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CONRAD KUNZE, SÖREN BECKER

Energy democracy in Europe

A survey and outlook



RENEWABLE
DEMOCRATIC
PARTICIPATION
DEGROWTH
SUFFICIENCY
SOCIAL MOVEMENTS



CONRAD KUNZE, SÖREN BECKER

Energy democracy in Europe

A survey and outlook



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[I Introduction]

Renewable energy sources such as wind, water, sun and biomass¹ are a peaceful alternative to fossil fuels such as coal, oil, uranium (atomic energy) and gas. Renewable energy can be produced locally and is available to nearly everybody. There is no peril of war over oil and gas fields or pipelines, no possible radioactive disasters, and they do not produce chaotic climate conditions. The energy transition is more than simply a technical question. Regularly social movements opposing opencast mining, fracking and energy poverty build alliances with those who are promoting and fighting for renewables. These alliances strengthen their political agenda by broadening the struggle from simply a struggle against a bad technology to one that also embraces a positive technology. These countless local movements promoting small-scale implementations of a concrete technology such as a wind turbine or a set of solar panels are giving rise to a genuinely European concept for a clean and democratic energy supply. Under different labels, but equipped with similar concepts, activists and those who then implement possible solutions gather under the banner of a democratic energy transition in Europe.

In 2014, this energy transition from below was threatened. First, a debate raged around what exactly energy transition means. A true energy transition would require more than simply a nuclear power exit. All fossil fuel-based energy production must be stopped, with a particular focus on the biggest polluters such as shale gas, nuclear power and coal. During the transition, only the gas-fired power plants should still

-
1. Although strictly speaking not a renewable source of energy, we will in the following nonetheless include geothermal energy within the category of renewables, as the source will provide energy for a very long time.

be operated, fired with natural gas. The existing fossil fuel power plants should be phased out and dismantled with as little social impact as possible. Greenpeace has demonstrated that technologically this could be achieved quite quickly.²

Secondly, over the last two years, there has been a polemic debate surrounding the question of the energy transition. In the United Kingdom, the argument goes that only nuclear power and shale gas can prevent fuel and energy poverty. And in Germany, in 2013, the neo-liberal FDP party for the first time rallied with poorer households. The party rushed to their support to protest against high electricity bills and thereby against the energy transition. The political intention is obvious, but for the time being the trick unfortunately seems to have fulfilled its purpose.

Others, however, pushed their luck too far and now have nothing. Neither in Poland nor in the UK did shale gas produce a miraculous economic upswing. And we are still waiting for the nuclear power renaissance, which has been tirelessly talked and written about for the past 20 years. Most recently the Czech government, much like most banks, stated that it would no longer accept financial liability for any new nuclear power plants. Nuclear power is safe, say the friends of this energy source. But most of them are then unwilling to accept liability. So, how convinced are they really? Even investments into lignite-fired power plants such as in Jämschwalde are being stopped, because the plant owners are no longer sure whether coal will remain a viable energy source in the future.

But this insecurity also affects renewables. Between 2014 and 2015, the European Union will establish new binding goals for its climate and energy policy. The cards will be reshuffled and, obviously, the representatives of each energy form will try to get the most out of the new deal. For now it looks like this will end with a setback for the energy transition. The German government should have promoted this

2. Greenpeace/European Renewable Energy Council EREC: Energy [R]evolution: Towards a fully Renewable Energy Supply in the EU27, 2010: www.greenpeace.org/austria/Global/austria/dokumente/Studien/klima_EU_EnergyRevolution_2010.pdf.

transition, but instead it has performed a U-turn and is now actually slowing the transition down. In 2002 the Danish government acted very similarly and sent Danish wind energy into a six-year-long period of hibernation. When the government changed in 2009, this also led to a change in energy policy. The main question is therefore, which energy transition will become implemented and how long this will take.

With this booklet we wish to further develop the concept of a democratic energy transition. Through a number of examples we aim to show how and where such a transition is already working. Since the turn of the millennium, many EU countries have introduced fixed feed-in tariffs and this has led to a macrocosm of alternatives. This study analyses these energy-democracy projects and investigates their future possibilities.

In 2013, and together with a team of four researchers, we investigated democratic, ecological and social energy transition projects across the whole of Europe. This booklet is a shortened version; the whole text, titled “Energiedemokratie” (Energy Democracy), is to be published in parallel as a book.³ We will begin by trying to establish a more concrete definition of the concept of ‘energy democracy’.



3. Kunze, Conrad/Becker, Sören: Energiedemokratie in Europa, Stuttgart 2014.

.1.

What do we mean by energy democracy?

Originally the term 'energy democracy' arose out of the climate justice movement. The Berlin-based group *Gegenstrom* describes energy democracy as a concept capable of integrating energy and climate struggles. It is grounded on the basic understanding that "the decisions that shape our lives should be established jointly and without regard to the principle of profit."⁴ The *Klimaallianz Osnabrück* movement emphasizes the importance of participatory forms of decision-making. It demands de-centralisation and independence from corporations, distribution grid use rights and control over municipal energy suppliers, moderated forms of reconciliation of interests, and union co-participation.⁵ The 2012 Lausitz Climate Camp reached a consensus that unified these ideas: "Energy democracy means that everybody is ensured access to sufficient energy. Energy production must thereby neither pollute the environment nor harm people. More concretely, this means that fossil fuel resources must be left in the ground, the means of production need to be socialised and democratised, and that we must rethink our overall attitude towards energy consumption".⁶

We have further developed and differentiated this concept to establish a more precise academic definition. Still, we took great care to change the original spirit as little as possible. In accordance with the quoted concepts, we have



4. Website Gegenstrom 2012: www.gegenstromberlin.net.
5. Osnabrücker Klimaallianz OK: Auf dem Weg zur Klimastadt. Bürgerschaftliche Impulse für Klimaschutz und Energiewende in Osnabrück, 2012, see: www.osnabruecker-klimaallianz.de/wp-content/uploads/2012/10/O.K._Klimastadt-Reader_1_021012.pdf, p. 18.
6. Quote from Klimacamp.info on the website of the Büro für eine demokratische Energiewende, see: www.energie-demokratie.de

split energy democracy into four separate areas: democratisation, property, surplus value production and ecology.⁷

DEMOCRATISATION AND PARTICIPATION

Many people see democracy as something to aspire to and not as something that we have already achieved. Practices that aim to broaden the scope of democracy abound, and almost always include the demand for a democratisation of the economy. We searched for structures conducive to a greater participation in energy policy. Examples are people who in their respective regions decide on wind turbine projects, consumers who decide the price policy of their municipal energy supplier or the members of associations who decide how the profits of their cooperative are to be used. In the best case, the greatest number of people directly affected by a project should hold as large a power of initiative and decision-making as is possible.

PROPERTY

Energy production affects everybody, be it as energy consumers, inhabitants of a particular region or, of course, as heirs and guardians of our shared planet. Also, the technical infrastructure of the energy supply grid requires close collaboration. Energy production, distribution and consumption should therefore be regulated in a collective, political and public form, rather than in today's individual, apolitical and private form. What could this look like?

We do not want to consider the apparently simple solution of returning to conventional state-managed plants. Many public companies, too, have missed and politically jeopardised the energy transition. They do not offer social energy tariffs and prefer instead to invest in nuclear or coal plants. At the communal level is the additional problem of the privatisation of many municipal energy suppliers, often against the will of the local people. A new form of public and state ownership would have to overcome these shortcomings. This is what we were looking for and basically found two frequently applied solutions: new forms of municipal or sometimes semi-state ownership; and collective private



7. Initially we also wanted to look into union co-determination and working conditions. But we abandoned this as beyond the scope of our study. The question of unions is touched on in the final chapter.

ownership, often in the form of cooperatives. Whereas energy cooperatives are already widespread in some countries, the concept of a new form of public ownership is still in its infancy. Here, too, we attempted to select the most promising and advanced examples.

SURPLUS VALUE PRODUCTION AND EMPLOYMENT

Municipal wind turbines and solar panels (or those owned by groups of consumers) only have to be purchased once. As the sun and wind are free, they produce energy without further (fuel) costs for many years. Unlike fossil-fuel-fired plants there is no constant capital outflow to pay for imported fuel. Capital is therefore retained in the region and can be employed otherwise. Publicly owned renewable energy production is in this sense always a plus for local surplus value production.

Furthermore, the expansion of renewables has created over one million employment opportunities in the EU.⁸ In Germany, the renewables sector employs more people than the entire fossil fuels industry. Jobs develop mainly in the industrial centres, in wind turbine and solar cell factories and usually in medium-sized urban enterprises. Rural areas tend to profit more from the investment of the increased revenue into different public services.⁹ Because only limited quantitative data is available, we can only touch on it in the examples. Where information was available, we used it.

ECOLOGY AND SUFFICIENCY

As is well-known, capitalist economies escape the threats of crisis only through growth. The price for this is high, though, because growth eventually destroys the basis for human life on earth and life in general. In opposition to this stands the concept of post-growth that prioritises people and the planet over capital-

8. See EurObserv'ER, *État des Énergies Renouvelable en Europe / The State of Renewable Energies in Europe*, Paris 2012, p. 172.

