CHANGING THE FUTURE OF ENERGY:
CIVIL SOCIETY AS A MAIN PLAYER IN RENEWABLE ENERGY GENERATION

EESC study on the role of civil society in the implementation of the EU Renewable Energy Directive

FINAL REPORT

(*January 2015)*

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This study was carried out by a team of nine members of the EESC Sustainable Development Observatory (SDO) and of the EESC Section for Transport, Energy, Infrastructure and the Information Society (TEN):

- a core team of three members who guided the work and visited the six Member States: Lutz Ribbe (overall coordinator), Isabel Caño Aguilar, and Brenda King; and
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The secretariat of the EESC Sustainable Development Observatory (Rayka Hauser and Nuno Quental) provided continuous assistance in the organisation of the case studies and in the drafting of this report.

The EESC study team extends special thanks to the Sustainable Development Council of the French Provence-Alpes-Côte-d'Azur Region (PACA), the Welsh government, the Polish Miners' Union, the EC representations in Germany, Bulgaria, Poland and Wales; to numerous civil society organisations, associations of renewable energy producers, cooperatives, community initiatives and social enterprises, as well as authorities at national, regional and local level in the countries visited. They all supported the organisation of the study, participated actively in the debates, showed enthusiasm in bringing forward the deployment of decentralised renewable energies, and provided invaluable input from their different perspectives in shaping the conclusions of this study.

Indeed, this report presents first and foremost the rich feedback the study team received from a wide range of stakeholders during the visits and discussions.

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From the Preamble to Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (the EU Renewable Energy Directive):

"(3) The opportunities for establishing economic growth through innovation and a sustainable competitive energy policy have been recognised. Production of energy from renewable sources often depends on local or regional small and medium-sized enterprises (SMEs). The opportunities for growth and employment that investments in regional and local production of energy from renewable sources bring about in the Member States and their regions are important. The Commission and the Member States should therefore support national and regional development measures in those areas, encourage the exchange of best practices in production of energy from renewable sources between local and regional development initiatives and promote the use of structural funding in this area.

(4) When favouring the development of the market for renewable energy sources, it is necessary to take into account the positive impact on regional and local development opportunities, export prospects, social cohesion and employment opportunities, in particular as concerns SMEs and independent energy producers. (…)

(6) It is appropriate to support the demonstration and commercialisation phase of decentralised renewable energy technologies. The move towards decentralised energy production has many benefits, including the utilisation of local energy sources, increased local security of energy supply, shorter transport distances and reduced energy transmission losses. Such decentralisation also fosters community development and cohesion by providing income sources and creating jobs locally. (…)

(43) In order to stimulate the contribution by individual citizens to the objectives set out in this Directive, the relevant authorities should consider the possibility of replacing authorisations by simple notifications to the competent body when installing small decentralised devices for producing energy from renewable sources."

1. Summary of key findings and recommendations

1.1 Key findings

1.1.1 A sense of opportunity

In all of the Member States visited, the study team found a strong civil society committed to energy transition, aware of the socio-economic opportunities it creates, and willing to benefit from decentralised renewable energy production. There was a sense of excitement about the possibilities opened by renewable energy for income generation, community development and social innovation, and an eagerness to learn about best practice and support policies in other Member States.

1.1.2 A sense of frustration

At the same time, stakeholders shared their frustration with bureaucratic hurdles and complex procedures; with recent policy reforms that put small producers and communities at a disadvantage to large, centralised energy producers; with the non-recognition of the value of civic energy by policy-makers and, in some cases, with the lack of constructive dialogue with the authorities. These barriers are known and described in detail by the European Commission in its Renewable Energy Progress Report (2013)[1]. The fact that such barriers remain or even are increasing (e.g. with the introduction of auctions for RE generation in a number of Member States) was interpreted by some civil society representatives as a direct attack on civic energy to the advantage of large centralised producers.

1.1.3 A strong case for civic renewable energy

A central finding of the study was the fact that civil society is not content with being just consulted on energy policy. Communities, civil society organisations and private individuals are eager to become producers of renewable energy - and the team was given ample evidence and arguments in support of this trend:

Civic energy increases local acceptance of renewable energy infrastructure, building support and engagement for the transition process. It unlocks urgently needed funds for the energy transition, brings about shared local socio-economic benefits and keeps value added in the communities. Indeed, RE production is becoming an economic opportunity for citizens, farmers, cooperatives, SMEs, local communities, charities and NGOs instead of, or in addition to, traditional energy companies. It stimulates local development, social innovation and cooperation. Decentralised schemes enable individuals and communities to share the costs and benefits of renewables and to identify possibilities for better matching supply and demand (e.g. in collective heating schemes). Where policy frameworks allow for this, civic renewable energy becomes a net creator of local jobs and economic growth.

The EESC study revealed that the development of RE is advancing faster especially in those Member States in which local people, individually or jointly, have been enabled to implement their own citizen energy initiatives. The key precondition for this development has been well-designed support schemes and good regulatory frameworks for civic renewable energy. In order to take advantage of this new opportunity, EU and Member States' climate and energy policies should put much stronger priority on

1 COM/2013/0175 final.

linking decentralised RE production with regional and local development. The time is ripe for introducing a strong, stable and consistent set of supporting structures for civic renewable energy to move Europe toward the low carbon economy.

1.1.4 An enormous potential that is largely untapped

The study revealed that, five years after the adoption of the Renewable Energy Directive, national policy documents contain hardly any reference to a consistent strategy aimed at supporting decentralised renewable energy production to the benefit of local communities. The study team could not find in any of the visited Member States a consistently implemented government strategy aimed at promoting civic energy. Quite the opposite: policy instability and recent reforms of the regulatory frameworks for renewables in all studied countries have resulted in uncertainty, reluctance to make new investments and concerns among stakeholders about the future of civic energy.

1.2 **Key recommendations**

1.2.1 Create a level playing field for renewable energy

As pointed out in the Commission's RED Progress Report 2013[2], support for the deployment of renewable energy will continue to be needed for as long as there is no open, competition-oriented internal energy market in the EU to put an end to market failures and to internalise the health, environmental and social costs of fossil fuel use. Governments should also work toward phasing out harmful and inefficient fossil fuel subsidies "that encourage wasteful consumption and undermine sustainable development", in line with the commitment reaffirmed in the Rio+20 Outcome Document "The Future We Want". Carbon pricing is just one possibility of internalising external costs by raising the relative cost of technologies based on fossil fuels.

1.2.2 Make decentralised, civic renewable energy a policy priority

A new energy policy cannot be implemented without the support of the citizens; but with their support, policy goals can be achieved faster than many would imagine. The EESC recommends that local, national and EU policy-makers make civic ownership of renewable energy production an explicit priority. The next Renewable Energy Progress Report of the European Commission, due in 2015, should look behind the bare figures and assess the extent to which bureaucratic hurdles have been removed, and market access for new, smaller players has been developed.

1.2.3 Establish stable policy frameworks to support civic renewable energy:

- Administrative procedures for civic energy should be made simple, fast and affordable.
- Costs and waiting times for the connection of civic energy projects to the grid must be reasonable and system operators should face penalties in case of non-compliance;
- One-stop shops should offer guidance to small investors from the feasibility/planning stage through to deployment;
- Electricity from renewable sources should be granted feed-in priority over fossil and nuclear power;

2 COM(2013) 175 final.

- Civic renewable energy should be exempt from procedures creating disproportionate burden, costs and insecurity, such as direct marketing obligations;
- Feed-in tariffs should be the main form of support for civic renewable energy. It provides a simple and reliable way for producers to calculate exactly their investments and returns. The investment certainty increases the chances for small developers to obtain the necessary credits. FiT can and should be constantly fine-tuned to decreasing investment costs.
- In order to address supply fluctuations and their dramatic effect on peak electricity prices, the system of FiTs could be complemented by energy management mechanisms to deal with fluctuations, e.g. net metering (see below), smart grids and the development of storage capacity.
- Member States should be very cautious about using tenders for RE, since complex and expensive procedures place a disproportionate burden on small-scale producers and may effectively exclude civil energy from RE support. Giving large centralised producers an advantage and reducing competition could increase consumer prices. Furthermore, tenders would not function where the energy market does not exist. The Guidelines on State aid for environmental protection and energy 2014-2020 should be clarified in this sense.
- Producers of civic energy should be entitled to net-metering and support for power production;
- EU Structural and Cohesion Funds as well as national budgets should earmark the funds needed to ensure that progress of renewables and of decentralised energy generation is not slowed down due to grid limitations.

