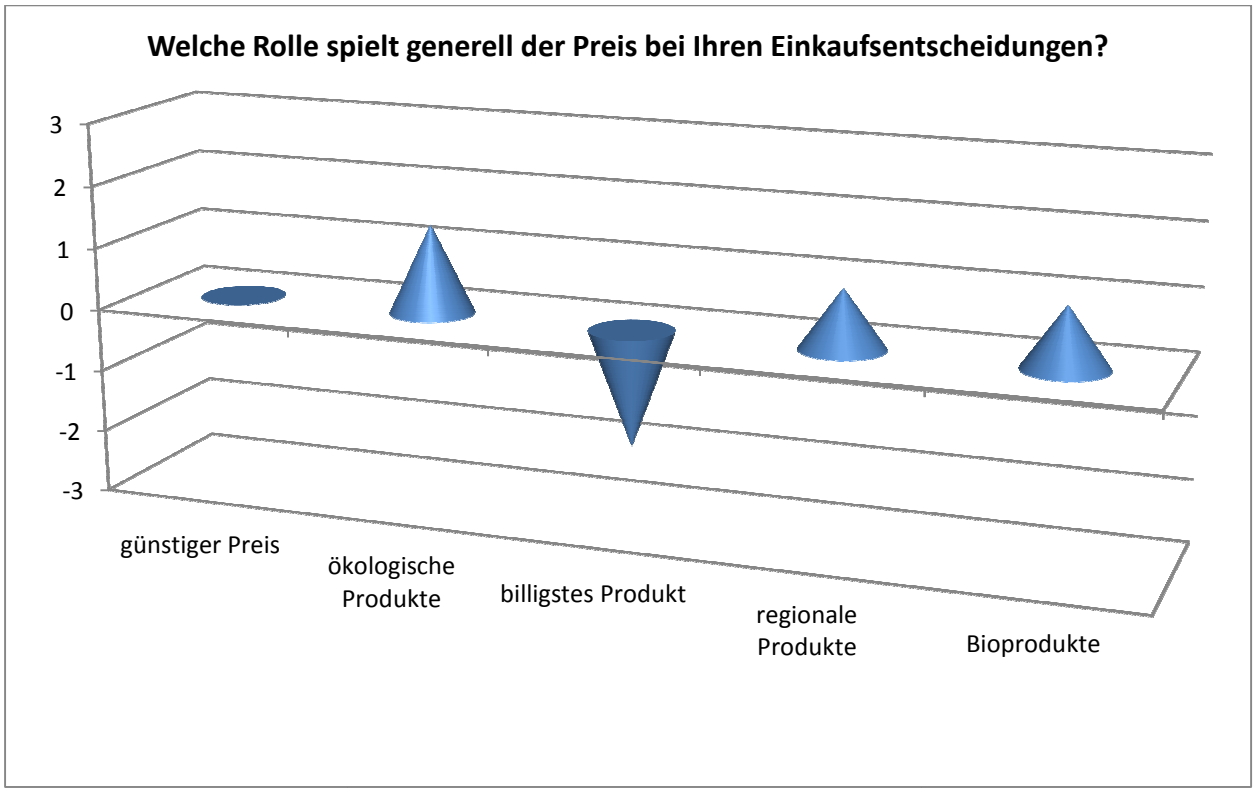

Abbildung 2

Das allgemeine Einkaufsverhalten (Abbildung 2) der Befragten zeigt die enge Verknüpfung des Themas Energie mit bewussten Einkaufsentscheidungen. Für einen Großteil der Befragen (50%) trifft die Aussage „Ich entscheide mich grundsätzlich für das günstigste Produkt“ überhaupt nicht zu. Als Umkehrschluss kann daher gelten, dass Qualitäts- und Gütekriterien bei Einkaufsentscheidungen eine positive Rolle spielen. Dies bestätigen auch die weiteren Antworten: Für die meisten Befragten spielen die Eigenschaften „ökologisch“, „regional“ und

„bio“ eine starke positive Rolle bei den täglichen Einkaufsentscheidungen. Personen, die sich an einer Solargenossenschaft beteiligen versuchen also auch im Alltagsleben, nachhaltige Einkaufsentscheidungen zu treffen.