9. Profits might be used to finance a kindergarten teacher or a further nurse for the elderly. When large solar farms are frequented by a shepherd (so that the grass does not grow too high and cast shadows), when residents manage their sun and wind energy complexes by themselves and create jobs, then this can also create other local job opportunities.

ism.¹⁰ This concept implies the need to consume less electricity and heating,¹¹ and values self-sufficiency as a new form of the good life.¹²

Democratic ownership supports such an approach because it creates space for goals other than one-sided profit maximisation. This happens when consumers, for example, organise and manage their heat and electricity requirements by themselves: the logic of meeting needs is completely different to the logic of profit maximisation. This could be a way of reducing total energy consumption and simultaneously ending energy and fuel poverty.

Moreover, there is another issue worth looking into: bio-diversity. Wind turbines and solar farms, but particularly fields and forests for biomass production, change landscapes and natural habitats. Unfortunately, the cultivation of “energy plants” reinforces the global trend towards monoculture. Technically, though, this is not a requirement; it is more a question of agricultural policy. A socio-ecological transition should not consider the conservation of animal and plant species and landscapes and ecosystems as an unnecessary luxury.¹³



10. See for example the writings of Georgio Kallis, Joan Martinez-Allier, Matthias Schmelzer, Alexis Passadakis, Tazio Müller, Serge Latouche and the New Economic Forum.
11. The Greenpeace EU-27 scenario shows that half of the energy we consume today could be saved without us barely noticing. See Greenpeace/European Renewable Energy Council EREC: Energy [R]evolution.
12. See Illich, Ivan: Tools for Conviviality, London 1973.
13. See also Brand, Ulrich/Wissen, Markus: Global environmental politics and the imperial mode of living. Articulations of state-capital relations and the multiple crisis, in: Globalizations 9(2012)4, pp. 547–560.

.2.

Distribution in Europe

Based on a set of criteria for energy democracy, we found and assessed many examples of good practice in Western Europe. None of our examples fulfils all the criteria, but many were excellent in at least one aspect and show what is possible even today. In Eastern and Central Europe, though, there are still only very few noteworthy energy-democracy projects. Nonetheless, we were pleased to see one very inspiring project from Hungary.

In Western Europe we found many good examples in countries such as Denmark, the Netherlands, Belgium, Germany, Austria, northern Italy, Sweden, the UK and France. South Italy, too, and Spain feature some smaller energy-democracy projects, albeit far fewer than in northern Europe.

As the following table shows, energy-democracy practices are also being developed in countries that are not pioneers in the energy transition. In this category we could name France, the Netherlands and the UK, where renewables play only a relatively inferior role in each country's energy mix. In the UK in particular we nonetheless find a surprising diversity of local "community energy" projects. Portugal and the Baltic countries are the exact opposite. In spite of a high share of wind energy, there is no sign of a democratic energy transition.

Finally, there is also a small group of countries where very little progress has been made, both technologically and socially. They have neither large-scale investor-funded wind energy or solar farms, nor smaller energy-democracy initiatives. In this group are many of the countries in Eastern and Central Europe, such as Hungary, Bulgaria, Poland and the Czech Republic.

	Countries with numerous emancipatory projects (more than 5)	Countries with some emancipatory projects (more than 1)	Countries with one or zero emancipatory project (up to 1)
High share of energy produced from renewable sources (at least 10 %)	Denmark (23 %), Germany (12 %), Italy (12 %)	Sweden (46 %), Finland (32 %), Austria (31 %), Spain (15 %), France (12 %)	Latvia (33 %), Portugal (25 %), Estonia (26 %), Romania (21 %), Lithuania (20 %), Slovenia (19 %), Bulgaria (14 %), Slovakia (10 %), Greece (12 %), Poland (10 %)
Medium share of energy produced from renewable sources (5–10 %)			Czech Republic (9.4 %), Hungary (8 %), Ireland (6.7 %)
Low share of energy produced from renewable sources (less than 5 %)	The Netherlands (4 %), UK (4 %)	Belgium (4 %)	

Table 1: Countries according to the share of renewable energy in total energy consumption (in brackets) and number of emancipatory energy projects. Percentage rates for all countries for 2011 (Eurostat 2013, IRENA 2014). The value given for Belgium is an estimate by Eurostat. Malta, Luxembourg and Cyprus were not included in the study.

[II Examples]



.1.

Socio-ecological, community-owned: Berlin's energy supplier

Our first example is an exception. The socio-ecological community-owned energy supplier conceived by the Berlin energy roundtable (*Berliner Energietisch*) fulfils all of our energy democracy criteria except for one: unfortunately, the project never got underway. We will nonetheless present it, because as a project it would have been far more than simply another municipal energy supplier. It would have united social and ecological principles in an exemplary fashion and would have granted the citizens of Berlin a high degree of decision-making power.

2013 saw a heated debate on how Berlin would be supplied with electricity during the next decades. By means of a referendum, a group of local and trans-regional ecological and socio-political initiatives—the so-called *Energietisch*—almost forced the Berlin senate to found a social and ecological community-owned energy supplier and take the management of Berlin's grid into its own hands. 'Almost', because on 3 November 2013 the referendum narrowly failed. 25% of the Berlin electorate would have been enough for the draft on a community-owned energy supply to become law. 599,588 people voted in favour, but this represented only a 24.1% share. Even though most Berliners greeted the initiative and 83% of those who voted, voted yes, the initiative nonetheless very narrowly missed the necessary quorum.

The ambitious goals of the planned community-owned supplier met with the equally ambitious resistance of its opponents. First and foremost this was Vattenfall. The company still holds a monopoly and started its own advertisement campaign before the referendum. Even though polls showed that the majority of Berliners stood behind the *Energietisch* initiative, the senate as the city's government failed to clearly position itself. The conservative CDU and

the liberal FDP parties were openly against a community-owned supplier. The social democratic SPD officially supported the initiative, but eventually gave up resistance on a key point. CDU and SPD both voted to shift the date of the referendum from the day of parliamentary elections to November 3. Had the referendum taken place simultaneously with the parliamentary elections, then, like in Hamburg, it would most likely have been crowned with success.

The outcome is a pity, because Berlin could well have become the first European metropolis with its own ecological and social community-owned supplier. Unlike a conventional municipal supplier, the proposal by the *Energietisch* would have barred renewed privatisation. The supplier's governing board would have consisted of the senate, consumers and workers. This panel would have decided on all fundamental questions. This would have made a second sell-out of the municipal supplier basically impossible, because unlike some city councillors, consumers and workers usually keep public property and oppose privatisation.

To implement its social goals, such as differentiated electricity prices for consumers, six out of a total of 15 board members would have represented electricity consumers. In their own interests, they could have voted for affordable energy prices and against energy poverty. The senate was opposed in particular to these participation rights. Citizens would no longer have delegated their vote to the senate. Instead, they would have directly stood and voted for their community-owned supplier and its board. This would have been an important step for direct democracy.

Shortly before the referendum, and to take the wind out of the campaign's sails, the senate announced that it would go forward with a municipal-supplier project of its own. The *Energietisch* promptly dubbed this project a "mini municipal supplier" because its planned size meant it was never designed to be a true municipal supplier. As could be expected, it also lacked the strong democratic participation rights, and affordable electricity was not a concern. Still, one opportunity still remains. The newly founded Berlin energy cooperative (BEB, Bürger Energie Berlin) aims to take over the concessions for Berlin's electricity grid. This is less ambitious than the *Energietisch* initiative, but still better than leaving the grid to Vattenfall. *Could* is everything here: Berlin *could* very well become a pioneer.

.2.

Som Energia: an energy cooperative to link local groups in Spain

The liberalisation of markets ordered by the EU left the oligopolistic Spanish energy market basically unscathed. Endesa and Iberdrola alone have an 80% market share.¹ So far there is no 100% green energy supplier, and community-owned solar parks are not widespread.

The cooperative Som Energia, founded by staff and students of Girona University in Catalonia four years ago, promises to change this. Its goals are—much like similar projects in other countries—to promote climate protection and the energy transition, in combination with an economically viable business model. To this end, the organisation founded a green energy supplier by the same name in 2011, which already has 14,000 customers who are at the same time members of the cooperative.

The cooperative's second pillar is its investment into green power plants. So far the cooperative has financed five solar parks and is currently building a large biogas plant, as well as Spain's first citizens' wind turbine.² To finance these projects, the members of the cooperative have so far invested 3.5 million EUR. At 3.5%, the return is meagre compared with other similar cooperatives in Europe. However, the minimum deposit for new members is only 100 EUR



1. Som Energia, www.SomEnergia.coop.
2. As of 2013, the goal of supplying itself 100% with green energy had not yet been achieved. Until now additional electricity capacity from green sources is bought every day at the OMIE electricity exchange. Once the planned wind turbine goes online it will (at least mathematically) be possible to sell members 100% green energy produced by themselves. Som Energia is building this first Spanish citizens' wind turbine in collaboration with Eolpop; an organisation founded by various environmental groups to democratically fund wind turbines.

and therefore quite low and can be paid for in instalments.

This fact emphasizes Som Energia's fundamentally political and democratic approach. In 2012, the cooperative still reported a loss. Investments are therefore more a means of reaching a shared goal and creating a large green energy supplier. The cooperative's rapid growth is surprising, even though it was founded only three years ago. Growth has been supported by studying the examples of similar cooperatives in Belgium, France and Germany as well as the umbrella organisation of European energy cooperatives, REScoop.

