

A stylized world map composed of a grid of dots in various shades of gray, with several dots highlighted in red. The map is centered behind the title text.

Updating the EU's Energy and Climate Policy

New Targets for the Post-2020 Period

SEVERIN FISCHER/OLIVER GEDEN

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- The 20-20-20 targets for 2020, which were adopted in 2007, represented the first milestones on the way to an integrated energy and climate policy of the EU. So far, the implementation of these goals in the areas of emissions reduction, renewable energies, and energy efficiency has been met with varying levels of success.
- In the meantime, the development of the EU's internal energy market, infrastructure planning, and the European Commission's »Roadmap« discussions have also become key issues. From a German perspective, these developments require increased attention since they are highly relevant for implementing the domestic *Energiewende* (energy transition).
- A serious discussion of the energy and climate strategy for the post-2020 period will begin in 2014 at the latest. This time, the negotiations between Member States are expected to be much more conflict-prone than they were when the 2020 goals were set.
- The upcoming strategy discussion in the EU will mainly focus on the following two questions:
First, should EU energy policy be primarily derived from specific climate policy goals?
Second, what degree of national sovereignty on energy policy matters should individual Member States be entitled to retain vis-à-vis the EU?



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Introduction

Following the reactor accident of Fukushima, the *Energiewende* has been at the very top of the political agenda in Germany. Electricity prices, the expansion of the power grid, financial support for solar energy, and a number of other contentious issues currently shape this prominent political debate. In addition to the discussion on specific policies and measures, cooperation between individual federal states and the Federal Government in Germany has proven increasingly difficult since many federal states have developed distinct, only partially compatible energy transformation strategies of their own. Moreover, different federal ministries have divergent views on how the energy transition should be properly implemented. Faced with all these coordination difficulties and conflicts of interest, stakeholders are increasingly losing sight of the European dimension of the energy transition. One has to keep in mind that due to the growing significance of European governance structures, Germany's energy and climate sector has been severely limited in its ability to act, particularly following its integration into the European electricity market and the comprehensive Europeanization of climate policies. If the energy transition is to succeed, the German energy sector will have to take the European dimension much more seriously.

Germany's increasingly domestic focus is especially surprising because the most important strategy for the EU's energy and climate policy was developed during the German EU Council Presidency in 2007. The EU has since tried to implement a sustainable, competitive, and secure energy supply. In 2007, however, a catchy-sounding and environmentally-focused strategy by the name of »20-20-20« was developed for 2020, which was mainly designed to promote climate protection, foster renewable energies, and increase energy efficiency (cf. Council of the European Union, 2007; Fischer, 2011). Due to the long investment cycles that are characteristic of the energy sector, the European Commission is already working on a proposal for the design of a post-2020 target architecture, following a public consultation (c.f. European Commission 2013a). Germany's energy and climate policy should therefore not become overly absorbed by the details of the domestic energy transition, but instead reflect on the question of how to incorporate its transition strategy into the future energy and climate policy of the EU. Legally binding European targets for 2030 will have a significant effect on the implementation of

the German energy transition – not least because many Central and Eastern European Member States recently started to openly question the sustainability focus of the EU's energy policy.


1. The EU's energy and climate policy strategy for 2020

European energy and climate policy in its current state was mainly developed between 2005 and 2007. After the Eastern enlargement process and against the backdrop of the failed European Constitution referenda in France and the Netherlands, the search for new fields of action for the EU had further intensified. Due to recurring problems with Russia as the EU's most important oil and gas supplier, and especially in light of the UN climate negotiations that had raised high hopes for an international agreement at that time, it appeared to be the next logical step for the EU to put an emphasis on this policy field. After Great Britain initiated some crucial first steps during its EU Council Presidency in 2005, the Federal Republic of Germany took on the task of reaching a strategic policy consensus between the heads of state and government, which also had been vigorously pursued by the European Commission. The energy strategy for Europe, which was finally adopted in March of 2007 under Germany's Presidency, boasts a strong environmental focus and is designed to help Europe evolve into a low-carbon-economy, while at the same time securing its long-term competitiveness.

Agreeing on an energy policy and quantifiable targets for the year 2020, however, was merely a first step in the right direction. Much more difficult was the implementation of the agreed objectives in the years that followed. As a result, this experience is likely to have a significant influence on the negotiations for European energy and climate targets for the post-2020 period.

