



# European Energy Union coming step by step

New institution due to current challenges

August 13, 2015

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**DB Research Management**  
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Publication of the German original:  
July 15, 2015

The decisive impetus for the European Heads of State and Government in March 2015 to enter into a commitment to put in place a European Energy Union came from the conflict between Russia and Ukraine and its importance for the security of supply. As a result of this conflict, many countries in Eastern and Central Europe felt particularly at risk of potential interruptions in Russian gas supplies. The high risk of supply disruptions brought together the European countries and was ultimately the basis for the new initiative.

The rough framework of the energy union agreed upon is quite comprehensive. At first sight, the five central task areas the new institution wants to address are hardly contentious, but they are ambitious. Specifically, the European energy sector is to be strengthened by initiatives to enhance energy security, reduce CO<sub>2</sub> emissions of energy consumption, complete the EU internal energy market, boost energy efficiency to reduce the demand for energy, as well as promote R&D and innovation.

In our assessment, it is already apparent that ultimately, no all-encompassing concept can be expected to meet all the energy and climate-policy challenges of our times. The interests of the various European countries and of the economic sectors concerned are simply still too diverse.

For the Energy Union, a concentration on the following agenda could be advisable because it would benefit the EU as a whole: Firstly, the further liberalisation of grid-based energies, i.e. electricity and gas, up to the completion of the respective EU Single Market. Secondly, closely related to this is the expansion and restructuring of the infrastructures required – from the electricity and gas grids to accommodative storage solutions. Thirdly, the Energy Union is also likely to focus more attention on the topic of Smart Grids – that is to promote the smart balancing of electricity supply and demand at the decentralised level.

Fourthly, for the Energy Union, against the background of the G7 negotiations, the target of a "carbon-free world" and a "carbon-free Europe" is a serious challenge. These issues could comprise very different energy sources, energy concepts and energy solutions – e.g. ranging from renewable energies right through to nuclear energy. In this framework, last but not least concepts of coordinated energy production and/or more systematic integration of energy consumers in the energy grid could be developed (further). Nevertheless, we have gained the impression that ambitious long-term goals could be given priority over the rapid implementation of clear short-term goals.



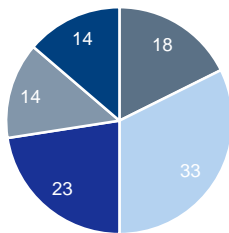
## European Energy Union coming step by step

### Energy cooperation – upgrading the new Europe

Fossil fuels make up ¾ of EU primary energy consumption

1

EU28: in absolute terms 1630 Mtoe, %



- Solid fuels
- Gas
- Renewable energies
- Petroleum
- Nuclear

Sources: Eurostat, IEA, BP, WEC

#### Liberalisation setting the pace

One lesson from World War II was that closer international cooperation, especially between the militarily important economic sectors, is probably the best way to prevent another war. Against this backdrop, the then French Foreign Minister Robert Schuman proposed the foundation of a "Montanunion" to administer the German coal and steel industry jointly. The establishment of the European Coal and Steel Community (ECSC) in April 1951, which when it entered into force in 1952, also consisted of Belgium, Italy, Luxembourg and the Netherlands (i.e. six founding states) laid the foundation for the subsequent European Union (EU). The ECSC already operated early forms of the now typical EU institutions with supranational responsibilities such as the European Commission, the European Parliament and the European Council.

In the subsequent years, hard coal lost its initial importance relatively quickly due to the rise of nuclear power for electricity generation in major European countries such as France and Germany, the global expansion of crude oil, as well as the rapid development of the natural gas sector in Europe. In the context of the integration of the Eastern European countries and increasing global competition in which not least energy prices became ever more relevant as a cost factor, a bold new EU energy initiative was launched in the 1990s.

