

Europeanising the German Energy Transition

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Germany's so-called "Energiewende" (energy transition) of summer 2011 could be the final episode of a long-running political conflict over the use of nuclear energy. The broad consensus assembled by the German government starts a process that will shut down all the country's nuclear power stations by 2022, while still confirming medium- to long-term targets for renewables and the reduction of greenhouse gas emissions. But the intense energy policy debate has remained largely confined to the national context and neglects economic and political interconnections with the EU level. This blinkered perspective not only endangers the success of the energy transition within Germany, but threatens its role as a globally attractive model for a successful shift to a low-carbon economy. If the German transformation is to succeed it must be backed up with political initiatives at the EU level.

The policy change in the German energy strategy, prompted by the shock of the multiple reactor meltdowns at Fukushima, has sealed the phasing-out of nuclear power generation in Germany. Despite the fundamental revision of its energy concept the German government has emphasised its commitment to existing expansion plans for renewables and the national climate target, even under these considerably altered circumstances. By 2020 at least 35 percent of electricity demand shall be generated by renewable means and greenhouse gas emissions are still to be cut by 40 percent (compared to 1990).

The European dimension of the German energy transition has been almost absent from the national debate, despite a strong

Europeanisation push in the energy business and its regulatory framework over the last decades. The reach of national energy policy is consistently overestimated, and a twofold change of perspective is therefore necessary. On the one hand, the desired effects of national policies must always be assessed in the context of the existing European environment. On the other, it is not enough to pursue the transition as a purely German project; it must also involve efforts to modify the European regulatory framework.

Integration vs. Isolation

Energy experts warn that the rapid phasing-out of nuclear power could lead to an

increasing probability of power cuts, especially in winter when high demand meets a reduced supply of wind and solar power. Concerns are also raised over natural gas. If the energy transition were to lead to increasing use of gas-fired power stations – a technically obvious option but subject to uncertainty under current market conditions – this could potentially increase dependency on suppliers like Russia.

In both cases the solution lies less within Germany, but more in cooperation with neighbouring countries to develop the European internal energy market. Greater security of supply can be achieved most efficiently by expanding cross-border transmission links and improving cooperation between all actors involved. The European Networks of Transmission System Operators (ENTSO) for electricity and gas play an important role in managing load fluctuations. Cooperation between European energy regulators also needs to be improved. Not least, the widespread negative public connotation of electricity imports from neighbouring states must be overcome. In a European internal market for electricity, such imports are no risk to energy security.

Prompt implementation of a regulation recently proposed by the European Commission could advance the necessary process of expanding European energy infrastructure much more decisively than has been possible under the existing directives for Trans-European Energy Networks (TEN-E). The legislative procedure is especially important in the context of the German energy strategy, where accelerated investment in cross-border links could obviate investment in new power stations or terminals for liquefied natural gas (LNG) and thereby reduce the cost of the transition. Germany should seriously consider changing its long-held position and agree to the harmonisation of approval procedures for cross-border projects and increasing public funding for energy infrastructure expansion as advocated in the Commission's proposal (€9.1 billion from 2014 to 2020

compared to €155 million for the TEN-E period 2007 to 2013).

Nuclear Safety in Europe

While the political impact of Fukushima was recognizable in Germany, Italy and Switzerland, most European countries have seen no reason for fundamental change. EU member-states like France, Britain and the Czech Republic are not going to bid farewell to nuclear power any time soon. The European treaties grant member states the right to make their own sovereign decisions about which resources and technologies they use. Under the principles of the internal market, electricity from nuclear power stations must, like any other commodity, be permitted to flow freely throughout Europe without discrimination. In other words, the approaching end of the production of nuclear electricity in Germany does not necessarily mean that electricity from nuclear power plants will no longer be consumed there. The only way to prevent imports would be to completely disconnect the German electricity grid from its neighbours. But Germany needs a well interconnected European network precisely because of its national energy transition. International connectivity allows electricity imports to cover short-term supply shortfalls and permits renewable electricity to be sold abroad when there is a domestic surplus.