4.5. Funktionen der Mitglieder in der Genossenschaft

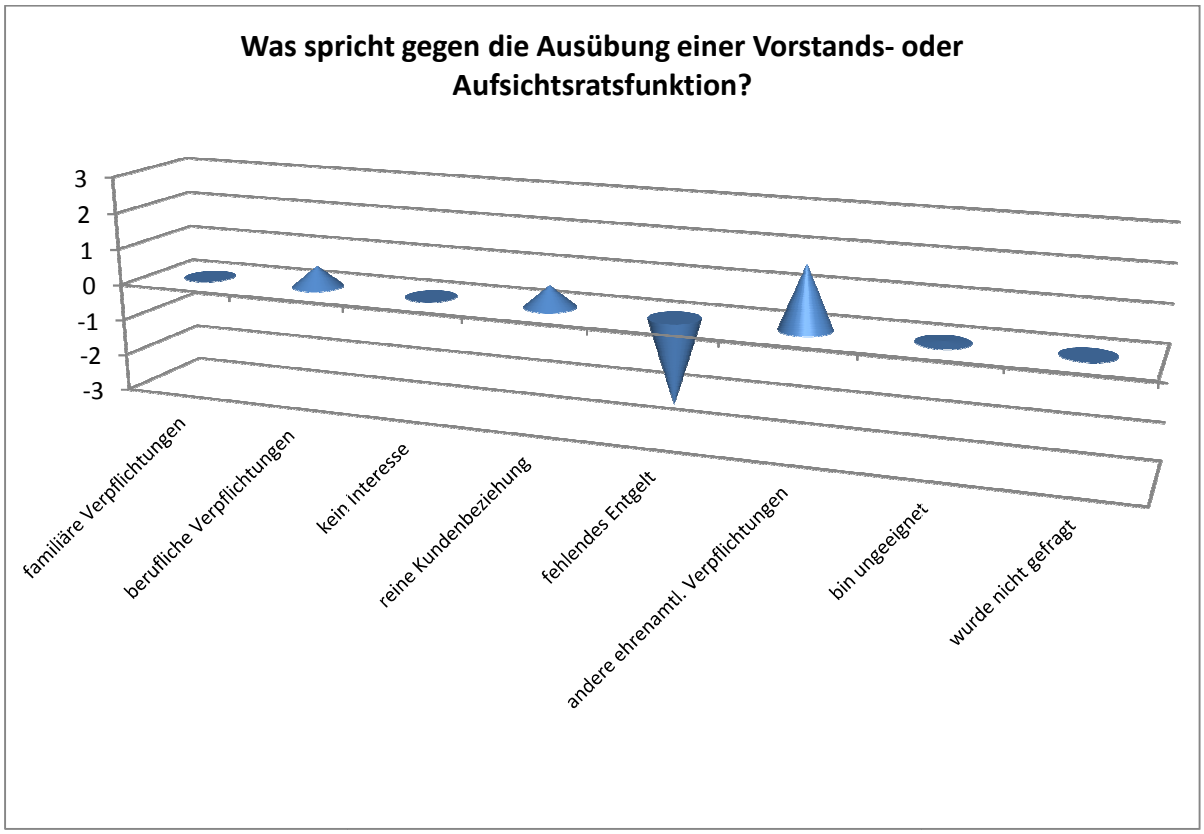

Abbildung 3

Abbildung 3 zeigt die Einstellung der Befragten zu den möglichen Optionen einer Verantwortungsübernahme in der Genossenschaftsstruktur. Demnach können es sich mehr als 90% der Befragten *nicht* vorstellen, in der nächsten Zeit für eine Vorstands- oder Aufsichtsratsfunktion zu kandidieren. Klar herauslesen lässt sich als Trend, dass das fehlende Entgelt hierfür keine hinderliche Rolle spielt. Bereits bestehendes ehrenamtliches Engagement hemmt hingegen die Bereitschaft, sich für weitere ehrenamtliche Aufgaben zu melden. Dieses Ergebnis bestätigt die Vermutung, dass ehrenamtliches Engagement für die meisten Menschen nur begrenzt möglich ist.

Bei allen anderen Gründen zeigen die Antworten – bei einem neutralen Trend – sehr hohe Standardabweichungen, woraus geschlossen werden kann dass die realen Gründe für die feh-

lende Bereitschaft, sich für eine Organfunktion zu melden, sehr individuell ausgeprägt und unterschiedlich sind.

4.6. Gründe für die Mitgliedschaft

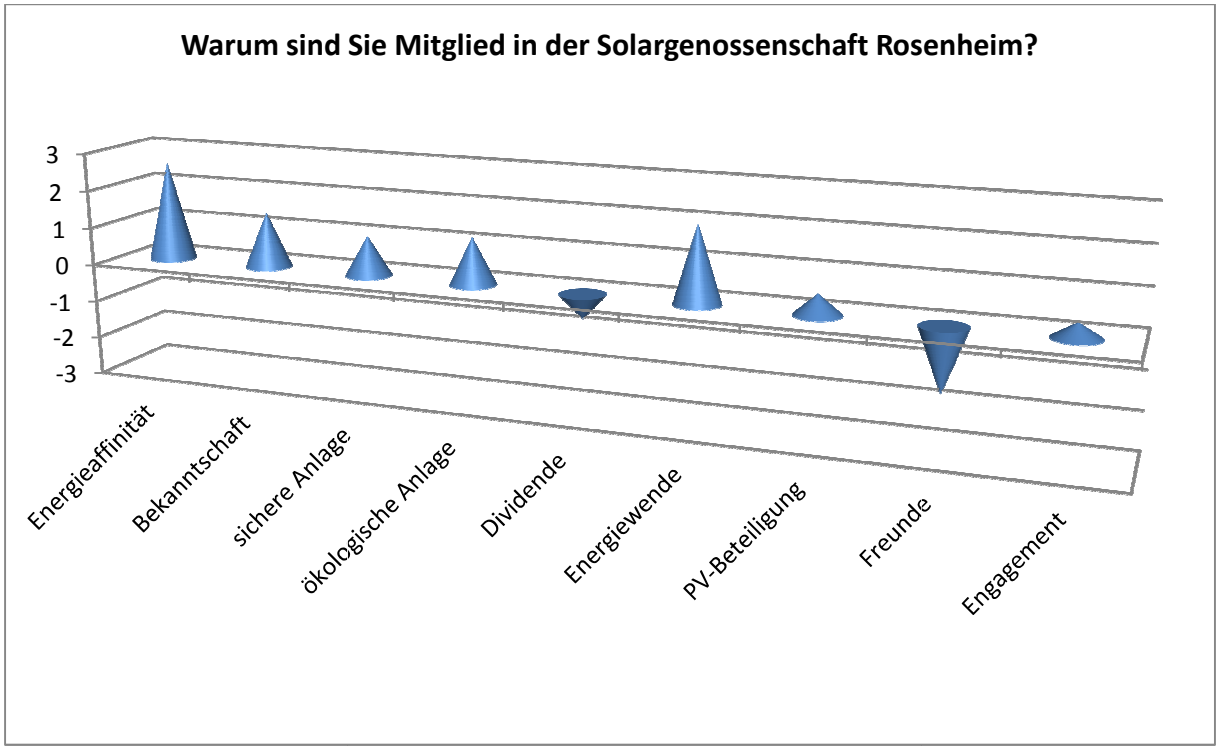

Abbildung 4

Abbildung 4 zeigt die Bedeutung verschiedener Motivationen für die Entscheidung, Mitglied in der Genossenschaft zu werden. Sehr wichtig für einen Großteil der Personen sind die Gründe „Das Thema erneuerbare Energie liegt mir am Herzen“ und „Ich möchte ein Zeichen für die Energiewende setzen“. Dieses Ergebnis zeigt die Bedeutung des Themas Energie für die Mitgliedschaft. Andere damit verknüpfte Gründe wie zum Beispiel die mit der Mitgliedschaft verbundene Möglichkeit, Geld „sicher“ und „ökologisch“ anlegen zu können, spielen in Relation eine eher untergeordnete Rolle. Es ist jedoch zu beachten, dass für drei Personen die Ausschüttung der jährlichen Dividende durchaus sehr wichtig ist, auch wenn durchschnittlich die Bedeutung der Dividende eher gering ausfällt.

Für die Mitgliedschaft spielt es so gut wie keine Rolle, dass Freunde/Bekannte oder Nachbarn auch Mitglied sind. Das deutet darauf hin, dass es hier keinen „sozialen Druck“ gibt, *auch* in der Genossenschaft Mitglied zu sein. Eine breite Streuung hat zudem der Aspekt, Mitglied zu sein, weil keine Möglichkeit besteht, eine eigene PV-Anlage zu errichten. Für die Personen,

die bereits eine eigene PV-Anlage haben, spielt dieser Aspekt aus verständlichen Gründen keine Rolle. Für die übrigen Befragten trifft dieser Aspekt hingegen sehr zu.