Luckily the economic crisis did not thwart, but instead strengthened, Som Energia's commitment. Spring 2013 saw 100 new members every week. According to the cooperative's president, Marc Rosello, some signed up with the political aim of doing something to create a post-fossil fuel economic order and experiment with new forms of grassroots democracy. Many members were already involved in other cooperatives, some were simply not happy with their electricity supplier, while others were involved in other political initiatives and became interested in the question of energy.³ Som Energia also wishes to act as a platform for various ecological movements, such as those against fracking and nuclear energy. This is achieved mainly by supporting existing organisations, such as creating new spaces for discussion. The organisation's website is commendable in terms of the transparency of documents and the involvement of workgroups.

The cooperative consists of sections and local groups. Each local group is independent to act, attract new members and organise information campaigns. Because the local groups constitute the cooperative from below, they can create their own statutes and procedures and are not expected to implement centrally decided rules. The organisational structure therefore runs from bottom to top and not the other way round. While in Barcelona the emphasis lay on member training, other groups have focussed on expanding energy supply capacities or creating links to other cooperatives outside of the energy sector.

THE DIGITAL GENERAL ASSEMBLY

The high number of decentralised, autonomous local groups—some of which are even outside of the Iberian Peninsula—makes voting and elections more



3. Interview with Marc Rosello, president of Som Energia.

complicated. Here, Som Energia makes seminal use of the internet as a tool. Local groups participate in the annual general assembly and elections via a live stream. All groups meet and jointly follow the live stream from the assembly. In 2013, only a small group of about 40 people actually physically took part in the *Asamblea General*, but many more members participated remotely through their local groups.

Initially, the option of local groups sending delegates was discussed, because the groups who were located further away in particular feared that they would be disadvantaged. But rapid growth meant a sports stadium would have been required to accommodate all members in a traditional general assembly. Finally, though, the idea of delegates was dropped and instead a form of direct democracy with elections via the internet was maintained.

Using the internet solved two problems: the problem of distance and the problem of numbers. Test runs before the actual assembly ensured that the elderly and less internet-savvy members also knew and understood how it would function.

AN ALTERNATIVE DURING THE CRISIS

Som Energia is embedded within a broader movement in which many Spaniards seek and support practical alternatives to the capitalist logic of exploitation. Som Energia promotes non-discriminating language with generally feminised subjects, which is far from what is usual in Spain. Furthermore, wherever possible, Som Energia seeks out ethical and ecological banks as partners.

For Som Energia, low income, too, is not a reason to exclude a potential member. However, the idea of introducing a so-called “social tariff” has so far failed due to unfavourable legislation that privileges large corporations.⁴ At least the share price of 100 EUR is quite low and can be paid for in instalments



4. Som Energia is under great pressure through Spanish legislation and an energy market dominated by an oligopoly of five corporations. So far they have not been able to offer a “social tariff” (as do the large suppliers) because the cheaper electricity offered to the poor by the large suppliers is subject to a state subsidy that Som Energia does not receive. Another problem, says Marc Rosello, is that a person that switches to Som Energia permanently loses his or her right to the social tariff. Once Som Energia’s financial situation is consolidated, however, some form of social tariff will be offered and financed from the profits, says Rosello.

by those on low incomes.

Since November 2013, Som Energia has been struggling (together with other groups) to bring down a new government law subjecting all operators of PV installations to pay a kind of “sun tax”.⁵ With this law, Spanish energy policy has switched from ignorance of to open hostility towards small-scale energy producers, who are typically the ones to invest in PV installations.



5. In 2013, the Spanish government introduced a tax on all PV installations and simultaneously and retrospectively cut subsidy rates. Currently both decisions are being legally contested. See Streck, Ralf: Spanischer Energiekonzern vergleicht das Land mit Bananenrepubliken, in: Telepolis, 22.2.2014.

.3.

Machynlleth: Wales' first community- owned wind turbine

In 2003, Machynlleth, a small town in central Wales with 2,200 inhabitants and a small tourism industry, erected Wales' first community-owned wind turbine. The path there was stony and only crowned by success thanks to the commitment of long-term volunteers.

A small group of dedicated people led by a woman with prior experience in the English wind energy cooperative Baywind and her three male companions—members, respectively, of the pro-tourism foundation Ecodyfi, the Mid Wales Energy Agency and the local Centre for Alternative Technology (CAT)—started the initiative at the end of the 1990s. At first they invited residents to a series of lectures in the parish house. Soon after, they founded an unincorporated association, the Dulas Valley Community Wind Partnership. This group organised further regular meetings, where the community, volunteers, landowners and the local administration discussed how a wind turbine could be financed—ideally 100% by the community—and erected with the goodwill of everybody.

They chose a relatively small, second-hand 75kW wind turbine, which they bought in Denmark. At 80,000 pounds it was not expensive and the organisation quickly gathered the required funds. In the end, more people actually wanted shares than were offered. In relatively poor Wales, this was more than could be expected.

At first, there were no state regulations such as feed-in tariffs, so the generated electricity was initially supplied directly to the associated CAT. Only after the government passed feed-in legislation could electricity be sold directly over the grid, making everything much easier. Nonetheless, as Andy Rowland—one of the organisers—comments, the path from the first planning

stages up to the erection of the wind turbine resembled an “epic battle”.⁶ Ever-new administrative legal hurdles needed to be fulfilled and paid for. The whole project nearly failed when without any explanation a large estate owner revoked his permission for a power line to be built over his land. Luckily a forest owner stepped in and made an alternative line possible.

One third of the profits from the sale of electricity produced by this first wind turbine now go into a community energy fund. This fund pays for consulting services to the residents on energy efficiency and insulation of family homes. Occasionally, too, hundreds of energy saving light bulbs are given out to the community for free, Rowland explains. In 2010, a second and far stronger 500 kW wind turbine was built to support the public *Ecodyfi* programme, which promotes low-impact tourism and pioneering ecological projects.

Although the organisers are proud to have built Wales’ first community-owned wind turbine, they do not recommend anyone to try to do the same. They report technical problems with the second-hand wind turbines, and the time and effort needed for the approval process “brought all of [them] to [their] limits”. They therefore recommend that other communities buy new technology, limit themselves to financing such projects and leave the planning and the question of permits to specialists.



6. Interview with Andy Rowland.

.4.

Ungersheim: French mining town turned eco-municipality

Ungersheim, a former mining town in the Alsace region, has successfully implemented a local socio-ecological transition strategy. Their success was based on the town autonomously designing its transition pathway, instead of following French government guidelines.⁷ As the mayor, François Mensch, tells us, there are three dimensions to Ungersheim's autonomy. The first two obvious dimensions are energy autonomy and food self-sufficiency, the third being freedom of thought.⁸

In this spirit, this small town has begun a process of permanent ecological learning and improvement. A council consisting of 50 citizens regularly meets to put together proposals and develop existing projects. As Mensch emphasizes, Ungersheim greatly appreciates the *génie collectif*. Unconventional thinking, too, is considered a principle in Ungersheim, or, as the French call it, "leaving the box": *sortir du carton*.

Everything began with the desire to save and also produce energy to cut down on public expenditure. This led to different measures, the most important



7. Whether Ungersheim can actually be considered a peripheral town is debatable. Alsace, which includes Strasbourg and its large services industry, has the second highest per capita income in France according to Eurostat: www.ec.europa.eu/eurostat. Moreover, the town's population is rising continuously. Still, with the end of potash mining at the turn of this century, the town's economic basis disappeared. But Ungersheim lies close enough to the industrial town of Mulhouse for people who work there to commute. This has meant that different spatial dynamics superpose each other. The population decrease that is usually characteristic of peripheral towns does not occur here.
8. Interview with François Mensch, mayor of Ungersheim.

of which was solar heating for the city's swimming pool. Moreover, the town also developed a small wood-fired heating grid. This development pathway then led to further projects, for example the instalment of small PV systems on the rooftops of public buildings, as well as a 17 million euro solar farm on a mining slag heap. The farm produces energy equivalent to that consumed by Ungersheim's 3,000 inhabitants, turning the town into a showcase project for the *Energie Partagée* network. The town saved money and was able to cut expenditure. Unlike in all other towns in France, local utility charges have not increased since 2004.

A second focus of this transformation is local agriculture and culinary practice. In line with Rob Hopkins' 'transition town' philosophy, Ungersheim attempts to produce its own food locally.⁹ The community bought eight hectares of land and now grows organic food here, mainly for the school canteen. Nuclear energy is also an issue, as the Fessenheim nuclear power plant is close by.¹⁰ Since the Fukushima accident in 2011, a political action group has been campaigning in the town for an exit from nuclear energy and the closure of Fessenheim.

Cooperative Multicarte, the cooperative founded in 2013 on the French national holiday of 14 July, will act as the umbrella organisation to link the numerous local ecology projects and help develop new ones.¹¹ Multicarte was founded as a cooperative precisely so that people in Ungersheim could invest in projects such as an organic brewery, more PV systems and eco-tourism. Profits will finance projects that are not yet profitable, such as the organic school canteen, political campaigns and education projects.

Up to now, the town has welcomed most of the projects with open arms, even the more extravagant ones. As the mayor says, some eyebrows were



9. Hopkins, Rob: *The Transition Handbook. From Oil Dependency to Local Resilience*. Cambridge 2008.
10. Built in the 1970s close to an area where earthquakes regularly occur, Fessenheim is considered particularly dangerous. France's current president, François Hollande, wants to close Fessenheim, also because of the pressure from people on both sides of the Rhine.
11. There is also a local currency which is so far accepted in twelve shops. In a town of 3,000 people, that is the majority of shops. Whether this currency will work has yet to be seen, but the people in Ungersheim certainly hope that it does.

raised when the town bought an “eco-horse” in 2008 and put it before a carriage to replace the school bus. Among the school children though this *cheval écolien* is hugely popular.¹²

Ungersheim is an exemplary project for a process of socio-ecological transformation at the local level. Potash mining, previously the town's main economic activity, has been successfully replaced. Noteworthy is the town's comprehensive conceptualisation of autonomy that combines questions of energy supply with local, organic food production and a great degree of freedom of thought. It is commendable how transition is not conceived as a closed process. Rather, profits are reinvested and new ideas put into practice.



