

CITIZENS ENERGY: Making Energy Democracy Happen

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This essay is an outcome of the Green European Foundation’s transnational project which aims to explore the potential of an energy transition for Europe and how to shape this process in a democratic, participatory way. Since 2014, GEF has been organising events and conducting research with partner foundations all over Europe to provide perspectives on the future of production and consumption based on sustainability and fairness.

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Description of authoring organisation:

The Green European Foundation (GEF) is a European-level political foundation whose mission is to contribute to a lively European sphere of debate and to foster greater involvement by citizens in European politics. GEF strives to mainstream discussions on European policies and politics both within and beyond the Green political family.

The foundation acts as a laboratory for new ideas, offers cross-border political education and a platform for cooperation and exchange at the European level.

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Introduction

In order to make the transition to a sustainable economy, to establish a real climate policy, we have to change our energy system into a fully renewable one. This transition is, at the same time, a great opportunity to achieve the goal of energy democracy. We should remember that when the green movement protested against nuclear plants in the seventies, it was not only because of the ecological risks of nuclear energy. It was, at the same time, the refusal of an energy system that was – by design – highly centralised and top-down. Simply put, nuclear plants have to be managed like military bases, while wind turbines can be community owned. In addition, fossil fuels are only found in certain places and, therefore, require centralisation and bring about energy dependence. Sun and wind, on the contrary, are available all over the world. This allows for decentralised and connected systems, based on cooperation.

The good news is that technological developments are now providing many more opportunities for a decentralised energy system, which can very well be organised in a democratic manner. Citizens cooperatives and local authorities can play a crucial role here, developing public-civil partnerships.

Combined with these favourable technological developments, a crucial insight is that citizens – more than businesses and, in most cases, more than governments – have been and still are taking the lead in the required energy transition. It was citizens – in a small village in the North of Denmark – who built the first wind turbine as an alternative for a planned nuclear plant, and now, 40 years later, they have organised themselves nationally and also in the European federation REScoop.

Studies show that by 2050, around 45% of all EU households could be producing their own renewable energy and more than a third could be supplied by renewable energy cooperatives. This constitutes a huge opportunity for regional economic development, as locally-owned renewable energy projects deliver eight times the value of projects owned by private companies that are not from the area.

The possibility of this bright future is an important reason for the Green European Foundation to support the transnational project *ENERGY DEMOCRACY: Changing the Energy System*. In this project, Green foundations from the United Kingdom, Greece, Macedonia and Belgium share their experiences and ideas and develop policy proposals that enable a transition to a renewable and democratic energy system.

In this publication, we first develop the concept of a democratic energy regime, building on experiences in countries such as Germany and Denmark. Although a great deal still has to be done, they have developed ambitious pathways to a renewable future. A new form of co-operation between citizens and (local) governments would appear to be key. As you can read in another paper that forms part of this project, citizens in the United Kingdom have been investing in renewable energy projects, whereas governments at best delivered lip service to sustainable goals. In a way, the situation in Belgium is quite comparable to (if also different from) the British one, with a lack of ambitious policy plans at the national level, but with active citizens organising themselves in a positive fashion.

In short, it is clear that we need different and better policies, which enable a fruitful synergy between public authorities and civil engagement: policies that will allow us to realise a democratic energy regime and to do so in time.



A brief history of energy

Energy sources have always been a driving force behind societal change and part of the dominant technological structure of societies. The Industrial Revolution in the 19th century led to significant changes with the use of charcoal, the emergence of the steam engine and the building of factories and railways. As Jeremy Rifkin points out, this energy and mobility technology, together with communications technology (the steam-driven printing press, the telegraph system), formed a powerful and consistent combination that led to deep societal change. People left rural areas to go live near the factory, where they worked as (badly) paid employees, resulting in accelerated urbanisation and new social challenges.

The 20th century saw a new industrial revolution, with the massive use of petroleum and gas (and later uranium), the advent of the combustion engine, the introduction of cars and trucks and – as a new communications technology – the telephone, soon to be followed by radio and television. This allowed for the wide availability of goods and transport and gave rise to the consumer society.

The combination of energy, transport, production and communication systems formed the basis of the first two industrial revolutions. Looking at the developments in those domains today, we can see a third industrial revolution emerging, based on three networks of internets: the renewable energy net, the communication internet, of course – which also makes possible more local production systems, thanks to ICT – and an automated transport-internet.

This perspective of the communication-energy-mobility paradigm shift is powerful and promising, since the third phase allows for much more decentralisation and thus for changes that favour democratisation. That this will in fact take place is, however, far from certain, since the same big energy corporations try to own and control these decentralised structures. Thus, a purely infrastructural approach does not explain the level of democracy of current or future systems. Instead, we have to consider also the governance regime, the possible role of citizens, and the narrative connected to it – which means that we adopt the perspective of *sociotechnical* systems.

Let us, for example, have a brief look at post-war developments. In order to be able to export and market it, the United States was trying to find civil applications for the nuclear technology it had originally developed for military purposes. Therefore, in 1953, US President Eisenhower presented ‘Atoms for Peace’, on the pretext that nuclear energy would be free energy. But, at the same time,

citizens and scientists were starting to worry. Big nuclear protest marches in the 1970s signalled the onset of the development of renewable energy initiatives by citizens. In several countries, such as Denmark and Ireland, protests were able to prevent the construction of nuclear plants. In other countries, they led to fewer nuclear plants being built than planned. For instance, in the small country of Belgium, the government had plans for no less than 20 nuclear plants.