The new objective of European energy policy built on the previously largely nationally structured and focused markets for electricity and gas. The core of EU liberalisation efforts became the establishment of well-functioning internal electricity and gas markets in order to introduce and stimulate Europe-wide competition in both markets. Furthermore, the liberalisation was designed to ultimately bring about new cross-border competition, so that future electricity and gas prices would rise less than on traditional national markets of the two grid-based energies. This should by no means benefit only household customers. Important European industrial sectors as well – ranging from automotives, chemicals, steel and electronics through to mechanical engineering – were to be relieved on the cost side thanks to stronger competition between their energy suppliers and thus become more competitive vis-à-vis their counterparts in the non-EU countries. At that time, they were mainly located in the US and Japan; only in the last few years increasingly also in China.

#### Climate policy setting the pace

In addition to the new competition policy, a climate policy on a hitherto unprecedented international scale became a further target area of the new energy and environmental cooperation in Europe. Last but not least, Europe entered new territory with the establishment of cross-border emissions trading and further climate instruments.

True, from today's perspective, there was progress on the liberalisation of the European gas and electricity markets in the last few years. The modification of the planned liberalisation projects in the framework of two further Internal Energy Market Packages is but one example. Furthermore, emissions trading has been updated, for instance the implementation of a more flexible volume policy as well as the specification of the climate protection targets until 2020. However, neither the new competition policy nor the environmental and climate policy on their own were by any means the decisive drivers for the new initiatives to establish an Internal Energy Union.



## European Energy Union

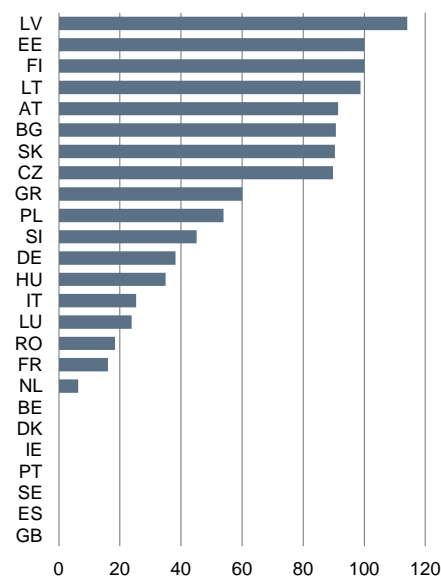
### Worries about the security of supply gives decisive impetus

New impetus for the establishment of a European Energy Union – besides the competition and environmental targets – came from the third target of energy policy, the target of security of supply. When the conflict between Russia and Ukraine escalated in 2014 many countries in Eastern and Central Europe were worried with regard to their energy supplies from Russia. The concerns were mainly about gas supplies. This was due to two reasons: first, for some countries, Russia was not only the main supplier, but the only supplier. Second, given the gas transport infrastructure in Eastern Europe, in many places no economically viable alternatives appeared realistic in the short to medium term. By contrast, it was possible to obtain oil and coal, if required, even internationally on the relatively well-functioning world markets. True, infrastructure-related shortages could not be ruled out completely for these energy carriers, either, but, if required, seemed manageable for a reasonable period of time.

### Ukraine crisis forges European countries together

Russia's import shares in the respective natural gas consumption of the country

%, 2012



Sources: IEA, OECD, DIW

Although Ukraine is not an EU Member State, the Ukraine revealed many deficiencies in the European energy relations. This is probably mainly due to the different stages of development of the energy sector and the overall economy of the various countries. For the aspiring countries of Central and Eastern Europe, the main goals so far were as follows: the securing and further stabilisation of the energy supply, so that the national energy structures (from electricity generation to heat supply) could continue to be used and developed further. By contrast, many countries of northern and western Europe – increasingly and more and more often – preferred a restructuring of energy systems towards environmental targets.<sup>1</sup>

This fundamental conflict of interests still paralysed the reorientation of European energy policy at the beginning of the current decade. Against the backdrop of the increased political and energy-related uncertainties in connection with the crisis in Ukraine, a common approach was considered beneficial, though. Jean-Claude Juncker, the current President of the European Commission, advocated already in mid-2014<sup>2</sup>, i.e. before he actually took office, the establishment of an energy union.<sup>3</sup>