1.2.4 Empower active civil society dialogue on energy policy

- Renewable energy policy should be designed and implemented in continuous dialogue with civil society stakeholders in order to develop a common understanding, shared goals, support for implementation, as well as a culture of cooperation and mutual trust. The EESC's European Energy Dialogue should be instrumental in this respect.
- Civil society should be empowered to participate in the development of the Member State climate and energy action plans, and in the monitoring and review of their implementation.
- Strategies, funding programmes and support measures at the EU, national, regional and local levels should be monitored and reviewed with the active involvement of civil society, in order to ensure that they contribute, and do not harm, civic energy. In particular, the introduction of disputed measures such as direct marketing requirements or tenders for renewable energy generation should be closely observed, in order to identify and quickly correct possible adverse impacts on civic energy.

1.2.5 Launch a transparent dialogue on energy prices, costs and benefits

As debates on energy policy are often dominated by short-term price concerns, a transparent public debate needs to be launched on energy costs and prices. RE have very low external costs: a major difference to conventional energies, which transfer significant health and environmental costs to present society as well as to the next generations. Clear and comprehensive information should be made publicly available to create the full picture of costs and benefits associated with subsidies to renewables, to fossil fuels and to nuclear energy; including the external costs of human health and environmental quality as well as the benefits arising from avoided imports and from energy security.

As pointed out in the Commission's RED Progress Report 2013[3], even though the costs of renewable technologies are in constant decrease, financial, legal and administrative policy measures are still needed to support the deployment of renewable energy for as long as there is no open, competition-oriented internal energy market in the EU to put an end to market failures and to internalise external costs.

1.2.6 Address the social consequences of the energy transition

While the net impact of the energy transition on jobs and incomes is expected to be positive, some conventional energy sectors are experiencing market and job losses (which are not necessarily related to the rise of renewable energy). Governments should take responsibility for managing the socio-economic impacts from the transition to a low-carbon economy, to the ultimate benefit of the entire society. National social transition strategies must be closely integrated with the renewable energy deployment in order to ensure a smooth transition, provide the new job skills needed and address in a targeted way any negative social impacts on jobs and socially weak households. Governments must ensure that the costs of support to civic renewable energy are spread through society in a just way.

2. Introduction

European Union (EU) policy-makers have jointly set a clear political goal: CO_2 emissions are to be reduced by 80-95% by 2050. Europe will be transformed into a resource-efficient and climate-friendly low carbon economy. This agenda is not solely driven by climate change concerns. A revolution in energy policy is needed to deal with the challenges related to the finite nature of fossil fuels, as well as to put an end to Europe's dependency on energy imports from politically unstable regions. Energy systems need to be developed in a way that will ensure clean, secure and affordable energy for the consumers of today, as well as for the next generations. Energy production planning must factor in social, environmental and health externalities and take into account impacts on the future generations.

Renewable energy (RE) has a central role to play in this transition. The 2009 EU Renewable Energy Directive (RED)[4] was conceived to promote the production of RE and to increase security of supply. It requires that each Member State (MS) achieves by 2020 a certain share of RE sources in its final energy consumption, thereby contributing to an overall EU objective of 20% share of renewables. The EU 2030 Climate and energy framework sets a further increase of this share to at least 27% by 2030. The European Economic and Social Committee (EESC) supports this target[5] but demands that national RE targets be set at Member State level which would enable the Commission to impose action and ensure that Member States deliver towards the common objective.

In his mission letter to the new Energy Commissioner, Commission President Juncker wrote: "We also need to strengthen the share of renewable energies on our continent. This is not only a matter of

3 COM(2013) 175 final.

4 Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

5 EESC Opinion on A policy framework for climate and energy 2020-2030 (NAT/636).

responsible climate policy. It is, at the same time, an industrial policy imperative if we still want to have affordable energy at our disposal in the medium term. I strongly believe in the potential of 'Green Growth' and I want the EU to become the world number one in renewable energies."

The EESC has acknowledged the technical, economic and social challenges associated with the transition to a resource-efficient, low-carbon economy. Concerns have been voiced about the distribution of the costs and benefits of the transition, about integrating dispersed and fluctuating energy sources into the supply system, about new infrastructure and local opposition to certain types of renewable energy infrastructure. Good work is being done towards resolving these challenges. The costs of renewable energy technologies have been falling thanks to technological development and market deployment; and progress is being made in developing smart grids and other solutions to manage fluctuating supply and demand.

The EESC embarked on the present study, well aware of the fact that the design and implementation of renewable energy policies is about market structures and socio-economic aspects at least as much as it is about technical and technological questions. The study therefore does not aim to analyse the technical challenges, which are subject to other ongoing debates. Instead, it looks into the much less explored topic of **the role that civil society is playing, or could and should be playing**, in this major transformation process.

Is civil society's role confined to observing and accepting new policies and projects? Are civil society actors consulted and if yes, with or without consequence? Or is civil society fully integrated and enabled to play an active, perhaps even a principal role in a new, more decentralised system of renewable energy production? Finally, what are the success factors and the challenges in this regard?

So far, civil society has only been peripherally involved in energy production. The energy sector has been highly centralised and the roles have been clearly divided. Traditional - and still mainstream - energy production has occurred in few large central units, most of them fossil or nuclear power plants. A very small number of large energy companies have dominated the market, for example: four in Germany, six in the UK, and one in France. Citizens, businesses and industry have been passive consumers paying for energy products.

The development of low carbon energy will bring about fundamental changes in the energy sector. Renewables are by their nature more decentralised because they tap resources that are often locally available and impossible or too expensive to transport. Energy and electricity production will take place in the immediate living environment of people, meaning that energy infrastructure will be much more visible in the landscape.

Policy needs acceptance to be successful. This has been true for earlier energy policies, and is probably even more valid for future ones. It is not only the overall EU climate policy that needs civil society support: every single project, every wind, solar or biogas facility needs the acceptance of local people. Projects are more likely to find acceptance when the affected people recognise the benefits from the changes in their living environment; and even more so if they directly benefit from these changes.

From the perspective of global climate change, it does not matter who owns or operates a wind turbine. From the perspective of policy acceptance, this can be crucial. The implementation of the RED – and indeed, of climate policy – is therefore closely linked to the question of **who is given preferential access and opportunity to produce and gain from RE**: external investors who use a region's local resources to their business interest, or local people who can tap into their own sun, biomass and wind resources, and generate not only energy but also new regional value, opportunities and jobs. This is not to suggest that the transition to RE can or should be carried out by small producers alone. Rather, private individuals and communities must be empowered to compete with large investors in order to derive local value and play their important part in the energy transition.

The RED recognises the opportunities for growth and employment that regional and local production of energy from renewable sources brings about. It calls on the MS to support national and regional development measures and to promote the use of structural funding in this area, even if it does not explicitly acknowledge or support community-led renewable energy development.

The SDO study investigated experience with this kind of schemes in six Member States. This report presents the EESC study findings and puts forward recommendations to the EU institutions and national policy-makers aimed at improving the regulatory conditions for decentralised RE production by, and for the benefit of, local communities and civil society.

The report is accompanied by national reports containing additional information about each of the six Member States visited in the course of the study.

3. The study approach

3.1 Objectives

The study aims to answer two specific questions:

- What is the level of involvement of civil society in the implementation of the RED? Does civil society only act as an informed observer? Is it consulted in decision-making processes? Or is it directly involved in energy production, thus both contributing to, and benefiting from, the transition to a low carbon economy?

- To what extent do national and regional regulatory frameworks (political, administrative, financial and technical arrangements) support the production of RE by civil society?

In order to respond to these questions, the study tried to **identify strategies and concrete measures** at different levels of governance that empower civic RE production and link it to local community benefits, highlighting good examples and putting forward policy recommendations.

In this report, we use the term **civic renewable energy** to refer to decentralised renewable energy generation owned (at least 50%) or operated by citizens, local initiatives, communities, local authorities, charities, NGOs, farmers, cooperatives or SMEs, creating a stream of local value that can

stay within the region. Not all RE projects bring value to local communities. The definition would not include e.g. wind parks belonging to large corporations, the added value of which escapes the local communities.