12. Rubbish collection and some public transport is also done by horse and carriage.

.5.

Gigha: a Scottish island
first socialises the
land and then the wind

The energy transition in Scotland profits from a land reform that has inverted historic property relations. Historically, Scotland is viewed as one of the most important examples for the *enclosure of the commons*.¹³ Up until the 19th century, large estates in Scotland were still being commodified¹⁴ and sold. More often than not, the former inhabitants were given a free ticket to America and advised to leave the land without delay. Only the tenants, the so-called crofters, and landowners, who often lived far away and are the ancestors of today's absentee landlords, remained. During the second half of the last century, the Home Rule movement developed to reunite land use and land possession. Its greatest success was the community buy-out law passed by the Scottish parliament in 2003, which until 2010 was followed by a further land reform act. These made land use by landowners compulsory. At the same time those actually living on the land were granted a right of pre-emption at preferential prices. Since then, crofters have been buying land through trusts and funds founded by them as forms of collective and local ownership.

Wind energy plays a significant role here. The land for the community associations needed to be purchased with bank loans that would need to be repaid. New community life, too, needs to be financed. Frequently this led to the erection of wind parks, either as purely external capital investments, or, in



13. Linebaugh, Peter: *The Magna Charta Manifesto. Liberty and Commons for All*, Berkeley 2009; Marx, Karl: *Das Kapital. Erster Band*, in: Marx, Karl/Engels, Friedrich: *Werke (MEW)*, vol. 23, Berlin 1975.

14. 'Commodified' here refers to Marx's well-known concept.

many cases also as community energy wind parks.¹⁵

To promote a democratic financing of community projects, Scotland established the central state planning agency, Community Energy Scotland (CES). This agency consults and supports communities and residents. Perhaps most importantly, it also provides loans at favourable conditions that make it easier for communities to gather the necessary funds. Alone in 2012, the CES supported 302 projects. This mixed form—combining a central state agency, government loans and municipal participation—is again based on the socialisation of the land, because socialisation would not have been possible for most villages, let alone community wind farms.

In Scotland the political framework for the energy transition is far more favourable than in other parts of the UK. The Scottish government has partial sovereignty over its energy policy planning and uses this sovereignty for the energy transition. It even exceeded its 2011 goal of sourcing 31% of its energy supply from renewables by 4%.¹⁶ A seldom form of miscalculation. Encouraged by this success, Scotland now aims to produce 100% of its energy from renewable sources by 2020. But before that is the 2014 referendum on independence from the UK. Because the idea of the energy transition in Scotland is linked to the question of independence, the result of the referendum will also impact future energy policies. A debate on energy autonomy in Scotland easily ends in a passionate discussion of the question of national autonomy.¹⁷

Andrew Cumbers and others argue that an independent Scotland could reverse the mistakes embedded in British energy policy, most importantly the mistakes of privatisation. A nationalised grid like in Norway, municipal energy supply companies (Stadtwerke) such as in Germany, and community-owned energy projects would create a public energy sector for the 21st century based

15. On the specific background of Scottish land buy outs and wind energy see Murphy, Joseph: At the edge: community ownership, climate change and energy in Scotland, JRF briefing paper, 11/2010: www.jrf.org.uk/sites/files/jrf/community-ownership-scotland.pdf.

16. See Scottish government press release from 31 September 2013: More clean energy “essential for Scotland”; www.scotland.gov.uk/News/Releases/2012/10/Renewables30102012.

17. Oral comment by Angela Pohlman, a social sciences researcher who investigated the Scottish energy transition.

100% on renewable sources.¹⁸

A good example of a publicly supported energy-democracy initiative is the island of Gigha, on the Scottish west coast. In 2002, the 98 inhabitants bought back their island. To do this, islanders founded the Gigha Heritage Trust as a community company. Two public Scottish organisations, the Highlands and Islands Enterprise and the Scottish Land Fund, helped finance the buy-out. Part of the purchase price, one million pounds, will be repaid by the new owner of the island, the Gigha Heritage Trust.¹⁹ To finance this, the island inaugurated what was at the time Scotland's first community wind farm and in December 2004 connected three small 225 kW wind turbines to the grid.²⁰ Profits go to the Heritage Trust to repay loans for the land and to pay for the refurbishment of buildings on the island.

For a long time, Gigha always brought up the rear in statistics on national living conditions. Most of the houses on the island fell in the category of "below tolerable standards". Even though many houses have by now been refurbished, 13 are still in need of refurbishment. To finance this, a fourth wind turbine is to be built in line with the current project model. But the current electricity grid, which—like most of the island's infrastructure—dates back to the 1950s, will reach its limits here.²¹ The Heritage Trust, however, is optimistic that it will also be able to raise the necessary funds.²²



18. Cumbers, Andrew/Danson, Mike/Whittam, Geoff/Morgan, Gordon/Callaghan, George: Repossessing the Future. A Common Weal Strategy for Community and Democratic Ownership of Scotland's Energy Resources, Glasgow 2013, p. 27.

19. Information from the Isle of Gigha Heritage Trust, see: www.gigha.org.uk.

20. See: www.renewables-map.co.uk, www.energysavingtrust.org.uk and www.cse.org.uk. These were the Fresh Futures Sustainable Communities Project Fund of the National Lottery, managed by Forward Scotland; the Scottish Community and Householder Renewables Initiative, managed by the Highlands and Islands Enterprise; as well as commercial loans from banks and shares for small shareholders. Furthermore, 148,000 pounds from Social Investment Scotland and 120,000 pounds worth of shares held by the Highlands and Islands Enterprise and the Isle of Gigha Heritage Trust. Total costs amounted to 440,000 pounds. See: www.gigha.org.uk/windmills/TheStoryoftheWindmills.php.

21. Meta web site Energy Share, see: www.groups.energyshare.com/isle-of-gigha-heritage-trust.

22. In Germany, wind farm operators often cover the expensive installation of power lines themselves.

The positive impact of the re-municipalisation of land and energy on the standard of living can also be seen in the number of residents, which nearly doubled between 2002 and 2013.²³

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23. See: <http://en.wikipedia.org/wiki/Gigha>.

.6.

Zschadraß: wind
and solar help a small
town in Saxony
out of debt

In the midst of a seemingly rich Germany, numerous towns, villages and rural districts are broke. The pathway to insolvency typically includes the following steps. Over the course of ten to twenty years, a community heaps up debt because revenue is permanently too low. To raise funds, towns then sell assets and establish public-private partnerships or so-called cross-border leasing. Usually things like the tramway, the water and sewage works and/or social housing is wrested from democratic control. After only a few years, this extra cash has melted like snow in the sun, but the running costs for the now-rented infrastructure are far higher than before. Finally the local audit court imposes a spending freeze: the town or community council can now only spend what is absolutely necessary and not a cent more. Within this intensified neoliberal logic, libraries, swimming pools and kindergartens often become a superfluous luxury. Particularly annoying is that this is a catch-22 situation: communities lose any opportunity to open up new sources of income such as, managing wind or solar farms for themselves.

One such financially tied town is Colditz in Saxony.²⁴ For the incorporated village of Zschadraß this is doubly detrimental, because it is not allowed to finance the village kindergarten itself, and any new income sources are automatically used to repay the regional debt.

In 2014, local village politicians founded an ecological and social founda-



24. Interview with Matthias Schmiedel, spokesperson for Zschadraß, 30.4.2013.

tion to provide financial support for public institutions in jeopardy. The foundation in turn founded a municipal company (Kommunale Wind GmbH & Co. KG), of which it holds 50%. This company operates several solar parks and a wood-fired heating system, and, in 2009, built a large 2.3 MW wind turbine in Zschadraß. This wind turbine is operated by the small association Ländliches Leben e.V., which finances new solar parks from the profits and also uses some of the money directly to fund social projects in the village

The village's politically active people are all members of either the foundation's advisory board or its steering committee. The communal authorities, for example, helped the foundation find areas and rooftops that could be used for energy systems, and the foundation donates money directly to the local sports associations, the school and the kindergarten. School meals for the children of poor families as well as the yearly school holiday camp are also paid for by the foundation, and the kindergarten receives additional funding of 70 EUR per month per child. Once the wind turbine has been paid for, the entire profits are to go to the kindergarten, which will then be free of charge.²⁵

The relatively large sum of 3.5 million EUR that the wind turbine cost was actually not a problem, says Mayor Matthias Schmiedel, because a large share can easily be financed through a loan, especially considering that banks offer good credit terms for renewable energy projects. The foundation only needed to provide 650,000 EUR in capital.²⁶ But where was a basically broke village—a village not allowed to have money—to get that kind of sum from? The details have not been revealed, but suffice to say a rich benefactor from Frankfurt am Main donated the necessary funds to the foundation.

