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# **EU Energy Policy: From the ECSC to the Energy Roadmap 2050**

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Energy expert Susanne Langsdorf discusses the history of energy policy at EU level, and how the Energy Roadmap 2050 will impact on its future direction.

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Energy policy is without doubt one of the most important political issues today. It is intrinsically tied to climate change, making it not only one of the most complex issues, but also one of the topics with the highest priority within the EU. In the past, energy policies were mainly made at the nation state level, and even today some actors fight against more competencies for the EU. Areas of disagreement include the energy mix of countries and how to fund future energy investment. In general, however, the signs for a common energy policy seem to be improving: a majority of EU citizens<sup>1</sup> favour tackling energy policies at EU level. So among EU citizens and many policy makers alike there is a growing awareness that the nation state is not the only arena for energy policy and that energy challenges can often be better met at EU level. This is in line with the history of the EU, which is rooted in energy issues.

In 1951 the "Treaty establishing the European Coal and Steel Community" (ECSC) was signed, marking the beginning of the integration of Europe. With the establishment of the ECSC, a common customs union was set up. The aim was to control collectively the two

commodities which were essential for warfare and reconstruction alike, thus creating a common political interest and improving cooperation.<sup>2</sup> With the establishment of the European Atomic Energy Community (EURATOM) six years later another early institution of European cooperation was energy based.

Despite these beginnings, European integration in the field of energy policy did not develop too smoothly. Not only did the importance of coal and therefore the ECSC diminish (with oil becoming the most important energy source), but the differences in energy mixes, transport routes or structures of energy markets resulted in the differing interests of the Member States hindering energy policy cooperation. The collaboration did become gradually closer – but the speed of this development varied strongly. In the following decades some efforts were made and several smaller steps were taken to put the European energy policy on a more formal basis. Many of the more ambitious plans of the European Commission for a coherent policy often failed in the face of opposition from Member States.

The major challenges become obvious when one looks at the energy market in Europe. In 2009 the EU 27 gross energy consumption was 1703 Mtoe (million tonnes of oil equivalent; energy production in the world 2008: 12 369 Mtoe).

Fossil fuels still represent roughly three quarters of the EU energy mix, with oil having the highest share (37%), followed by gas (24%) and coal (16%). Nuclear energy counts for 14% of energy consumption. Renewable energy sources are growing and represent almost 9% of the energy mix in 2009.<sup>3</sup>

The EU has a very high import dependency; more than half of the energy needs to be imported, though the situation varies greatly in the different Member States. Some countries, such as Italy or Malta have an energy dependency of ~80 and even 100%, whereas Denmark is a net exporter of energy and the UK imports 26% of its energy. Import dependency – and thus the vulnerability in the event of price shocks or supply difficulties is highest for oil (83%) and gas (64%). As natural gas is largely supplied via pipeline, it is most susceptible to risk. The export state and transit routes cannot be changed at ease if major problems occur. Nevertheless the Commission expects the import quota of natural gas to rise in the

<sup>2</sup>Sascha Müller-Kraenner: *Energy Security*. Earthscan: London, 2008, p.78ff

<sup>3</sup>All data from: European Commission: *Eurostat pocketbooks. Energy, transport and environment indicators*. Publications Office of the European Union: Luxembourg, 2011

<sup>1</sup>European Commission: *Eurobarometer 72*, TNS Opinion & Social: Brussels, 2009, p. 219

future. This is also due to the fact, that looking at fossil fuels only, and not taking into account renewable energy, which has by the far the best qualities when it comes to climate and environment questions, natural gas ranks least problematic among fossil fuels in those respects. It burns cleaner and more energy efficient than other fossil fuels such as oil, which in turn has lower CO<sub>2</sub> emissions than coal. Talking about oil one also has to talk about the quasi-monopoly of oil in the transport sector. Despite the stability of energy consumption in the EU over the last two decades, the change in the energy mix and declining resources within the EU resulted in rising import dependency given the fact of the continuing dependency on fossil fuels. If current policies are continued, this situation is predicted to exacerbate. In order to prevent higher energy insecurity due to this import dependency and to minimise the negative environmental impact of coal but also of natural gas and oil, a swift change to renewable energies is needed.

Current EU policy, as discussed in recent EU Commission strategy papers, sees the EU relying on elements such as a high share of renewable energies, high energy efficiency, energy savings, carbon capture and storage (CCS) and nuclear energy to transform Europe's energy market in the long run. Some of these elements are highly contested.