A critical dimension that tends to be overlooked is that when the green movement protested against nuclear plants in the seventies, it was not only because of the ecological risks of nuclear energy. It was, at the same time, the refusal of an energy system that was – by design – highly centralised and top-down. Simply put, nuclear plants have to be managed like military bases, while wind turbines can be community owned. Thus, the critique was part of a broader critical stance towards authoritarian bureaucracies and industries.

After the Second World War, energy policy was an issue of national importance, directly connected to each country’s reconstruction and the reconstruction of its economy. Most governments had a firm grip on energy policy, and in many cases, energy production was in the hands of national or municipal public energy utility companies.

This changes in the second half of the 1990s, as neoliberal policies were introduced. By virtue of this liberalisation, Europe relinquished the tools to plan and democratically implement how we want to generate our energy. In the form of its directives, the European Union introduced guidelines requiring the so-called liberalisation of energy markets. The change was supposed to offer the prospect of energy bills for citizens going down and investments being made in technologies of the future. The bitter reality, however, is that the production of electricity in Europe fell into the hands of private companies and energy bills never decreased. From then on, these private companies decided how our electricity is generated and what investments are made, based purely on their profit forecasts. The companies did what they do best: trying to compete with each other in order to raise profits as much as possible, generating electricity using the existing systems, based on fossil fuels and nuclear energy, and ignoring the general interest. Contrary to the neoliberal promise, big energy corporations did not invest in the transition towards a sustainable energy system: their short-sightedness prevented them from pursuing a more sustainable course. As a reaction, citizens and the governments in certain countries started doing it in their place.¹



Energy transition: Denmark and Germany take the lead

Denmark is well-known for its ambitions in the field of sustainability. By 2050, the country wants to be independent of fossil fuels. The Danish success story did not come out of the blue. It goes back to the 1970s, when the oil crisis put the country on the track of wind energy. Thus, the protests against nuclear energy went hand in hand with positive initiatives stimulating the development of renewable energy. Governments put everything in place to build wind parks. Families were offered tax exemptions for producing energy themselves. This was mostly realised by citizens buying shares in renewable energy cooperatives on a massive scale. It is in Denmark that the energy cooperative model grew to maturity and provided the model for other countries. The Danish wind energy industry became the largest in the world, with more than one-third market share, providing more than 40% of all electricity, and comprising more than 20,000 jobs. Combining wind energy with other renewable energy sources, the country aims to rely on renewables for at least half of its energy needs by 2030. Interestingly, as wind energy delivers an increasing share of the Danish electricity supply, the number of turbines is decreasing, because they have become bigger and more efficient.

Germany also turned to renewables in the famous *Energiewende*. This energy revolution was not solely a bottom-up development, but also the result of conscious political choices on the part of the red-green governments from 1998 until 2005. The introduction of CO₂ energy taxation in 1999 stimulated the development of a green economy and accelerated the development of alternative energy sources, resulting in the creation of tens of thousands new jobs in the sector. Together with the *Energy Law*, which came into force one year later and introduced long-term contracts for fixed feed-in tariffs for renewable electricity projects put on the grid, it led to an incredible boom of renewable energy projects and feed-in tariffs became the model worldwide. While big energy corporations

maintained their traditional ways of doing things, innumerable citizens' initiatives, in cities but also in villages in the countryside, established renewable energy facilities. Nowadays, more than one-third of energy production comes from renewables and more than one-third of the facilities are owned by citizens and their cooperatives. More than 400.000 people are employed in the sector.

This shows that the *Energiewende* is not just a success of government policies or solely a miracle brought about by bottom-up citizen action. It is the result of public-civil cooperation, in which governments, in their new role of so-called Partner State, develop enabling schemes for civil initiatives. As defined by authors like Michel Bauwens and Dirk Holemans, who introduced the concept, a Partner State is a government that enters into partnerships with civil society or citizens' collectives for the general well-being of the economy and the population.²

At the same time, it is about shifting power relationships and societal struggles. As the business model of the traditional energy corporations came under pressure because of the *Energiewende*, they successfully organised themselves at the European level and lobbied the European Commission. In 2013, they managed to get the successful model of feed-in tariffs changed to commercial tenders on the market, which is much more suited to private corporations than citizens' cooperatives.³ But of course, the power struggle is not over.

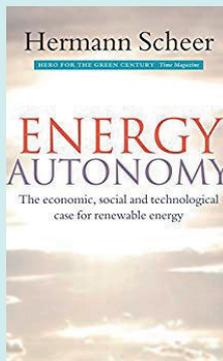
Today, there are already more than 2400 renewable energy cooperatives in the whole of Europe, bringing together more than a million committed European citizens.⁴ This development is not only about shifting from fossil fuels and nuclear energy to renewable energy; it is also about power and ownership, about citizens getting their voices heard and not being left out in the cold. It is not only the fruit of the action of bold citizens, but also of responsible politicians, who both develop participatory policies and regulate energy markets in such a way that big corporations cannot dominate them anymore.





What happened from the post-war period until now can be summarised in a symbolic way by two influential books.