1.1 Reducing emissions: easier than expected?

The EU's goal of unilaterally reducing its greenhouse gas emissions to 20 % below 1990 levels by the year 2020 has always served two purposes: First, it was intended to accelerate the process of transforming the European economy into a low-carbon economy. And second, with an eye towards the upcoming international climate



negotiations it was to send a strong signal to the outside world that Europe was willing to unilaterally take the first step on climate change. Directly linked to this was the EU's offer to raise its own emissions reduction goal to 30% under the condition that other industrialized countries and emerging economies showed a willingness to implement ambitious emission reduction targets as well.

The crucial step towards implementing the unilateral climate target was taken in the context of the negotiations on the climate-energy package in 2008 (cf. Fischer, 2009). By reforming the EU emissions trading scheme (EU-ETS) and agreeing to reduce greenhouse gas emissions in the sectors not covered by the EU-ETS (transport, agriculture, and buildings), the 20% target was turned into legally binding legislation (European Community, 2009a and 2009c). Since then, roughly half of the greenhouse gas emissions fall under the emissions trading scheme, and the rest are covered by individual country-specific measures. The emissions reduction in non-ETS sectors to be achieved by each Member State has been determined on the basis of their individual economic performance and capacities. The reform also introduced complete harmonization of the system on the EU level from 2013 onward, which means that national allocation plans will be abolished, and with them the possibility for individual Member States to influence the process of free allocation of tradable certificates within the system. Only the revenues from auctioning the allowances are to be given back to the Member States, partly via a solidarity and burden-sharing mechanism. Under these circumstances, the German emissions reduction target of 40% by 2020 seems essentially aspirational in nature. Germany's expected emissions reduction under existing EU legislation only amounts to approximately 33% (cf. Expertenkommission, 2012; Fischer/Geden, 2011).

Since the formal adoption of the climate-energy package in the spring of 2009, the climate policy discussions in the EU have mainly been shaped by the following two developments. First, the lack of success of international climate protection efforts—particularly the failed 2009 UN Climate Change Conference in Copenhagen, which clearly illustrated the ineffectiveness of the EU's conditional emissions reduction goals. Second, the EU was hit by the recession in 2008. The global financial and economic crisis caused a drop in industrial production rates in almost all EU Member States, which led to a noticeable reduction in carbon emissions. In 2011, emissions were

already 17.6% lower than in 1990. Therefore, the 20% emissions reduction target by 2020 has come within reach earlier than expected and will be much easier to achieve compared to expectations in 2007. On the other hand, this development means that the number of available allowances that are determined by the emissions trading system for the period before 2020 will no longer exercise a strong steering effect. Demand for these allowances and thus the allowance price itself has dropped significantly. The price for one ton of CO₂ has long been well under 10 Euros. It is thus a long way away from a price range of 30–40 Euros initially forecast by the European Commission. Many companies were thus able to save up the emissions allowances allocated to them during the financial crisis. Furthermore, the certificates from international climate protection projects that are tradable in the EU-ETS also had a price-lowering effect. Unless targeted interventions into the emissions trading scheme are launched, it is to be expected that the over-supply of allowances will remain in place until the end of the current trading period in 2020.

So far, all attempts to retroactively increase the 2007 reduction goal for 2020 have failed. With the support of the British government in 2010, EU Climate Commissioner Connie Hedegaard tried to illustrate the positive economic effects that would come with raising the target rate to at least 25% (European Commission, 2010a). However, this attempt faced considerable opposition, particularly from Central and Eastern European Member States. To make matters worse, most large Member States have no interest in adjusting climate protection targets. Nevertheless, advanced implementation measures of climate policy tools have already yielded some positive results. In contrast to the situation of several years ago, calls for the climate policy goals to be tightened and the EU climate goal to be raised are now frequently voiced even by important parts of the business community. In particular, large electricity and technology companies now speak up in favor of limiting the number of available allowances in order for them to be able to invest in climate-friendly technologies without suffering competitive disadvantages. It is uncertain whether the Commission's proposal of taking several hundred million emissions allowances temporarily off the market and postponing their auctioning to the 2018–2020 period would actually stabilize the price. At this point, we cannot even predict whether this comparatively unspectacular intervention might fail due to opposition in the

Council of Environmental Ministers and the European Parliament. A first attempt to find a compromise in the plenary of the European Parliament failed in April 2013.

With every year of debate that passes, the likelihood of being able to adjust the 2020 target decreases. The last opportunity to achieve this will presumably be the UN Climate Summit in Doha, asking participating nations to raise their respective climate targets in the Kyoto Protocol's second commitment period by the year 2014. Indeed, it is to be expected that the block of Central and Eastern European Member States led by Poland will continue blocking any attempts to strengthen the EU's greenhouse gas reduction target. Considering its original goal of 2020, if the EU manages to achieve an emissions reduction of 20 % by 2014, and then subsequently refuses to commit to reduce emissions any further before 2020, Europe's reputation in the area of climate policy will be severely damaged. This should motivate the more ambitious Member States to try harder than before to find ways to wear down the opposition encountered from Central and Eastern European Members.