Now that the foundation has established a functioning business model and is credit worthy, Matthias Schmiedel plans to use the foundation's capital to support similar projects in other municipalities. The foundation could donate to other municipalities the necessary capital base for a wind turbine or a PV installation to enable them to get a bank loan to fund the rest. These installations would then also be managed by an association or foundation and a part of the profits could be used to directly fund social institutions without first having to pass through the over-indebted municipal household.

25. Ibid.

26. Ibid.

This might sound a bit complicated and highly unconventional. But faced with an ever-longer list of over-indebted municipalities, such a model offers a backdoor to which there is currently no alternative. A parallel budget based, for example, on the profits from a wind turbine provides financial support for public services and helps circumvent the restrictions resulting from a budget freeze. It remains to be seen whether this can become a model beyond Zschadraß.

.7.

*Told: a Hungarian
Roma village overcomes
energy poverty*

In 2012, 23% of Hungarians heated their homes with wood, a fact mainly owed to rising gas prices.²⁷ Analysts assume that a large percentage—possibly 50%—of the wood sold in Hungary is logged illegally, which by far over-stretches the reproductive capacities of the woods.²⁸

The Roma village of Told offers a possible solution to Hungary's heating problem. As a socially marginalised group in Hungary, the Roma have even less access to combustible materials for heating than ethnic Hungarians. Frequently, Told residents used to heat their precariously insulated houses in a makeshift fashion by burning waste, i.e. car tyres and plastic. Occasionally wood taken secretly from the forests was also burned. In the past, the Roma were able to get the wood they needed legally, but the gradual process of privatisation has closed off their access to forest firewood.

In autumn 2012, the engineer Nóra Feldmár and the Real Pearl Foundation offered a cheap solution to this problem for a budget of only 2,690 EUR. She made use of a technology from the Global South, biomass briquettes. Producing these briquettes is pretty much a straightforward process. Available biomass is shredded—or sourced pre-shredded from farmers—and mixed with soaked wastepaper as a binder. This mush is stirred, poured into moulds and pressed, thereby eliminating a large part of the water again. Using a car jack,



27. Central Statistics Bureau (Központi Statisztikai Hivatal): Household energy use / A háztartások energiateljesítménye, 2008. See: www.ksh.hu.

28. According to the Regional Centre for Energy Policy, national definition of fuel poverty, this is three to three and a half cubic metres.

Told residents built a small machine capable of simultaneously pressing several of these briquettes. Then the briquettes are left to dry for ten to fifteen days in the sun or in a drying house. After several attempts, it became clear that the waste from farmers in the region was suitable to be used in this way. Until 2012, farmers had dumped bran, husk and stubbles illegally in a stone quarry. Now they are happy to be able to rid themselves of this waste completely legally. Wastepaper, the binder, was also provided for free of charge. The mayor of the municipality to which Told belongs helped to get the materials together. Because the impulse came from outside, the town hall was more than happy to use this opportunity to help the Roma. What is more, the mayor himself is a forest owner.

In the second phase, people were recruited to work in the project. The minimal budget meant the project could only offer volunteers a meal and coffee. As Nóra Feldmár states, economically measurable poverty is often accompanied by a lack of trust and decision-making power. It proved hard to find willing volunteers among people who usually distrust each other to work towards an apparently abstract goal. Nonetheless, in the end she recruited 20 residents, both men and women. Between August and October they produced 30,000 briquettes. This is the equivalent of seven tons of climate-neutral heating fuel, and it considerably reduced energy poverty in the winter of 2012/2013.

The example of Told shows how ideas to reduce energy poverty imported from the Global South are also helpful on the European continent. The project integrates the three pillars of sustainability—social, economic and ecological—in a commendable fashion and, additionally and implicitly, tackles ethnic stigmatisation. It is an encouraging example, because minimal efforts have led to measurable improvements.

.8.

Atterwasch: energy transition against opencast mining

Southeast of Berlin and near the Polish border lies the region of Lausitz, one of Europe's largest brown coal fields that supplies the coal for Europe's third most polluting industrial plant: Vattenfall's Jänschwalde power plant.²⁹ The industry turns ever-greater parts of the landscape into open pits and devours one village after another. Most residents give up at some point. Vattenfall uses psychological pressure³⁰ and also offers quick financial compensation for all willing to move. One village, though, has decided to resist: Atterwasch.³¹

There are mainly three people in the village driving the resistance. These are the regional pastor Mathias Berndt, the mayor and a farmer.³² Together with others, they have given a practical answer to claims that electricity needs to be produced somewhere and that there is no real alternative to coal. The village now produces nearly 100% of its energy requirements from renewable sources. Solar panels on the church and parish hall and a biogas plant create a 100% green energy supply, plus sustainably produced heating for those con-



29. For more information on the power plant in Jänschwalde see: www.lausitzer-braunkohle.de and European Environmental Agency EEA, Factsheet Jaenschwalde 2005.

30. For example in 2013 the association Pro Lausitzer Braunkohle e.V. collected signatures for the open pit mine Welzow-Süd II. They collected signatures in associations and clubs that receive support from Vattenfall, such as the football club Energie Cottbus. See the newsletter of Grüne Liga, Umweltgruppe Cottbus, July 2013; www.lausitzer-braunkohle.de.

31. In 2007 residents received a letter from Vattenfall telling them that starting in 2015 they could and should "resettle".

32. Vgl. Kunze, Conrad: Modell „Energiedorf“, in: Robin Wood Magazin 1/2011, unter: www.robin-wood.de/Ausgabe-1-11.613.0.html.

nected to the central heating system. Alongside the symbolic message, the energy transition also involves a commitment. Most of the installations will only pay off in ten to twenty years, so with every investment they make, residents confirm their will to stay.

This way, Atterwasch and two neighbouring villages are becoming centres of resistance against the use of coal as an energy source. From here, the petition for a referendum against open pit mining in Brandenburg was organised between 2007 and 2009. The anti-coal alliance Klingener Runde is also rooted in these villages.³³ And this is where the regional solar energy collective Solar-Genossenschaft Lausitz developed. Every solar panel installed in neighbouring towns and villages is a practical commitment to energy transition combined with a local investment. For the weakly developed civil society in Lausitz, this constitutes an important achievement. The energy transition gives people the courage to defend themselves, and it is an alternative future perspective and an opportunity not only to say no but to also say yes: yes to a future for the village and yes to the energy transition.

33. For a more detailed description of the local and Brandenburg wide protests and actions against further open pit mining in the Lausitz region see Becker, Sören/Gailing, Ludger/Naumann, Matthias: Neue Energielandschaften – neue Akteurslandschaften. Eine Bestandsaufnahme im Land Brandenburg, edited by the Rosa-Luxemburg-Stiftung, Reihe Studien, Berlin 2012, p. 46.

.9.

Retenergie:
an Italian energy
collective and green
energy supplier

The project Retenergie developed in the region of Piedmont in 2007. A group of friends and activists from various ecology movements decided to initiate a project and jointly invest in a set of PV panels. At first they called this project simply *Solare Collettivo*, solar collective. The commercial PV project “adopt one kilowatt hour” kicked off to become an unexpected success story. The co-founder and organisation’s current president, Anna Maria Olivero, sees the trust between the original members as an important reason behind the good start. Via the internet and with the help of positive TV coverage, the number of supporters quickly expanded and soon included people from other parts of Italy.³⁴ From the outset, the idea of producing energy democratically met with very positive feedback.

Setting out, a number of fundamental issues needed to be discussed. For example, the group decided not to build PV installations on arable land so as not to compete with food production. Instead, they decided to install their panels only on roofs.

The business form also needed to change. With *Solare Collettivo* set up as a not-for-profit association, it was not possible to develop the business as planned. So the ecologic collective Proteo from the small town of Mondovi was won as a partner.

To finance the first 20 kW solar installation, they managed to raise 70,000

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34. Interview with Anna Maria Olivero.

EUR from 40 people. Encouraged by the unexpectedly good start, they soon financed further PV installations. To take the burden of day-to-day business off the association, they then founded Retenergie as a subsidiary collective in 2008. Marco Mariano, a member of the association and former organic farmer, became the president. He explains how progress without external expertise is possible: "Because we were all new to the subject [of renewable energies] and we were conscious of this fact, we put ourselves into a situation where we had to learn. And then we learnt",³⁵ The necessary supplementary expertise in difficult technical questions came in a timely fashion through new members. Retenergie therefore only needs three people working part-time. In the summer of 2013, Retenergie, originally founded by 13 idealists, had 600 members from various northern and central Italian provinces.

RETENERGIE'S BUSINESS MODEL

The business model rests on two different types of membership. This takes into account that not all members have the same financial capabilities. So-called *consumption members* pay a deposit of at least 50 EUR and can then buy green energy from the collective. *Investment members* also receive green energy, but make a deposit of ten shares costing in total 500 EUR. This money is used to build new installations and these investment members then receive a share of the profits. A further financing instrument takes the form of "ethical investments",³⁶ loans that members can opt to grant to the collective, with a fixed two-percent interest rate over one or two years. All in all, the collective has raised 800,000 EUR this way.³⁷ All members also have equal access to further services offered by the collective, such as advice on energy efficiency. As is usual for collectives, all members have the same say. Furthermore, Retenergie cooperates with local craftsmen who offer members a discount for refurbishments aimed at increasing the energy efficiency of buildings.

