

Power in Europe: dirtier, less secure

Several studies published in France warn that without massive investment, the security of electricity supply in Europe will deteriorate, emissions of CO₂ will rise and power will become more expensive.

| by Yves de Saint Jacob

In the seventh edition of the “European Carbon Factor”, PriceWaterhouseCoopers draws a comparison of CO₂ emissions of the 22 leading European leading electrical utilities. Their first conclusion is that with 800 million tonnes in 2007, total emissions in the power sector increased by 3% compared to 2006 and 6% compared to 2001. That means an increase in a single year equivalent to that recorded for the

five-year period from 2001 to 2006.

According to PWC there were two reasons for this poor performance: an increase in power production (+ 1,5 %) and a deterioration in the European “carbon factor”, that is to say the amount of CO₂ emitted per unit of electricity. Because of an increased use of fossil fuels, the average carbon factor in Europe has risen to 373 kg per MWh, an increase of 1.4%.

The highest increases in emissions were recorded by the Czech producer CEZ (+29%) and the two German companies, Eon (+10%) and RWE (+3%). Both RWE (848 kg/mWh) and CEZ (635 kg/mWh) have very high carbon factors, while Eon scores better but above the average with 403 kg/mWh. “The German electricity producers, forced to abandon nuclear power, use more in the way of fossil fuels. They are investing

in wind and solar power, but these take time to develop', says Olivier Muller, who coordinated the PWC report.

As far as central Europe is concerned, the tendencies are the same. 'Several countries are going through a period of transition from the old nuclear industry, a legacy of the Communist era, to new power stations, which is a lengthy and costly process. Their economies are in a period of strong growth and so have greater need of energy,' Muller says.

It is the proportion of nuclear-generated electricity which in effect allows EDF, Europe's biggest power producer, to boast an excellent carbon factor of 145 kg/mWh. But the situation for the French company is not quite as exemplary as it appears. Its nuclear installations are ageing, they are not working to maximum productivity and EDF is faced with increasing investment requirements to bring them up to standard. When it comes to new nuclear plants, initial investment costs are so high and the timescale to completion so long that many in the nuclear industry are starting to worry about a "freeze" capable of slowing down the resurgence of nuclear power. There is a strong temptation, according to one expert, to put greater emphasis on fossil-fired power stations (58% of all electric power stations currently planned in Europe will be fired by gas or oil), even down to reviving closed-down old oil-powered plants, as has already happened in the US. Between 2006 and 2012, EDF will put into operation 4,000MW of fossil-fired production capacity and it has already reactivated four oil-powered plants which at one point it considered dismantling.

Alarm bells |

In her introduction to the 10th report of CapGemini's "European Energy Markets Observatory" (EEMO), Colette Lewiner puts forward some spectacular figures: between now and 2030 Europe will need to invest 1,000 billion euros in its gas and electricity infrastructure if it hopes to be able to satisfy the predicted growth in energy demand, replace ageing infrastructure and meet new environmental criteria. 'We have

sounded the alarm bell,' she writes, 'and warn that, without an ambitious construction programme, the security of energy provision will be under threat.' Problem is that the extreme volatility and unpredictability of oil prices and other raw materials, makes it increasingly difficult for energy companies to plan their investments. In addition, the credit crunch could severely hurt the investment cycle. Hence, CapGemini is anticipating a rude awakening for

2006 to 5.3% in 2007, while 5 is considered the threshold below which margins must not be allowed to fall. The position in France, Britain and Germany is worrying, and fragile in Central and Eastern Europe, CapGemini concludes.

Green Keynesianism |

Michel Derdevet, a teacher at the Institute of Political Studies (Sciences-Po) in Paris who also works in the electricity transport sector, remains optimistic and underlines

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the European energy markets once the recession is over.

CapGemini estimates that things could become critical during surges in consumption 'with the risk of power cuts in winter', in particular because of the increasing reliance on wind power. This can already be observed in France, once the European "electricity reservoir". For three days in November, network operator RTE had to ask consumers in Brittany to reduce their consumption at certain moments. RTE did so by text message on mobile phones!

RTE also announced that it would have to import electricity for two weeks in January 2009. Of course import and export of electricity occurs all the time, but in the past France never had to import on several consecutive days. And even though France remains a net exporter on an annual basis, the trend since 2001 is that imports are growing and getting longer. 'France is gradually returning to the situation of the early 80's, before the surge of its nuclear capacity', as one senior manager in electricity transportation puts it.

The CapGemini report notes that the real margins of production capacity have fallen in Europe on average from 7.6% in

the need to differentiate between sectors when it comes to investment. 'There are investments in production, which depend on the attitude of private operators; but there are also investments in infrastructure, where individual states and the EU have a major role to play,' he tells European Energy Review. 'Through well-thought-out regulation and clear political will, they can guarantee suitable and constant investment, both for the upkeep of the existing network and to expand it.'

The budget for the Trans-European Networks (TEN in the EU jargon) allocates 155 million euros for electricity and gas network expansion for the period 2007-2013. Many French experts believe that this is far too low to meet the challenges. This is why there are increasing calls in France for greater State intervention to help realise targets in sustainable energy production, a sort of "Green Keynesianism", to borrow a phrase from French Minister of Sustainable Development, Jean-Louis Borloo. Apart from aid for more environmentally-friendly cars, and better insulated housing, such intervention should also lead to a major programme to perfect the vital electricity infrastructures which link the different member states. ■