The debate on whether or not to include emissions from international aviation in the EU Emissions Trading System further illustrates that over the last few years, the willingness within the EU to pursue an ambitious climate policy has waned. Since emissions from aviation are not covered by the Kyoto Protocol and because negotiations that have been conducted under the umbrella of the International Civil Aviation Organization (ICAO) since the 1990s have not produced any results so far, the EU decided to take unilateral measures and include aviation in the EU ETS. This step not only affected all flights within the EU, but also all intercontinental flights that depart from or land at an airport within the European Union. This was the first time that emissions that do not originate in the EU were included in the EU's Emissions Trading Scheme. The governments in the United States, China, India, Russia, and a number of other states have opposed this process from the beginning and announced that they would refuse to accept the unilateral measures introduced by the EU. For instance, the U.S. Congress has legally banned U.S.-American airlines from buying allowances from the EU Emissions Trading Scheme, Russia has threatened to deny European airlines the right of transit, and China has threatened to cancel all contracts awarded to Airbus, the main European aircraft manufacturer.

As the airlines' 2012 deadline for purchasing allowances drew closer and closer, however, it became increasingly obvious that the EU lacked a suitable strategy for dealing with the opposition encountered from these non-EU states. Although until the late fall of 2011, the EU Climate Commissioner indicated that the EU was determined to impose sanctions on airlines that were unwilling to cooperate, several Member States of the EU also started suspending their political support. In November of 2012, Connie Hedegaard then announced a face-saving solution.¹ The inclusion of intercontinental flights in the EU ETS would be suspended for a year in order to give the ICAO one last chance to pass global regulation in the matter. Should the requested regulation not be passed by the deadline or turn out to be significantly weaker than the European scheme, the EU's climate policy will have to face a litmus test: Will the EU be satisfied with a watered-down international compromise on climate policy, or will it be willing to stand its ground and insist on its climate policy goals even in the face of such opposition?

1.2 Renewable energy: diverging trends

In addition to the legislation on climate policy, the climate and energy package of 2009 also included a directive on the promotion of the use of energy from renewable sources, which turned the target of a 20 % share of renewables in final energy consumption into legislation (European Community, 2009b). While the EU assumed the role of steering the climate policy side of things in a certain direction, it continued to leave the implementation of measures in the area of renewable support mechanisms up to the Member States. The Renewables Directive sets national targets to be reached by 2020 without determining the mechanisms to achieve them. The individual Member States' targets were determined on the basis of the respective stage of development of their renewable energy sector in 2005 and their economic performance at the time. As a consequence, the targets ranged from 10 % for Malta to 49 % for Sweden. Germany's national target to be reached by 2020 is 18 %, which is below the EU average. The targets of individual Member States have been set as a percentage of their final energy consumption. Member States can decide for themselves which exact percentage of renewable energy

1. In this context, Climate Commissioner Hedegaard announced that »the clock would be stopped« until the ICAO presents an agreement in 2013 (cf. European Commission, 2012d).

sources to strive for in their electricity, heating/cooling, and transportation sectors, as long as the overall target is fulfilled. The transportation sector is the only sector to have been assigned a specific minimum target of 10 % by 2020 that must be achieved by all Member States.

Member States must provide the Commission with annual reports on the state of development and any political measures that have been or are being carried out in the renewable energy sector. The first round of national action plans for the year 2011 painted a very positive picture. With the exception of only a few Member States, the goals were considered likely to be achieved (European Commission, 2011a and 2012b). Since the summer of 2012, however, signs have demonstrated that these positive prognoses can no longer be kept (cf. Fischer/Westphal, 2012). The latest progress report in March 2013 confirmed a more doubtful outlook (c.f. European Commission 2013b). This has mostly been due to two independent developments:

(1) In the transportation sector, which accounts for roughly one third of energy consumption in the EU, biofuels were supposed to make a major contribution to achieving the renewable energy goal. The sub-target of deriving 10 % of the energy used in the transport sector from renewable energy sources was meant to create a Europe-wide market for biofuels, while at the same time promoting the development of new technologies, such as electrically powered cars or second-generation biofuels that no longer pose a threat to food production. Even before the directive was passed in 2009, critical voices were raised, advising against political support measures in favor of biofuels and questioning the sustainability of this development. Meanwhile, the (sometimes exaggerated) »food vs. fuel« conflict, i.e. the competition between fuel and food production, had a disastrous effect on the reputation of the biofuel industry. Once a number of analysts began questioning the positive effects of certain biofuels on the climate, the pressure on the European Commission to rethink its renewable energy policy for the transportation sector grew. In October of 2012, the European Commissioner for Energy, Günther Oettinger, and the EU's Climate Commissioner, Connie Hedegaard, presented a legislative proposal limiting the share of conventional biofuels in the transport sector to 5 % and tightening the sustainability criteria, particularly regarding the negative effects of indirect land-use changes (European Commission, 2012a). If the Member States and