CCS, is a technology that is not even market-ready, and works by capturing the carbon dioxide produced by burning fossil fuel and storing it under the earth. Several problems occur with this technique: the process is highly energy intensive, and involves lifetime costs as the captured carbon would have to be stored indefinitely. Additionally, many critics fear the uncontrolled release of CO<sub>2</sub> in case of storage accidents. Therefore CCS is strongly criticised as a future technology.

Public and political opinion has also been increasingly critical about nuclear energy, an energy Greens have dismissed since their political beginnings as too high risk and too high costs to base any sustainable energy system on.

It is the long-term goal of the EU to restructure its economy to a low-carbon economy. The goal is clear, but the path as well as the vision of such a low-carbon economy is contested.

## Actors – and what they want

As with all policy fields in the multilevel system of the EU, energy policy is made by an array of actors. The most important EU actors are the Commission, the Parliament and the Council. Other important actors are the Member States, which still have the decisive say with regard to the energy mix and energy foreign policy. From the private side the (inter-) national energy companies and NGOs enter the equation.

### 2.1. EU actors

The EU Commission has the right to initiate legislation and has thus considerable influence due to its agenda setter position. Sometimes the Commission gets the mandate of the Council to prepare certain energy legislation. In the legislative process as such, however, the Commission has very limited power, as it may withdraw a legislative draft, but it has no decisive say. The Commission is also the executive body of the EU and monitors the implementation of energy legislation. The EU Commission is a cabinet government and each policy area is headed by a Commissioner, who is proposed by the government of his home country. Similar to the dynamics in the cabinet of a nation state, the character and power of the Commissioner affects the stance taken by the Commission.

In the legislative process the EU Council and the EU Parliament are pivotal actors. The Council consists of the respective ministers (Ministers for Energy) from Member States and is therefore the EU actor with the strongest focus on Member States interests. In the past, the Council used to decide all energy legislation unanimously, this brought many initiatives to a sudden end. Following changes brought in under the Lisbon Treaty, today most issues can be decided with qualified majority. The EU Parliament is the second legislative body in the EU and has gained more power in the recent years, especially under changes introduced by the Lisbon Treaty. Under the Lisbon Treaty co-decision, which is based on the principle of parity between the Council and the European Parliament, was renamed the "ordinary legislative procedure", with the Council deciding with qualified majority and the Parliament deciding with simple majority. Since the new ordinary legislative procedure is in force, the Parliament has taken part in all important energy policy decisions.<sup>4</sup>

<sup>4</sup>Fischer, Severin: *Auf dem Weg zur gemeinsamen Energiepolitik*. Nomos: Baden-Baden, 2011, p.57

The EU Parliament is organised in political factions, but decisions of Members of parliament are usually also strongly influenced by their country of origin. Decision-making in the EU parliament therefore pursues a different logic than in national parliaments. Coalitions may form across faction lines; nonetheless energy policy is strongly influenced by political preferences. In the Parliament the Greens/EFA Group advocates for a transition to 100% renewable energies.

## 2.2. Other actors

The Member States are the most important actors outside the institutional EU level. They influence energy policy via their energy ministers in the EU Council and their heads of state determine the “general direction” of energy policies in the European Council. Moreover, the EU can only act in areas for which the Member States gave the EU the competence to act. It is not always in the short term interest of the Member State to give certain competencies to the EU. For example, the energy mix is still a Member State competence. National preferences, available natural resources, industrial reasons and energy foreign policy all influence which kind of mix a country has: Whereas Germany has decided to phase out nuclear energy; France has a share of 42% of nuclear energy in its mix. Europe-wide most countries try to replace coal with other fuels, in order to reach climate goals, at the same time Poland has a share of more than 50% of coal in its energy mix, as it has very big coal deposits. The considerable differences in the energy-mix lead to differing interests. For Poland, for example, very ambitious CO<sub>2</sub> reduction goals present a higher challenge than for most other countries in the EU. This often led to its “brakeman” position in negotiations. On the other hand the sole dependency of some EU Members on one supplier (Russia) especially in the gas sector made the affected countries more nervous about their energy security than countries that enjoy a higher diversification in suppliers. Therefore these countries pushed for more energy solidarity. This demand was included in the Lisbon Treaty, strengthening energy security in the EU.

The (inter-)national energy companies in the EU also play an important role. Via associations they take part in the Economic and Social Committee, as well as in various European dialogue forums. Apart from these activities they lobby on all other levels, for example via direct contacts with EU MEPs or Members of the Commission.<sup>5</sup>

The “national champions”, such as France’s EDF, Germany’s RWE and E.ON or ENEL in Italy, also exert influence via national channels. As the liberalisation process in the energy sector was and is handled with big time lags within the EU, some national champions profited economically, gaining ever more influence.