3.2 **Methodology**

The study was based on the collection and analysis of different information sources and above all, on feedback received from a wide range of stakeholders during missions to selected Member States. The following actions were carried out:

- Desk research of literature, statistical data and national policies documents;
- Interviews with key EU level stakeholders;
- Online questionnaire open to authorities and stakeholders covering different aspects of the national administrative, technical and financial policy frameworks for RE;
- Missions to six selected Member States, which included workshops and hearings with authorities and stakeholders, as well as visits to local renewable projects. These six countries were selected so as to (a) include a balanced geographical representation of the EU, (b) provide examples of "new" and "old" Member States, and (c) represent different starting points and levels of implementation of the RED.
  The missions took place on the following dates:
  - Germany: 11 to 13 March 2014;
  - Poland: 7 to 9 April 2014;
  - France: 23 to 24 April 2014;
  - United Kingdom: 5 to 7 May 2014;
  - Lithuania: 13 to 15 May 2014;
  - Bulgaria: 14 to 16 July 2014.

It is worth noting that in all of the visited countries, around the time of the study visits, RE policy frameworks and measures were undergoing significant reforms. Thus, the team had the opportunity to draw on heated national debates on these reforms' potential impacts on civic energy. Reports on each of these missions are appended to this report.

Given the focus on civil society, the study looked into RE sources in which small producers and local communities are typically involved: solar (photovoltaic and thermal collectors), wind, biomass, biogas, and micro-hydropower generation.

4. Progress in renewable energy in the EU: a snapshot

The EU economy is still heavily dependent on fossil fuels and on fuel imports but the share of renewables in gross final energy consumption has been rising steadily. It reached 14.1% in 2012[6], still in line with the RED target of 20% share of renewables in EU gross final energy consumption by 2020. However, progress has been varying widely across the EU, and it slowed down in 2014. If this trend continues, the EU may fall short of its 20% target.

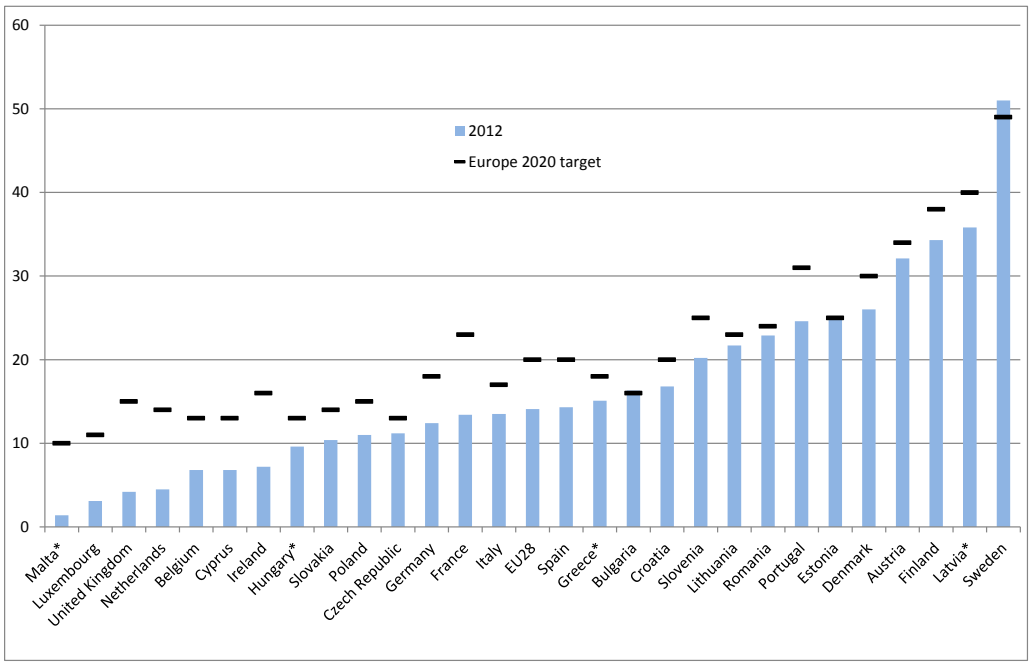

Figure 1: Share of energy from renewable sources per Member State (% of gross final energy consumption)
Source: EUROSTAT news release, STAT/ 14/ 37, 10.3.2014

According to Eurostat data (2012) renewable energy production in the EU relies mostly on biomass (46%) and hydropower (16%) but new types of renewables such as **solar photovoltaic** (PV) and **wind** are gaining ground and bringing new possibilities for the involvement of civil society.

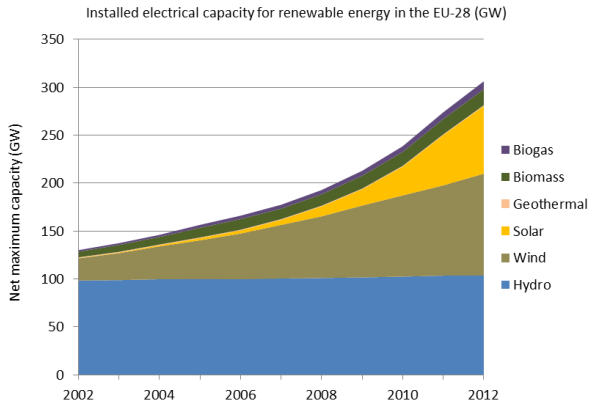

Figure 2: Installed electrical capacity for renewable energy in the EU-28.

6 Eurostat (2014).

Source: based on Eurostat data

The final consumption of **electricity from renewable sources** (RES-E) reached 23.5% in 2012. This success is partly explained by the spectacular growth in the PV sector (which represented 23% of the installed capacities of RES-E in the EU by 2012) and in the wind sector (which represented 35% of installed RES-E capacity).

Progress on renewables in the heating and cooling energy sector (RES-H&C) has been much slower: 15.6% in 2012. Biomass accounts for 15% of heat production and 87% of RES H&C. Biogas lags behind with only 3% of RES‑H&C. Biomass is often used to produce heat in combined heat and power plants (CHP), but a large part of it is burned in inefficient equipment. Wood biomass is still widely used in Eastern Europe, including large imports from Russia (in the case of Poland). The energy produced is accounted as renewable energy and producers obtain *green certificates*, although in effect it brings no benefit for emissions reduction and sometimes contributes to deforestation. Furthermore, most CHP plants co-fire a mixture of coal and biomass, making the reported share of renewables difficult to monitor: an issue raised by stakeholders in Poland, Lithuania and Bulgaria. In Poland, 70-75% of all green certificates went to coal-powered electricity plants in the period between 2007 and 2011, increasing their profits and at the same time reducing the price of green certificates. This reduction, in turn, hit hardly wind energy facilities and made them economically unviable.

It is important to note that the political and societal debate on renewable energy until now has focused primarily on the production of electricity, while heat generation has had a less prominent role. This priority needs to be reconsidered because energy use is significantly higher in the heating than in the electricity sector. Furthermore, a combination of renewable electricity production with heat production could be an excellent opportunity to gain urgently needed storage capacities (power to heat), which could be tapped into over and again in the context of fluctuating renewable energy production.

5. The case for civil society involvement and for civic renewable energy

During the study visits, the EESC was given ample evidence of the importance of civic renewable energy: from obtaining the necessary short- and mid-term acceptance for new production facilities, to mobilising the funds for the transition, achieving long-term self-sufficiency, deriving regional value and local development, and putting an end to traditional monopolies in the energy sector. This does not suggest that the transition to renewable energy should, or can be carried out by civil society alone. Rather, it is important to ensure that regulatory frameworks create a level playing field that enables civil society to compete with large centralised investors and to play its important role in the energy transition.

5.1 Civil society demands an active role

The EESC study visits to the six EU Member States, as well as the debates with civil society organisations in Brussels, delivered some unexpected results. The study team witnessed a very open

civil society[7] with stakeholders who not only supported renewable energy but also clearly recognised an opportunity for themselves in the energy transition. Remarkably, the discussions with these stakeholders were dominated by socio-economic considerations and were focused on community benefits, rather than on climate change mitigation objectives.

In the different Member States, the team met civil society representatives with very differing levels of confidence. In Germany, stakeholders declared: "we do not just support the energy transition; we ARE the energy transition. The *Energiewende* was not brought about by politicians or the large energy companies; it was us who made it happen. With our pressure, the framework conditions were established that made the transition possible." In Poland, Lithuania and Bulgaria, on the other hand, the strong interest in civic renewable energy was offset by extreme frustration with the administrative and financial barriers to participation in policy processes and in energy production. Instead of recognising the value and potential of the new climate and energy policy, governmental representatives in these three countries seemed to see predominantly threats and difficulties related to civic RE. On the one hand, they raised doubts about the capacity of RE to cover significant parts of electricity needs (an argument often used in the early stages of the energy transition) and, on the other, they expressed concerns about the high rate of deployment of RE.

