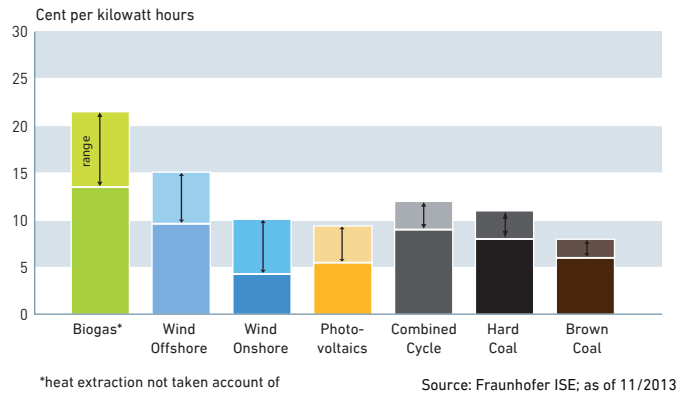


## Renewable energies become competitive

While the costs of conventional energy sources continually rise, the costs of renewable energies go down steadily. In reaction to the price decrease on the market for solar panels, feed-in tariffs for new installations were lowered significantly. As a consequence, the feed-in tariff for producers of electricity from new roof-mounted solar power systems now roughly amounts to just half the consumer price for electricity.

At very good locations, onshore wind power turbines already have lower levelized costs of electricity (LCOE) than new hard coal plants. A study from Fraunhofer ISE research institute predicts that LCOE for solar power will sink to a range of 6 to 9 Eurocent by the end of the next decade. If external costs are internalized however, renewable energy technologies are already competitive today.

## Forecast of Levelized Costs of Electricity from Renewable Energies in 2030



The current extra costs of renewable energies are low compared to the damage inflicted on the environment by exploiting finite resources such as oil, natural gas or coal. Like nuclear energy, the use of fossil fuel has been promoted via subsidies and other advantages for decades. According to a study by FÖS, the figures stand at:

- hard coal (1970 – 2012): some 311 billion Euro
- lignite (1970 – 2012): some 88 billion Euro
- nuclear energy (1970 – 2012): some 213 billion Euro

Meanwhile, the additional outlays for renewable power incurred under Germany's feed-in tariffs are not a subsidy, because they do not stem from tax revenue, but are financed via electricity prices. Consumers who use less also pay less in terms of the feed-in surcharge. However, exceptions from the feed-in surcharge apply to certain industries, above all energy intensive firms.

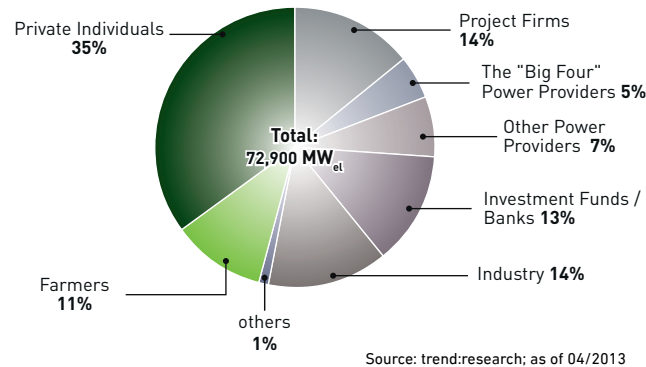
## High acceptance of renewable energies – a prevailing feature in public opinion

Renewable energies enjoy high acceptance levels in German public opinion. According to a representative poll carried out in 2013 by TNS infratest, 93 percent of all respondents attributed high or very high importance to expanding the renewable energies sector. 66 percent of all respondents welcomed the potential construction of renewable energy installations in their neighbourhood. Acceptance of such plants is even higher among people who have had prior experience with renewable energy installations in their vicinity. High acceptance of renewable energies also explains Germans' willingness to shoulder the costs of the turnaround in energy policy, the Energiewende.

## New ownership structures emerge

The expansion of the renewable energy sector is accompanied by a shift in the ownership structure of electricity production. Almost half of all renewable energy capacity so far installed in Germany is in the hands of private individuals, according to a study by trend:research released in 2013. This is evidence that citizens can actively take part in the growth of renewable energies.

## Citizens – the biggest investors on the renewable energies market



New ownership models such as citizens' wind parks and energy cooperatives show that the Energiewende cannot only bring about environmental protection and economic growth, but also decentralised production structures in the hands of local initiatives.