Liberalisation and stronger market integration should tackle the power of big energy companies. The liberalisation process is undertaken as a part of the completion of the internal energy market, which is a key priority of the EU. Its objective is to provide better energy prices and higher efficiency by increasing competition and furthermore enhancing energy security.

The grid-connected energies (gas and electricity), however, proved difficult to liberalise. Some Member States were reluctant to open their markets, as electricity and gas supply is traditionally a task of the state. Other reasons include the nature of grids to be “natural monopolies” complicating liberalisation, as complex regulation has to be put into place to organise the right to use the grid.

The latest big step for further liberalisation in the energy market has been the adoption of the “third energy package” in 2009. The third package brought more rights to customers, better protection for the “energy poor” and more powers for national energy regulators. Besides, the “Agency for the Cooperation of Energy Regulators” (ACER) was set up, which will set out non-binding framework guidelines; and shall provide better coordination between regulatory agencies, which in turn received more power.

The Greens recognised these advancements, but criticised the outcome of the package, because of the missed opportunity to unbundled ownership, which had been at the core of the debate. In order to break the oligopolistic power of the big energy companies it would have been necessary to reach full ownership unbundling, that is, the separation of supply and production activities. The ownership of the transmission network and production in big companies hinders the access of small energy suppliers (and thus often renewable energies) to the grid. Especially the opposition of Germany and France led to a “compromise” in which energy companies keep ownership of the grid. The grid can instead be handled by an independent system operator (ISO) or the two sectors are just separated within the company, the so called “independent transmission operator” model.

<sup>5</sup>Geden, Oliver/Fischer, Severin: *Die Energie- und Klimapolitik der Europäischen Union*. Nomos: Baden-Baden, 2008, p. 60

Furthermore the market does not reflect the real cost of the various energy sources, as scarcity of resources and environmental damage are not taken into account. These factors are only reflected via the European Emission Trading System, which covers only a part of the energy market. These market failures are not adequately addressed in the liberalisation process, as most of the environmental costs caused by fossil fuels and nuclear energy are and will be borne by society, whereas the profits are privatised by big energy companies.

Cooperation with energy companies is important for EU energy policy, as many of the biggest challenges for the restructuring of the energy market and the way to a low carbon economy, such as the development of the European grid and the so called “smart grids”, which are more decentralised, are to be solved by the companies. Exchange of knowledge and information on the needs for companies are therefore useful. On the other hand companies are, by nature, profit driven, leading to positions which may not be in the best interest of EU citizens. These negative tendencies are partly cushioned by the influence of civil society actors such as environmental protection associations. These have gained considerable influence, as they provide valuable science and thus data on climate change and energy issues and enjoy a high level of credibility. The channels of lobbying for these actors are very similar to those of the energy companies.

## Energy policy – a timeline

### 3.1. Humble beginnings – the first decades of European energy policy

Energy policies on EU level and an integrated internal energy market would enhance energy security in the EU, should lead to better prices due to more competition and also provide political leverage vis-à-vis the energy exporters, once the EU manages to “speak with one voice”. In spite of these advantages, the community institution’s competence to act was limited in the first decades of European integration. The 1960s were characterised by a focus on the nation state level. A push towards energy cooperation was triggered by the oil crises in 1973/74. As a consequence, in 1974 the “Council Resolution concerning a new energy policy strategy for the Community”<sup>6</sup> was passed, which was shortly after

<sup>6</sup>Council Resolution of 17 September 1974 concerning a new energy policy strategy for the Community. *Official Journal C 153*, 09/07/1975 P. 0001 – 0002. URL: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31975Y0709%2801%29:EN:HTML>

enhanced with energy goals for 1985. With this the Council not only emphasised the added value of close coordination among Member States to tackle energy problems, but also adopted guidelines concerning energy supply (promotion of nuclear energy, hydrocarbon and solid fuels in the Community; diversification) and energy demand (using energy more rationally).