On the part of civil society, there was a clear and consistent response to the key question of the study: civil society wants to actively participate in the production of renewable energy. As summarised by a participant in the debate in Poland: "We do not want to watch others take advantage of the sun and wind of our region. We want to use our resources for our own benefit." Finally, the team identified an enormous desire for information, for best practice examples and success models, as well as for lessons learned, in order to avoid repeating the mistakes made by others.

5.2 **Civic energy increases local acceptance of renewable energy infrastructure**

A successful energy transition requires a high level of acceptance by civil society. During the EESC missions, stakeholders referred to cases of local opposition to RE infrastructure, particularly against wind parks. These are typically cases when renewable energy infrastructure has been put in place by external investors, with little benefit or compensation to local communities. On the contrary, where citizens and local entrepreneurs have been involved in a RE project, they were much more likely to appreciate its benefits and to accept possible inconveniences of aesthetic or other nature. An excellent example of the importance of local involvement was provided during an EESC debate on community renewable energy in November 2013[8]. The Samsø Region in Denmark now covers all its energy needs from renewable sources, mostly due to citizen involvement through community-run projects. As part of an effort to maintain public support and involvement in the renewables sector, wind developers are required to sell shares to local citizens.

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7 These included representatives of small businesses, the academia, environmental NGOs, community groups, cooperatives, local and regional authorities.

8 "Local renewable energy initiatives: positive examples, success factors and the role of civil society", held in November 2013. http://www.eesc.europa.eu/?i=portal.en.events-and-activities-local-renewable-energy.

Last but not least, civic renewable energy raises awareness, empowers and motivates citizens to express their voices and to have a say in policy-making. The process strengthens democracy and the legitimacy of political decisions. It can contribute to improving dialogue and building trust and cooperation between the institutions and civil society.

5.3 **Civic energy unlocks funds needed for the renewable energy transition**

It is beyond doubt that the deployment of renewable energy and the infrastructure associated with it will require significant financial means[9]. It is recognised that the majority of funds will have to originate from the private sector. Well-designed support schemes have been able to unlock and leverage an incommensurable amount of investments by citizens, communities and local entrepreneurs. The potential for civic investment in the energy transition is only partially realised, with big differences between the EU MS. Denmark and Germany are probably the best examples of the transition being largely carried out by civil society.

In Germany, civic renewable energy investments amounted to EUR 5.14 billion in 2012, whereas traditional large energy suppliers invested only EUR 1.7 billion in RE in the same year. The current installed PV capacity in Germany is more than 30 000 MW and it is increasing at a rate of 7 MW per day (which is equal to the total currently installed PV capacity in Poland). Almost half of the capacity lies in the hands of more than 1 000 energy cooperatives, citizens and farmers.:

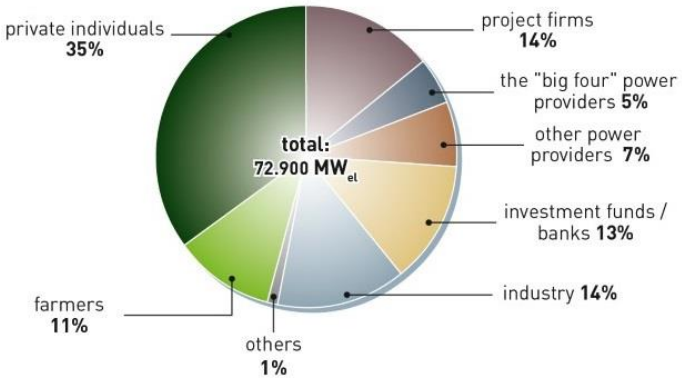

Figure 3: Ownership distribution of installed RE capacity for power production in Germany (2012).
Source: Blog "German Energy Transition" (2014)

In the earlier stages of the *Energiewende*, the high investment costs and correspondingly high feed-in tariffs for solar power production created incentives for private citizens to feed produced solar electricity into the grid. There has been a definite change in this area. The dramatic technological developments and corresponding reduction of investment costs have made it more profitable for small producers to use their electricity themselves, thus reducing the amounts of electricity bought from the

9 This certainly does not concern renewable energy alone. The European Commission's 2030 Climate and Energy Package states that "the costs of a low carbon transition do not differ substantially from the costs that will be incurred in any event because of the need to renew an aging energy system, rising fossil fuel prices and adherence to existing climate and energy policies. There will, however, be a major shift away from expenditure on fuels towards innovative equipment with high added value that will stimulate investments for innovative products and services, create jobs and growth and improve the Union's trade balance".

grid. This, in turn, has promoted efforts to optimise own energy consumption so that it takes place predominantly during own production peaks and reduces e.g. energy use peaks in the late afternoon or early evenings.

Decentralised renewable energy means that production typically takes place closer to the consumer, with significant potential for reducing grid infrastructure costs. Further to this, the EESC study found that small scale producers have significantly lower profit margin expectations compared to large scale producers.

5.4 Civic renewable energy promotes community development and fights energy poverty

Renewable energy harnesses resources that are locally available. When the right regulatory frameworks are in place, energy production by citizens and local communities creates a new stream of value that can stay within the region. Some RE communities are able to keep immense financial resources that used to be spent on energy and fossil fuel imports, and are now invested in new local jobs and socio-economic development.

One such example is the community of Treuenbrietzen in Germany, which established, together with its citizens, its own sun, wind and biogas facilities. The biogas facility produces both electricity and heat, distributed via the community's new, self-installed heating grid. Additional heating needs are partly covered by a woodchip furnace. In addition, the community has established a separate electricity grid and is in the process of building its own energy storage capacities in order to become energy independent. Local electricity prices amount to 16.6 ¢/kWh which is 30-35% below the average electricity prices in Germany. Heat is delivered to consumers at the price of 7.5 ¢/kWh, far below the domestic gas or oil heating costs. Treuenbrietzen is evidence of the fact that local RE can in fact save money.

Civic renewable energy initiatives promote cooperation among different local players, as demonstrated by the explosive growth in energy cooperatives in across the EU (Figure 4).

REScoops	total
Germany	800
Denmark	657
Austria	390
Netherlands	110
Sweden	108
Finland	79
Italy (ZEV)	74
France	60
UK	45
Spain	26
Belgium	22
Ireland	10
Portugal	6
Croatia	4
Greece	4
Luxemburg	2
Eastern Europe	0
Total Europe	2397

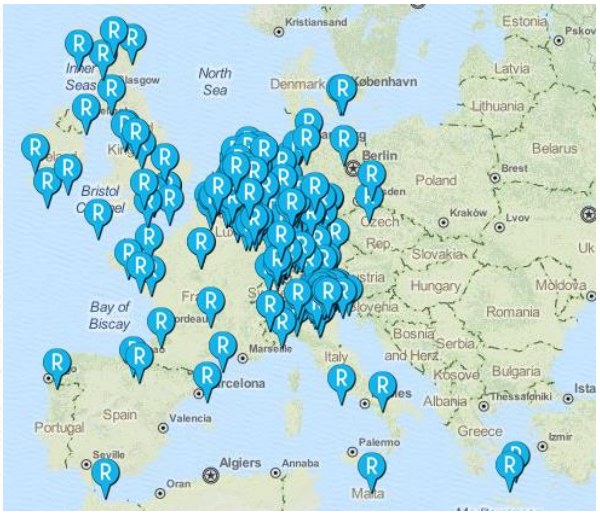

Figure 4: Provisional figures and map of registered community energy cooperatives.
Source: REScoop project (2014)

Local RE initiatives are also associated with innovative business models, social enterprise development and increased cooperation. The study team witnessed a wealth of business and social innovation in local communities. The biogas facility cooperating with several farms, for example, decreased the business risk and secured raw materials, while simultaneously solving the environmental problem of manure. In Bulgaria, home-owners in an apartment building formed a cooperative and invested the rent paid by a GSM operator for placing an antenna on the house roof, into solar thermal panels for the entire building. Another example of creative problem solving was a German energy cooperative which built a roof of solar panels over the stands of the local football stadium, and re-paid its members using the incomes from the energy sold, as well as by providing them with annual tickets to the team's games. In Wales, the team visited a local renewable energy initiative in the Talybont-on-Usk community which provided heating for the local school, as well as two electric cars powered by PV on the municipal building roof, for the use of local inhabitants.

