

Germany sets its sights on coal phase-out ^[1]



Renewable energies in Germany currently account for nearly one-third of electricity usage. However, they cover only 12 per cent of total energy demand, since the heating, industrial, and transportation sectors still largely depend on fossil fuels. An all-inclusive revision of national economic strategies is therefore now required for decarbonising energy usage to fulfill climate protection obligations.

In 2013, the CDU/CSU/SPD coalition government committed to eliminating between 80 and 95 per cent of Germany's greenhouse gas emissions by mid-century compared with 1990. Since carbon dioxide (CO₂) constitutes 88 per cent of the greenhouse gases in question, the systematic reduction of carbon-based fuel usage is essential to realizing a climate-tolerant economy. The staged retirement of Germany's final eight nuclear reactors has been legislated by the end of 2022. The continuing expansion of renewable energy capacities is therefore essential for supplanting this lost generation. Less than a tenth of power demand is covered by costly natural gas. Domestic lignite and imported coal account for about 25 per cent and 20 per cent of electricity generation, respectively.

To promote renewable energy deployment, Germany provides guaranteed power feed-in tariffs for operators. By 2015, wind (13.5%), solar (5.9%), bioenergy from waste (7.7%), and hydroelectric (3.0%) power accounted for 30.1 per cent of overall generation. Daily availability widely deviates from these annualized figures, however. Recurrent wind and solar deficiencies (grid "droughts") mean that fossil fuel generation remains essential for insuring uninterrupted electricity supplies. Limited pumped hydropower reserves would be exhausted within a few hours without these conventional capacities.

According to the most recently available data for an entire calendar year (2014), renewable energies with a total capacity of 91.8 billion watts (GW) – including 1.5 million PV solar installations (38.5 GW) and 24,867 wind turbines (38.1 GW) – delivered scarcely more electricity in Germany than lignite power plants with a capacity of 23.1 GW. Whenever this combined fluctuating generation surpasses grid demand, the excess electricity is redirected to local

utilities, hydroelectric storage plants, and the export market. The necessary routing costs have been estimated at €500 million for 2015 alone by the grid operator 50Hertz.

Shortly after the Paris COP21 conference, the Agora Energiewende group in Berlin presented a programme with “Eleven Principles for a Consensus on Coal” on 13 January 2016. According to these findings, the current 42 per cent usage of coal and lignite for electrical power generation must be phased out over the next quarter-century for Germany to realize its ambitious climate protection goals. Carbon-based market mechanisms will be insufficient to achieve this objective alone. “Even if the CO₂ price were to increase to about 40 euros per ton of CO₂ by 2040,” Agora notes, “the proportion of electricity generated by coal in the system would still be too high”. Overall emission reduction targets for 2030 and 2040 could not be attained without comprehensive phase-out schedules, additional carbon taxes, or public plant decommissioning premiums.

Once nuclear power has been completely retired, more than three quarters of Germany’s energy will be derived from fossil fuels. An entirely market-based approach would be inadequate for effecting the necessary decarbonization transition. Without policy incentives, no market exists for climate-neutral transportation and buildings. In the Agora proposal, the increasing electrification of these sectors could accelerate the transformation of power generation. With electric vehicles and heat pumps drastically increasing the demand for wind and solar power, far greater capacities would be required.

Agora has particularly emphasized the need for RWE to retire lignite power generation in the Rhineland by 2040 for Germany to attain its CO₂ reduction targets. Fulfilling this requirement would eliminate 77.8 TWh of the electricity generated in 2015, constituting 12 per cent of total grid power (bmwi.de). RWE also generated 46.5 TWh (7.2%) of electricity from hard coal, while nuclear contributed 14.1 per cent nationwide in 2015. Germany would therefore have to double its current renewable energy commitment just to make RWE carbon-free while also phasing out nuclear power.

Jeffrey H. Michel

Acid News Article Issue:

- [2016-2](#) ^[2]

Source URL: <http://www.airclim.org/acidnews/germany-sets-its-sights-coal-phase-out>

Links

[1] <http://www.airclim.org/acidnews/germany-sets-its-sights-coal-phase-out>

[2] <http://www.airclim.org/acid-news-article-issue/2016-2>