



Germany's new energy policy - Claims and Challenges -

Restructuring the energy system: An overall strategy

With its Energy Concept the German government has formulated guidelines for an environmentally sound, reliable and affordable energy supply. For the first time a road into the age of renewable energies was mapped. This provides long-term orientation while at the same time flexibility required for new technical and economic developments is preserved. The German Energy Strategy bases on four pillars: targets, measures, financing, monitoring.

In 2050 renewable energies will contribute the major share to the energy mix (electricity, heat, transportation). Today, share is about 10%. On the path to achieving this, conventional energy sources will gradually be replaced by renewables in a dynamic energy mix. In a step-by-step approach, Germany will completely phase out electricity production in our nuclear power plants by the end of 2022.

The example of electricity production puts this in perspective: in 40 years 80% of electricity generated is to come from renewable sources (today 20%), as opposed to the 80% of electricity that is currently derived from fossil fuels and nuclear energy. A restructuring of this magnitude can rightly be considered the transition to a new energy era (referred to as "Energiewende" in German).

With this 40-year trajectory, the Energy Concept has a long-term focus and aims to give a certain degree of planning and investment security for the extensive investments that are needed. Nevertheless, the Concept is as technology-neutral as possible to avoid any barriers to new technologies entering the market. This approach strikes a balance between investment security and flexibility.

A financing model is also available in the form of the Energy and Climate Fund. This extra-budgetary special fund is financed by revenue from emissions trading, which means that the precise volume of the fund depends on the price of CO₂.

The Energy and Climate Fund supports a range of areas, including an Energy Efficiency Fund, electric mobility, building modernisation and national and international climate protection projects. A system of compensatory payments for power-intensive businesses to offset increases in electricity prices due to emission costs is also planned from 2013 onwards.

Restructuring the energy system will take time and require considerable entrepreneurial investments in new power plants, grids, storage technology, building retrofits and the expansion and development of renewable sources of energy. In a market based economy, however, policy-makers cannot determine where individual businesses decide to invest. For this reason, the Federal Government will use a monitoring system to regularly check its progress on the delivery of goals and measures in the energy field and to evaluate whether the framework conditions are still suitable.

The first annual monitoring report will be submitted at the end of the year. An independent commission of energy experts will support the Federal Government in the monitoring process. A summary progress report will be presented every three years, starting in 2014. As it will draw on multi-annual data and more granular analysis, the progress report seeks to provide a more reliable assessment of obstacles and a better appraisal of the need for additional measures.

Current energy policy: Key action areas

However, just expanding renewable energy sources, by creating more offshore wind farms for example, is simply not enough. Rather, our entire energy system has to be put on a new footing. We need new electricity grids, as well as new, high-efficiency fossil power stations and innovative energy technology, more efficient buildings and production processes, and stronger exchange between Germany and its European neighbours and international partners.

Grid expansion is the foundation for the continued development of renewable energy

The expansion of the electricity grid is the most important prerequisite to ensuring the growth of renewable energy. Numerous wind farms and solar energy installations need to be connected to the grid, and the electricity must be transmitted to the consumer. Transmission is often necessary over long distances, as renewable energy development is mostly concentrated outside major demand centres and in numerous smaller installations.

Thus, central element of the concept is a rapid expansion and restructuring of our grids and storage facilities. The Energy Concept describes objectives and instruments for the expansion and restructuring of grid infrastructure, smart grids, and electricity storage facilities. In order to speed up the expansion of the grid, e.g. the BMWi presented a Grid Expansion Acceleration Act (NABEG).

In the future, policy-makers must continue to strike the right balance between incentives for grid operators and the resulting costs for consumers. This is what prompted the Federal Ministry of Economics and Technology to establish the “Future-oriented grids” platform (Plattform “Zukunftsfähige Energienetze”) in which key stakeholders from the field of politics, the business community, the Federal Government and Länder, associations and NGOs develop strategies and solutions for expanding and upgrading the power grids.

Bringing renewable energies closer to the market

There has been a strong increase in the share of renewable energy in the energy mix in recent years. By 2011, the share of renewables in electricity production has grown to roughly 20%. However, this

does have its price. Therefore, in the future greater priority must be placed on ensuring that the continued development of renewable energy is as cost effective as possible.

The operation of an energy supply system where the bulk of electricity is not generated in response to demand brings considerable challenges for the power market. Structural changes are therefore needed. In addition to the much-needed grid expansion, energy feed-in should become more market-oriented. By boosting incentives for the direct marketing of renewable electricity, the Federal Government has taken the first steps toward bringing renewables closer to the market.