In Poland's rural areas, poor grid quality results in frequent blackouts, reduced voltage levels and associated problems. Stakeholders consulted during the EESC mission presented estimates that developing local renewable energy in these territories would be in fact cheaper than the 30-60 billion PLN[10] required until 2020 to entirely renovate the long-distance electricity grid. In its 2020 Regional Development Strategy, the Podlaskie Region in Poland recognises RE as an opportunity to strengthen the region's economy. It refers to the fact that more than 5 billion PLN[11] annually flow out of the region for energy imports. As electricity and heat can already be produced locally from RES at lower costs, the Regional Strategy puts a "focus on developing a local decentralised energy system and fostering a local RE revolution, with people as the owners of energy and heat producing installations." It explicitly states that investments should be primarily in local citizens' hands in order to prevent the loss of value for the region.

5.5 **Civic renewable energy production is a net creator of jobs and economic growth**

The growth in renewables brings about new jobs along its value chain. This job generation effect is particularly high in the sectors of energy efficiency (0.38 job-years/GWh), PV (0.87), biofuels (0.21) and wind (0.17) when compared to coal and gas (0.11). Another interesting aspect is that most of the jobs in the RE market are for highly qualified workers, and 5 out of 6 jobs are local. The EU must therefore ensure that knowledge and skills are developed to match the needs of this new labour market.

At the same time, even though the net outcome of renewables' expansion is positive, the energy transition will mean that some sectors (based on fossil fuels and in some countries, nuclear) – will face a loss of markets and jobs. Concerns were especially strong in those countries where these sectors employ a large number of people. National strategies must therefore be put in place to ensure a smooth transition, develop the new skills needed and address the social impacts of job losses in traditional energy sectors.

10 Ca EUR 7 billion.

11 Ca EUR 1 162 000 000.

6. The debate on renewable energy prices and costs

Public debates about energy policy are usually dominated by price concerns, and the costs of RE support were a recurring topic during the study. In some of the visited countries, RE support mechanisms have been attacked by policy-makers and the media as a reason for rising household energy prices. The economics of the RE business is essential to understand that public support is indeed still needed to attain the climate and energy targets and long term benefits, rather than leading to windfall profits in times when public budgets are under high scrutiny and pressure.

The question arises over which horizon society is trying to limit costs. A cheap solution in the short term could turn into an expensive solution in the long run, and vice-versa. This argument *per se* is sufficient to question those who consider renewables expensive and a burden to public budgets[12]. In reality, as is commonplace in the technology arena, larger volumes of production lead to constantly decreasing RE unit costs (the so called "**learning rate**"). Production costs for RE facilities depend primarily on investment costs. Until recently, RE technologies were more expensive than coal and nuclear. The reason was that these technologies were very immature: technological development took place back-to-back with market introduction. In 2008 in Germany, the FiT for PV were 46 ct/KWh, corresponding to higher productions costs at that time; today, they are maximum 12.8 ct/KWh for small facilities up to 10 kW (and much lower for larger installations) corresponding to the continuous costs of the technology.

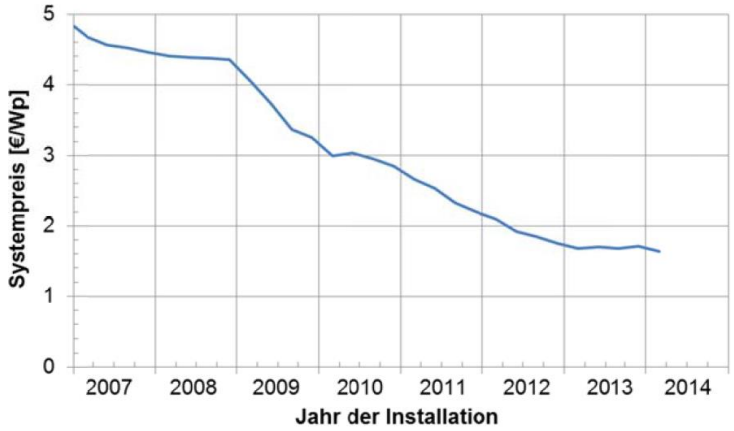

Abbildung 3: Durchschnittlicher Endkundenpreis (Systempreis, netto) für fertig installierte Aufdachanlagen bis 10 kW_p, Daten aus [BSW]

Figure 5: Average consumer price (net system price) for ready installed roof PV facilities of up to 10 kWp.
Source: BSW

12 This is the right place to point out that fossil fuel producers have received 523 billion $ in subsidies in 2011 alone.

Little by little, RE technologies are reaching price levels that can compete with coal, gas and nuclear[13]. On-shore wind can already compete – even though the external environmental and health costs of fossil and nuclear are not fully reflected in retail prices. It can be expected that technological developments will continue to drive RE investment costs down. At the same time, sun and wind are renewable resources which come at no cost. It is therefore likely that renewable electricity will soon be competitive even without subsidies. This trend has been confirmed by the European Commission, which pointed out in its Communication on the Climate and Energy Framework 2020-2030[14] that "the costs of a low carbon transition do not differ substantially from the costs that will be incurred in any event because of the need to renew an aging energy system, rising fossil fuel prices and adherence to existing climate and energy policies. There will, however, be a major shift away from expenditure on fuels towards innovative equipment with high added value that will stimulate investments for innovative products and services, create jobs and growth and improve the Union's trade balance...".

Decentralised renewable energy means that production typically takes place closer to the consumer, with significant potential for reducing grid infrastructure costs. Further to this, the EESC study found that small scale producers have significantly lower profit margin expectations than those typical for large scale producers.

What is more, many of the benefits of renewable energy, making it a priority for support, go far beyond economic figures. RE contributes to mitigating climate change, creating jobs and local sustainable livelihoods, increasing energy security, reducing dependency on imports from unstable regions and achieving a more favourable trade balance for the EU due to a lower reliance on fossil fuels. Policies that ignore these long-term effects and the numerous co-benefits of RE can lead to detrimental future energy mixes. It would be detrimental to stop this encouraging development in its tracks by overturning support policies just as they are starting to bear fruit.

While the net impact of the energy transition on jobs and household incomes is expected to be positive, some conventional energy producers are already experiencing market losses with implications for jobs in these sectors. This issue should be addressed urgently and proactively. **National strategies** must be put in place and closely coordinated with the renewable energy deployment policy in order to ensure a smooth and fair transition, provide the new job skills needed and address in a targeted way any negative social impacts on jobs and socially weak households. The true problem of energy poverty should be addressed through concrete and targeted measures, but not used as an argument for maintaining energy prices artificially low (e.g. in Bulgaria). The true problem of jobs loss in conventional sectors (some of which is not necessarily related to the rise of renewable energy) should not be used as an argument to stall progress in decentralised renewable energies (e.g. in Poland). Governments should take responsibility for managing the socio-economic impacts from the transition to a low-carbon economy to the ultimate benefit of all sectors of society.

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13 Some of the interviewed stakeholders pointed to the debate (which was still ongoing at the time of the study visits) on the two nuclear reactors in the UK, Hinkley Point C. In the meantime, the EC has approved the subsidies that were under discussion. The future operator, EDF, will receive over the next 35 years 10.9 ¢ for every kWh of produced electricity, adjusted to annual inflation rates. This tariff significantly exceeds the time span and the level of the German FiT for wind energy.

14 COM(2014) 15 final.

7. What preconditions are needed to unfold the potential of civic energy?

7.1 A level playing field

As pointed out in the Commission's RED Progress Report 2013[15], even though the costs of renewable technologies are in constant decrease, financial, legal and administrative policy measures are needed to support the deployment of renewable energy for as long as there is no open, competition-oriented internal energy market in the EU to put an end to market failures and to internalise the health, environmental and social costs of fossil fuel use. Carbon pricing is one possibility of internalising external costs. It raises the relative cost of technologies based on fossil fuels. Revenues obtained from the sale of allowances can be recycled or allocated to RE support funds.

7.2 A stable and coherent policy framework

Policy coherence and stability is a key factor for any investment, including in RE, as was emphasised by stakeholders during ***all*** case study visits. Stable and streamlined policies enable investors to plan, address risks and get access to credit.