the European Parliament were to pass this initiative, the achievement of this sector-specific 10 % goal would be seriously jeopardized, not only because little progress has been made with regards to the introduction of new second-generation biofuels, but also because technological development in the area of electrically powered vehicles is failing to live up to expectations. If the 10 % goal in the transport sector is abandoned, the overall objective of raising the share of renewables to 20 % as a percentage of final energy consumption would be jeopardized as well.

(2) In the course of the global financial, economic, and debt crisis, many Member States have significantly cut the amount of financial support used to promote the spread of renewable energies. Particularly in the crisis-torn nations of Spain, Portugal and Greece, renewable energy subsidies have fallen victim to fiscal consolidation. In addition, a number of Central and Eastern European states have curtailed their renewable energy support schemes. In this context, some of these cuts were implemented retroactively, thus not only reducing funds for future projects, but also cutting promised support for facilities that have already been installed, which proved disastrous for the development of the renewable energy sector in those countries. These measures severely affected the safety of investment, and thus the confidence that investors placed in the development of renewable energies. As a consequence of these cuts and investors' overall caution in times of an economic crisis, the prospects for the renewable energy sector in the EU are much more gloomy now than they were twelve months ago. This further reduces the likelihood of achieving the 20 % target by 2020. Due to the change in circumstances, even some of the former pioneering states in the area of renewable energy, such as Spain, are now unlikely to achieve their national renewable target.

1.3 Energy efficiency: a lack of ambition

In contrast to the climate protection and renewable energy targets, EU energy policy since 2007 has somewhat neglected the energy efficiency objective. The target formula has been rather obscure since the beginning because the European Council merely stipulated in its energy action plan of 2007 that »energy efficiency in the EU must be increased, so that [...] the goal of saving 20 % of the EU's energy consumption compared to

the prognoses for 2020 can be achieved« (Council of the European Union, 2007). In other words, in 2007 the heads of state and government did not agree to reduce their 2007 energy consumption rates by 20%, but instead agreed on a reduction of the projected consumption rates for 2020; for a long time, it was not even clear exactly upon which projections this agreement was based. This formula, which was not specified further until Energy Commissioner Oettinger gave it a more concrete shape, corresponds to the equally vague final efficiency goal, which serves merely as a recommendation. The 20% energy savings target has always been considered to be merely advisory in nature and – in contrast to the climate protection and renewable energy targets – had never been given the shape of a legally binding regulation in its entirety.

Since the beginning, this process has lacked proponents to promote the matter on an EU level and to make absolutely sure that it would be included in the energy policy agenda. In the years that followed, energy efficiency policies in the EU remained a fragmented set of individual and incoherent measures: a mix of binding energy consumption standards (e.g. »the incandescent light bulb ban«), product labeling regulations, and legislation that was merely advisory in nature. It wasn't until 2010, when it became obvious that despite the continued economic slowdown, the EU was not on track to achieve its energy savings target by 2020. In the following months a serious political discussion of the topic began. In particular, Mr. Oettinger, the EU Energy Commissioner, repeatedly campaigned for greater commitment on the side of the Member States and threatened to introduce a legislative proposal that would make the target legally binding.

When the proposal for a new Energy Efficiency Directive was presented to the public in June of 2011, however, it contained neither legally binding targets nor sector-specific objectives (European Commission, 2011d). In the course of the negotiations between the Council and the European Parliament, the proposal was watered down even further. At the end, it was only thanks to the results-oriented approach taken by the Danish Presidency and the Commission – which was trying to save face – that a compromise could be reached in June of 2012. Although this compromise requires Member States to introduce further energy efficiency measures, it refrained from introducing any control measures on the EU level (European Union, 2012). It is uncertain whether the new

Energy Efficiency Directive will lead to effective regulation in individual Member States and whether the EU will be able to get anywhere close to reaching the existing 2020 target. In any case, Member States are unlikely to agree to any significant tightening of their energy efficiency measures again.