It would be consistent for Berlin to step up its efforts to increase safety norms for nuclear plants in the EU. In March 2011 the twenty-seven heads of state and government called on the Commission to critically review the regulatory framework on nuclear safety. In the run-up to the publication of the initial findings of the nuclear safety stress tests scheduled for late 2011, Germany should push for the preparation of a directive to introduce binding uniform safety standards for the operation of nuclear power plants. A coalition of nuclear-critical states could put the issue of nuclear safety permanently on the EU's energy policy agenda.

The European Climate Target Is the Key

The immediate closure of eight German nuclear power plants and the successive shut-down of the remaining nine will lead to an increase of Germany's emissions from electricity production, as fossil fuels are burned to make up at least a part of the shortfall. The self-imposed target of reducing national greenhouse gas emissions by 40 percent by 2020 is unlikely to be achieved under these conditions.

This is a sensitive issue in the national political arena because it appears to undermine Germany's pioneering role on climate policy. In fact, if we examine the interaction of German and European instruments this turns out to be nothing but a problem of political communication: total electricity production in the EU is subject to joint emissions trading, where national targets will be abolished in 2013 in favour of a single European target. The permitted ceiling decreases by 1.74 percent each year through to 2020. So if Germany burns more gas and coal, emissions will increase in Germany but not in the EU as a whole because increased demand for pollution rights by German power plant operators will push up the price of emissions certificates on the European exchanges. In the long run this will make higher-emission power stations in the EU unprofitable and squeeze them out of the market. In other words, any additional carbon dioxide emitted by coal- and gas-fired power stations in Germany will be balanced at the European level by the use of lower-CO₂ facilities. This process will be determined solely by the market and is largely beyond the influence of national policymakers.

In awareness of these interrelations, German climate policy should be directed towards modifying the European regulatory framework rather than focussing on "voluntary" national targets. If Germany wants to play its role as climate pioneer effectively, it must push for better investment incentives for climate-friendly technologies via CO₂ pricing. Because this can only func-

tion at the overall European level, national initiatives must be brought into line with EU climate targets. Most likely, the Danish Council Presidency in the first half of 2012 will take the last opportunity for an initiative to change the EU's CO₂ reduction target for 2020 from 20 to 25–30 percent. The climate policy decisions involved in the energy transition would lead us to expect Germany to support this move.

The "German Model"

With its "Energiewende" Berlin has adopted an overall energy concept that is as yet unique for a major industrial country. At its heart is the acceleration of a technology path that ensures higher efficiency and an increase in the use of renewable energy sources, while, at the same time, phasing out nuclear energy. The "German model" is being closely watched in Europe and other parts of the world, especially the aspect of its economic viability. This in turn requires a critical examination of the transition costs, which are decisively influenced by the choice of the regulatory model.

The most important instrument of the transformation to a low-carbon economy is the national Renewable Energy Act of 2000. But the export-focused German economy has always been dependent on the structure of its markets, especially the European internal market. In the longer term German domestic demand for renewable energy technologies, and environmental and efficiency technologies in general, will be insufficient to sustain the economic transformation process. The success of the German model therefore depends heavily on broader European demand, which can be influenced indirectly through a stricter limitation of CO₂ certificates in the emissions trading scheme or directly through European support mechanisms for renewables. Such instruments are handled very differently within the EU, with the highest feed-in tariffs in Germany and a much less favourable framework in many other EU member-states.

New policies to promote renewable energy across Europe would not only expand the market for German products but probably also reduce the costs of the national energy transition through two mechanisms. Firstly, power generation would be more efficiently distributed across Europe, taking better account of meteorological and topographical aspects. Secondly, the demand for new technologies outside Germany would increase. If state intervention on behalf of renewables remains restricted to the domestic market then the costs for the upcoming transformation of Germany's industrial base will increase tangibly. And that would rob the "German model" of some of its attraction.

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A European Transition

With the adoption of a revised energy concept and the corresponding legislative decisions German energy policy is continuing a pathway that dates back to the first nuclear phase-out decision of 2000 under Gerhard Schröder's Social Democrat/Green coalition. But the circumstances have changed considerably since then. The steady convergence of the European internal energy market and the emergence of a genuinely European climate policy limit the influence of national policy decisions. This trend will continue in the coming decade. If the "Energiewende" is reduced to a purely German affair this globally pioneering transformation project threatens to fail. If it is to succeed, Germany will have to concentrate on shaping European instruments to its needs.