RETENERGIE AS A GREEN ELECTRICITY PROVIDER

Italian legislation does not make it easy for Retenergie to sell the energy it

35. Interview with Marco Mariano, president of Retenergie.

36. Ibid.

37. Ibid.

produces to its members. *Gestore dei Servizi Energetici*, a publicly owned stock company, manages the renewable energy market. The company buys the renewable energy produced de-centrally at slightly subsidised rates and feeds it into the Italian grid. But if the members were to simply get their electricity over the standard grid they would have no financial benefits. To solve this problem, Retenergie collaborates with Trenta, a larger energy supplier. Trenta buys the energy produced by Retenergie and supplies green electricity to the members of the collective. Because this circumvents the normal energy market, Trenta can offer a twelve percent discount on the usual market price.

DECISION-MAKING AND CODE OF ETHICS

The complex business model does not mean that the collective renounces democratic and ecological principles. All members are invited to the half-yearly general assembly, the highest decision-making body. Otherwise members organise in regional groups, so-called *nodi* (knots) that act more or less autonomously. These *nodi* propose projects that the collective then may decide to develop. To ensure a permanent connection, each of the nine regional groups is represented on the board

An ethical code defines the basis for all activities. It determines, for example, that collaboration is only possible with ethical or green banks, and formulates the goals of greater energy efficiency, installing only small or medium-size installations and always checking on such installations' ecological impact, which means not building on otherwise arable land.³⁸

Marco Mariano told us how some members stopped the board's plans to build a wind farm in Apulia: "We were very enthusiastic when we presented this great opportunity to the general assembly. But after talking for only five minutes some hands were raised and some members said: Look, we don't like this project because wind farms cause many problems. And so we were stopped."³⁹ This shows the importance of a responsible board as well as an active member base for an ethical company. Currently a workgroup is establishing ecological criteria for wind farms similar to those already in place for Retenergie's solar and hydro power business branches.



38. See the website of Retenergie: www.retenergie.it.

39. Interview with Marco Mariano.

Moreover, it is a compulsory requirement to take into account all residents, whether or not they are members. When a project is planned for a particular village, town or municipality, the group first organises several meetings with residents. This way it aims to involve as many people as possible. According to Mariano, Retenergie's ethical principles create the basis for the broad acceptance of projects among local residents. As he explains, Solare Colletivo works like a think tank, and Retenergie then implements the projects.⁴⁰ This division of labour enables the association to progress its other projects. These include the construction of small wind farms in rural Tanzania in East Africa and a sharing project for electric scooters in Italian cities.



40. Interview with Anna Maria Olivero.

.10.

Lieberoser Heide:
Europe's largest solar
farm finances
munitions clearing

The former GDR used large parts of the country as military training grounds. Much like the Western allies, the Red Army did not care too much about protecting the environment. Worse still, after the Berlin wall fell, large parts of these areas were left to lie fallow. In many places, like the Lieberoser Heide in Brandenburg, heathlands and forests are therefore full of unexploded ordnances and ammunition. Clearing these areas is extremely expensive but necessary, because otherwise the forests would not be safe for hikers, sheepherders or forest wardens to access, and buried toxic waste barrels could rust through and pollute the groundwater.

Most of Lieberoser Heide belongs to Brandenburg and is managed by Brandenburg's local forest management authority. The agency developed a concept to finance the clearing of the forest from ammunition based on a solar energy project, which was to gain model character for other military training grounds. A large meadow in the zone was particularly contaminated. It was leased to a large institutional investor, who built a solar farm—at the time the largest in Europe—on an area of 114 hectares in the middle of the forest. Lease income (8.3 million EUR) paid for the de-contamination and clearing of the meadow and the rest of the forest from ammunition.⁴¹ By 2013, half of the forest had been re-opened to the public.⁴²

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41. Interview with a representative of the local forest management authority on 23.4.2013.

42. Ibid.

The success of this model led to the building of another large solar park covering 61 hectares. Once the whole area has been cleared up, Brandenburg will continue to receive lease payments. Both clearing up the area and the construction of the solar farms was labour intensive, which means that for around three years 200 people found employment here. This definitely boosted the local economy. The project would have been even more consistent had Brandenburg's state pension scheme financed the solar farms, but this was blocked by the Brandenburg state government. Nonetheless, the example of Lieberoser Heide shows how the public sector can become economically active at the local level in renewable energy projects.

.11.

Vents du Sud: an energy production cooperative in southern Belgium

An example of one of the many energy cooperatives in Western Europe is the still relatively new cooperative Vents du Sud (southern wind) in Belgium. Asked about the founders of Vents du Sud, president, Guirec Halfants, says “We’re all what they call *ecolos*”, ecologists. Halfants explains their motto “Take a deep breath” (*prenons l’air*): “On the one hand it means to inhale, that is exchange, and change – changing the way you see things and breathing for yourself. On the other hand it also means appropriating the air. Industry doesn’t have to appropriate it for us, like it always does. We can take that into our own hands!”⁴³

Vents du Sud aims to build community-financed wind farms to convert the region’s strong winds into energy and income. This requires some form of arrangement with the large project developers. This is because generally they are quicker than the cooperative in buying or leasing good pieces of land from local farmers. Instead of taking care of the whole process, Vents du Sud therefore focusses on only two tasks. The members of the collective gather capital from residents, offering a six percent return. Furthermore, they talk with the authorities, parliament and politicians and several times a year inform citizens during festivals and on other occasions about the ecological and economic benefits of the energy transition. In this way, they help to increase acceptance of wind farms.⁴⁴

Still, collaborating with the public authorities is not always easy, says

43. Interview with Guirec Halfants on 23.5.2013.

44. See: Kunze, Conrad: Soziologie der Energiewende. Erneuerbare Energien und die Transition des ländlichen Raums, Stuttgart 2012, pp. 122–135.

Halfplants. There is “a lot of distrust”. Particularly at first the authorities did not know whether to see them as some kind of eco-freaks or “strange and wondrous entrepreneurs”. Halfplants’ main hope is that eventually the authorities will end up taking the cooperative seriously. In spite of teething troubles, the authorities approved the first wind turbine financed by the group (*éolienne citoyenne*) in July 2013.

As a “purely hypothetical” example, Guirec Halfplants explains how financing is usually achieved. “A 2 MW wind turbine costs around three million EUR. We get half a million from citizens, a further half million as a loan from the Walonia Region and two million from the banks.”

Characteristic of Vents du Sud projects is a detailed listing of environmental and social objectives. The statutes, which took a year of hard work to establish, stipulate gender parity on the board (in 2013, though, there were still only men on the board), solidarity economy, preservation of biodiversity, ecology, and of course a new energy policy as goals. The 30 members strive for a “society based on social justice.”⁴⁵



45. Self-description of Vents du Sud, see: www.ventdusud.be/vds.

.12.

Fair Planet: a global, Münster-based energy cooperative

Fair Planet (FairPla), based in Münster, shows that cooperatives can also operate at the international level. FairPla was founded in 2006 by activists from both volunteer and professional development cooperation organisations. FairPla supports projects in the Global South and the Global East, not through donations but through projects aimed at enhancing the economy. Thus, for example, they build small biogas plants in village communities in Kenya and India. As central tools to achieve this, the organisation thereby uses education, practical assistance and low-interest loans. FairPla raises the necessary funds in Germany from several large-scale solar farms. Members from Germany and other countries of the Global North invest in the cooperative, which in turn invests in the solar farms. Approximately half of the profits flow back as interest to investors. The other half goes into the fund, which in turn provides the loans for the projects outside of Europe. So each member invests in two projects, one in the North and one in the South (or East). It differs from microcredits in that it involves co-determination. FairPla allows and encourages the membership of borrowers in the cooperative and thus gives them a voice in important decisions.

FairPla shows the whole range of projects that are possible within the form of a cooperative and is by far the most international and global of all of the energy projects we looked into.

[**III** Results]

We looked for approaches towards energy democracy in the EU and this text presents some of the results. We will now sum up what is already possible and point to what we believe the future might hold. Again, this summary will be based on the four dimensions of energy democracy presented at the outset.

.1.

Democratisation and participation

In comparison to the established energy industry, all the investigated examples grant users greater participation rights. Especially in very small projects, many decisions can (and must) be taken. The concept of a democratic energy transition opens up a new field of action for direct democracy struggles that aim to democratise not only politics, but also a branch of the economy.

Even the larger organisations retain strong participation rights. In Scotland, cooperatives build citizens' wind farms with large-scale investments. This could be achieved with the strong participation of residents and the local community. In Spain, the collective Som Energia has maintained direct democratic organisational forms despite growing to over 14,000 members.

These examples show that membership growth (Som Energia), spatial expansion (Retenergie), and increased production capacity (Scotland) all require a greater level of professionalization. In all cases, this professionalization has been consistent with democratic structures. We therefore do not believe in the commonplace argument that regional initiatives are necessarily more democratic than trans-regional initiatives. A project that grows beyond the size of a local project needs more formal structures because people no longer simply meet each other at the village inn or on Sunday mornings. More formal structures can ensure the democratic involvement of many members and in some cases even allow for more freedom of choice than informal, local organisational forms. The crucial question is the design of such rules and the effects they have. Our examples show that rigid rules for democratic participation can be tools for a democratisation of the energy industry.

.2.