In 1977, the Austrian author Robert Jungk published *Der Atom-Staat. Vom Fortschritt in die Unmenschlichkeit*, which was number one on the German bestseller list for non-fiction. According to Jungk, the building of nuclear power stations is so dangerous that the government and industry are forced to take excessive, tyrannical security measures, which often affect the freedom and rights of the individual citizen and which, even then, do not neutralize all the risks involved. The book was translated in 1979 under the telling title *The New Tyranny: How Nuclear Power Enslaves Us*. Jungk was in favour of the development of alternative technologies that do not oppress, such as energy generation from wind and from methane gas produced by waste products. He added that all these environmentally-friendly techniques were still in their infancy.



It is striking how much time we lost – decades – to implement these alternative technologies on a large scale. Almost thirty years later, in 2006, the German politician Hermann Scheer published another influential book that captured the *Zeitgeist* quite well. *Energy Autonomy: The Economic, Social and Technological Case for Renewable Energy* ranked number one in *Die Zeit*'s ranking of 'Most Important New Non-Fiction'. This much more positive book aimed to provide a solution to our fossil fuel addiction. For Scheer, the solution was to make the transition to renewable sources of energy and to distributed, decentralised energy generation. Three decades after Jungk, the author can comprehensively demonstrate that this is a model that works: technologically, commercially and politically.

Energy democracy and its benefits

For too long, the energy debate – its problems and solutions – has been dominated by technological (electric cars) and economic (profitability) issues. In addition, answers to environmental concerns are sometimes reduced to technological and market solutions allowing for the reduction of carbon emissions. Hence, the broad political and societal questions regarding the socio-technological system have long been sidelined.

If we restart the discussion from the point of view of democracy and fairness, new questions come to the forefront. How do we want to regulate this system? Who should be at the steering wheel and get the support to build the new energy system? Who benefits and who loses out from the energy transition? What arrangements serve the public interest and what arrangements do not?

If we aim for a *just transition*, it is crucial that we tackle social and ecological goals and concerns in an integrated way.

This becomes clear in the debate on energy poverty, which is a sober reality for millions. Together with a failing housing market and austerity measures affecting wages and welfare provision, liberalisation of the energy market has led to rising bills and falling incomes for important groups, who are compelled to live in poorly insulated houses. Due to this harmful evolution, more and more people are currently denied access to the basic levels of energy needed for a dignified life.⁵ But the answer is not – as some on the old Left argue – to lower energy prices. On the contrary, we need at the same time expensive *and* affordable energy. This is not a paradox as long as we make the right investments. For if we insulate all houses (with priority given to social housing), if we provide affordable and good public transport as an alternative to cars, etc., people can live a good life with less energy demand and costs.



The active participation of citizens

The transition to a socio-ecological and, therefore, democratic energy system can no longer be addressed without considering the active participation of citizens. Besides the need for co-creation at the policy level, the recognition of the crucial role of energy cooperatives is key. We are no longer talking about local initiatives in only a few countries. In 2013, energy cooperatives joined forces to form REScoop.eu: a federation of citizens' groups and cooperatives dedicated to renewable energy. The point of departure for the federation is the view that the natural sources of energy, such as wind and sun, are a common good: they are not owned privately and should, therefore, be accessible to everyone. Hence, their exploitation should not be privatised, but rather should, as much as possible, benefit the community.

The importance of these cooperatives lies not only in the fact that citizens are co-owners. By bringing together production and consumption, citizens get involved in investment decisions and reap the benefits. Being more involved, they are often also value-driven, rather than profit-driven. This is why these cooperatives often decide to reinvest substantial portions of their revenues in social and environmental causes and in the local economy. Just as in new developments in sustainable agriculture, what is at issue here is about shortening the chain between producer and consumer: in this case, between energy production by your cooperative and your power sockets at home. Thanks to such a short chain, you increase the involvement of citizens. The latter will actively relate to social objectives, such as a sustainable energy infrastructure, within the framework of a decisive climate policy. For example, a renewable energy cooperative will also help its members to consume less energy – something you can hardly expect from a private corporation.

In this respect, positive developments are already happening on the level of cities and transnational organisations like Energy Cities and the Transnational Institute (TNI).

If the new energy system is more and more built by energy cooperatives, this means, at the same time, that the economy becomes more regionalised: the local government gets higher revenues from labour, taxes, interest on loans and dividends from cooperatives, and it can reinvest these revenues, instead of letting private companies run off with the profits.⁶ Ecological justice and social innovation are closely linked.

This emphasis on citizens' initiatives should not, however, be interpreted as a plea for less state or public services. Instead, it is an ardent call for another kind of state: a Partner State that actively supports citizens' initiatives, while formulating bold goals for a sustainable future. It is from this perspective that we consider the encouraging increase in the number of local authorities that are expanding their role: no longer simply acting as planning authorities, but rather becoming operational stakeholders and driving forces in the local energy transition. The return to municipal control, however, does not guarantee a substantially different model than privatisation (or post-war top-down national energy policies). Collaboration with citizens is key.

The future model in the pipeline

Citizens taking initiative in an autonomous way form the first subsystem of the future model that will lead to a sustainable energy system. But their actions alone are not enough: it is important that self-reinforcing and accelerating dynamics be triggered by interaction between these citizens' initiatives and three other components. The first component is the **Partner State**, offering a framework that supports and stimulates these initiatives on different levels: from the urban to the (supra)national. The German feed-in tariffs are a good example. At the same time, huge investments are necessary to connect wind parks and regions. This allows for the transport of energy surplus to places with a shortage of electricity. The second subsystem is that of the **public-civil partnerships**: cities and towns have the capacity to enhance the start-up of new cooperatives and to facilitate the installation of new wind turbines. Their cooperation also makes it easier to convince ethical banks to get on board with such projects.