# Renewable Energies – a success story

Germany's Energiewende in practice

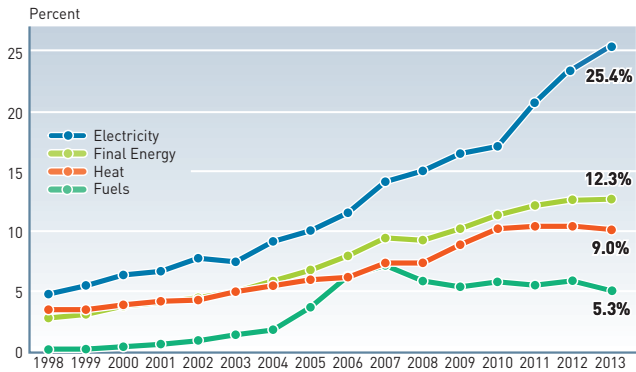


## Sustainable and reliable supplies

Renewable energies are of threefold importance to Germany's economy. They offer climate protection, give incentives for growth as well as job creation and provide increasing independence from energy imports. The power, heat and fuel sectors all profit from renewable energy alternatives. The political will to promote renewable energies was affirmed by the federal government after the Fukushima disaster in Japan in early 2011.

In response to that disaster, the federal government committed itself to phasing out nuclear energy by 2022 and to gradually increase the share of renewable energies. This political decision is known as the Energiewende. By 2020, 18 percent of gross energy consumption is to be generated from renewable sources, according to government plans. By 2050 this share is to rise to 60 percent. Industry sources believe that the turnaround can be achieved even faster.

## Share of Renewable Energies in Germany's Energy Market from 1998 to 2013



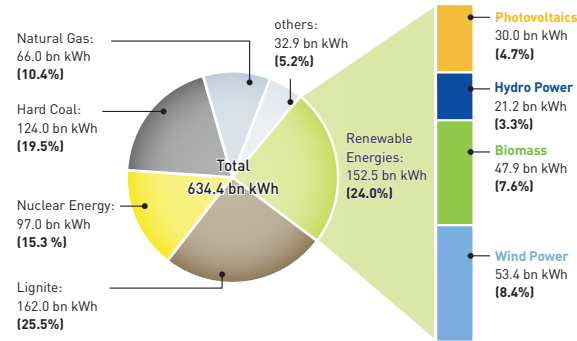
Source: BMU; as of 03/2014

## Renewable energies create turnover, jobs and value added

The German economy profits from the advent and rise of renewable energies. Investment in new installations of renewable energy plants amounted to 16.3 billion Euro in 2013. Turnover from operating renewable energy plants increased to 15.2 billion Euro. Buoyant economic activity has been accompanied by job creation. According to estimates from the Federal Ministry for the Environment, the renewable energies sector now employs some 380,000 people.

The expansion of the industry has gone hand in hand with more decentralized power production and positive economic effects for local constituents. Studies have shown that the increase in renewable energy production can generate double digit billion Euro benefits in terms of value added.

## Germany's power mix in 2013

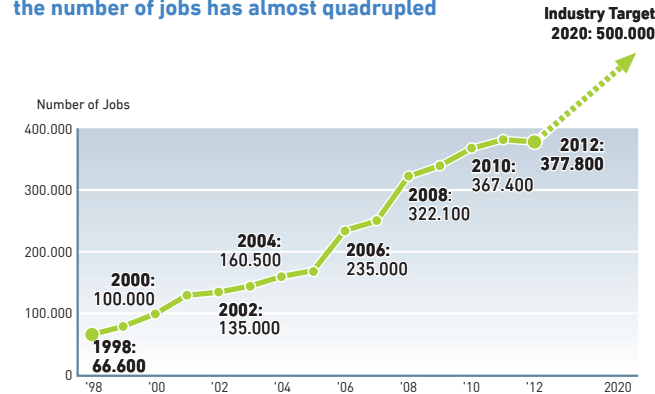


Source: AG Energiebilanzen; as of 05/2014

## More and more imports will be replaced

The German economy is highly dependent on finite and ever more expensive resources such as oil, natural gas, coal and uranium. On average, Germany has an import quota of more than 70 percent for these conventional energy sources. The costs of Germany's fossil fuel imports have increased dramatically and tripled between 2000 and 2013 to some 91 billion Euro. By contrast, renewable energy sources can be used from within our borders. In 2012, their use replaced energy imports of some 10 billion Euro in value. Further increases are foreseeable. Renewable energies are therefore the sensible way out of our dependence. Renewable energies are team players. Regenerative combination power plants that use different renewable energy sources show how an intelligent management of decentralised power plants could work on a national scale. Nuclear power plants and additional coal-fired power plants will not be needed in the future.

## Renewable energies: Within twelve years, the number of jobs has almost quadrupled



Sources: BMU/AGEE-Stat, DLR/DIWI/ZSW/GWS/Prognos, UBA, BEE; as of 03/2013

With the decision to phase out nuclear energy by 2022 and to reliably expand the renewable energies sector, Germany has embarked on a course that offers a sustainable future for its people, for the environment and for the economy.

Renewable energies are a growth engine for the German economy. They foster

- security of energy supplies,
- climate protection and
- economic stability.

Published by:

German Renewable Energies Agency

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