For example, the German Renewable Energy Act (EEG) with its central instruments of easy grid access, priority for RES, marketing by the grid operator and guaranteed FiT for 20 years, provided excellent investment security and enabled civic energy to develop much faster than anyone could have imagined.

Changing this stable foundation may have detrimental consequences, beginning with the uncertainty for the small investor that they would obtain financial support after the planning phase (e.g. due to the introduction of an annual cap on new installations). However, radical policy reforms were under discussion[16] at or close to the times of the visits to Germany, Poland and France, and in the UK. In Bulgaria, small producers pointed to contradictory laws and a Government decision to discontinue the deployment of RE since 2013, after announcing that the 2020 target had been achieved. A completely unacceptable practice is the retrospective change of framework conditions after the start of the RE operations, e.g. in Bulgaria, where investors in small-scale PV and wind facilities have faced insolvency due to the introduction of new taxes and fees on RE. Although the 20% tax on wind and solar electricity introduced in January 2014 was cancelled by the Bulgarian Supreme Court in July 2014, operators did not get back the payments they had already made during that period. A moratorium to PV support schemes in France in 2010 also led investments to all but a complete stall.

15 COM(2013) 175 final.

16 In some cases, like in Germany and Poland, they have already entered in force.

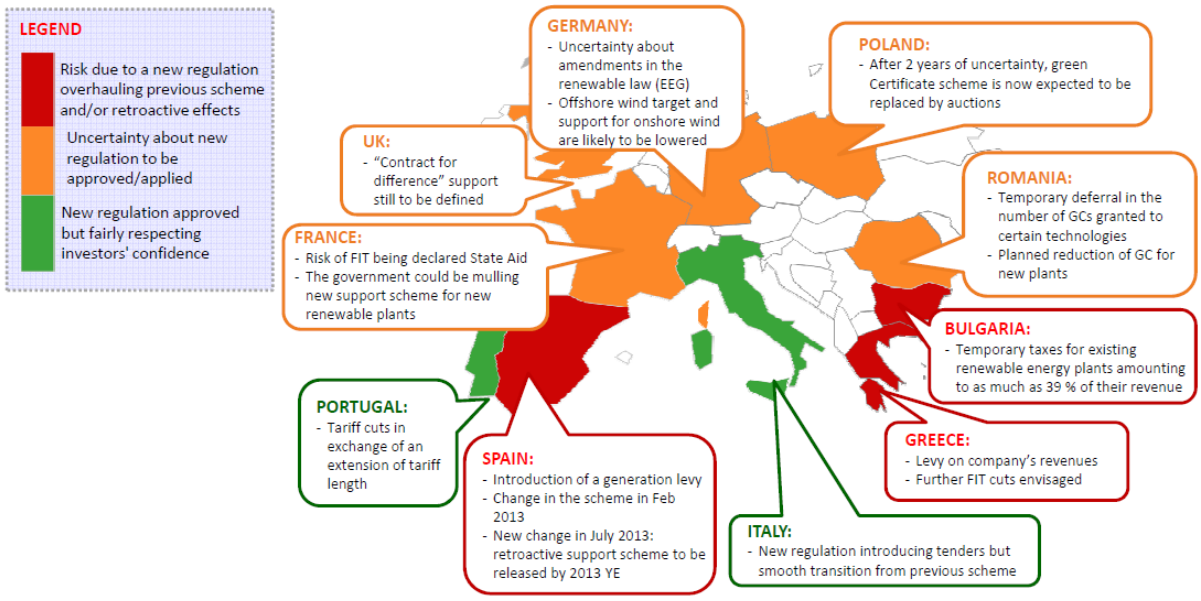

Figure 6: Uncertainty in renewables' policies across the EU.
Source: EDP Renováveis (2013)

Not only is legal uncertainty a destabilising factor for investments but recent policy reforms show a clear trend of reducing support for small producers and putting them at a disadvantage to large producers (e.g. through the introduction of auctions for RE production). Debates in all of the visited countries revealed that civic RE producers associated this trend with the Commission's Guidelines on State aid for environmental protection and energy 2014-2020[17]. These guidelines put significant limitations on Member States' decision to guarantee feed-in tariffs to RE investments after 2016. Participants in local hearings acknowledged the need to avoid overcompensation and develop RE in a cost-effective way. Yet, they referred to recent reforms of renewables support frameworks as "a race to the bottom." Some pointed to an EU-driven trend to re-centralisation, hidden behind the arguments of cost-effectiveness or costs reduction.

According to the International Energy Agency[18], "just when renewables are becoming a cost-competitive option in an increasing number of cases, policy uncertainty is rising in some key OECD markets." The chilling effect of changing regulatory frameworks is already being felt in 2014, and the EU is at risk of missing its 2020 target of 20% renewables in gross final consumption.

7.3 A transparent and inclusive policy formulation process

Next to policy stability, **the democratic process of policy formulation** and reform is a key issue that emerged in the course of the EESC study. As advocated by the EESC in its European Energy Dialogue initiative, for any policy to succeed and for its results to be sustainable, it should be developed in an open and transparent debate with civil society stakeholders at all levels. This is essential for creating a common understanding of the issues at hand, defining common goals and ensuring broad support for

17 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0628%2801%29.

18 Medium-Term Renewable Energy Market Report 2014 -- Market Analysis and Forecasts to 2020, International Energy Agency.

implementation. While the German and Danish energy transition have been bottom-up processes in which policy decisions were the result of public pressure, and policies were largely implemented by civil society, in other countries studied (Bulgaria, Poland) the team could find neither true dialogue nor trust between the authorities and civic energy producers.

7.4 Simple and transparent administrative procedures

Small producers are not necessarily energy experts and therefore need access to support and guidance, and administrative procedures that are simple, transparent and completed within reasonable timeframes. There were very large differences among the studied Member States in the procedures and the time needed for the approval of small RE installations, and these differences correlated with the rates of deployment of civic energy. For example, while the approval of a rooftop solar panel in Germany takes less than a working day and involves the submission of an online application form, in other countries such as Bulgaria, Lithuania, Poland and the UK (Wales), stakeholders described complicated procedures stretching over months – or even years. Navigating the complex, lengthy approval and planning system can be costly and risky for small producers, especially when the regulatory framework and FiTs undergo significant changes during the same period.

7.5 Support schemes adapted to the needs of decentralised civic renewable energy

➔ **Priority dispatching to the grid**

Renewable energy should enjoy **priority dispatching** to the grid over nuclear and fossil energy, meaning that it should be the first to be sold to electricity system operators. In Germany, this priority was established by the 2000 Renewable Energy Act, and maintained by the reformed law of 2014.

➔ **Feed-in tariffs (FiT)**

By far the most common support mechanism for RE are feed-in-tariffs (FiT), which offer long-term (10-25 years) purchase agreements for the supply of RE into the grid, which is sold on the market by the grid operator. The producer receives the fixed FiT and is freed of direct marketing requirement.

FiT should be maintained as the main support mechanism for civic RE projects. It provides a simple and reliable way for producers to calculate exactly their investments and returns. The investment certainty it creates increases the chances of small developers to obtain the necessary credits.

In the case of the German *Energiewende*, feed-in-tariffs (FiT) have been financed via the so called Renewable Energy Levy (EEG levy) which represents the difference between the electricity price at the stock exchange and the guaranteed FiT (which was >50 ¢/kWh for PV in the early days of the *Energiewende*, and is 12 ¢/kWh at the moment). During peak production of electricity, the stock exchange price goes down, pushing the EEG levy up. The crash of electricity prices is however not only due to overproduction of RE but also due to the failure of the ETS; to cheap electricity from coal plants (which does not internalise environmental and health costs to society); to the lack of a fully developed electricity market and of grid management and storage capacities.

As technological developments resulted in dramatic costs decreases for wind and PV, governments in some EU Member States did not react quickly enough to reduce the tariffs for new facilities. As a

result, a number of new RE facilities received long-term contracts with FiT significantly exceeding the investments made, and resulted in disproportionately high profits for these facilities. In fact, FiT can be easily and regularly fine-tuned to constantly decreasing investment costs. They have already been reduced and are subject to regular updates in most countries. However, energy prices - and unfairly, the image of RE and of FiTs - may be affected for years to come by this delayed regulatory reaction.

In order to address supply fluctuations and their dramatic effect on peak electricity prices, the system of FiTs could be complemented by energy management mechanisms to deal with fluctuations, e.g. net metering, smart grids and the development of storage capacity (see below).