The last subsystem is an adequate **fiscal system**: the system only works with high energy prices, obtained via an energy tax. This is a critical issue: this energy tax is part of the new social contract of the 21st century. In the 20th century, we introduced a social security contribution, in order to build the welfare state. In our century, it is time for an 'ecological security' contribution for the purpose of investment in a more sustainable society. At the same time, more energy efficiency measures will decrease the demand for electricity. Together with social policies, this ensures that energy is affordable for everyone, even though expensive. The latter is necessary because cheap energy leads to stupid consumption.



With these subsystems, we can realize a new *regime of renewable energy democracy*, based on four principles:

- 1 100 % renewable energy with sun, wind and water as commons;
- 2 Ecological justice: everybody has access to energy although energy prices are high;
- 3 Democratic: public-civil management of energy production and distribution;
- 4 Energy within limits: decreasing the energy demand.

In other words, we are talking of an energy sector that runs on renewable energy, is co-managed from the standpoint of ecological justice, and is focused on the general interest.⁷ These principles align with the five building blocks put forward by Energy Cities, the Euro-

pean network of cities in energy transition: local energy ownership (local authorities and citizens), municipalisation (municipal control over energy management), devolution (transfer of powers from the national government), community projects (citizens – renewable energy projects), and participative governance (direct democracy, influence of citizens).⁸

It seems unlikely, however, that the transition to energy democracy can take place on only a local or municipal scale. There is a need for large-scale coordination and cooperation. Besides states, new emerging networks like Energy Cities and TNI can facilitate this.

Countries in the EU are moving at many different speeds in this respect. But, with its recently published 'Clean Energy Package', the European Commission is trying to point everybody in the same direction.

European energy policy

In November 2016, under the heading of **Clean Energy for All Europeans Package**, the European Commission presented a more advanced series of measures for making the European energy sector more secure, more market-oriented and more sustainable, with the active and central participation of its citizens.

The clean energy transition is changing global energy markets and, according to the Commission, if it wants to lead this transition, the EU should not only commit to cutting CO₂ emissions by 40% by 2030 (a target that was increased to 45% in October 2018); it also needs to modernise the EU's economy and deliver on jobs and growth for all European citizens.

According to the Commission, consumers will have a better choice of supply, as well as the possibility of producing and selling their own electricity. Increased transparency and better regulation will create more opportunities for civil society to become more involved in the energy system and to respond to price signals. The package also contains a number of measures aimed at protecting the most vulnerable consumers.⁹

All the measures are bundled into 8 legislative texts: the Energy Performance in Buildings Directive, the Renewable Energy Directive, the Energy Efficiency Directive, the Governance Regulation, the Electricity Directive, the Electricity Regulation, the Risk-Preparedness Regulation, and the Rules for the regulator ACER.

On December 18, 2018, the European Parliament and the Council reached a political agreement on the Electricity Directive and the Electricity Regulation.

With this agreement, the final pieces of the EU's Clean Energy for All Europeans legislative package are now in place and must be approved by both the European Parliament and the Council by way of their respective procedures. Once the legislation enters into force, Member States will begin the task of writing the new rules into national legislation.¹⁰

The Clean Energy for All Europeans Package sets new targets, which would have to lead to 45% emission reductions for the whole EU by 2030 relative to 1990, and it aims to achieve net-zero greenhouse gas emissions by 2050 by way of a socially-fair transition in a cost-efficient manner.



Implementing the Paris Agreement

The EU plays a crucial role in making the Paris Agreement operational. Even greater efforts will be needed, however, after the October 2018 United Nations climate change report showed that the measures of the agreement are still insufficient.¹¹

The UN climate conference (COP24) in Katowice, Poland, concluded in December with the adoption of a clear rulebook for making the Paris Agreement on climate change work in practice all around the world. The completion of the rulebook was the EU's top objective in these negotiations. The Paris rulebook will enable the Parties to the Paris Agreement to implement, track and progressively enhance their contributions to tackling climate change, in order to meet the Agreement's long-term goals. The EU's nationally determined contribution (NDC) under the Paris Agreement is to reduce greenhouse gas (GHG) emissions by at least 45% by 2030, as compared to 1990, under its broader 2030 climate and energy framework.

This transition is going to be more difficult for some regions than others – notably, those regions where the economy is based on coal production. The clean energy transition is a transition for all Europeans and its socio-economic impacts must be carefully managed.¹²

The EU's ambitions go beyond 2030. In November 2018, the Commission presented a promising strategic long-term vision for a prosperous, modern, competitive and climate-neutral European economy by 2050. This will kick-start an EU-wide debate, which should allow the EU to adopt a long-term strategy and submit it to the UNFCCC (United Nations Framework Convention on Climate Change) by 2020. The Commission's vision for a climate-neutral future covers nearly all EU policies and is in line with the Paris Agreement objective of keeping the global temperature increase well below 2°C and pursuing efforts to keep it to 1.5°C.¹³

In short, the Clean Energy for All Europeans Package requires joint action in seven strategic areas¹⁴.