2. Fundamental controversies

Since the EU Energy Strategy was passed in 2007, the implementation of the 20-20-20 program has been at the very center of political attention. Even though a plethora of other initiatives have been launched in support of it, none of them have been particularly successful. This was made especially obvious by the attempt to develop a resilient external energy policy for the EU, which failed comprehensively and is now hardly ever mentioned. There are still too many differences between the interests of the 27 Member States, which are primarily responsible for the security of energy supply. In light of the mostly domestic focus of individual Member States' energy markets, the external energy policy preferences of individual states depend mainly on their energy mix and on the specific import dependency structures at hand (cf. Geden/Dröge, 2010).

The future development of the EU energy and climate policy will depend crucially on the European institutions' solutions in two fundamental but politically contentious areas: first, the expansion of electricity and natural gas grids which are crucial for building an internal energy market in the EU, and second, the increasingly pressing question of the extent to which the EU's energy and climate policy should be based on coherent long-term planning.

2.1 The internal energy market and infrastructure

Since as early as the end of the 1990s, the EU has pursued its declared goal of creating a fully integrated market for natural gas and electricity. After a few mostly failed attempts, much progress has been made on this project over the last few years, especially after the Third Internal Energy Market Package was passed in 2009. Politically, the attention was mostly focused on the conflicts caused by tightening provisions regarding the »unbundling« of large energy utilities. But creating new institutions and

accelerating the implementation of detailed regulatory provisions have achieved the most far-reaching integration. This development, however, was hardly noticed outside of a small circle of experts. In this context, the focus has been placed mainly on using and expanding the existing electricity and natural gas grids. For instance, the harmonization of trade rules and technical network codes will greatly simplify cross-border flows of electricity and gas. According to new EU regulation, transmission system operators, which had operated mostly domestically up to that point, were required to found cooperation structures (ENTSO-E for electricity grids, ENTSO-G for natural gas grids), and they have been assigned specific tasks, such as regularly developing European ten-year network development plans. An Agency for the Cooperation of Energy Regulators (ACER) has been created, which has the authority to make the final decision on cross-border projects if the authorities of the respective Member States fail to reach an agreement.

While the core area of energy market regulations is gradually and almost silently being Europeanized, the topic of infrastructure development is turning into a new area of conflict. In 2011, the Commission launched a fundamental discussion about the role of the EU in network development by submitting a proposal in favor of harmonizing the permitting procedures and giving the EU more control over the funding aspect of infrastructure development projects. The core of this Energy Infrastructure Package is constituted by a new procedure for identifying »projects of common interest« and the proposal to have the EU carry a significant part of the financial burden for these projects. In its original proposal, the Commission budgeted 9.1 billion Euros for this over the duration of the next multiannual financial framework (2014–2020). While the European Parliament and the European Union are already in the process of negotiating the details of the regulation for identifying and regulating priority projects, the overall budget for upgrading and expanding the infrastructure grid will be decided upon by the 27 heads of state and government in the course of the EU budget negotiations.

So far, the EU's role in infrastructure development was mainly limited to the (co-) financing of feasibility studies and smaller projects. With only 155 million Euros in funding, the Trans-European Energy Network (TEN-E) program was significantly underfunded for the 2007–2013 period. In comparison, the one-of-a-kind »European


Economic Recovery Plan« for investments in the energy sector, which was developed in the course of the financial crisis, was allotted a much higher amount of four billion Euros in funding. The envisaged »Connecting Europe Facility« for the 2014–2020 period has been designed as a high-level follow-up funding tool for financing infrastructure projects.

Not all Member States have given their full support to this initiative launched by the Commission, however. In particular, the net contributors among the Member States have expressed reservations about the EU's extensive participation in energy infrastructure projects. Their reservations are based on the argument that in a liberalized market, private companies and not the public sector should make infrastructure investments. Eastern and Southern European governments, however, stress the need for larger EU investments in those sectors and regions in which the market itself does not provide the necessary funding. While it is rather certain that the level of energy infrastructure funding will be significantly above that of the current TEN-E program, net contributors among Member States will probably force large cuts to the Commission's original budget proposal.

It should be pointed out, however, that the level of funding and the funding procedures for future European energy infrastructure projects are not the only controversial issues in this regard. Further disagreements exist about the nomination of projects and the prioritization of measures. For instance, many Member States are calling for a balanced allocation of »projects of common interest,« regardless of how relevant individual projects might be for the EU's internal energy market as a whole. This would mean that a crucial mistake that was already made in the area of cohesion policy would now be repeated in the area of energy infrastructure policy.