Property and ownership

The hitherto most obvious innovation in ownership in the course of the energy transition is, at least in Western Europe, the renaissance of the cooperative as an organisational form. Cooperatives and municipal utilities are the two most common alternatives to traditional ownership structures. The power in cooperatives lies in their membership base, and in new municipal utilities it comes from the city's electorate. In a cooperative, all votes are equal. Thus, in terms of democracy they are an advance over the usual private-sector structures, in which the weight of a voice is almost always tied to the amount of invested capital. However, they fall short of the possibilities of the planned socio-ecological municipal utility in Berlin planned by the *Energetisch* or the revived Scottish islands. There is also a long tradition of criticism surrounding the limitations of cooperatives, which we will not discuss in detail here. Without a doubt, cooperatives within capitalism are an improvement, but they offer no perspective beyond the current system.

A municipal supplier, however, does have several advantages. With the support of local politics, it can grow faster and pursue a social tariff policy for the voters. Nonetheless, as many examples have proven, traditional municipal utilities do not necessarily guarantee this. We must therefore distinguish between the traditional form of state ownership, with all its weaknesses, and the nascent new forms. In order to escape the shortcomings of traditional forms of state ownership, new forms of public and citizens' ownership—as we saw in Scotland, Zschadraß and Ungersheim—are a step in the right direction. Instead of starting from scratch, it is sometimes easier to change and democratise existing public forms of organisation. The experiments with a democratic energy transition undertaken so far provide us with hints as to where such an approach could be practical and where starting from scratch is probably easier.

.3.

Production
and consumption
cooperatives

It makes sense to distinguish between two types of cooperatives: those that involve consumers and those that do not. Even mere production-oriented cooperatives (e.g. wind farms) are still almost always an improvement on the status quo. Nonetheless, essentially more democratic are cooperatives that integrate production and consumption. Since they also integrate consumers as members (or are even established by them), barriers to membership are bound to be low in order to achieve high membership numbers.

Two examples illustrate this fact. Vents du Sud from Belgium is a production-oriented cooperative. Its main task is the organisation of new wind farms and the provision of the necessary funding. Since they involve large sums (even a small wind turbine can easily cost several hundreds of thousands of euros), but produce considerable profits over their life span, they are a good investment for the wealthy bourgeoisie. Such a model can only be egalitarian in a system that distributes assets and wealth equally across society. Retenergie in Italy, in contrast, also organises consumers. This means that Retenergie organises far more people. Access to membership in the cooperative therefore also has to be much easier. The chances of success for a model not based on the imperative of increasing consumption and prices are far higher when consumers and producers are involved, because the consumer's primary interest lies in the provision of a service and not the increase of profits and consumption.

.4.

Social tariffs

A democratization of decisions over energy should link the prices for energy to income in some form or another, at least in places where energy poverty prevails and people are poor. Still, we did not find such a model anywhere. In Berlin, such a system would have been introduced had the referendum for the municipal utility been successful.

In Spain, the government grants poor families subsidies to pay for their electricity bills; however, small providers like Som Energia are exempt from these provisions.

Cuba shows how energy efficiency and overcoming energy poverty can complement each other within a single strategy. In 2006, the Cuban government introduced as an “energy revolution” a strongly progressive and strict system of graded electricity rates.¹ 100 kWh of electricity, which is regarded as sufficient to fulfil basic needs, is offered at the very low price of 0.3 euro cents per kWh.² Beyond this basic amount, energy prices per kWh jump up. Such a system with graded rates enables the poorest to fulfil their basic needs and also allows the richest the luxury of, for example, air conditioning. Because air conditioning consumes a lot of energy, this is then priced as a luxury good at a rate of 16.5 euro cents per kWh.³ In Europe, such a solidarity-based graded model of rates for electricity consumption could reduce the squandering of electricity caused by the lack of energy-saving incentives. Equally, it could alleviate the problem of energy poverty. This would demand action either by national or European politics. Until then, we will probably be stuck with the “German model”: The poorest pay the highest rates and large industrial consumers the lowest.⁴



1. The Cuban system also builds on the Spanish water rates system. In India, too, electricity rates are graded in a similar fashion.
2. 0.3 euro cents is equivalent to 0.09 pesos; see: Seifried, Dieter: *Energierevolution in Kuba. Ein Modell für den Klimaschutz?*, Freiburg 2013, p. 13.
3. Calculation based on the figures offered by Seifried: *Energierevolution in Kuba*.
4. Germany exempts large industrial consumers from paying certain electricity fees with regard to their competitiveness. Private households and SMEs, though, are required to pay these fees. See: Arepo Consult: *Befreiung der energieintensiven Industrie in Deutschland von Energieabgaben*, ed. Rosa-Luxemburg-Stiftung, Reihe Studien, Berlin 2012.

.5.

Value creation and employment

In many of our examples, organizers seek to award contracts to local craftsmen. In addition, depending on the size of the projects, organisations also create new jobs to manage or maintain the installations. Moreover, there is an additional effect of value-adding due to reduced capital outflow because less fuel is imported, which can generate jobs in other sectors indirectly.⁵

If we wished to name a positive example we could again point to the Scottish islands. On Gigha, the population has risen, and the investments have enabled the further development of tourism. These results are certainly less spectacular than those with which hydro dams and nuclear power plants are regularly justified. Unlike the latter, however, the projects on Gigha have not had any negative side-effects. Instead, they have led to gradual but continuous progress.

However, we warn against excessive expectations. Without a doubt, the manufacturing of wind turbines and solar panels creates numerous jobs. Yet, only a few selected production locations will notice these effects and the benefits will be very unevenly distributed. Like other technologies (including the highly automated fossil energy industries), the energy transition does not offer a supreme way out of mass unemployment. Precisely *not* doing something is one of its benefits: coal diggers do not run and no nuclear repository needs to be dug. The task for society is to justly distribute the time that is gained this way. Pinning our hopes *only* on the energy transition, however, would be—as is occasionally criticized—a return to wishful technology utopias and their heavy leaning toward fetishisation.⁶



5. See: Hirschl, Bernd/Aretz, Astrid/Prahl, Andreas/Böther, Timo/Heinbach, Katharina/Piek, Daniel/Funke, Simon: Kommunale Wertschöpfung durch erneuerbare Energien (= Schriftenreihe des Institut für ökologische Wirtschaftsforschung, Ausgabe 10/196), Berlin 2010.

6. See: Hildyard, Nick/Lohmann, Larry: The museum of fetishes, in: The Corner House, 31.3.2013.

.6.

Ecology and
post growth

For many of the examined projects and initiatives, ecological values are an important motivational force for what is often volunteer work. We found, at least in their infant stages, practices that connect energy transition with a policy of sufficiency and post-growth. In Machynlleth, in Wales, one third of the revenue collected from the wind turbines goes into a fund to help poorer families finance energy-efficiency measures. On the Scottish island of Gigha, too, wind turbine proceeds finance thermal insulation in homes. In these cases, the energy transition cross-subsidises energy efficiency. If this was done at the national level, the goal of a 100-percent renewable energy supply could be achieved much earlier than it is envisaged by most governments.⁷

Again, the Cuban *Revolución Energética* is also an exemplary model of post-growth and energy efficiency. Cuba's government provided households with one million fans and around nine million energy-saving bulbs free of charge in exchange for their old fans and bulbs. Since then, national electricity consumption has fallen by about 10 percent, even though at the same time many gas stoves were replaced with electric stoves.⁸

Post-growth as a concept does not imply that all sectors of the economy need to shrink. Growth in selected fields is actually required to transition to a post-growth society.⁹ The renewable energy sector and in particular a democratic energy transition need to expand greatly so as to supplant and replace

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7. See Greenpeace/European Renewable Energy Council EREC, Energy [R]evolution: Towards a fully renewable energy supply in the EU27, online, 2010.
 8. 2.5 million fridges were also exchanged through social loans. The given figure of 10 percent savings is only an estimate because complete statistics are not available. See: Seifried: *Energierévolution in Kuba*.
 9. Latouche, Serge: *Farewell to Growth*, Cambridge 2009.

the destructive fossil fuel energy sources.¹⁰ As an example, Greenpeace proposes upgrading and closing the blind spots of Europe's DC grid by building new power lines. This investment, though, does not oppose itself to, but rather encourages, a post-growth energy transition. The ecological footprint associated with expanding the grid is much smaller than the footprint of current fossil fuel-based energy production.¹¹

Finally, we also explicitly looked for environmental improvements. The French town of Ungersheim presents an ecologically exemplary project to increase species diversity. The town invests revenue generated by its local energy transition to support organic and extensive forms of agriculture. In the Wendland, in Germany, revenue from wind turbines is used to buy seeds. These are planted as flowering strips of wild herbs at the borders of fields and thereby provide a habitat for insects and birds.¹² Also, the very careful adaptation of the size of wind turbines to the landscape in Scotland and Wales can be considered a contribution to regional biodiversity.

10. D'Alessandro, Simone/Luzzati, Tommaso/Morroni, Mario: Energy transitions towards economic and environmental sustainability. Feasible paths and policy complications, in: *Journal of Cleaner Production* 18(2010)6, pp. 532–539.

11. See: Greenpeace Germany 2014: *Power 20[30]: a European grid for 3/4 renewable electricity by 2030*.

12. See: Verein Wendenenergie: www.wendenenergie.de



[IV Outlook]

After the 2011 accident in Fukushima, the left-wing German magazine *konkret* argued that Germany would not close down its nuclear power plants for as long as a single one still made a profit.¹ The facts have proven this refreshing, materialistic assessment—that contradicts the general perception that politics is based on values—to be wrong.² Political decisions beyond short-term economic interests are in principle possible. At least when a rare event such as the Fukushima accident reverberates with a 20-year old anti-nuclear movement and, when, at the exact same moment, the party that had ruled the German state of Baden Württemberg for six decades, the CDU, is thrown out of office by the Green Party. But of course, if it requires three exceptional events for an uneconomic, truly political decision, as Max Weber would have called it, then this also shows how high the price is.