1 Maximise the benefits from energy efficiency including zero emission buildings. Higher renovation rates, adequate financial instruments for overcoming existing market failures, sufficient workforce with the right skills, and affordability for all citizens are of central importance. Consumer engagement is key.

2 Maximise the deployment of renewables and the use of electricity to fully decarbonise Europe's energy supply. Improve security of supply and foster domestic jobs. Foresee a nuclear power share of approximately 15%.

3 Embrace clean, safe and connected mobility. Internalising the external costs of transport is a prerequisite for making the most efficient choices in terms of technology and transport mode.

4 Competitive EU industry and the circular economy have to be key to enabling a reduction in greenhouse gas emissions. Recover and recycle raw materials. Digitalisation and automation.

5 Develop an adequate smart network infrastructure and interconnections to ensure optimal sector coupling and enhance regional cooperation.

6 Reap the full benefits of bio-economy and create essential carbon sinks. Deploy digitalisation and smart technologies for precision farming and precision agriculture, in order to optimise fertiliser and plant protection products.

7 Tackle the remaining CO₂ emissions with carbon capture and storage.

According to the Commission, considerable additional investments are also needed. However, certain options, such as a rapid transition towards circular economy and behavioural changes, have the potential to reduce the need for additional investment. At the same time, significant health costs can be saved.

According to the Commission, the financial sector has a key role to play in supporting the transition towards net-zero emissions, since it can redirect capital flows and investments. Environmental taxation, carbon pricing systems and revised subsidy structures should play an important role in steering this transition: the polluter pays.

The EU is poised to set an unprecedented standard by formalising the role of citizens and communities in Europe's energy transition. And rightfully so.



According to the latest special Eurobarometer (November 2018), 93% of Europeans believe climate change to be caused by human activity and 85% agree that fighting climate change and using energy more efficiently can create economic growth and jobs in Europe. EU-citizens thereby give a strong mandate to the Commission to push for ambitious measures.

The Commission continues its discourse by ensuring that, notwithstanding decarbonisation, the EU economy will more than double by 2050 compared to 1990. There is need for more green jobs in construction, farming and forestry, and renewable energy sectors.

Support for a just transition will be provided under the European Pillar of Social Rights, with its adequate social protection systems, inclusive education, training and life-long learning. Vulnerable customers will benefit from regulated energy tariffs, but these tariffs can distort market signals and reduce the effectiveness of policies on energy efficiency or hamper the deployment of technologies such as smart meters. Therefore, social issues will generally be better addressed through social policy and welfare systems, the financing of which could benefit from tax shifts and revenue recycling.

Clean Energy Package from a critical point of view

Even though the recently adopted directives and regulations are a big step in the right direction, the legislation still operates too much within the framework of the current industrial model.

1. European ambition

First of all, it is important to stress that the October 2018 United Nations climate change report has shown that the objectives of the Paris Climate Agreement are far from sufficient to keep the global temperature increase well below 2°C, let alone 1.5°C. Not only do we need more ambitious goals, we also cannot wait until 2030 for more ambitious action.

2. Energy communities

According to REScoop, by 2050, almost half of all EU households could be involved in producing renewable energy, about 37% of which could come through involvement in an energy community.

In its new energy directives, the European Commission endorses this vision by foreseeing more active and central participation of citizens. However, clearer definitions of and more stringent governance rules for citizen energy

communities are needed, in order to prevent interference by larger companies, which can lead to indirect control.

3. Agricultural status quo?

Instead of pursuing a more sustainable overall agricultural policy, the package only focuses on precision farming and precision agriculture for the purpose of optimising the use of fertilisers and pesticides. Our current agricultural system depends on a massive use of fossil fuels, artificial fertilisers and pesticides. In order to pursue a real sustainable agriculture, we should move beyond precision agriculture alone and strive for so-called agroecology. This term refers to the theory and practice of a series of techniques that reduce the need for external inputs (like fertilisers and pesticides), as well as for a multiplicity of unwanted outputs (like pollution and climate change). Instead, agroecology tries to re-stimulate interaction between trees, plants and animals through soil management, sustainable management of ecosystems and biodiversity, planting trees (for carbon storage, for shadow management,...), etcetera.¹⁵

4. Nuclear or sustainable?

The new Electricity Directive maintains a nuclear power share of approximately 15% after 2050. That figure is still half of the share of nuclear power produced in the EU today.¹⁶ This raises questions in terms of financial investments, energy management, nuclear liability, and social justice with regards to future generations. First of all, apart from the overall safety risk, several current nuclear power plants are outdated and require major investment to remain operational. Will tax payers have/want to cover a substantial amount of this investment, and if so, what do they get in return? Secondly, unlike (cheaper) renewable energy systems, the building of nuclear power plants is extremely expensive. Coincidentally or not, tech company Hitachi announced this January that it will suspend its new nuclear power stations project in the UK. The decision was made from the viewpoint of Hitachi's economic rationality as a private enterprise.¹⁷ Thirdly, the management of nuclear power stations is highly centralised and undemocratic. How can the EU be both an advocate of nuclear energy and of the empowerment and participation of citizens? Last but not least, questions about nuclear waste remain unanswered. How can it be morally justifiable to saddle future generations with problems to which we do not have answers? And who will bear responsibility when general public safety is jeopardised?

According to a study by the Energy Watch Group, 100% renewable energy across Europe would be more cost effective than the current energy system and will lead to zero emissions before 2050.¹⁸ Citizen cooperatives can play an important role in this transition.