2.2 Roadmaps for 2050

Since 2009, the EU's long-term climate policy benchmark of reducing its greenhouse gas emissions by 80–95 % until the year 2050 (compared to 1990 levels) has been reflected in a number of Commission papers and conclusions submitted by the European Council and the sector-specific councils of ministers. This benchmark is not a legally binding goal; rather, it reflects a mitigation corridor that the Intergovernmental Panel on Climate Change



(IPCC) suggested in its 2007 assessment report, outlining how industrialized nations could make a fair contribution to reaching the global two-degree target. However, Poland in particular has influenced the corresponding EU declarations in such a way that the 80–95 % corridor will only apply if all industrialized nations agree on an appropriate reduction level and if emerging economies and developing countries commit themselves to significant reductions in greenhouse gas emissions, too. This illustrates that even in the post-2020 period, the EU's internal climate policy will continue to be closely linked with international negotiations and their progress.

Shortly before the 2009 Copenhagen Climate Summit, the European Council put the Commission in charge of conducting macroeconomic and sector-specific analyses for implementing an emissions reduction path to 2050. In March 2011, EU Climate Commissioner Hedegaard first presented a cross-sectoral analysis called the »Low Carbon Roadmap« (European Commission, 2011b). Shortly thereafter, a specialized analysis of the effects on the transport sector followed, and some weeks later an examination of the energy sector was presented (European Commission, 2011c and 2011e). In the time that followed, however, Member States were unable to pass consensual conclusions, which would have sent a signal to the international community that despite the economic and debt crisis, the EU is not only committed to the 80–95 % mitigation corridor, but is also willing to agree to ambitious and legally binding energy and climate goals for the year 2030. In the case of the cross-sector »Low Carbon Roadmap,« the attempt to reach a consensus failed twice, and in the case of the Energy Roadmap it failed once. Both of these initiatives were blocked because the Polish minister in charge vetoed the proposals. Poland's unwillingness to compromise came as a surprise to many, not least because no obligations for Member States could have been derived from the Council's conclusions themselves. Rather, the conclusions were intended to send a signal to the Commission about how a proposal that would be amenable to compromise could be given a more concrete shape to the EU's energy and climate policy for the 2021–2030 period. Such a signal is still awaited; in the case of the transport roadmap, a compromise is far from reach because among other factors there are reservations on the part of many Member States about introducing ambitious emission reduction goals in a sector that has a strong influence on domestic elections.

Regardless of its political resonance, the Commission has nevertheless created an innovative planning tool by submitting three roadmaps, which all contain the same ambitious emission reduction target for 2050. This planning tool offers the possibility of illustrating the consequences of long-term targets for actions taken in the present (and vice versa). Planning processes based on macroeconomic models continue to offer the Commission the possibility of exercising a significant influence on the structure of energy and climate debates. One method of achieving this is by making assumptions that may be disputable but are rarely questioned in practice. For instance, the roadmaps do not even seriously contemplate the possibility that a comprehensive and ambitious global climate treaty may not be created for quite some time. Therefore, we lack a well-founded analysis of what the potential consequences for the level of unilateral European emission reduction efforts might be if the envisaged global climate treaty fails. Nevertheless, the roadmap approach offers the Commission some useful insights: for instance, the key role that energy efficiency measures play and the consequences of an ambitious decarbonization policy for different fossil energy sources. The roadmap also revealed that in the medium-term it might be necessary to equip all coal power plants with the carbon capture and storage (CCS) technology. The same thing would be true for gas plants beginning in the 2030s.

As far as Poland is concerned, there are two main problems. First, the Polish government has criticized the trend of decoupling European emissions reduction policies from progress made in the context of international climate negotiations. Second, Poland would be faced with significant pressure to change its domestic energy mix and high costs for the transformation process if the roadmaps were implemented. Even though the Polish government was the only one to publicly and effectively resist the adoption of the climate and energy roadmaps, it can be assumed that a number of other Eastern and Southern European Member States share Poland's reservations. The message spread publicly by the Commission and many North-Western European Member States, according to which 26 of the 27 Member States fully subscribe to an ambitious European climate policy, is misleading; this becomes very obvious when looking at the ongoing legislative process for reforming the emissions trading scheme. It is true that the biggest objections are once again being raised by Poland. However, the Polish government now enjoys the support of several other

governments on this issue, which – unlike the roadmap conclusions – would require a blocking minority in the Council of Ministers.