➔ **Feed-in premiums**

Recent policy reforms have seen a major shift to **feed-in premiums**, which means that RE producers (above a certain installed capacity) will be required to sell their electricity directly on the energy market, and would receive a certain premium over the market price. The introduction of marketing premiums has been a cause of concern for civic energy producers. Direct marketing puts a new and significant logistical burden on small and medium-sized producers, and reduces their chances of obtaining project finance, since a feed-in premium is also less likely to be treated as a bankable revenue stream by a lender.

➔ **Net metering**

A significant opportunity to promote civic energy is **net metering**, which allows grid-connected producers to use their own power and sell any surplus to the grid. Net metering can enable prosumers to take from the grid at a later moment the exact quantity of electricity which they have fed into it, while paying only the grid costs. This, combined with energy management measures, could turn the public grid into an actual "virtual storage." Denmark implemented the system for PV in 1998 with considerable success. The Lithuanian Parliament, in turn, started debating in the beginning of 2014 its first legislative proposal.

➔ **Quota systems**

Another common support mechanism is the establishment of RE quota obligations. These systems are at different levels of implementation and work with varying success in different countries. In Poland, for example, energy distributors are obliged to buy "green certificates" from the market, even if most of these certificates originate from traditional coal plants where biomass (partly imported from Russia) is co-fired. The incomes from the Green Certificates were supposed to support the deployment of RE; however, the EESC study revealed that instead of achieving this, they indirectly made electricity from coal cheaper. Furthermore, the wide-scale use of biomass led to a dramatic reduction of the price of green certificates in Poland and thus of returns e.g. on investments in wind energy. The instrument of green certificates became completely ineffective, or even counter effective. A FiT is in this sense a more predictable instrument that offers better returns to producers, particularly in the case of cost-intensive technologies.

➔ **Investment support**

The mechanisms mentioned above reward production, but since most RE are highly capital-demanding, there are also several instruments addressing the investment barrier. Investors in facilities of small and medium capacity are typically given the possibility to choose between receiving a FiT and obtaining one-off investment support to reduce the initial costs. These schemes can be of

particular interest in the regions receiving structural funds. They should be carefully adjusted and managed to avoid excessive profits, inefficiencies leading to unnecessarily high energy prices and to sub-optimal energy mixes, or possible flow of support funds from civic energy to hedge funds.

Box 1: The example of the German Energy Transition *(Energiewende)*.
In the first half of 2014, over 30% of the electricity consumed in Germany came from renewable sources. The tremendous growth of RE in Germany has been largely due to the German Renewable Energy Act which came into force in 2000. The act did not explicitly aim at promoting civic energy but it established the framework conditions that enabled civil society to become an active producer of RE. The act provided for:

- Simple planning and approval procedures for investors (no administrative barriers)
- Easy access to the grid
- Priority grid dispatching for RE over nuclear and fossil
- 20-year fixed feed-in tariffs
- Electricity marketing by the grid operator
- Investment support by means of preferential credits for RE facilities from the state Credit Facility for Reconstruction (KfW)
- Covering of the costs arising from the act by means of the Renewable Energy Act Levy on electricity prices. Especially energy intensive industries could be exempt from this levy in order not to damage their international competitiveness.

In the countries visited by the EESC, a very complex picture of tariffs, quotas, grants and subsidies emerged. Such complexity is justified in part by the need to differentiate support schemes, but it should be kept to a minimum:

- Differentiation by fuel or technology stimulates the development of technologies with different costs that cannot directly compete with each other, thereby leading to faster learning rates. It can also address specificities of the cost structure;
- Differentiation by power class avoids excessive profits resulting from economies of scale, and can also be used to stimulate civic energy, which is usually associated with low power capacities;
- Differentiation by energy carrier (e.g. electricity vs. heat) enables the attainment of specific targets for each. Contrasting to the electricity sector, where FiTs are usually paid for more than 10 years, renewable heat production is mostly stimulated via loans and grants that help to cover investment costs. The French *fonds chaleur* is a good example in this respect. Beginning in 2015, Lithuania will also enact RES-H&C obligations for all new buildings and for existing buildings subject to major renovations.

7.6 Addressing barriers to civic renewable energy

➔ **A cautious approach to tenders**

Recent reforms of RE support frameworks introduced tenders in several of the countries studied as the main procedure for attributing FiTs or premiums for RE. Only very low production capacities will be

exempted from the auctioning process in the future. This trend is at least partly driven by the EC State Aid Guidelines for Energy and Environment.

Stakeholders in all visited countries raised concerns about complex and expensive tender procedures, which would also raise financing costs and reduce the chance of obtaining a credit due to higher investment risks (uncertainty about obtaining the support). This disproportionate financial burden on small-scale projects, combined with the fact that small producers could hardly deliver the quantities typically required in tenders, would effectively exclude civil society and local communities from enjoying the benefits of RE support. It could also destroy competition on the energy markets as only few large producers would have the capacity to participate in tenders.

Tenders favour large producers and thus support possible re-centralisation, taking RE production out of the hands of private individuals and communities. Giving large centralised producers an advantage could increase consumer prices due to large enterprises' higher profit margin expectations than those of civic energy producers. Furthermore, tenders would not function where the energy market does not exist. Experience shared in some of the visited countries (notably in the UK) suggests that tenders actually increase the overall costs and the risk of project delays and cancellation. Tendering was the first system of support for renewables in the UK, and it was abandoned in favour of a quota system, which was then replaced with FiT for projects under 5MW.

➔ **Not too rigid capping of renewable energy targets**

A number of EU Member States have put in place mechanisms to slow down the development of RE by reducing or discontinuing support as soon as their targets for the period have been achieved. Among the Member States visited during the study, Bulgaria was a particularly striking example: the government declared in 2013 that the national 2020 RE target of 16% had been achieved; since then, grid operators have used this as an argument to refuse connecting new renewable electricity producers to the grid. Lithuania capped public support to renewable electricity when it set quite unambitious targets for each of the main RE technologies. With the exception of hydropower, the capacities were reached in less than two years. As a result, Lithuania has today one of the most refined, yet non-operational, support schemes.

The need to make the growth of the renewable sector more predictable and to manage any related social and economic costs may be a valid argument for capping. It is however crucial that capping does not turn into an end to the Member States' ambition for energy transition, or into a way to block progress where it could and should have continued.

➔ **Removal of grid connection hurdles**

Low power capacities as those typical for civic energy are usually connected to the distribution network. Grid connection, either in terms of administrative procedures, waiting times or costs, remains an issue in many of the studied countries. Although the connection of a RE project to the grid must be granted according to the RED, the high costs often practiced by some operators effectively prevent this right from being enjoyed. The number of connection sites for a new project is often limited and civic energy producers may therefore not be able to connect at a reasonable price. Micro off-grids may circumvent this shortcoming and even be the right solution from a cost perspective for very remote

areas where the grid network is weak or absent. The German EEG law provides an excellent good practice example in grid connection[19].

➔ **Exemption from direct marketing**

Direct marketing puts a new and significant logistical burden on civic energy producers and reduces their chances of obtaining project finance, since a feed-in premium is also less likely to be treated as a bankable revenue stream by a lender.