Therefore, it is high time to move towards energy communities that empower citizens to participate collectively in the energy transition by way of a structure whose main aim, ownership and governance are distinct from traditional market actors.¹⁹ We do not need nuclear energy.

5. Decarbonisation of the economy

The Commission assumes that the EU economy will more than double by 2050 compared to 1990, even as it fully decarbonises. But economic growth is traditionally associated with an increased use of energy and resources. So, how do we link the doubling of the size of the economy to the necessary transition to a

net-zero emissions economy? Indeed, we will require more green jobs in construction, farming and forestry and in renewable energy sectors, but we also need to rethink the economy in itself. Resource and CO₂ limits render further growth of the economy unsustainable and require a decoupling of economic growth (GDP) from growth in environmental impacts.²⁰ An absolute precondition for this decoupling is to lower demand: for energy, for transport, for goods (by pursuing so-called ‘politics of sufficiency’). In order to go beyond growth, we need to share wealth, share work, redirect financial profits towards investment in the real economy, reduce the overall scale of production and consumption, and experiment with local alternatives. The economy needs to be re-embedded in society against the backdrop of sustainability and fairness.²¹

Pathway to energy democracy in Belgium

A short history

The Belgian energy landscape has a remarkable history. After delivering uranium for the first nuclear bombs via its former colony of Belgian Congo, Belgium received early access to nuclear technology from the United States, thus making applications of nuclear energy a logical step for the Belgian government of the time.

In 1966, after President Eisenhower’s ‘Atoms for Peace’ speech, the Belgian government decided unilaterally to order seven nuclear reactors. In nuclear energy, it saw an excellent opportunity for the country to become economically independent in the energy domain; the nuclear ambition was significant and fully centralised.

There was no question of any democratic process. The parliament never approved the use of nuclear power plants, public debate was absent, and organised citizen protest was not on the agenda (yet). It was only in the early 1970s, when the sites for the first Belgian nuclear power plants were chosen, that large protests arose. Until then, the government had failed to take the public interest seriously. The US standard evacuation zone of ten miles (or 16 kilometres) around a nuclear power plant was in Belgium reduced to just 10 kilometres. This explains why there were four reactors in the village of Doel at barely 11 kilometres from the heart of Antwerp.²²

Moreover, the problem of nuclear waste hardly received any attention. Legislation was minimal in this respect – to say nothing of decent governmental regulation. Private companies were in control.

On another note, no less than 36 private electricity companies regrouped until only three private companies remained in 1976.

The Belgian energy supply in the post-war period was also characterised by cheap oil and gas from the Middle East. The dream of almost free energy vanished into thin air when, in 1973, the Arab oil-producing countries increased the price of oil by seventy percent and reduced its supply. A new oil crisis occurred in 1979. The price of a barrel of crude oil suddenly peaked above 100 dollars, and the energy bill of Belgian households and companies increased considerably. In response, the government adopted measures to increase energy efficiency, but if failed to intervene in the market. As a consequence, the decreasing energy consumption, due to increased energy efficiency, caused energy prices to plummet, resulting in ‘idiotic consumption’ and thus nullifying all energy saving measures. The proceeds were spent on more consumption, instead of on renewable energy. In the mid-1980s, after market liberalisation, the last 3 electricity companies merged to form Electrabel, which in 1990 acquired a quasi-monopoly, accounting for almost 94 percent of Belgian production.²³

In the meanwhile, a group of committed citizens are getting tired of being the victim of failing energy policy and profit-driven energy giants. In 1991, they organise themselves into the country’s first energy cooperative: Ecopower. For more green energy and more energy democracy. These pioneers had to break through many barriers: like, for instance, the right to put their green electricity on the grid.