Over the following years the issue of environmental protection became more prominent in Europe, but this did not yet translate into European legislation, especially as climate change was not yet high on the agenda. Advancement of common energy policies usually came via economic routes, though this changed slightly with the inclusion of environmental protection into the Single European Act in 1987. The focus, however, still lay on economic objectives, such as the completion of the Internal Energy Market. This tendency was underlined when the Commission failed in their attempt to include a separate energy chapter into the “Treaty of Maastricht” in 1992.<sup>7</sup> Several Member States, especially those that had fairly high own reserves, vetoed this proposal as they did not want to give away autonomy in that field. The vague “measures in the spheres of energy”<sup>8</sup> that were included, did not make effective foundations for legislation, and the reference to grids was too specific for general energy legislation. The progress made, namely the directives on the electricity<sup>9</sup> and gas internal market<sup>10</sup> (1996 and 1998) were based on internal market and environmental regulations of the Treaties. Neither the “Treaty of Amsterdam” (1999) nor the Treaty of Nice (2003) brought major advances for a common energy policy. Therefore the important energy regulation in the years after, such as the Renewables Directives (2001 and 2003) and the introduction of emissions trading in 2005 were based on environmental regulation (Art. 175 (1)EC).

But with the first assessment report of the Intergovernmental Panel on Climate Change (IPCC) published in 1990, the following reports of the IPCC, the “Earth Summit” in Rio in 1992, and the adoption of the

<sup>7</sup>Geden/Fischer: *Die Energie- und Klimapolitik der Europäischen Union*, pp. 26ff

<sup>8</sup>Treaty of Maastricht: TREATY ON EUROPEAN UNION. *Official Journal C 191*, 29 July 1992. URL: <http://eur-lex.europa.eu/en/treaties/dat/11992M/htm/11992M.html#0097000021>. Energy was also mentioned in the “Environment” title, Art. 130s(2).

<sup>9</sup>Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity. *Official Journal L 027*, 30/01/1997 P. 0020 -- 0029

<sup>10</sup>Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas, *Official Journal L 204*, 21/07/1998 P. 0001 D 0012

Kyoto protocol in 1997, climate change and thus energy issues came strong on the global agenda leading to a more favourable atmosphere for ambitious goals. More and more policy makers came to the conclusion that energy and climate challenges were of such a scale that solutions were not to be found on the nation state level, and it also made for a good common goal for the European Union, which aimed to take the lead in the fight against climate change.

### **Making good pace: “An energy policy for Europe” and the Lisbon Treaty**

It wasn't until March 2007 that EU heads of state and governments endorsed the first EU “energy action plan”. Following a series of discussions over the previous years, the Commission's “An energy policy for Europe” strategy marks the beginning of a more integrated European energy policy, which gained considerable momentum since then. The action plan laid out the three major challenges for European energy policy, which form the core of the common energy policy till today: sustainability, security of supply, and competitiveness.

In order to reach these goals the commission also laid out quantifiable targets. Only two months later the reply came in form of the Council Conclusions. In its “action plan 2007-2009” the Council adopted (and slightly altered) many of the Commission's proposals, among them the famous – and catchy – “20/20/20” targets, which defined European energy policy in recent years. These targets refer to three 20% goals, to be reached until 2020:

- A reduction in EU greenhouse gas emissions of at least 20% below 1990 levels (to be increased to 30% in the event that other industrial countries and economically more advanced developing countries also contribute adequately)
- 20% of EU energy consumption to come from renewable resources and
- a 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.<sup>11</sup>

The plan included a range of other working areas, most prominently the completion of the internal market for gas and electricity, issues concerning security of supply, internal energy policies and energy technologies. The Council invited the Commission to come forward with proposals in order to regulate the respective areas.

<sup>11</sup>Communication from the Commission to the European Council and the European Parliament. *An Energy Policy for Europe*, Brussels 2007

The action plan was complemented with changes in EU legislation shortly afterwards: the Lisbon Treaty finally included a title on energy. The article<sup>12</sup> first refers to the “functioning of the internal market” sticking to its roots, but then enumerates several innovations:

- (a) ensure the functioning of the energy market;
  - (b) ensure security of energy supply in the Union;
  - (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy;
- (d) promote the interconnection of energy networks.<sup>13</sup>

The most innovative point, (b) refers to ensuring energy security in the EU, which was traditionally the preserve of Member States. Energy mix, energy foreign policy and the conditions for exploiting its energy resources, however, remain in the hand of the nation state. Decisions on legislative proposals built on Art. 194 TEU are made according to the ordinary legislative procedure. Measures that are “primarily of fiscal nature” will be decided by the council unanimously; the parliament will be consulted in these cases, but cannot veto the process.

Apart from the new energy title, the Lisbon Treaty maintains status quo of the internal market and environment regulations as sources for energy policies.