### Core aspects of the European Energy Union

In March 2015, the 28 European Heads of State and Government committed themselves to creating an Energy Union. The rough concept agreed upon by the Member States is quite comprehensive. It consists of the following five "dimensions" whose implementation is to strengthen Europe's energy business in the future:

- The reduction of CO<sub>2</sub> emissions of energy consumption,
- More security of energy supply,

<sup>1</sup> See Fischer, Severin/Geden, Oliver, 2015. Die Grenzen der Energieunion. SWP-Aktuell 36. p. 2.

<sup>2</sup> See Schiffer, Hans-Wilhelm, 2014. A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change. Political Guidelines for the next European Commission. Strasbourg, July 15. pp. 56.

<sup>3</sup> He modified and expanded proposals already made by Jerzy Buzek in 2010 (at that time President of the European Parliament) and Jacques Delors (previous President of the European Commission). In April 2014, they were critically questioned and amended by Donald Tusk (at that time Prime Minister of Poland, later President of the European Council) in view of the new political realities regarding Russia. See Fischer, Severin/Geden, Oliver, 2015. p. 2.

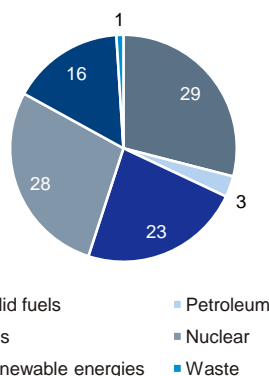


## European Energy Union coming step by step

EU electricity generation by input energies in 2007

3

Shares in electricity mix, %



Source: Eurostat

- The completion of the Internal Energy market,
- Increase in energy efficiency contributing to moderation in demand,
- More R&D, innovation and competitiveness.

At first glance, the "dimensions" mentioned hardly seem controversial. They also fit into the triangle of objectives of European energy policy, which has already been pursued in the last few years. However, while agreement was obviously reached across borders on the chief target areas, there is no consensus on the implementation in many areas yet. In the individual countries, their parties, companies and other interest groups, different priorities and preferences with regard to energy policy still persist.

## Challenges/open questions with regard to the European Energy Union

The development and the differentiation of the "five dimensions" show that the Energy Union is meant to address very different challenges. However, the required concretisations of targets and instruments have not materialised yet. For this reason, there are quite a few open questions at present.

### Sudden initiative for Energy Union initially tends to follow the "locomotive theory"

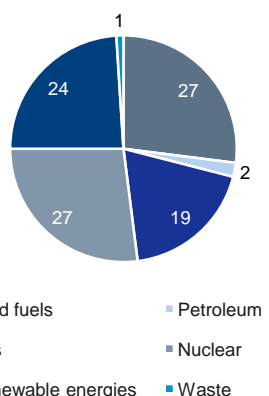
The path towards the Energy Union agreed upon is reminiscent of the introduction of the euro. The founding of the European Monetary Union was preceded by a long, intensive and contentious discussion on the right strategy: for many years, the "coronation theory" was advocated, particularly by Germany, in which only at the end of the process of the political and economic integration of the individual countries, the final step was to be made with the establishment of a single currency. By contrast, countries such as France advocated the "locomotive theory". According to this concept, a single currency was to be agreed upon, which, in turn, would be the driving force for the further political and economic integration. Finally, the EU policy followed the "locomotive theory", and in the participating countries, sometimes called core Europe, the euro was introduced. For Germany, one of the main reasons why it joined the European Monetary Union after all was German reunification.

