

Promoting the German approach to energy policy in the UK and Ireland

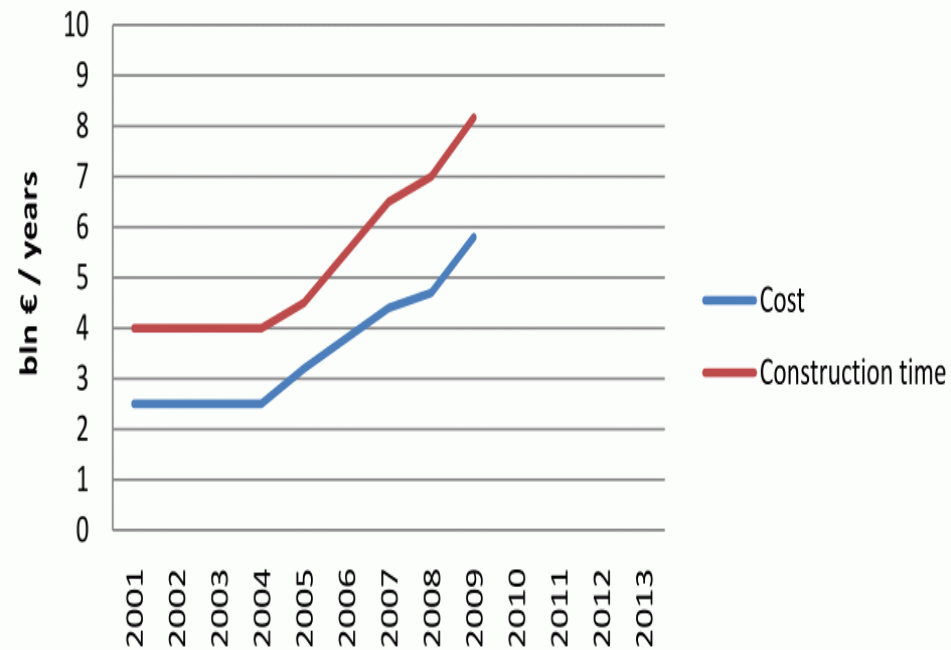
Dr Paul Dorfman

Founder, Nuclear Consulting Group

NFLA, 7 Dec 2013, Manchester

New-build cost over-runs

Olkiluoto 3 cost & lead time



Update: this week

- ⦿ EDF EPR planned cost €3.3bn, running by 2012.
- ⦿ Last year revised upward to €6bn, with start-up pushed to 2016.
- ⦿ On Monday, EDF said the cost would be €8.5bn.

Post-Fukushima situation in the EU

- ⦿ Ageing nuclear and the finalisation of Germany and other European countries nuclear phase-outs.
- ⦿ Emphasis on maximizing output of existing reactors through extension, up-grade and retrofit.

'Energiewende'

- ⦿ New Germany national energy strategy, adopted by virtual consensus in the parliament, will phase out all nuclear power by 2022.
- ⦿ Europe's integrated electricity grid has enabled Germany's de-nuclearisation without affecting energy service or price.
- ⦿ Public opinion a key driver for policy-making.

Quick phase-out

- ◎ Pre-Fukushima: 17 nuclear reactors in Germany, providing one-quarter of the countries' electricity.
- ◎ Within six months, nearly half of Germany's 17 nuclear reactors permanently closed and a new phase-out strategy for the remaining ones put in place.

Renewable energy revolution

- ◎ Over the past decade, renewables have grown fivefold; and expected to double again by 2020.
- ◎ 2011: 2,000 MW added to the grid.
- ◎ Total electricity: 38.6%
- ◎ Heating/cooling: 15.5%
- ◎ Transport: 13.2%.
- ◎ Installed wind capacity: 30,000 MW.
- ◎ 4 Bundeslander generating over 45% of their power from wind.