4.7. Vorteile durch die Mitgliedschaft

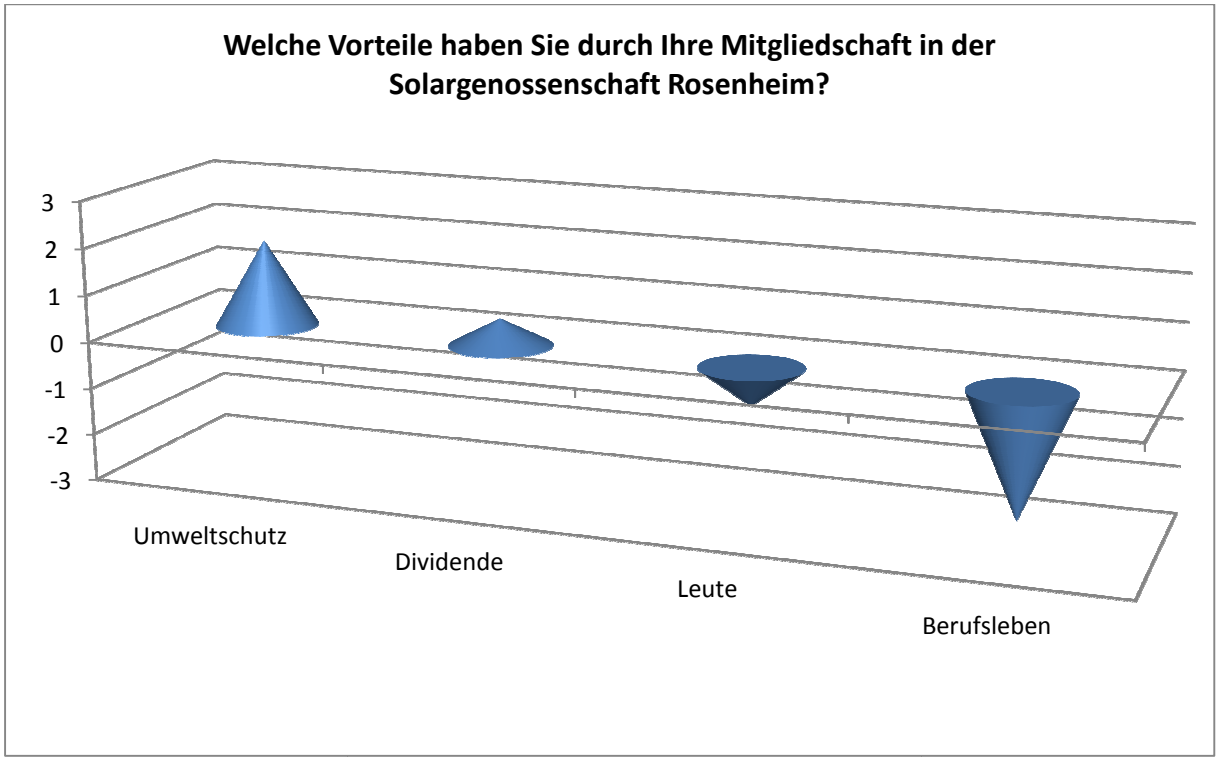

Abbildung 5

Abbildung 5 zeigt, welche Aspekte der Mitgliedschaft die Befragten als Vorteile wahrnehmen. Eine hohe Bedeutung hat dabei wieder der Umweltschutz. Mit der Mitgliedschaft kann ein Zeichen für den Umweltschutz gesetzt werden. Für mehr als 80% der Mitglieder trifft es hingegen nicht zu, dass ihnen die Mitgliedschaft auch für ihr Berufsleben nützt. Ebenfalls eine eher geringe Bedeutung hat der Aspekt, dass man aufgrund der Mitgliedschaft Personen mit ähnlichen Interessen kennenlernt. Dieses Ergebnis bestätigt die oben genannte Vermutung, dass aufgrund der Zwecksetzung relativ wenig soziale Aktivitäten der Mitglieder möglich beziehungsweise auch notwendig sind. Eine Solargenossenschaft kann vermutlich nicht die gleichen sozialen Funktionen wie beispielsweise ein Sportverein erfüllen.