Following the clear requests of the Council for an action plan the Commission set to work and drafted a list of proposals, among them the third “Internal Energy Market Package” (2007). Proposals that already in 2009 resulted in directives included proposals concerning emissions trading,<sup>14</sup> the promotion of renewable energies<sup>15</sup>, and Carbon Capture and Storage (CCS)<sup>16</sup>.

<sup>12</sup>Art. 194 TEU

<sup>13</sup>European Union: *Consolidated Treaties. Charter of Fundamental Rights*. Publications Office of the European Union: Luxembourg, 2010

<sup>14</sup>2009/29/EC; (COM/2008/0016)

<sup>15</sup>2009/28/EC; COM/2008/0019 final - COD 2008/0016 \*/

<sup>16</sup>2009/31/EC; \* COM/2008/0018 final - COD 2008/0015 \*/

## Current developments and future challenges

### Energy 2020 and Energy Roadmap 2050

After some intense legislative developments since 2007, currently several strategy papers are defining energy developments on EU level, the most important ones being: “Energy 2020. A strategy for competitive, sustainable and secure energy” and “Energy Roadmap 2050”, the latter published at the end of 2011. “Energy 2020” is a long-term energy strategy published by the Commission in November 2010. It builds on the “energy action plan” of 2007, but states that this strategy is unlikely to achieve the 2020 targets, let alone the longer term challenges, especially the emission cuts of up to 95% by 2050. Therefore it aims at providing new tools to achieve the 2020 goals. The Commission hopes to pave the way for energy legislation by pointing the direction with its strategy papers.

“Energy 2020” emphasises the urgent need to act in order to not only restructure the energy market in the EU and reach the climate targets, but also to stay competitive in the future. In order to meet the challenges, the Commission estimates investment needs of 1 trillion Euro, especially for (re-)building infrastructure. The Commission identifies five areas of priority, especially for reaching the 20/20/20 goals:

#### *1) Achieving an energy-efficient Europe*

Energy efficiency holds great potential for more energy security and a green economy. At the same time it remains a major goal (next to the promotion of renewable energies and lower emissions) that the EU is a long way from achieving. The problems began with an unfortunate target designation in the first action plan (“20% reduction compared to projected levels”) and still the progress in the field remains limited. Among other measures, the Commission wants to achieve a breakthrough by putting a stronger focus on buildings and transport, the two areas that use most energy next to industry. Whereas success has been made in the industry thanks to the EU-ETS, the building and transport sector remain difficult to convert to “green” and the past Directives haven’t achieved the desired results. Therefore in June 2011 the Commission came up with a new proposal for a directive to combat energy inefficiency in the EU.

#### *2) Completing the internal energy market*

The Commission keeps working to complete the internal energy market as the current situation leads to higher costs for energy and less energy security in their analysis. A special focus is on the infrastructure projects of “European interest” that would be necessary for the completion of the internal market, i.e. for building grids that transport renewable energies within Europe from the places where it is harvested to the regions where most energy is used or building modern smart grids that can incorporate the decentralised production of renewable energies and lead to energy savings.

#### *3) Empowering consumers and achieving the highest level of safety and security.*

#### *4) Extending Europe’s leadership in energy technology and innovation.*

#### *5) Strengthening the external dimension of the EU energy market.*

Renewable energies have no special priority in the Energy 2020 strategy paper, but form part of the goals concerning technology and innovation.

The “Energy Roadmap 2050” is also a strategy paper, but as the name suggests, with a longer time-frame, as “the pattern of energy production and use in 2050 is already being set”. The Roadmap 2050 is an answer to the long term investment cycles of energy infrastructure, and aims at giving a direction for after 2020. The Commission follows a market based, and supposedly “technology neutral” approach. Its Roadmap aims to provide planning certainty for investments, especially as in the coming decade a lot of infrastructure will need to be replaced.

By 2050 the EU is committed to reduce greenhouse gas emissions to 80-95% below 1990 levels. The Roadmap 2050 shall point the way to achieving these decarbonisation goals and ensuring the core targets of energy security and competitiveness.