Before the establishment of the European Energy Union as well, there were similarly different and contrasting positions. And here as well, a special event finally tipped the balance; the hitherto barely conceivable new Russian policy vis-à-vis Ukraine (and before that, already vis-à-vis further neighbouring countries such as Georgia). Furthermore, in this heated political situation, there were countries which until then took a rather reticent attitude towards European solutions regarding energy policy (such as Germany, which before the liberalisation of the markets for grid-based energies was not really a driving force) and Europhiles (such as most Eastern European countries and France, which has a generally more positive attitude towards Europe also with regard to energy problems). The comparison with the period around the introduction of the Euro is somewhat misleading, though. While the establishment of the Single currency was in fact a bold move by many European countries, indications are that the European Energy Union will probably be established using a step-by-step approach. Thus, the way towards the Energy Union de facto also follows the concept of the "coronation theory". At least the challenges and open questions discussed in the next chapters underscore such an assessment.

EU electricity generation by input energies in 2013

4

Shares in electricity mix, %



Sources: Eurostat, IEA, WEC



## Total concept versus step-by-step problem solving

### EU prioritises the issue

It would be desirable if the future political decision-makers could resort to a conclusive overall concept and gear their political measures to it. For this reason it has to be welcomed that at the beginning of the discussion no area of the previous European energy and climate policy was left out. In fact, Juncker already in his agenda prioritised the establishment of the Energy Union, nominated a vice president for this project and campaigned for tackling all energy and climate political topics under the umbrella of the Energy Union. This approach clearly underscores the political will to focus on these thematic areas even more intensively and with even greater determination. The prioritisation of this thematic area by the European Commission was well received by most of those concerned, not least by the European Parliament, environmental associations but also industrial and energy companies.<sup>4</sup> This encouraged all those concerned to make proposals of their own which can contribute to a comprehensive overall concept. The concept will probably be presented by the end of 2015 at the earliest.

### Initiative has to be taken seriously

However, indications are that due to fundamental conflicts of interest between individual EU countries and/or economic sectors concerned, an all-encompassing concept to meet all energy and climate-policy challenges of our times is unlikely. Nevertheless, the initiative should by no means be talked down. Especially the recent past supplied evidence that despite an obvious variety of interests and opposing interests in the EU countries, quick cross-border solutions can also be found. For instance, the risk of gas supply shortages in several Eastern European countries due to a sudden change in Russian supply policy was contained because the EU previously promoted infrastructural supplements which enabled gas reverse flows in Eastern Europe. Even the courageous initial liberalisation steps for grid-based energies at the end of the 1990s were not based on an encompassing concept, but – in line with the EU's intentions – brought about the first cross-border competition.

### Individual agenda items harbour conflict potential

Even though an overall concept to meet all energy and climate-policy challenges currently seems rather unlikely, it makes sense to identify the probably most useful areas of activity of the EU and thus the agenda items of the basic concept of the future Energy Union. In this context, the question arises of which "dimensions" harbour the most conflict potential that could hinder their implementation or where consensus among participants is more likely. The largest basic consensus can be expected with regard to the dimensions "Increase in energy efficiency" and "More research and development". Both comply with economic rationality and are therefore most likely to be enforceable. By contrast, the remaining three dimensions harbour significant conflicting interests and thus conflict potential.

## Energy Union should tackle climate target "Reduction of CO<sub>2</sub> emissions"

Climate change due to the anthropogenic greenhouse gases such as CO<sub>2</sub> is surely a global challenge due to its various externalities because it does not stop at borders or continents. Currently, truly global political approaches or initiatives are not foreseeable yet, however. This is the case despite the promise by the G7 Heads of State and Government at their June summit in Germany to limit global warming to 2°C and by 2050 to emit 40-70% less greenhouse gases than in 2010. The current absence (which will probably also continue for some time) of climate policies that truly integrate all countries suggests that further action should be taken at EU level, given the relevance of the subject and

<sup>4</sup> See Fischer, Severin/Geden, Oliver, 2015. pp. 2/3.





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Europe's advantaged stage of development, so to speak as second best approach.