Boom in the photo-voltaic (PV)

- ◎ 2011: Record 7,500 MW connected to the grid.
- ◎ Total 25,000 MW PV has generated 18.6 TWh, up by 60% from 2010.
- ◎ Solar power electricity set to increase by 70% over the next four years.
- ◎ Solar set to provide 10% of total electricity by 2020.
- ◎ (UK DECC 4% nuclear...)

Don't believe UK media hype

- ⦿ No real impact on the pricing and availability of electricity in Germany.
- ⦿ By October 2011 Germany had become a net exporter of power again.
- ⦿ Positive example of the ability to harness post-shock opportunities
- ⦿ Fusing citizens aspirations with policy-making.

Energy efficiency and conservation

- ⦿ Energiewende relies on changing energy consumption.
- ⦿ 10% reduction in electricity demand over the next decade.
- ⦿ Involves rapid implementation of new policies and measures
- ⦿ High investment costs.

New policy initiatives in Germany

- ◎ Sixth Energy Research Programme Budget increase of 75%: €3.5 billion to end of 2014 to support renewables, energy efficiency, storage, grid technologies.
- ◎ Weatherproofing support programme increased to €1.5 billion per yr.
- ◎ Homeowner support calculated according to the degree and timing of renovation measures, with 10% of the costs deducted from income tax.

Electric vehicles

- ◎ 1 million electric vehicles expected by 2020.
- ◎ 6 million by 2030.
- ◎ R&D funding doubled to €2 billion until 2013.
- ◎ 10-year tax exemption, dedicated parking spots with charging stations and the option to use bus lanes.

CHP and storage

- ◎ Support scheme for micro-CHP (combined heat and power) has been renewed and extended.
- ◎ €200 million to 2014 for development of storage technologies.
- ◎ Projects include a 90-MW compressed-air plant, to be built at Staßfurt (Saxony Anhalt) to store up to 360 MWh and reach 70% system efficiency through heat recovery.

Why Germany?

- ⦿ Historic commitment to renewables.
- ⦿ Renewable electricity doubled between 1998 and 2003 and doubled again between 2003 and 2008.
- ⦿ Invented the fixed price feed-in-tariff.
- ⦿ Huge purchase of solar PV have driven down world prices.

Co-operatively and municipally owned energy companies

- ⦿ Communities have secured political agreements: Bundesländer regions set goals and locations for for renewables.
- ⦿ Ensures local energy resources and financial subsidies paid for by customers (feed-in tariffs) or tax-payers (cheap loans provided by the KfW bank) benefit the local people not companies.
- ⦿ Profits and employment are kept in the region.

German energy policy matters to the rest of the Europe.

- ◎ Germany uses around a sixth of Europe's electricity and its decision has huge implications for the region.
- ◎ Germany's nuclear phase-out has important implications for a potential transmission and load-balancing EU-wide energy grid.

Chancellor Angela Merkel

- ◎ “As the first big industrialized nation, we can achieve such a transformation toward efficient and renewable energies, with all the opportunities that brings for exports, developing new technologies and jobs”.

Unfit for purpose

- ◎ “UK's eccentric determination to build new nuclear power means it is not fit to take part in the third industrial revolution of switching to clean renewable energy”.

Prof John SchellInhuber - current adviser to the German chancellor, Angela Merkel, and previous adviser the president of the European commission and other governments.

Key lessons learned

- ◎ With political consensus and will - rapid change can happen with big financial and environmental gains.
- ◎ Germany has built an integrated and pragmatic energy system, transforming small-scale support to a long-term strategic goal.
- ◎ Energy companies prevented from controlling the development of the energy system - although they still benefit from the changes.

We know the technology works

- ◎ Germany shows that renewable energy can deliver large quantities of electricity.
- ◎ Cost of renewables is falling and the efficiency of deployment is driving down costs.
- ◎ Widespread public support for renewable energy technologies and especially compared to nuclear.

Don't believe UK policy hype

- ⦿ Despite the rhetoric, UK energy futures and nuclear are still very much in transition and open to change.