4.8. Aspekte der Rechtsform Genossenschaft

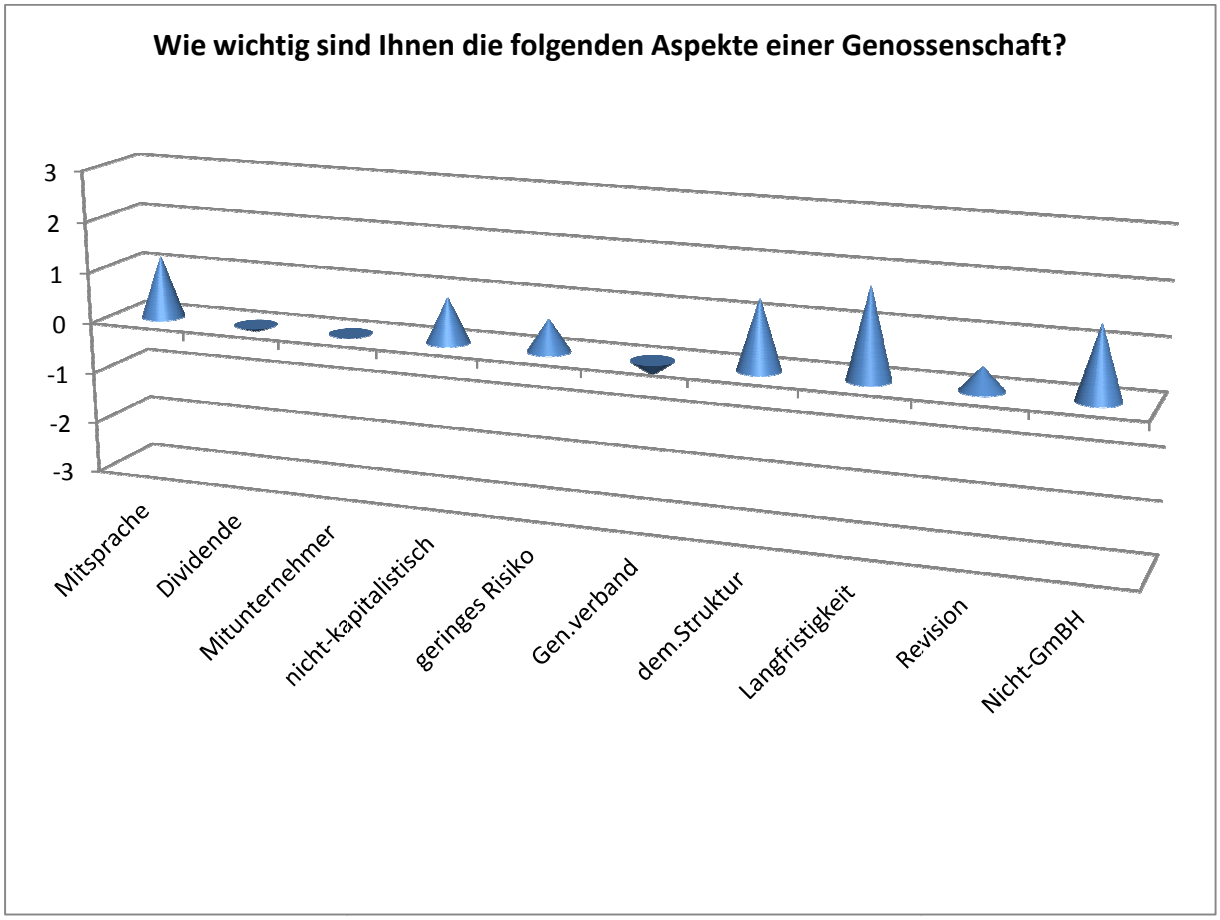

Abbildung 6

Abbildung 6 behandelt die Bedeutung unterschiedlicher Aspekte und Bedeutungen, die die Rechtsform der Genossenschaft einnehmen kann. Eher wichtig sind für die Mitglieder „Mitspracherecht“, „nicht kapitalistische Ausrichtung“, „demokratische Struktur“ und „Langfristigkeit“. Dass die Solargenossenschaft tatsächlich eine Genossenschaft ist, spielt sogar für 35% eine sehr wichtige Rolle. „Mitunternehmerschaft“, „Dividende“ und die „Beratung und Revision durch den Genossenschaftsverband“ sind von eher untergeordneter Wichtigkeit. Diese Ergebnisse deuten darauf hin, dass im Umfeld der Solargenossenschaft die Rechtsform Genossenschaft tendenziell als „alternative“ Organisationsform wahrgenommen wird und weniger als eine spezifische unternehmerische Struktur, der rationale Vorteile im Rechtsformenwettbewerb zugeschrieben werden.

4.9. Ausrichtungen der Genossenschaft

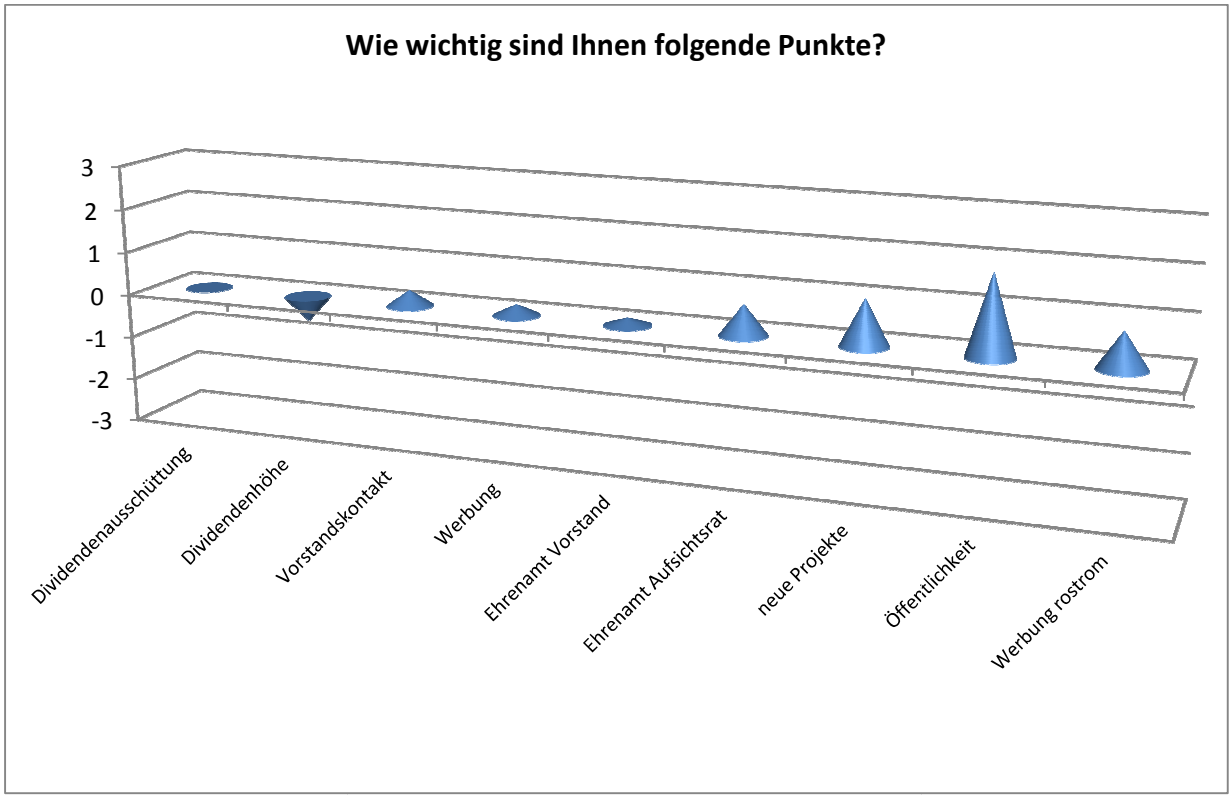

Abbildung 7

Abbildung 7 zeigt das Ergebnis der Frage „Wie wichtig sind Ihnen die folgenden Punkte?“. Sehr wichtig ist es für die Mitglieder, dass in der Öffentlichkeit wahrgenommen wird, dass sich die Solargenossenschaft Rosenheim im Bereich der erneuerbaren Energien engagiert. Die Werbung für *rostrom* sollte ebenfalls verstärkt werden. Das lässt den Schluss zu, dass die Mitgliedschaft in der Solargenossenschaft durchaus als aktive gesellschaftliche Meinungsäußerung verstanden werden soll. Vor allem bei der Aufsichtsratstätigkeit ist es den Mitgliedern wichtig, dass diese ehrenamtlich stattfindet.

Eine geringe Rolle spielt für die Mitglieder die Höhe der Dividende. Kombiniert mit den anderen auf die Dividende bezogenen Fragestellungen kann somit gesagt werden, dass es zwar wichtig ist, dass es eine Dividende gibt, jedoch ist deren Höhe kein Entscheidungskriterium für die Mitgliedschaft in der Genossenschaft.