The discussion about the climate and energy roadmaps for 2050 has uncovered several key areas of conflict. The way these conflicts are dealt with will determine the future direction of the EU's energy and climate policy. Priority will be given to the question of whether emission reductions should continue to be the dominant benchmark in the area of energy policy. The much more fundamental question, which is currently simmering under the surface, is whether Member States are going to be willing to surrender further parts of their sovereignty in the area of energy policy to the EU. The roadmaps have not only shown that the envisaged transformation process will have a considerable effect on the energy supply structures in individual Member States, but it has also illustrated that this transformation process cannot be carried out successfully as long as 27 different energy strategies are in place. If the poorly coordinated energy policy approach pursued by Member States continues, the transformation costs will likely be significant due to the interdependence of individual Member States' energy markets. However, a fully European integrated approach – a necessity if the energy roadmap is to be implemented successfully – violates Art. 194, Section 3, of the Treaty on the Functioning of the European Union, which legally established the Member States' sovereignty on energy supply structures, and there is no evidence of Member States being willing to give it up (cf. Fischer/Geden, 2012). This is true irrespective of individual Member States' energy policy designs. Even countries that have created long-term plans with ambitious emissions goals similar to those of the EU differ greatly from each other in terms of the priorities that were set (cf. Notenboom et al., 2012).

3. Strategic decisions for the post-2020 period: difficult negotiations ahead

The 2020 targets set important milestones for the energy industry, which requires medium- and long-term planning in order to be successful. The 2007 energy strategy symbolized the sustainable development paradigm pursued by the European Union which was mostly unquestioned at that time. The two other angles of the energy policy triangle – security of supply and competitiveness – have

been somewhat marginalized in energy policy since 2007 because they are almost impossible to measure objectively on the basis of quantifiable indicators, and thus very hard to implement legally. Only the 20-20-20 targets, which primarily focus on the aspect of sustainability, are legally and politically binding. Even in the case of an energy savings goal that is only advisory in nature, the degree to which a certain target is reached or missed is much easier to evaluate than in the case of a generally phrased objective such as the »completion of the internal energy market by 2014« (cf. European Commission, 2012c).

This does not mean, however, that the target architecture created in 2007 will simply be carried on. On the contrary: As soon as the Commission submits its detailed energy and climate policy proposals for 2030 by the end of 2013, all Member States will enter into conflict-laden negotiations, which the heads of state and government can only put an end to by reaching a consensus.²

We estimate that the course of the international climate negotiations will have a significant effect on the exact parameters of the future emissions reduction goal. If the UN fails to pass a comprehensive and ambitious global climate treaty by 2015, thus failing to adhere to the official UNFCCC roadmap, it will be very difficult for the EU to agree on ambitious unilateral goals as well. But even if the UN climate negotiations for 2015 do not fail, it is unlikely for the intra-European compromise on the post-2020 framework to be »roadmap-compliant.«³ Since the emissions trading scheme now works Europe-wide without national allocation, the possibilities of burden-sharing between the more ambitious and the more hesitant EU Member States are rather limited. Governments with an exceptional level of commitment to climate policy have to focus on those sectors that are not part of the EU's emissions trading scheme. But new regulatory burdens in the transport or buildings sector are particularly sensitive issues prior to elections because the direct con-

2. In the process of setting these headline targets, the European Parliament will merely have an advisory role. It can exert an influence on the implementation of these targets via the legislative co-decision procedure, for instance when amending the emissions trading and renewable energies directive.

3. The EU Commission's Low Carbon Roadmap aims at a 40 % emissions reduction by 2030 (compared to 1990 levels), which – in contrast to the 20 % target for 2020 – is supposed to be reached exclusively through efforts taken in Europe alone (»40 % domestic«); in other words, without benefiting from emission credits from climate protection projects that are being conducted in emerging economies and developing countries.

sequences of ambitious climate policies are much more noticeable for individual voters than stricter regulations for electricity producers would be.

We also expect further conflicts in the area of renewable energies. If the current trend continues and the EU or some of its Member States fail to reach its goals for 2020, the willingness of the heads of state and government to once again agree to legally binding targets for the post-2020 period will be negatively affected.⁴ This will be even more true if the ambitious Member States are unwilling to open up their support schemes to installations located in other regions of the EU or consider a Europeanization of support schemes in general. Rather, renewable energy pioneers would then focus on their domestic concepts in this sector and thus increasingly link those to industrial-policy considerations. Such a development would be equivalent to the failure of an overall European framework for renewable energies. The negative impacts on the internal electricity market that go hand in hand with this would then have to be addressed on a regional level (cf. Fischer/Westphal, 2012).

The likelihood of the energy efficiency target being renewed after 2020 is extremely low. The fact that the EU is unlikely to reach its 2020 goals and the tough negotiations on the energy efficiency directive have probably induced Member States even more to give in to their inclination and do without quantifiable limits on overall energy consumption.

Despite the publication of a Commission consultation (»Green Paper«) on the 2030 framework, no substantial discussions have taken place on the fundamental architecture or ambition levels of post-2020 targets. It is conceivable that disputes between Member States will not only delay the final decision but also lead to a compromise in the shape of vaguely formulated goals that may be open to a number of different interpretations. The more narrow the boundaries are set by the heads of state and government, the less room there will be for the Council of Ministers and the European Parliament to deviate during the complex implementation phase.