In Europe, several stakeholders (e.g. the European Climate Foundation, Greenpeace/EREC) developed decarbonisation scenarios up to 2050. As a starting point, the Commission analysed these scenarios, in comparison to a set of own scenarios and a current trend plus a business-as-usual scenario. The major insight of this analysis is that “a secure, competitive and decarbonised energy system in 2050 is possible”, even if the scenarios

have different foci. Apart from this positive conclusion, the Commission also draws practical conclusions for its own Roadmap, for example that the future energy system shall have higher capital expenditure, but lower fuel costs. Another important lesson from the scenarios is the realisation that the transformation of the energy system is, in the long term, not substantially more expensive than sticking with current policies. Further conclusions concern the increasing importance of electricity, which will in this process become temporarily more expensive but become cheaper after 2030. In general the Commission predicts increasing household expenditures for energy (and energy related products). Furthermore in all scenarios renewable energies rise substantially, energy savings are needed and decentralised and centralised elements of the power system need to be interconnected.

Backed by the decarbonisation scenarios the commission identifies five major working areas:

- Transformation of the energy system, especially by managing the demand side (high energy efficiency, especially in buildings and transport; smart energy technology), promoting renewable energies and fostering renewable heating and cooling in a decentralised system; and by making conventional sources, such as coal and gas, “greener”. A major hope lies with the marketability of CCS, which, even the Commission admits, is not a definite event. Nuclear energy is also a major pillar in the Roadmap energy system, despite wide-spread criticism on this technology.
- Rethinking energy markets. This targets mainly the integration of the internal energy market. The still incomplete integrated electricity and gas markets shall not be subjected to further barriers from Member States. Furthermore local and long-distance networks shall be integrated providing the infrastructure for high renewable usage and smart technology should be promoted.
- Mobilising investors. The bigger part of the restructuring of the EU energy system has to be done by private investors, especially energy companies. Only in exceptional cases do investments have a public good character and shall receive support. For the normal procedure the EU still has to provide incentives, such as ETS, for low-carbon investments.
- Improving public acceptance.
- Driving change at the international level.

After laying out the working areas for its energy system the Commission identifies ten conditions to achieve the new system. The long term vision shall be supported by developing strategies till 2030 and by implementing the

“Energy 2020” strategy first. The conditions as such are not new and include current policies such as more energy efficiency; more renewable energies and a fully integrated energy market are needed.

The Commission’s on-going reliance on fossil fuels and nuclear energy provoked harsh criticism from environmental groups and Green Parties. They excoriated not only the focus on outdated technologies, but also the scenarios on which these assumptions were built. They object to the Commission’s estimates of future price and security development of nuclear energy and CCS as overly positive whereas underestimating the potential of renewable energies.

The dependence on CCS to “green wash” fossil fuels is seen as a wrong signal to the energy industry. CCS is not commercially usable, presents the problem of “eternal” storage and reduces plant efficiency. Already resistance is forming from citizens that live close to proposed storage sites. Critics argue that these variables are not properly reflected in the Commissions scenarios, resulting in artificially low-costs for the continued usage of fossil fuels and CCS technology.

The second highly disputed suggestion is the promotion of nuclear energy as a favourable low-carbon option. Especially after the nuclear accident in Fukushima the level of opposition to that technology is at all-time high in the EU. The Commission’s hope to solve the waste and safety problems with new technology is seen as naïve at best. Again it is argued that the estimated cost development for nuclear energy is too positive.

Especially due to these points the transformation of the energy system is expected to be the most contested field in the near future. The “Roadmap 2050” is only a strategy and its scenarios offer different options as such. The legislation, that is, the directives that will shape the energy markets for the coming decades is still unwritten. The European Green Parties have the clear position of achieving the 2050 goals with 100% Renewables and without the use of nuclear energy and CCS.

The advantage of the Roadmap is, however, that the Commission makes a clear stating detailing what it wishes to achieve by 2050: a largely decarbonised society in the EU. It stresses that it can be done and that it will not cost considerably more than the current strategy. A decarbonised energy system will lead to high energy security, lower import dependency, lower energy prices and CO<sub>2</sub> reductions. Furthermore it will provide co<sup>2</sup> benefits, such as better air quality and favourable health conditions.

Due to the remaining focus on fossil fuels and nuclear energy, however, the Roadmap 2050 is seen by many, especially of the Green Parties as a “wasted chance”. This applies all the more so as it is a step backwards from the “Energy 2020” strategy. In the upcoming years Green energy policy makers will fight for legislation that leads the way to a truly sustainable energy system with 100% renewables and a phase-out of fossil fuels and nuclear energy.

Setting the priorities right now is pivotal. The supply of energy is not only of importance for economic development and a more sustainable energy supply is not only about ecological challenges or climate change. Ultimately the fair distribution of energy worldwide is also necessary for a peaceful future, preventing conflicts over the allocation of resources and do justice to the development needs of developing and industrialised countries alike.

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