5. Workshop

Fakten zum Workshop

Workshop Solargenossenschaft Rosenheim	
Titel	Engagement und Motivation in einer Bürgerenergiegenossenschaft
Ort	Bildungs- und Pfarrzentrum St. Nikolaus in Rosenheim/D
Einladung	Postalisch im Dezember 2011
Datum	Freitag, 13.01.2012
Leitung	Elisabeth Reiner (RiCC), Anna Schreuer (IFZ Graz)
Teilnehmer/innen	Mitglieder der Solargenossenschaft Rosenheim, Gesamt:
Programm	Präsentation der Befragungsergebnisse Diskussion der Ergebnisse Möglichkeit für die Teilnehmer/innen eigene Themen einzubringen

Wie im Projektantrag vorgesehen wurde im Jänner 2012 in Rosenheim ein Workshop mit den Mitgliedern der *Solargenossenschaft Rosenheim* abgehalten. Der Workshop hatte einerseits den Sinn, die Ergebnisse der im November abgehaltenen schriftlichen Befragung (vgl. Kapitel 4) gemeinsam mit den Mitgliedern diskutieren zu können. Ebenfalls bot sich auch die Möglichkeit, besonders spannende Aspekte noch einmal genauer herauszuarbeiten.
Es wurde zudem spezieller Wert darauf gelegt, dass der Workshop den Teilnehmer/innen auch die Möglichkeit bietet, aktiv ihre eigenen Anliegen und Wahrnehmungen einzubringen.

In der Diskussion mit den Teilnehmer/innen wurde ersichtlich, dass tatsächlich ein Großteil der anwesenden Mitglieder überwiegend aus idealistischen Motiven Mitglied in der Genossenschaft sind. Allerdings wurde auch angemerkt, dass die Möglichkeit nicht auszuschließen ist, dass jene Mitglieder, die sich bei Befragung und Workshop nicht aktiv zeigten, eventuell zu dem Personenkreis gehören könnten, die in der Mitgliedschaft tatsächlich eher eine Form des Investments sieht. Grundsätzlich würden aber Personen, die erneuerbare Energie hauptsächlich als eine Möglichkeit für (Öko-) Investment sehen, eher in einen Fonds investieren, da dort die Renditen deutlich höher seien.
Die Rechtsform der Genossenschaft spielt für die Teilnehmer/innen so auch eine wichtige Rolle. Mögliche Entwicklungsmöglichkeiten für die Genossenschaft wären Beteiligungsmodelle im Bereich der Energieeffizienz, da immer wieder betont wird, dass hier das größte Potential für die Energiewende liegt.

6. Resümee: Zukunftsperspektiven und Potential der Rechtsform Genossenschaft im Bereich der erneuerbaren Energie

Die dargelegte Untersuchung zeigt deutlich die Relevanz von Bürgerbeteiligungsprojekten im Bereich der erneuerbaren Energie. Es gibt mittlerweile zahlreiche Projekte, die in Größe und Ausrichtung jedoch sehr unterschiedlich sind. Projekte von großen Investoren haben mittlerweile ebenfalls das Potential von Beteiligungsprojekten erkannt und versuchen mittels der „aktiven" Einbindung von Bürger/innen Zustimmung für kritische Bauvorhaben zu finden. Die Politik misst inzwischen dezentralen Projekten eine hohe Bedeutung auf dem Weg zur Energiewende zu.

Vor allem von Seiten der „Grünparteien" werden der Ausbau von PV-Anlagen auf öffentlichen Dächern und die Gründung von Bürgersolarkraftwerken forciert. Die Gründung von Energiegenossenschaften wird auch von den deutschen Genossenschaftsverbänden unterstützt. Allein im Jahr 2010 wurden in Bayern insgesamt 54 Genossenschaften gegründet, wovon 30 dem Bereich „Umwelt & Energie" zugeordnet wurden (GVB 2010). Insgesamt gibt es in Bayern mehr als 100 Energiegenossenschaften (GVB 2011, 3). Die Zahlen belegen, dass der Bereich Energie für die Genossenschaftsverbände eine zentrale Bedeutung hat. Der Genossenschaftsverband Bayern sieht in der dezentralen und regionalen Energieerzeugung die Grundlage für eine echte Energiewende. Die Ressourcen aus den Regionen sollten für eine regionale Energieproduktion und so für eine nachhaltige Regionalentwicklung genutzt werden. Als ökonomischer Vorteil wird angeführt, dass durch die Nutzung der regionalen Energiequellen die Wertschöpfung und Wirtschaftskraft in der Region bleiben (GVB 2011, 1).

> *Die ideale Unternehmensform zur Organisation dezentraler Energieversorgung ist die Genossenschaft. Sie bietet Landwirten, Bürgern und Kommunen eine bewährte, praktikable und demokratische Rechtsform. Sie schafft stabile Rahmenbedingungen um regional eigenverantwortliche und aktive Beiträge zur Energiesicherung und dem Erhalt von Lebensqualität zu ermöglichen.* (Verbandspräsident, Prof. Dr. h.c. Stephan Götzl, Genossenschaftsverband Bayern e.V, vgl. GVB 2011, 1)

Die Genossenschaft hat gegenüber anderen Gesellschaftsformen den Wettbewerbsnachteil, dass die Gründungsberatung, Betreuung und Prüfung beim jeweiligen Revisionsverband liegt. Somit besteht ein nur geringes Interesse von Rechtsanwälten und Steuerberatern, die Genossenschaft zu „empfehlen". Aus diesem Grund ist es umso entscheidender, wie aktiv sich ein

Verband um die Interessen seiner potentiellen Gründer/innen bemüht und wie rasch auf Trends reagiert wird. Der deutsche Genossenschaftsverband hat rechtzeitig das Potential „kleiner“ Genossenschaften erkannt und setzt sich mit seinen Aktivitäten sehr stark für diese ein (vgl. etwa die Broschüre des GVB, „Gestaltung der Energiewende nach genossenschaftlichen Prinzipien“). Die Genossenschaftsbanken sehen in den Bürgerenergiegenossenschaften ebenfalls ein neues Geschäftsfeld (Behrens et al. 2010).

Trotzdem sind bei weitem nicht alle Projekte in der Rechtsform der Genossenschaft gegründet. Viele Projekte werden auch als eingetragener Verein oder Kapitalgesellschaft gegründet. Der Verein hat den Vorteil, dass er deutlich weniger kostenintensiv als die Genossenschaft ist. Kapitalgesellschaften (beispielsweise AG und GmbH & Co KG) werden oft als Rechtform für investitionsintensive Solarparks gewählt. Innerhalb der Genossenschaft sind die Mitglieder jedoch nicht nur Kapitalgeber, sondern Eigentümer mit Stimmrecht und können die Genossenschaft mitgestalten. Die unabhängige Prüfung durch den jeweils zuständigen Genossenschaftsverband erhöht zusätzlich die Sicherheit für die Mitglieder und Geschäftspartner.

Der politische und gesellschaftliche Wunsch nach einem möglichst raschen Vollzug der Energiewende führt dazu, dass es auf Bundes- und Landesebene (neben der Einspeisvergütung nach dem EEG) eine Vielzahl an Förderungen gibt (vgl. GVB 2011, 12 f.). Das Fördersystem und die öffentliche Anerkennung von Energieprojekten bilden die Rahmenbedingungen, innerhalb derer sich die Projekte entwickeln. Mittlerweile haben sich in Deutschland verschiedene Aus- und Weiterbildungsmaßnahmen im Bereich der erneuerbaren Energien gebildet, da bereits mehr als 367.0000 Menschen in Deutschland in diesem Bereich beschäftigt sind (BMU 2011b, 37).