Climate policy approaches and climate-related policies are already found in all European countries. In part – such as in Germany – the climate initiatives vary from country to country and/or individual emissions sectors (from the auto industry to the remaining power plants) are selected and are subjected to special regulations. True, such a procedure preserves the sovereignty of the individual nation state in principle. It may, however, violate the efficiency of the overall system in Europe and thus cause unnecessary economic costs.

Functioning or emissions trading to be improved further

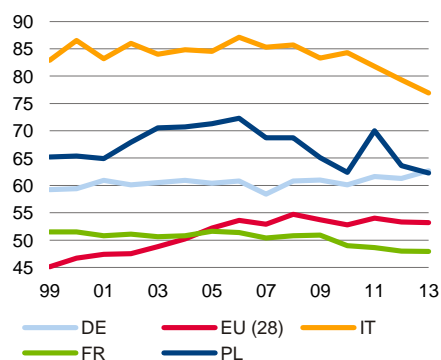
Since its start, EU emissions trading has gained global recognition and attention, also with regard to its shortcomings and further development. It should be beyond debate that it should/will be an important action area for the new Energy Union. Essentially, its mission is to improve the functioning of emissions trading further. Should it function better than before, interventions by individual states and/or sectors could cease or at least be reduced. These are so substantial in some cases that they could have a counterproductive influence on emissions trading.

### Energy Union should ensure greater security of supply

Rising EU energy dependence

5

Net imports in relation to gross domestic energy consumption, %



Source: Eurostat

Efforts to boost the security of supply of primary energies did not play the main role in the last two decades. True, prices for the individual energy carriers temporarily differed a lot. True, the price range over the last two decades for the major energy carrier in quantitative terms, i.e. crude oil, was between USD 10 bbl and close to USD 150 bbl. If the oil could be paid for, however, the supply and thus the fulfilment of demand were guaranteed. As mentioned above, the conflict between Russia and Ukraine has made the supply security target much more relevant again in European policy. Willingness to pay no longer seemed sufficient on its own. So what will follow from this for the European Energy Union? All in all, a differentiated position with regard to the individual energy sources but also with regard to the individual processing stages seems appropriate.

In the future as well, the supply of crude oil and hard coal to the EU should be relatively unproblematic. For both energy sources, there are currently various supply opportunities in non-European countries. This is also reflected in the recent price development. This raises the question whether above all crude oil stocks (and the construction of corresponding storages) should be an agenda item of the Energy Union. In this regard, it seems more appropriate to continue to rely on betting on market solutions, i.e. the private sector. Only for smaller supply bottlenecks should a public-sector minimum reserve be considered. Especially smaller EU countries that have hitherto already relied on public-sector storage facilities should be allowed to do so in the future as well.

Security of natural gas supply to be improved further

The supply situation regarding natural gas has to be assessed in a more differentiated way. Last but not least, this was reflected by various differences of opinion regarding the current conflict between Russia and Ukraine. The conflict revealed gas import risks especially in the Eastern European countries hitherto inconceivable. For this reason it seems reasonable to assume that gas supply security will be a major topic of the future Energy Union. However, this general assessment is probably just about where the consensus ends. After all, it is doubtful to what extent the individual countries are really willing to cooperate at the various gas supply levels and to give up decision-making powers at the national level or at the individual gas companies. Would it actually be helpful if the EU organised gas purchases across borders? Should gas storage decision-making (ranging from investment in new storage facilities to their operation) be shifted from the current operators (private sector or state) to European



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institutions? In our assessment, a consensus on this point for all countries of the European Energy Union is not foreseeable yet. It is also questionable whether this EU institution will actually lead to better solutions than the traditionally established structures.

### Energy imports to be reduced

One of the future targets of the European Energy Union could be to reduce total net energy imports to make Europe more independent of supply disruptions and thus risks to supply. Policies which contribute to this – e.g. measures to increase energy efficiency and thus to reduce energy demand (that is one of the five "dimensions") – may be in harmony with the supply target. However, these policies may create new conflicts between the participating countries as the individual countries may have different priorities.