4. The British government already goes so far as to generally question the necessity of a renewable energy target. Instead, it wants the EU to follow a »technology-neutral climate policy« that treats all low-emission technologies (including fossil power plants with CCS and nuclear energy) the equally, even with regard to the possibility of additional funding for nuclear power.

The question of whether or not the European Union will once again agree to a comprehensive energy and climate framework depends strongly on the timing of the negotiations. If the EU Commission submits a detailed proposal on this matter by the end of 2013, negotiations between Member States could begin in the year 2014 and an agreement could be reached in 2015 at the earliest. It is rather unlikely, however, that the EU will be ready to agree to new legally binding domestic targets before the crucial world climate summit takes place at the end of 2015. Based on the experience of the Copenhagen Climate Summit in 2009, it seems hardly conceivable that Member States will even agree on a conditional emissions reduction target that would be similar in structure to the 2007 agreement (»20 % unilateral, 30 % conditional reductions by 2020«). Instead, Member States will probably attempt to postpone the decision on the emissions reduction target until after the 2015 climate summit, while the energy industry and the environmental movement will demand that the EU decide on new targets as soon as possible. It is difficult to predict how long individual governments will be able to stand up to the pressure.

Should the EU actually decide to wait for a clear signal from the UN negotiation process before agreeing on an emissions reduction target, there will be a number of possible consequences. If the different elements of the target architecture cannot be decided upon simultaneously, the issues might be solved one after the other, i.e. the political discussion about a new renewable energy goal could be concluded first. This would certainly be in the interest of a number of different political and entrepreneurial stakeholders from the renewable energy sector, who fear that the plodding UN climate negotiations will have negative repercussions on renewable energy policies and who will thus demand that these two policy areas be decoupled from one another. Since this would put an end to a holistic energy and climate policy framework, it would be conceivable in principle to (initially) formulate a European renewable energy target for the electricity sector alone. The negative experiences in the context of the biofuels debate in the transport sector and the lack of cross-border implications of the heating and cooling sector could lend further arguments in favor of such a limited approach.

4. Conclusion

By starting to develop an integrated EU energy and climate policy, setting quantifiable targets for 2020, and implementing crucial elements of these in the context of the climate and energy package of 2008, the EU has certainly demonstrated that it is capable of taking action in this policy area. The results thus far are mixed, however. While more could have been achieved in the area of emissions reductions, renewable energy policies seem to have fallen victim to the distinct national agendas and processes in the individual Member States. The success rates in the area of energy efficiency will probably continue to depend on individual Member States' ambitions to include the recommended EU target into their domestic political agendas. In any case, the vaguely formulated target of 2007 was hardly able to take full effect.

Against this background, the development of a European energy and climate strategy for the post-2020 period will probably constitute a litmus test for this policy area, which is still in its infancy. Due to the complexity of the transformation process, which – according to many important stakeholders – is geared towards completely decarbonizing the European economies, the medium-term strategies of individual Member States remain unclear. At this point, the course and the result of the negotiations are difficult to predict. Currently, it seems highly likely that during these negotiations the Central and Eastern European Member States will attempt to at least slow down the speed at which the transformation process is taking place, and these attempts will probably be successful. Unless Germany adjusts its current course, this process is likely to widen the discrepancy even further between the energy transition policy pursued by Germany and the European climate and energy policy.

A renewed discussion about the fundamental direction and speed of the energy transition in Germany will unquestionably ensue following the adoption of a European agreement, at the latest. If the EU scales back its ambition and passes less demanding energy and climate targets, should Germany adapt to this development? Or should Germany stay on course and confidently follow a »leadership by example« strategy even more vigorously even if neighboring states show little willingness to share the burden or to take Germany's preferences into account when making their own domestic policy decisions?

Regardless of which path one considers to be the more suitable one, the following conclusion will remain true either way: Germany's energy policy, which has been completely absorbed by the implementation of the energy transition, will have to take into account the European perspective soon. Only then will Germany be able to influence the European legal framework in line with its own interests.



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About the authors

Severin Fischer is a Fellow in the Research Division European Integration of the Stiftung Wissenschaft und Politik (SWP), the German Institute for International and Security Affairs in Berlin.

Dr. Oliver Geden is a Senior Associate at SWP.

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Responsible:
Dr Ernst Hillebrand, Director, International Policy Analysis

Phone: ++49-30-269-35-7745 | Fax: ++49-30-269-35-9248
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