Das Ministerium für Umwelt, Naturschutz und Reaktorsicherheit sieht für die Zukunft eine hohe Bedeutung darin, dass der Einsatz der erneuerbaren Energien die Verteilungskämpfe um knappe Ressourcen entschärft und so einen indirekten Beitrag zur äußeren und inneren Sicherheit leistet (ebd., 47). Aus diesen Gründen werden vom Ministerium auch zahlreiche Forschungsprojekte im Bereich erneuerbare Energien gefördert (BMU 2011c).

Die Schwierigkeiten von Bürgerenergiegenossenschaften liegen besonders in dem Erfordernis eines nachhaltigen Engagements und dem damit verbundenen Problem der Ehrenamtlichkeit. Damit bestimmte Teilbereiche eines solchen Projekts entgeltlich ausgeübt werden können muss das Projekt gewinnorientiert wirtschaften, damit genug finanzielle Mittel verfügbar sind um Mitarbeiter/innen anzustellen Selbst wenn das der Fall ist besteht immer noch die Mög-

lichkeit, dass die Mitglieder trotzdem die *ehrenamtliche* Ausübung von Vorstands- bzw. Aufsichtsratstätigkeiten voraussetzen. Ein weiterer kritischer Punkt ist die eher gering ausgeprägte Möglichkeit, sich als Genossenschaftsmitglied einzubringen. Die Geschäftstätigkeit der Genossenschaft bleibt somit tendenziell abstrakt, der Identifikationsgrad der Mitglieder mit der Genossenschaft muss folglich eher hoch ausgeprägt sein will die Genossenschaft nicht riskieren, dass Mitglieder nach einer gewissen Zeit ihre Geschäftsanteile wieder kündigen.

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Fragebogen

Liebe Mitglieder der Solargenossenschaft Rosenheim!

Worum geht es?

Das Forschungsinstitut für Kooperationen und Genossenschaften (Leitung Univ. Prof. Dr. Dietmar Rößl) der WU Wien arbeitet derzeit an einem Projekt zum Thema Energiegenossenschaften. Das Forschungsprojekt wird vom Jubiläumsfonds der österreichischen Nationalbank (OeNB) finanziert und gemeinsam mit dem IFZ Graz (Interuniversitäres Forschungszentrum für Technik, Arbeit und Kultur) durchgeführt.

Teil des Projektes ist die Erstellung von zwei Fallstudien. Im vergangenen Juli konnte ich mit mehreren Personen, unter anderem Herrn Lukas und einigen seiner KollegInnen mündliche Interviews über die *„Solargenossenschaft Rosenheim“* führen.

Warum haben Sie einen Fragebogen bekommen?

Da in jeder Genossenschaft den Mitgliedern eine entscheidende Rolle zukommt, ist jetzt Ihre Meinung von wesentlichem Interesse für das Projekt! Aus diesem Grund habe ich mich für eine schriftliche Befragung der Mitglieder entschieden.

Ihr Mitwirken an der Befragung eröffnet die Möglichkeit, mehr zu dem wichtigen Thema Energie und Bürgerbeteiligung zu erfahren.

Die Antworten werden vertraulich behandelt!

Die Befragung ist vollständig anonym. Die Fragebögen wurden an Herr Lukas versandt, der diese wiederum an Sie weitergeleitet hat. Ihre persönlichen Daten sind uns nicht bekannt. Ich würde mich sehr freuen, wenn Sie an der Befragung - sie nimmt ungefähr 15 Minuten Ihrer Zeit in Anspruch - teilnehmen. Bitte senden Sie den ausgefüllten Fragebogen in dem beiliegenden freigemachten Rückkuvert innerhalb von 10 Tagen an uns zurück.

Wie geht es weiter?

Für November/Dezember 2011 ist ein Workshop in Rosenheim geplant, wo die Ergebnisse der Befragung präsentiert werden und wir die Themen gemeinsam diskutieren können.

Für Fragen stehe ich jederzeit zur Verfügung.

Vielen Dank für Ihr Mitwirken!

Meinungsumfrage zur Mitgliedschaft in der Solargenossenschaft Rosenheim

I Thema Energie

1. Haben Sie eine eigene PV- (Photovoltaik) Anlage?

1 - Ja 2 - Nein [Weiter bei Frage 3]

2. Welche Faktoren haben dabei eine Rolle gespielt?

	sehr unwichtig						*sehr wichtig*
a) Ich kann damit einen Beitrag zum Klimaschutz leisten.	1	2	3	4	5	6	7
b) Es wurde mir von Freunden/ Bekannten/Nachbarn empfohlen.	1	2	3	4	5	6	7
c) Die Errichtung einer PV-Anlage wird öffentlich gefördert.	1	2	3	4	5	6	7
d) Die gesetzlich vorgesehenen Einspeistarife sind attraktiv.	1	2	3	4	5	6	7
e) Andere Personen können sehen, dass ich etwas für die Umwelt tue.	1	2	3	4	5	6	7
f) Ich erzähle Freunden/Bekannten gerne von meiner PV-Anlage.	1	2	3	4	5	6	7

3. Von wo beziehen Sie Ihren Strom?

a) Stadtwerke Rosenheim
b) rosolar (Produkt der Solargenossenschaft Rosenheim)
c) EON
d) andere: _____

4. Handelt es sich dabei um Ökostrom?

1 - Ja 2 - Nein

5. Haben Sie beruflich mit dem Thema Energie zu tun?

1 - Ja 2 - Nein

6. Welche Rolle spielt generell der Preis bei Ihren Einkaufsentscheidungen?

(Bitte geben Sie an, ob die folgenden Aussagen auf Sie zutreffen.)

	stimmt gar nicht						*stimmt völlig*
a) Ich achte sehr darauf, zu möglichst günstigen Preisen einkaufen zu können.	1	2	3	4	5	6	7
b) Der Preis ist mir zwar wichtig, aber im Zweifelsfall ist es mir wichtiger, „ökologisch wertvoll“ einzukaufen.	1	2	3	4	5	6	7
c) Ich entscheide mich grundsätzlich für das günstigste Produkt.	1	2	3	4	5	6	7
d) Ich kaufe hauptsächlich regionale Produkte.	1	2	3	4	5	6	7
e) Ich kaufe hauptsächlich Bioprodukte.	1	2	3	4	5	6	7