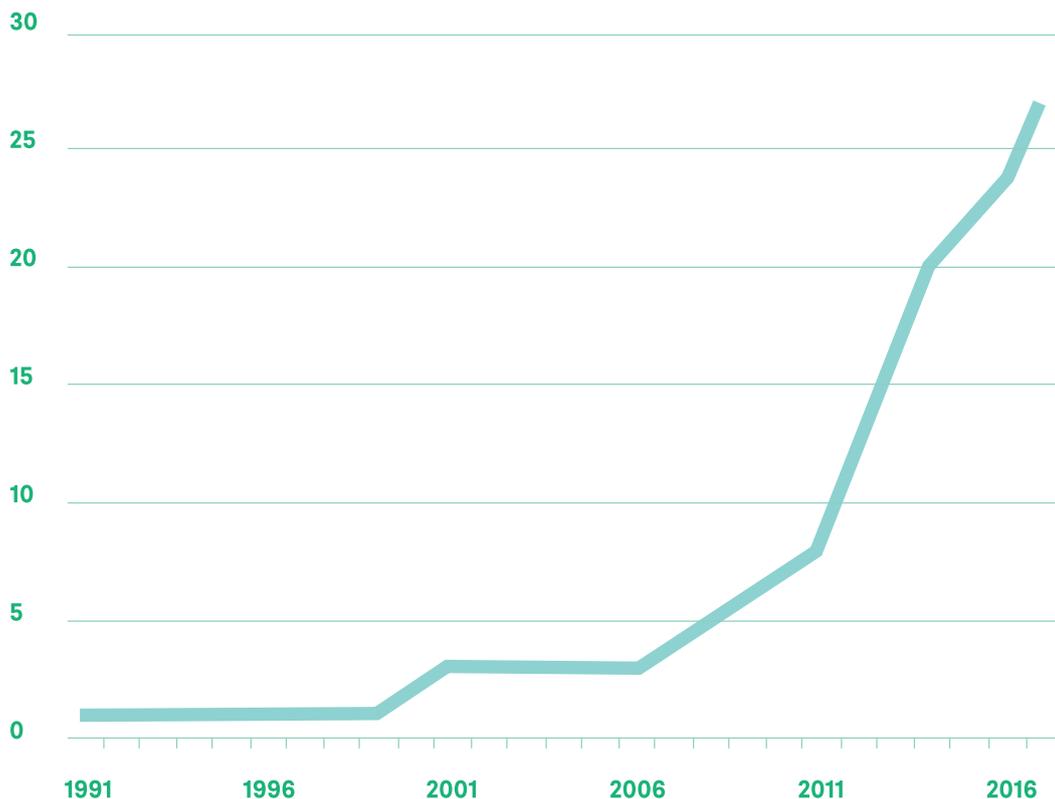


Figure 1: Renewable energy cooperatives in Belgium

The status of energy democracy in Belgium today

Oikos studies²⁴ have shown that since the beginning of this century and in various domains, citizens have been organising themselves more frequently in so-called commons. This new wave was a reaction to the failure of market and state to deliver a sustainable society, and it grew stronger with the financial crisis of 2007: besides urban farming, co-housing projects and initiatives like car-sharing, there was also a strong increase in the founding of citizen-led energy cooperatives. In 2017, Oikos counted 27 citizen-cooperatives for renewable energy in Belgium, and the number continues to grow.

The power of these cooperatives to mobilise people and money is often astonishing. In 2017, for example, Beauvent raises 1.5 million euros from 650 local citizen-shareholders in barely 12 hours. With the citizens' money, the cooperative will construct a heating network in the city of Ostend, revise the entire energy supply of a local retirement home, and install solar panels on public buildings in the municipality of Kuurne. The unprecedented rapid raising of capital shows that citizens want to invest in renewable and sustainable energy by way of citizens' cooperatives, even if these initiatives remain limited in the face of the immense challenge represented by the transformation of our energy system into a fully sustainable one by 2050.

Ecopower, the largest renewable energy cooperative in Belgium, which, in addition to being an energy producer, is also a supplier of sustainable cooperative energy in Flanders, only has a market share of 1.49% of household customers for electricity. Looking at the total produced power of the wind turbines in Flanders, Ecopower accounts for only 3% of this capacity. All wind turbines in Flanders that are owned by citizens' cooperatives account for only a 4% share, as compared to 96% that is in the hands of energy multinationals or project developers with a high takeover risk.

COCITER, the umbrella cooperative of REScoop in Wallonia (i.e. the French-speaking region in Belgium), which is responsible for the supply of their electricity, has the capacity to supply more than 14,000 households. It currently supplies only 2400 customers, however. In short, energy cooperatives still have a considerable margin for growth.²⁵

If we take transition theory as a starting point, we can see that renewable energy cooperatives in Belgium are currently in a take-off phase: the pioneering experiments are behind us, cooperatives are combining forces to shift up a gear, and traditional companies are being put under pressure by municipalities that demand a minimum of citizen participation in new energy projects or by European funding programs like Horizon 2020, which supported the energy cooperative Courant d'Air in the French-speaking region of Belgium.



Despite their limited impact however, Oikos's study on citizens' collectives shows that these initiatives do fulfil some crucial roles: like innovation and experimentation, knowledge development and dissemination, mobilisation of human and financial resources, building legitimacy, and support and networking. In the city of Ghent, the energy cooperative EnerGent has worked on a broad and varied network since its inception. EnerGent arose from a local network consisting of actors from all kinds of domains and organisations. They helped the cooperative to generate support, spread its ideas, and significantly increase awareness of its projects. This network ultimately gave rise to a varied and pluralistic advisory board that assists the cooperative – a model that could be interesting for other renewable energy cooperatives. Cooperation between these different renewable energy cooperatives is crucial to give start-ups a push in the right direction, to involve them in new projects, and to offer opportunities. In this way, a widespread network of energy cooperatives can emerge and grow from a niche supplier into a more developed alternative.

But what else is needed, in order for these cooperatives to outgrow this take-off phase and become stronger?

Building Public-Civil Partnerships

Different local and regional governments are already supporting renewable energy cooperatives to a greater or lesser extent.

The government of the French-speaking region in Belgium presented a policy framework that would allow municipalities in Wallonia to impose 24,99% ownership for citizens and 24,99% ownership for municipalities as a condition for private project developers to build new wind turbines. The frame of reference was never promulgated and hence has no legal force. But as it turns out, it is socially enforceable if a local government demands this and takes a firm stance.

Also on a local level, we see more and more municipalities anchoring sustainable energy projects in their policies. The East Flemish City of Eeklo played a pioneering role when it decided to include citizen participation as one of its criteria in public procurement for wind projects. This enabled Ecopower to build its first wind turbine in early 2000, despite having no experience with such large projects.