### Basis of power supply still different from country to country

One field of activity regarding the security of supply with future potential should be electricity supply in Europe and its further development. A considerable challenge is to be seen in the differing tolerance of the individual countries vis-à-vis disruptions to supply. Preferences and energy targets that in some cases are completely different from one country to the next suggest that the power to make decisions about the energy mix – i.e. more fossil or more renewable or more nuclear energy – will remain with the individual EU countries and individual companies, respectively. As a matter of fact, focusing on particular energy carriers has an impact on the security of power supply. This has also been reflected by the recent disagreements with regard to the gas supplies from Russia. Here, renewable energies have a certain advantage as usually they are not imported over long distances from regions far away.

## Energy Union should work on completion of EU Single Energy Market

### Develop and upgrade transmission grids

The European electricity market has not reached an optimum functionality yet. Future projects to be tackled are the further expansion of the grid as well as the completion of the Single Market. Difficult tasks lie ahead as far as the expansion of the grid is concerned. This not only applies to the international level; it also holds true for important individual countries. For instance, in Germany the expansion of transmission grids, which are required to transport large quantities of wind electricity from the North to the southern federal states is moving forward only slowly. For the optimisation of the European Single Electricity Market as well, a further upgrading and expansion of transnational transmission grids is required. Besides the technical challenges, such as uniform grid standards and requirement specifications, the individual grid development plans of the Member States have to be harmonised, so that the total system can be optimised.

The capacity market issue is by no means assessed uniformly in the EU. In fact, a capacity market already exists in some countries. Other countries – e.g. Germany – do not regard it as a necessity. As a result of the different positions and preferences, there is no uniform solution. In case of doubt, the lack of international coordination and cooperation also harbours inefficiencies and thus leads to suboptimal solutions with welfare losses for the national economy. For this reason, dealing with the topic could be a future field of activity for the Energy Union.

### Completion of the EU Single Market for electricity and gas

On balance, the topics of completion of the EU Single Market for electricity – and the Single Market for natural gas as well – should become rewarding fields of activity for the Energy Union as in the event of success, they are likely to bring welfare gains to the Member States. Here, the Energy Union has to pay attention to the repercussions of its policies on energy prices, in order not to disadvantage especially industrial clients in international competition. Working on Smart Grids, i.e. intelligent power grids with a focus on balancing electricity



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supply and demand, should also be prioritised more highly by the EU. Already today, the European Commission's Institute for Energy and Transport keeps track of diverse Smart Grid projects – from demonstration projects to first small series.

### Conclusion: Energy Union still has many question marks hanging over it

Energy Union will  
be worthwhile for Europe

The European countries' commitment to even stronger cooperation when it comes to answering energy and climate questions is undoubtedly a step forward. This is irrespective of the fact that the trigger was grave concern about the security of supply. In our assessment, the target areas of boosting energy efficiency and research & development harbour relatively little potential for conflict, even though e.g. green energies are likely to compete with nuclear energy and/or fossil energies. With regard to the dimensions of reduction of CO<sub>2</sub> emissions, greater security of supply as well as the completion of the Single energy market, the implementation targeted for the end of the year should be awaited, which will then permit an initial assessment to be made. The current debate is an indication that the Energy Union will probably initially focus on the burning issues of our time, such as the further improvement of natural gas supply. The further development of infrastructures and markets for grid-based energies are further foreseeable target areas. By contrast, contentious topics such as the nuclear phase-out in Germany and country-specific subsidy programmes for renewable energies are unlikely to be a target area yet. We thus expect an incremental policy, i.e. by no means a rapid and radical transformation of the total energy sector.

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Printed by: HST Offsetdruck Schadt & Tetzlaff GbR, Dieburg

Print: ISSN 1612-314X / Internet/E-mail: ISSN 1612-3158