7. Sind Sie Kunde von rosolar?

1 - Ja [*weiter bei Frage **8***] 2 - Nein [*weiter bei Frage **9***]

8. Wie wichtig sind dabei folgende Gründe?

	sehr unwichtig						*sehr wichtig*
a) Ich bin Mitglied der Solargenossenschaft Rosenheim, daher bin ich auch Kunde von rosolar.	1	2	3	4	5	6	7
b) Ich bin für den Atomausstieg.	1	2	3	4	5	6	7
c) Ich möchte einen Beitrag zur Energiewende leisten.	1	2	3	4	5	6	7
d) Es ist wichtig, ein Zeichen für „Ökostrom“ zu setzen.	1	2	3	4	5	6	7
e) Der Strom ist nur geringfügig teurer. Die Entscheidung für rosolar ist mir daher nicht schwer gefallen.	1	2	3	4	5	6	7
f) Viele meiner Freunde/Verwandten/Bekannten beziehen ebenfalls Ökostrom.	1	2	3	4	5	6	7
g) Ich möchte Projekte in der Region unterstützen.	1	2	3	4	5	6	7
h) Die Mitgliedschaft nützt mir auch sonst.	1	2	3	4	5	6	7

9. Warum sind Sie <u>nicht</u> Kunde von rosolar?

_____
_____
_____

10. Wie stark hat die Atomkatastrophe in Fukushima/Japan direkt Ihre Einstellung zur Atomenergie verändert?

1	2	3	4	5	6	7
gar nicht						*sehr stark*

II Thema Genossenschaft

11. Seit wann sind Sie Mitglied in der Solargenossenschaft Rosenheim?

_____

12. Waren Sie vor Gründung der Genossenschaft Mitglied im Solarförderverein Rosenheim?

1 - Ja 2 - Nein

13. Sind Sie derzeit Mitglied im Solarförderverein Rosenheim?

1 - Ja 2 - Nein

14. Wie haben Sie von der Solargenossenschaft Rosenheim erfahren?

(Bitte geben Sie an, ob die folgenden Aussagen auf Sie persönlich zutreffen.)

	stimmt gar nicht						*stimmt völlig*
a) Ich war in der Agenda 21 aktiv.	1	2	3	4	5	6	7
b) Freunde/Verwandte/Bekannte haben mir davon erzählt.	1	2	3	4	5	6	7
c) Ich habe in der Zeitung davon gelesen.	1	2	3	4	5	6	7
d) Ich war bei einer Veranstaltung, wo Werbefolder aufgelegen sind.	1	2	3	4	5	6	7
e) Ein Genossenschaftsmitglied hat mich angesprochen.	1	2	3	4	5	6	7
f) Ich war aktiv an der Gründung der Genossenschaft beteiligt.	1	2	3	4	5	6	7

15. Bitte geben Sie an, ob die folgenden Aussagen auf Sie persönlich zutreffen.

	stimmt gar nicht						*stimmt völlig*
a) Die Rechtsform der Genossenschaft war mir schon vor der Solargenossenschaft Rosenheim bekannt.	1	2	3	4	5	6	7
b) Ich bin auch Mitglied einer anderen Genossenschaft.	1	2	3	4	5	6	7
c) Ich bin Kunde einer Genossenschaftsbank.	1	2	3	4	5	6	7
d) Ich übe in meiner Freizeit eine ehrenamtliche Tätigkeit aus.	1	2	3	4	5	6	7
e) Ich habe Aktien einer Aktiengesellschaft.	1	2	3	4	5	6	7

16. Die folgenden Aussagen betreffen Ihre Rolle in der Solargenossenschaft Rosenheim.

(Bitte geben Sie an, ob diese auf Sie zutreffen. Mehrfachnennungen sind möglich.)

a) Ich bin Mitglied des Vorstands.	1 - nein	2 -ja
b) Ich bin Mitglied des Aufsichtsrats.	1 - nein	2 -ja
c) Ich erledige verschiedene Arbeiten für die Genossenschaft.	1 - nein	2 -ja
d) Ich identifiziere mich mit den Zielen der Genossenschaft.	1 - nein	2 -ja
e) Ich komme immer zur Generalversammlung der Solargenossenschaft Rosenheim.	1 - nein	2 -ja
f) Ich melde mich bei der Generalversammlung öfters zu Wort.	1 - nein	2 -ja
g) Ich habe Interesse an dem Kauf von weiteren Genossenschaftsanteilen der Solargenossenschaft Rosenheim.	1 - nein	2 -ja
h) Ich kann mir vorstellen, in der nächsten Zeit für eine Funktion im Vorstand oder Aufsichtsrat zu kandidieren.	1 - nein	2 -ja

*Falls Sie Frage **16 a)** oder **b)** oder **h)** mit **„Nein“** beantwortet haben:*

17. Was spricht gegen die Ausübung einer Vorstands- oder Aufsichtsratsfunktion?

(Bitte geben Sie an, welche Aussagen zutreffen.)

	stimmt gar nicht						*stimmt völlig*
a) Meine Familie nimmt zu viel Zeit in Anspruch.	1	2	3	4	5	6	7
b) Mein Beruf lässt mir dafür keine Zeit.	1	2	3	4	5	6	7
c) Ich habe daran kein Interesse.	1	2	3	4	5	6	7
d) Ich sehe mich primär als Kunde der Solargenossenschaft Rosenheim.	1	2	3	4	5	6	7
e) Eine solche Tätigkeit ist für mich nicht interessant, weil es dafür kein Entgelt gibt.	1	2	3	4	5	6	7
f) Ich übe bereits andere ehrenamtliche Tätigkeiten aus.	1	2	3	4	5	6	7
g) Ich glaube nicht, dass ich geeignet bin.	1	2	3	4	5	6	7
h) Ich wurde nicht gefragt.	1	2	3	4	5	6	7
i) Sonstiges							

18. Warum sind Sie Mitglied in der Solargenossenschaft Rosenheim?

(Bitte geben Sie an, ob die folgenden Aussagen auf Sie zutreffen.)

	stimmt gar nicht						*stimmt völlig*
a) Das Thema erneuerbare Energie liegt mir am Herzen.	1	2	3	4	5	6	7
b) Ich kenne ein Gründungsmitglied.	1	2	3	4	5	6	7
c) Es handelt sich um eine sichere Anlageform.	1	2	3	4	5	6	7
d) Ich möchte mein Geld ökologisch anlegen.	1	2	3	4	5	6	7
e) Die jährliche Dividende motiviert mich.	1	2	3	4	5	6	7
f) Ich möchte ein Zeichen für die Energiewende setzen.	1	2	3	4	5	6	7
g) Ich habe nicht die Möglichkeit für eine eigene PV-Anlage. Die Genossenschaft bietet die Möglichkeit, dass ich mich trotzdem an einer PV-Anlage beteiligen kann.	1	2	3	4	5	6	7
h) Viele meiner Freunde/Bekannten/Nachbarn sind auch Mitglied.	1	2	3	4	5	6	7
i) Ich wollte mich engagieren und das Thema Energie liegt mir noch am nächsten.	1	2	3	4	5	6	7
j) Sonstiges							