7.7 Grid development and coordination to adjust to the needs of renewables

Legacy grid systems were designed in times of centralised energy production and unidirectional flows from large scale power generators at high voltage to consumers at lower voltage. Grids need to be adjusted to the characteristics of dispersed and fluctuating RE such as wind, solar, and tidal energy. Their deployment requires structural changes in the infrastructure combined with better coordination of electricity markets and power production, as well as energy management solutions to export or store surplus electricity. **Coordination among transmission system operators** (TSO) through regional coordination initiatives is becoming increasingly important. For example, forecasting energy demands, CORESO is able to inform TSOs from five Member States in advance about expected electricity surpluses and deficits at national and regional levels so that they are better able to manage their own networks and address any problems. One of the ways to deal with the intermittence of RE is by deploying **hybrid systems** that combine a variety of energy sources, storage and demand management. If properly managed, the result would be a "**smart grid**" delivering sustainable, economic and secure electricity supplies". The EESC team visited an excellent example of such an initiative: the "Nice Grid" in France aims to optimise energy management and increase the energy autonomy of 1 500 residential, professional and industrial clients, integrating storage and demand side management solutions and reducing peak load by up to 17%:

19 *EEG § 8 Connection "(1) Grid operators shall connect to the net immediately and with priority facilities for the production of electricity from renewable sources and from mine gas, at the grid point which is suitable in terms of voltage level and which is at the shortest straight-line distance from the location of the facility, unless this or another grid is shown to have a technically or economically more suitable connection point; the consideration of the economically more suitable connection point should take into account the direct connection costs. In case one or more facilities with a combined installed capacity lower than 30 KW are located on a terrain with an already existing grid connection, the grid connection point of this terrain shall be considered the suitable connection point."*

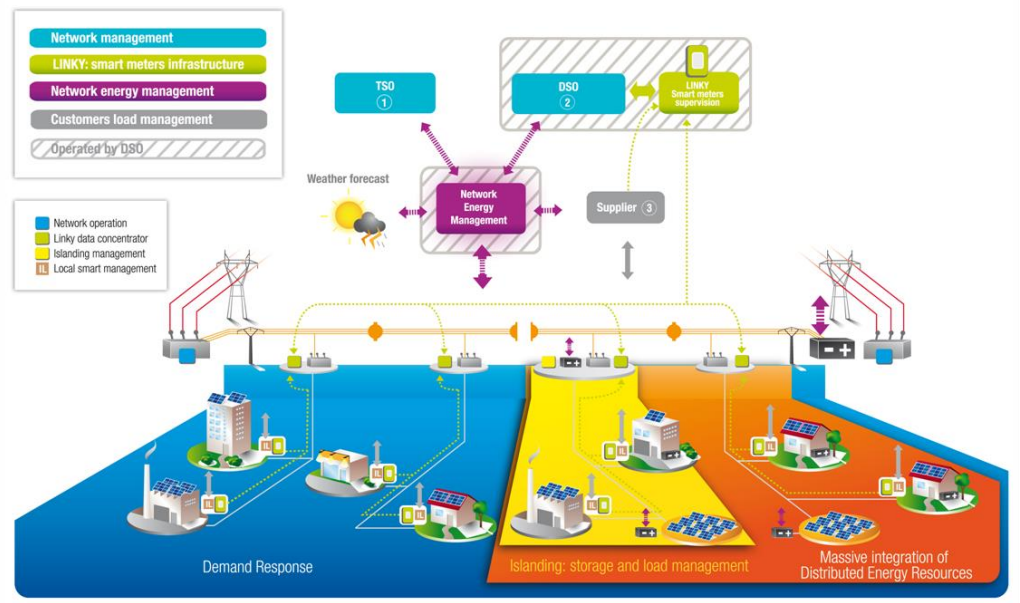

Figure 7: "Nice Grid" architecture.
Source: Nice Grid (2014)

During the German visit, the study team was made aware of the following statement of the German Federal Grid Agency on the subject of decentralised production structures: "It is obvious that the transformation of the energy system can best succeed by close cooperation among all those involved. […] We should welcome approaches maximising energy consumption at the source. This has always been the principle of energy supply as it keeps grid losses to a minimum."[20]

7.8 Energy management and storage

The intermittent nature of some renewables remains a challenge for supply management. Yet, with the wide deployment of renewables, new and innovative solutions are coming to the fore. A combination of renewable electricity production with heat production could be an excellent opportunity to gain urgently needed storage capacities, which could be tapped into over and again in the context of fluctuating RE production. **Power to heat,** i.e. the use of "cheap" renewable electricity oversupply via heat pumps and hot water reservoirs for heating or cooling purposes, is already a viable alternative in terms of economics and energy management. A debate on this possibility took place during the visit in France, and there are projects in implementation in Germany.

8. Conclusions

Civil society, given the right regulatory conditions, has a strong interest and the potential to carry out a major part of the transition to decentralised, sustainable energy production. In all countries visited, civil society stakeholders recognised the business opportunity and showed a very high interest in participating in RE production in order to generate income and to keep value within the local communities. Where favourable policy frameworks were in place, small producers quickly moved into

20 "Smart Grid and Smart Market: Keynote Paper of the Federal Grid Agency on the changing energy supply system", 2011.

the market, became the main driving force behind the development of renewables and transformed the national energy landscapes. Renewable energy projects often formed the core of community initiatives with much broader social, economic and environmental benefits than just energy generation, encouraging cooperation, social innovation, education, improved local services and local jobs creation. Furthermore, owning RE facilities and deriving value from energy production increases citizens' acceptance of new infrastructure and their tolerance to potential nuisances. The enormous collective investment, implementation and innovation capacities of civil society provide essential resources for the transition to sustainable energy.

Yet, the enormous collective potential of civil society to move forward the transition to renewable energy, as well as the potential of decentralised energy to stimulate local and regional development, remains largely untapped. The study identified some excellent examples of community involvement strategies, simplified administrative procedures, financial incentives and facilitated access to the grid and to markets for small renewable energy producers in the visited countries. Yet, the team found in no Member State a consistently implemented government strategy aimed explicitly at empowering civil society and creating a level playing field for civic renewable energy. Quite the opposite: policy instability and recent reforms of the regulatory frameworks for renewables in all studied countries have created higher uncertainty, reluctance to make new investments and concerns among stakeholders about the future of civic energy. Where complex, lengthy licencing procedures are combined with constantly changing support schemes, market access rules that discriminate against small producers, and – in some cases – new taxes and fees on renewables, small and medium-sized investors are put at significant disadvantage compared to large-scale energy producers.

The EESC study identified an urgent need to make decentralised renewable energy production by citizens an explicit priority for support. National, local and regional authorities should establish targets for civic energy development, in particular with a view to integrating them into local renewable energy planning frameworks. Civic energy must be treated specifically by support mechanisms. Grants, loans, or production support schemes should be designed so as to provide a stable long-term framework for investments that guarantee a decent, but not excessive, return on investments. Administrative procedures must be simple, fast and affordable for civic energy producers. We recommend mainstreaming the procedures in one-stop shops, which would offer guidance to potential investors and accompany them during the several stages of the process (from planning to deployment), and where all the required paper work can be dealt with.

Renewable energy policy at EU and Member State levels should be developed and implemented in continuous dialogue with civil society stakeholders, in order to ensure common understanding, shared goals, support for implementation and the long term benefits of a cooperation culture and mutual trust. The EESC's European Energy Dialogue could be instrumental in this respect. Specifically, it will be vital that civil society stakeholders are able to participate in the transparent development of Member States' national energy action plans to achieve 2030 climate and energy objectives, and in the monitoring and review of their implementation. EU, national and regional strategies, funding programmes, and support measures should be regularly monitored and reviewed with the active involvement of civil society in order to ensure that they contribute, and do not harm, civic energy. In particular, the introduction of disputed measures (such as audits) should be closely observed in order to identify and quickly correct possible disadvantages to civic energy.

Increasing the pace of deployment of civic energy requires a paradigm change in grid planning. Better network management at different geographical levels and coordination among transmission system operators are key for the successful and massive deployment of renewables. Enormous investments are needed to expand, modernise, and adapt the grid to the challenges posed by decentralised and intermittent production. EU Structural and Cohesion Funds should earmark the funds required to deliver the 2020 climate and energy targets thereby ensuring that the progress on renewables is not slowed down due to grid limitations.

Public debates about energy policy are usually dominated by price concerns and may even fall victim to populism. An open and transparent public debate on energy costs and prices is needed. Clear and comprehensive information should be provided on the costs associated with subsidies provided to renewables, fossil fuels and nuclear energy, as well as on benefits from avoided energy imports, as well as on environmental and health benefits that are difficult to monetise.

Last but not least, while the net impact of the energy transition on jobs and household incomes is expected to be positive, some conventional energy producers are already experiencing market losses with implications for jobs in these sectors. This issue should be addressed urgently and proactively. National strategies must be put in place and closely coordinated with the renewable energy deployment policy in order to ensure a smooth transition, provide the new job skills needed and address in a targeted way any negative social impacts on jobs and socially weak households. The true problem of energy poverty should be addressed through concrete and targeted measures, but not used as an argument for maintaining energy prices artificially low (e.g. in Bulgaria). The true problem of jobs loss in conventional sectors (some of which is not necessarily related to the rise of renewable energy) should not be used as an argument to stall progress in decentralised renewable energies (e.g. in Poland). Governments should take responsibility for managing the socio-economic impacts from the transition to a low-carbon economy to the ultimate benefit of all sectors of society.

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A. Appendices

A.1. Reports of the missions to Member States

A.2. List of EESC opinions dealing with renewable energy