

Germans debate cost of going green

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Chancellor Angela Merkel's push for an accelerated phase-out of nuclear power accompanied by heavy investment in renewable energy in the wake of Japan's Fukushima disaster is prompting a debate in Germany about the costs of going green.

Although she is pushing for early July parliamentary approval, the chancellor has yet to detail her plans. Many politicians and energy experts reckon the last of Germany's 17 nuclear power stations will close not in 2036, as agreed last autumn, but some time between 2020 and 2025.

The government-funded German Energy Agency (Dena) last month said resulting investment in alternative generating capacity – renewables, gas and coal – and in new transmission networks could drive up the price of domestic electricity by a fifth by 2020, adding €0.04 to €0.05 to a current household price of €0.23 per kilowatt hour.

(Note- €0.23/kwh is \$.32/kwh)

The German Industry Association topped this with its own forecast of a 30 per cent rise in electricity prices by 2018 if all nuclear power stations were to close that year. Electricity would by 2020 cost homes and businesses an additional €3bn (\$47bn), with the latter footing just under three-quarters of the bill.

These estimates are much higher than the €0.01 rise per kilowatt hour put about by Christian Democrat lawmakers, although experts caution that both numbers could be no more than educated guesses.

“We expect that electricity prices will rise, but it's far too early to say by how much and over what period of time,” says Michael Schlesinger, energy expert at Basel-based consultancy Prognos. “That depends on many factors – for example how quickly replacement capacity can be built, and whether this will be coal or gas or renewable energy.”

That, in turn, will depend on whether the government succeeds in speeding up planning permission, and how clearly it decides to favour renewable-energy investment over coal and natural gas.

The RWI research institute expects the share of nuclear in electricity generation to drop from 23 per cent today to zero in 2020. It expects renewable energy sources to make up 27 per cent of electricity generation by then, up from 17 per cent currently, and natural gas to make up 20 per cent of generating capacity, up from 14 per cent now. Coal would constitute 47 per cent of generating capacity in 2020, the institute predicts.

Power companies will have to invest about €20bn a year over the next 10 years to fill the gap left by the phasing out of nuclear power, says the DIW economic research institute in Berlin – a process that could start this year with the closure of the country’s seven oldest plants, most of them in southern Germany, which Ms Merkel has left to idle since mid-March for a three-month safety review.

“If you turn off a lot of nuclear power stations in southern Germany, you need to bring electricity from other places. And if you don’t have the networks to do that, you could find you have a problem,” says Mr Schlesinger. “The networks are the key.”

Built for regional transmission from local generating hubs, and for south-to-north transmission from the country’s southerly nuclear plants, Germany’s transmission system is not equipped for the new realities with which government decisions look set to confront it.

When the oldest nuclear plants went offline in March, electricity flows switched direction, flowing north to south and east to west, and the country became a net importer – all things for which the system was not designed.

To avoid the risk of blackouts, the German energy regulator recently warned Berlin not to shut more power plants any time soon and to encourage network operators to hurry extensions and plan for the new future.

The biggest challenge will be to build about 4,000km of new, heavy-duty power lines, running from the envisaged wind farms on the north German coast to the big urban and industrial centres in the south – projects that could cost up to €56bn over the next nine years, according to Dena and electricity generators.

“The nuclear phase-out is right and practicable, and the conversion to renewable energy all the more,” Stephan Kohler, Dena head, said last month. “But this change of direction is not going to be an easy manoeuvre.”