A model for widespread support

In Belgium, the installation of local wind energy projects often encounters resistance from local citizens. A notable exception is the City of Eeklo, in collaboration with Ecopower. It created a model for widespread support based on co-ownership, thorough information and communication. The City of Eeklo considers wind as a common good and cares about a balanced apportionment of the joys and the burdens. It foresees an input of 50% direct participation by citizens and the local government, and an output of 10.000 EUR per year per turbine for the city and its environment. This reallocation allows the injection of 65 million euros, over a period of 20 years and without extra subsidy, in one of the socio-economically most vulnerable areas of East Flanders – a powerful way to boost the local economy.

In Eeklo, there will soon be 22 wind turbines and a heating network on a total population of 20,000 inhabitants, many of whom also financed these projects as shareholders. One shareholder even trimmed the tree in his garden to be able to see 'his' windmill from the kitchen window²⁶.

In 2017, the municipalities of Kurne and Sint-Pieters-Woluwe included a criterion of citizen participation in solar projects and Laarne passed a municipal resolution opening up renewable energy projects for up to 50% citizen and government participation. In the autumn of 2017, the Leuven city council approved a vision memorandum aiming at a minimum of 50% direct participation of citizens and the local government. Similar proposals for citizen participation in energy projects were later also approved in other municipalities.

In Wallonia, the municipalities of Amel and Büllingen selected two energy cooperatives (Courant d'Air and Ecopower) to develop a wind farm that is 100% owned by the municipalities and the two cooperatives.

Courant d'Air and Ecopower provide for up to 60% participation of the municipalities in operating the park (depending on the municipalities' wishes and financial capacities). Citizens, on the other hand, will be able to invest in at least 40% of the park through Courant d'Air and Ecopower.



Other municipalities in Wallonia, such as Villers-le-Bouillet, Modave and soon also Lierneux, are at the basis of establishing community-controlled cooperatives.

The municipality of Villers-le-Bouillet started a public-private partnership to realise a project in the field of citizen wind energy. The municipality carried out a large and diverse information campaign addressed to all the various parties involved – via publications in the municipal newsletter, press articles, mail, presentations for the various municipal services, the Advisory Council of Senior Citizens, and the Municipal Advisory Committee on Planning and Mobility – and by organising open meetings for citizens to encourage them to participate in the project financially.

In the municipality of Modave, more particularly in the district of Les Trinitaires, 5 new wind turbines came into being. Four wind turbines are operated by Wind-4Wallonia: a partnership between 5 Walloon intermunicipal companies and Engie Electrabel. The 5th wind turbine is operated by the cooperative Eole Modave, which is owned by the Modave municipality, citizens and local businesses.

These are cases where the government has a mutually reinforcing relationship with citizens' collectives in the form of a Partner State. For the moment, such examples are still too limited to allow these collectives to develop into a mature niche.

Local authorities could more actively seek opportunities for sustainable energy projects on their territory. This involves evaluating public roofs for solar projects and public land for wind projects. Land represents one of the biggest obstacles for energy cooperatives, since developers have already leased many possible locations, leaving hardly any suitable private land (the so-called wind rush).

In this respect, governments can actively seek partnerships with owners of plots of land or buildings that lend themselves to wind or solar projects. Potential partners include the church councils, intermunicipal companies and Public Centres for Social Welfare. When a government has listed the possible sustainable solar and wind energy projects on its territory, it can include clear qualitative criteria in the tender that award points to citizen participation by referring to the ICA definition. In addition to this qualitative support, the government can also make cooperative solar sharing possible.

Collaboration and networking

In Ghent, the energy cooperative EnerGent has been working on a broad and varied network since its inception. It arose from a local citizens' collective with the support of a good transition network comprising actors from all kinds of domains and organisations, who helped to spread its ideas and significantly increase awareness of its projects. This transition network ultimately gave rise to a varied and pluralistic advisory board that assists the cooperative. EnerGent currently invests in wind energy, solar panels and heating. It also campaigns via group purchase for more solar panels in Gent and more energy efficient living; it started a crowdfunding campaign to create a green energy neighbourhood; and it currently is also studying the possibilities for local, decentralised energy sharing.

But cooperation between different renewable energy cooperatives is also crucial for giving smaller, start-up cooperatives a push in the right direction. In this way, a broad network of renewable energy cooperatives can emerge and grow as a niche supplier with the potential to develop into a fully-fledged alternative energy system.

Conclusion

Belgium has long opted for a highly centralised energy policy trajectory. The country's resolute and undemocratic choice for nuclear energy and then the liberalisation of the energy market have led to a limited number of big energy corporations acquiring dominant market positions. Citizens became the victims of a short-sighted policy vision involving centralised decision-making, large price fluctuations and profit-oriented companies. As a result, until the financial crisis of 2007, Belgium was lagging behind in the domain of sustainable energy policy and renewable energy systems. Citizens then started setting up their own energy cooperatives and local authorities also increasingly extended a helping hand. The movement is growing rapidly and there are no fewer than 27 energy cooperatives today. While their market share is still modest, their impact is significant. Building on the theory of transition and the vision of the abovementioned Partner State, it is crucial that local governments and citizens find each other in an energy policy that is shaped from the bottom up, rather than imposed from above. This also applies to Belgium. Sun and wind belong to everyone. Local energy cooperatives can revive the local economy, give citizens more autonomy, and form the basis for a sustainable energy system – as the many examples show



ENDNOTES

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- 26 Cf. Terzake report dd 12/12/2018 on VRT television (<https://www.youtube.com/watch?v=4iSskbAyzpc> - in dutch)



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