From this perspective, it is equally astonishing that since the year 2000 many EU countries have introduced feed-in tariffs to significantly increase the share of renewables in their energy mix. Some countries designed the respective laws such that achieving the set goals became highly unlikely. Probably, the goals were not ever meant to be achieved. Yet in other countries, such as Denmark, a significant shift in electricity



1. Within this system, green energy capacities are built when they produce greater profits than the existing nuclear power plants and not one day earlier or later, konkret, editorial 2011(9).
2. It should be added that in spring 2014 the four large German monopolists proposed, or actually threatened, not to pay for their nuclear power plants to be dismantled. The state should take care of this and found a “bad bank” for the nuclear power plants. Furthermore, they announced their intention to sue Germany in international courts for the profits they would lose from the nuclear phase out. In this sense the assessment by konkret could be changed to say that there will be a nuclear phase out, but only if the state, as the ideal personification of the total national capital, socialises the costs and ensures the protection of privatised profits.

and heat production took place, which went far beyond a niche development. Within these countries only a small fraction of the new forms of electricity and heat generation were actually based on a concept of energy democracy. Nevertheless, the market liberalisation of the European Union has unwillingly created a parallel universe of a thousand alternatives.

As our good practice examples show, small democratic energy transitions are scattered across Western Europe. Most of them, it appears, emerged in Germany. Here, citizens' energy projects have conquered around one eighth of the electricity market from the oligopoly of the four large corporations.³ This has not happened thanks to *good governance*, but rather due to *bad governance*.⁴ It is unlikely that a government of a single EU country ever actually set out to harm the dominant local energy oligopoly.⁵ In Germany, however, the competences for the feed-



3. The renewables sector in Germany is dominated by a green faction of capital and/or citizens' energy projects and not by the large four corporations. See: Haas, Tobias/Sander, Hendrik: "Grüne Basis": Grüne Kapitalfraktionen in Europa – eine empirische Untersuchung, edited by the Rosa Luxemburg Stiftung, Reihe Studien, Berlin 2013; Bürgerenergie: Definition und Marktanalyse von Bürgerenergie in Deutschland, edited by the initiative "Die Wende – Energie in Bürgerhand" und Agentur für Erneuerbare Energien, 2013, p. 42. www.die-buergerenergiewende.de/wp-content/uploads/2013/10/definition-und-marktanalyse-von-buergerenergie-in-deutschland_akt_2.pdf.

According to this study around half of the energy produced in Germany from renewable sources is citizens' energy. Because about 25% of the total amount of energy that is produced comes from renewable sources, which means that citizens' energy initiatives that more or less fit our definition of energy democracy produce around an eighth of the total energy produced in Germany.

4. If good governance describes the planned steering of a process of transformation, then the Netherlands could have proven the efficiency of good governance for the energy transition. Yet, the process to cut carbon emissions and towards energy transition was "hijacked" and slowed down by the fossil fuels industry. In spite of its highly praised "transition management", energy transition in the Netherlands has not advanced. See: Smith, Adrian/Kern, Florian, Restructuring energy systems for sustainability? Energy transition policy in the Netherlands, Energy Policy 36 (2008), pp. 4093– 4103.
5. These thoughts follow Nicos Poulantzas' theory of the state.

in law (*Einspeisegesetz*) were spread so widely across ministries, and the interests at the state and federal levels were so heterogeneous, that the lobbies of the oligopoly of four corporations for many years failed to get a grip on and bring down Germany's feed-in regulations. For once, the often-lamented blockading and lack of centralisation of key policy decisions had its good side: During more than 14 years, the "sprawl" of democratic energy projects could barely be controlled. In 2014, this phase has now concluded. The German ministry of economics has centralised all competencies for feed-in regulations and now curtails rights granted before and is initiating oligopoly-friendly reforms.⁶

The talk of the need for an energy transition and the purported concerns about too-high energy prices and energy poverty can be confidently dismissed as a background media murmur. In fact, Germany in 2014 now embraces re-centralisation. The energy transition will continue, but its pace will slow, and its direction will change. In future, the large oligopolies will definitely profit more, and the many small experiments with a democratic energy transition, so far in the upwind, will profit less. Fundamentally, the oligopoly-friendly reforms are built on two innovations. 2017 will see mandatory direct marketing and invitations to tender imposed on all renewable energy producers. In spite of protests from the side of "green capital", and much like in other cases, the German government justifies these reforms with reference to requirements from Brussels.⁷ In Brussels, in turn, Energy Commissioner Günther Oettinger (a member of the CDU party) supports the changes to the German feed-in law. The fact that the requirements from Brussels fit so well with the CDU's traditional pro-industry policy (but also with the "coal lobby" policies of the CDU's coalition partner in the German parliament, the Social Democrats) probably has a lot to do with Oettinger being a member of the same party as German Chancellor Merkel.

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6. See: Bürgerenergie e.V./BUND/Uwe Nestle: Marktrealität von Bürgerenergie und mögliche Auswirkungen von regulatorischen Eingriffen in die Energiewende, April 2014. www.bund.net/fileadmin/bundnet/pdfs/klima_und_energie/140407_bund_klima_energie_buergerenergie_studie.pdf.

7. See: Haas/Sander, Grüne Basis

The U-turn of German energy policy therefore also has its repercussions at the EU level. There, advocates of the coal, nuclear and fracking industries meet head-on with those representing the wind and sun energy sectors—and in direct relation to the distribution of these industries in the individual countries. 2015 will be a very interesting year, when the EU decides on new climate and energy targets. Other countries could then very well take over Germany's current role as the driving force behind the energy transition. But even in the EU, the development is still open. Already before, in 2001, the European Court opposed the powerful interests of the fossil fuel lobby and decided in favour of the renewable energy act. Moreover, the EU has proved a bulwark against the yearned-for renaissance of nuclear power and is currently suing the UK for its plans to subsidise nuclear power.

A qualitative and quantitative leap of democratic energy transition processes would represent an optimal future scenario for the realignment of Europe's energy production and distribution system. So far, though, most of the vanguard projects, like those presented in this study, are generally limited to a small circle of people. Democratic energy projects are spreading, even though they are still mostly limited to niches.

Particularly promising, therefore, are first steps towards an implementation of rural energy transition strategies in urban areas. It would be a great step forward if energy democracy as a model would evolve in the direction indicated by the promising examples from Berlin and other German cities. Democratic energy transition projects capable of supplying the needs of a major city could be part of a more general energy transition that generates large quantities of clean electricity and eventually democratises the energy industry. Even in Germany, though, this prospect still sounds pretty utopian. Notwithstanding, it might be less utopian than the likelihood of a nuclear phase-out appeared a few years ago, when opponents of nuclear power were ridiculed by many conservatives as unworldly crackpots.

With fracking projects looming in many regions of Europe, the politicisation of the energy question has also become European. From England to Lithuania, and even in Poland, people are fighting to stop their

regions from being turned into industrial toxic waste dumps. Everywhere, environmental movements struggle against the same argument, that there is allegedly no alternative to shale gas, nuclear power and coal.⁸ The fact that in spite of massive media support (and the support of most governments) no larger fracking project has so far been able to go ahead, shows how successful these movements have been.

Movements can counter the argument that there is no alternative, to which a patriotic argument (independence from Russia) is added in Eastern Europe, with the energy transition. As numerous calculations have proven, renewables can in the long term replace fossil technologies.⁹ Any local initiative against a fossil technology can be combined with the demand for renewable technologies. It is then no longer a case of *not in my backyard*,¹⁰ because wherever a wind turbine produces energy, shale gas and coal can in principle be left in the ground. The more Europe supplies itself through renewable sources, the less coal it will need to import from Colombia, uranium from Niger and shale oil from Canada. Every step towards a socio-ecological energy transition is therefore also a step towards global environmental justice.¹¹



8. In Germany, as of January 2013, local environmental movements have also stopped the building of a total of 18 coal power plants. See: Greenpeace, www.greenpeace.de/themen/energiewende/fossile-energien/geplante-kohlekraftwerke-deutschland.
9. See for example the Greenpeace scenario 2030. Greenpeace/European Renewable Energy Council EREC, Energy [R]evolution: Towards a fully Renewable Energy Supply in the EU27, 2010. www.greenpeace.org/austria/Global/austria/dokumente/Studien/klima_EU_Energy-Revolution_2010.pdf.
10. In academics the term is NIMBYism.
11. On environmental justice see: Anguelovski, Isabelle; Martínez-Alier, Joan, The 'Environmentalism of the Poor' revisited: Territory and place in disconnected global struggles, *Ecological Economics* 102 (2014) pp. 167–176.



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Already today, the energy transition in Europe is supplanting nuclear and coal power plants and will, at some point, be able to completely replace them. As Hermann Sheer incessantly emphasizes, this transition could also have positive social and political side effects. This study offers a general and easy-to-understand overview of vanguard energy democracy projects within the EU. We looked for nascent energy projects characterised by their combination of an energy transition approach with gains in participation, collective ownership, or for local business or ecology in general. Through these twelve select examples, we take a look into this great laboratory of small alternative projects and venture an outlook on future developments and opportunities in the coming years. Not only are renewable energy sources an appropriate means of combatting climate change, if implemented correctly they could also gradually become part of a wider social change.