New gas- and coal-fired power stations necessary to safeguard future supply security

Conventional power stations will remain indispensable to our electricity supply in the years ahead. This is because they can do what most renewable energy sources cannot: provide a reliable supply of power precisely when it is needed. In calm and cloudy conditions, conventional power stations still provide electricity for days and weeks on end.

Furthermore, the fluctuation in the supply of electricity from renewable energy plants must be smoothed out constantly to guarantee system stability. Currently only flexible conventional power stations can perform this task.

Investments in power plants must come from the private sector; the state can help ease the dialog. The Federal Ministry of Economics and Technology established the power plant forum in the summer of 2011. Within this framework, the Federal Government, the Länder, the energy industry and environmental organisations exchange views and ideas on the main issues the energy sector must address in the production of electricity.

Energy research: Investing in new energy technologies

To achieve our ambitious energy policy objectives, we need new technologies and more research. For this reason, the Energy Concept aims to boost the research being done on renewables, energy efficiency, grids and storage technologies.

The Federal Government has defined how it aims to promote research that will contribute to the energy supply in the years ahead. It implemented a key measure of its Energy Concept with the adoption of the new Energy Research Programme in August 2011. Roughly € 3.5 billion in funding are available through to 2014 to support research and development into sustainable energy technologies, e.g. on storage facilities and grids.

Energy efficiency is a central requirement for restructuring the energy system

Increasing energy efficiency is the key to reach the ambitious objectives in the Energy Concept. Our aim is to cut primary energy consumption by half by 2050. This means for example, that in just less than 40 years we need to have saved the entire amount of energy currently consumed by industry and transport together.

There is a broad consensus that we need to use energy more efficiently. For the Federal Ministry of Economics and Technology, the best path is the interplay between information, advice and support coupled with a necessary but reasonable degree of regulation.

The framework for receiving information, advice and funding has been considerably strengthened and expanded with the move to restructure the energy system. To this end, an Energy Efficiency Fund has been established to boost energy efficiency in households and companies.

Buildings account for around 40% of Germany's final energy consumption and roughly one-third of our CO₂ emissions. At the same time, the potential to save energy and CO₂ here is substantial. It will require substantial investment, but in the long term this will cut costs. Effective incentives (CO₂ building modernisation programme with 1.5 billion €/a) have clear priority here over compulsory regulations.

European neighbours and international partners help to secure the energy supply

Germany cannot deliver on its ambitious energy and climate policy goals alone. We need our European partners on board for a secure and affordable future energy supply. A well-functioning EU-internal market is of central importance. Pan-EU regulations are also required for the expansion of alternative energy and climate protection if we are to fully realise Europe's potential. For the Federal Ministry of Economics and Technology, a successful EU energy policy means pushing at the EU level for the cost-effective restructuring of the energy system.

Germany already relies on imports for some three-quarters of its energy needs. This dependence is set to increase in the future. A successful foreign energy policy therefore seeks to further diversify energy sources and transit routes. In addition to collaboration in international energy organisations, bilateral energy partnerships with other nations are becoming increasingly important as they set energy relationships with key partner countries on a solid footing over the long term.

Making the restructuring of the energy system a success

The Federal Government has set itself an ambitious task: Renewable energy is to become a cornerstone of energy supply in Germany. At the same time, Germany is to remain a competitive business location. To ensure successful goal delivery, the transition to a new energy era must be as economically viable as possible, with the innovative strength of the market and competition continuing to occupy centre stage in the future. Energy supply must remain reliable and affordable.

The transition to a new energy era opens up technological and economic opportunities in terms of Germany's competitiveness as an exporter and location to do business. Germany is a pioneer on the path towards a new energy era. German enterprises already occupy a leading position worldwide in the renewable energy and energy efficiency field.

In the best tradition of German engineering, new technologies and products, new export opportunities and thus employment and growth will be created. And the global market offers enormous potential. At USD 211 billion, global investment in renewable energy reached a record level in 2010, growing 30% on the previous year.

Nevertheless, our future energy supply also poses challenges, in particular for an industrial country like Germany. The new energy era will not come free-of-charge. Electricity must remain affordable: Phasing-out the low-cost electricity generated by nuclear also means higher CO₂ prices and higher electricity prices.

A secure and economically viable energy supply is a key precondition for lasting growth and prosperity in Germany. Germany must continue to remain a competitive location for industry. Germany can and will cope with the challenges of restructuring the energy system if all stakeholders accept responsibility: companies, policy-makers and citizens.