19. Welche <u>Vorteile</u> haben Sie durch Ihre Mitgliedschaft in der Solargenossenschaft Rosenheim?

	stimmt gar nicht						*stimmt völlig*
a) Ich kann damit ein Zeichen für den Umweltschutz setzen.	1	2	3	4	5	6	7
b) Ich bekomme eine jährliche Dividende.	1	2	3	4	5	6	7
c) Ich lerne Leute mit ähnlichen Interessen kennen.	1	2	3	4	5	6	7
d) Die Mitgliedschaft nützt mir auch für mein Berufsleben.	1	2	3	4	5	6	7
e) Sonstiges							

20. Wie wichtig sind Ihnen die folgenden Aspekte einer Genossenschaft?

	sehr unwichtig						*sehr wichtig*
a) Mitspracherecht	1	2	3	4	5	6	7
b) Dividende	1	2	3	4	5	6	7
c) Mitunternehmer zu sein	1	2	3	4	5	6	7
d) Genossenschaft als „nicht kapitalistische“ Rechtsform“	1	2	3	4	5	6	7
e) Das geringe unternehmerische Risiko durch die beschränkte Haftung.	1	2	3	4	5	6	7
f) Die Betreuung/Beratung durch den Genossenschaftsverband.	1	2	3	4	5	6	7
g) Demokratische Struktur	1	2	3	4	5	6	7
h) Langfristige Ausrichtung	1	2	3	4	5	6	7
i) Die unabhängige Prüfung durch den Revisionsverband.	1	2	3	4	5	6	7
j) Sonstiges							

21. Wie wichtig ist Ihnen, dass die *Solargenossenschaft Rosenheim* eine Genossenschaft ist und nicht etwa eine GmbH?

sehr unwichtig	unwichtig	eher unwichtig	neutral	eher wichtig	wichtig	sehr wichtig
1	2	3	4	5	6	7

22. Wie stark werden die Mitglieder bzw. die Solargenossenschaft Rosenheim von den folgenden Institutionen unterstützt?

	gar nicht						*sehr stark*
a) Stadt Rosenheim	1	2	3	4	5	6	7
b) Bürgermeisterin	1	2	3	4	5	6	7
c) Stadtwerke Rosenheim	1	2	3	4	5	6	7
d) Solarförderverein Rosenheim	1	2	3	4	5	6	7
e) Genossenschaftsverband	1	2	3	4	5	6	7
f) Sonstiges							

23. Wie eng ist Ihr Kontakt zu den folgenden Personen/Institutionen ein?

	gar nicht						*sehr stark*
a) Stadt Rosenheim	1	2	3	4	5	6	7
b) Bürgermeisterin	1	2	3	4	5	6	7
c) Stadtwerke Rosenheim	1	2	3	4	5	6	7
d) Solarförderverein Rosenheim	1	2	3	4	5	6	7
e) Genossenschaftsverband	1	2	3	4	5	6	7
f) Solargenossenschaft Rosenheim	1	2	3	4	5	6	7
g) Sonstiges							

24. Wie wichtig sind Ihnen die folgenden Punkte?

	sehr unwichtig						*sehr wichtig*
a) Dass jährlich eine Dividende ausgeschüttet wird.	1	2	3	4	5	6	7
b) Dass eine möglichst hohe Dividende ausgeschüttet wird.	1	2	3	4	5	6	7
c) Dass ein enger Kontakt des Vorstands zu den Mitgliedern besteht.	1	2	3	4	5	6	7
d) Dass verstärkte Werbemaßnahmen für die Solargenossenschaft Rosenheim stattfinden.	1	2	3	4	5	6	7
e) Dass der Vorstand ehrenamtlich und nicht entgeltlich tätig ist.	1	2	3	4	5	6	7
f) Dass der Aufsichtsrat ehrenamtlich und nicht entgeltlich tätig ist.	1	2	3	4	5	6	7
g) Dass neue Projekte vorangetrieben werden, damit ich Genossenschaftsanteile kaufen kann.	1	2	3	4	5	6	7
h) Dass in der Öffentlichkeit wahrgenommen wird, dass sich die Solargenossenschaft Rosenheim im Bereich der erneuerbaren Energien engagiert.	1	2	3	4	5	6	7
i) Dass es verstärkte Werbemaßnahmen für rosolar gibt.	1	2	3	4	5	6	7
j) Sonstiges							

III Entwicklungsmöglichkeiten der Solargenossenschaft Rosenheim

25. Sind Sie der Meinung, dass es zweckmäßig wäre, wenn gewisse Ämter (z.B. Vorstand, Sekretärin …) in der Solargenossenschaft in Zukunft entgeltlich ausgeübt werden würden?

1 - Ja 2 - Nein

26. Werden Sie, wenn es wieder neue Projekte gibt, weitere Genossenschaftsanteile zeichnen?

1 - Ja [*weiter bei Frage **28***] 2 - Nein

27. Warum werden Sie keine weiteren Genossenschaftsanteile zeichnen?

_____

28. Wo sehen Sie Verbesserungspotential für die Genossenschaft?

_____

29. Hätten Sie gerne einen engeren Kontakt zum Vorstand?

1 - Ja 2 - Nein

IV Allgemeine Informationen

30. Welcher ist Ihr höchster Bildungsabschluss? Bitte wählen Sie eine Alternative.

1 – Realschulabschluss; 2 – Lehrabschluss; 3 – Abitur, 4 – Universität

31. Sind Sie derzeit: 1 – Single; 2 – in Lebensgemeinschaft

32. Welcher Altersgruppe gehören Sie an?

< 25	25-35	36-45	46-55	56-65	>65
☐	☐	☐	☐	☐	☐

33. Ihr Geschlecht: 1 – männlich 2 – weiblich

34. Wie viele Personen wohnen in Ihrem Haushalt? _____

35. Wie viele Personen sind davon unter 18 Jahre? _____

36. Wo wohnen Sie?

1 - In einer Mietwohnung.
2 - In einer Eigentumswohnung.
3 - In einem Haus (Miete).
4 - In einem Haus (Eigentum).
5 - Sonstiges

37. Wohnen Sie in der näheren Umgebung (Umkreis von 15 km) der Stadt Rosenheim?

1 - Ja 2 - Nein

38. Welchen Beruf üben Sie derzeit aus? _____

39. Haben Sie ein eigenes Auto?

1 - Ja 2 - Nein