

**3rd European Conference on Green Power Marketing, 18 & 19 March 2004, Lausanne, Switzerland**

## **Demand for hydropower set to surge**

**Electricity consumption will increase 40 per cent in Europe by 2020. Since energy producers have reduced the overcapacities of recent years and are hesitant to build new installations, electricity will once again be a scarce commodity. As a result, wholesale electricity prices are set to rise by more than 50 per cent in the next ten years. This trend, combined with new environmental measures from the EU, will benefit hydropower in particular. These are the predictions of the business, research, policymaking and marketing experts taking part at the European Conference on Green Power Marketing in Lausanne.**

pd – Economic experts forecast that electricity consumption in Europe will rise by 40 per cent by 2020. To satisfy this growing demand, European power production will have to increase by 300 million kilowatts, the equivalent of an additional 750 large power stations. The cost of building these plants and renewing existing installations and the European grid is estimated at 250 billion euros. Energy companies, which have only just decommissioned old or unprofitable plants in an attempt to reduce the overcapacities of recent years, are shying away from this enormous investment.

So supply looks set to increasingly lag behind demand for electricity in Europe. Growing demand and tightening supply owing to delayed investment – the hallmark of liberalised markets – will trigger a massive rise in electricity prices in the

next ten years. Experts reckon that wholesale prices will rise by up to 50 per cent by 2015, from 30 euros (2003 base load) to 45 euros per megawatt-hour. And there will be other factors driving up the price of power in the next few years, as many coal, gas and oil-fired plants are forced to buy CO<sub>2</sub> credits to achieve the Kyoto goals for reducing in CO<sub>2</sub> emissions. Experts believe these additional factors will add at least another 3 euros per megawatt-hour to wholesale prices.

In the next ten years it will be existing hydroelectric stations that profit most from these rising prices. Industry observers predict a “golden age” for hydropower producers, which thanks to major write-downs in recent years are now able to produce at market prices. Demand for “clean” hydro will also be boosted by the latest EU environmental measures.

In a move designed to create greater transparency for consumers, the EU Commission has issued a directive ruling that all member states must introduce disclosure by 1 July 2004. The directive requires that at least once a year, consumers must receive written information on where and how the electricity they buy is produced. In other words, in future people will be told on their electricity bill (or an enclosure to their bill) that the power supplied by their municipal utility is a mix of, for example, 30% hydro, 40% nuclear, 10% coal-fired and 20% power of unknown origin. This “unknown” component is likely to correspond roughly to the European “grey” power mix: 15% hydro, 40% nuclear and 45% fossil fuels (coal, gas and oil). However, the EU’s disclosure requirements do not stop here: in future, consumers must also be informed about the amount of CO<sub>2</sub> emissions and radioactive waste resulting from the electricity mix supplied to them.

Although Switzerland has not yet liberalised its own electricity market, it is a major trading partner in the common European market and also plans to introduce disclosure. Energy experts expect pan-European disclosure to lead to an increase in

demand for “clean” energy. Particularly in countries where hydropower accounts for a large share of electricity production, there is likely to be a massive increase in domestic demand for hydro from consumers who had previously assumed, mistakenly, that they were buying hydropower because so much of it is produced in their country.

The fact that consumers are increasingly demanding hydropower was demonstrated clearly in nuclear-free Austria, which has already introduced disclosure. Fearing consumer protests, energy companies there were forced to give their grey power imports an “environmental upgrade” using hydropower certificates.

This was possible because the environmental quality of hydropower can already be traded, independently of actual physical power sales, in the form of certificates. Traders have recognised that certificates are a good way of quickly and efficiently buying and selling the real benefit or “green value” of renewable energy all over Europe, independently of expensive distribution grids.

Another EU directive is designed to guarantee the quality of wholesale green power. In future, producers and traders of energy from renewable resources (hydro, biomass, solar and wind power) will, on demand, have to be able to document the origin and production technology of their electricity by means of so-called guarantees of origin. These EU measures are still something of a headache for the industry. With the control mechanisms currently in place, it is still not possible to prevent unintentional or fraudulent double counting. The EU Commission is trying to find a solution to this problem. What is still not clear, however, is how non-EU countries, including major hydro producers Switzerland and Norway, can be involved.

This shortcoming must be resolved quickly, as experts at the Lausanne conference predict that demand for renewable energy will increase substantially in the next ten years. The European green power market has changed rapidly and fundamentally. Until recently, the driving force was a small number of pioneering green consumers buying a relatively small volume of green power. Now the European green power market is driven by politicians and energy traders. Nowadays there are very few municipal utilities left that do not offer their customers a product featuring a large proportion of renewable energy.

The predicted 50%-plus rise in wholesale prices will also affect prices for end-consumers, although the impact will be delayed and cushioned to some extent. Energy experts at the industry conference in Lausanne agree that municipal utilities will enhance the environmental quality of their “traditional” power products to at least partly justify unpopular price hikes to their consumers. Since certified hydropower does not cost a great deal more than conventional grey power on the wholesale market, in future we will see a growing number of local providers upgrading their standard grey products with hydropower and selling it to end-users for the same price.

As the gap between the retail price of grey electricity and hydropower narrows, consumer demand for green power will rise substantially. Biomass, wind and hydropower, currently the only forms of energy produced in sufficient amounts to meet growing demand for “clean” energy, will profit immensely from this development. The scope for building new hydroelectric power stations is extremely limited, not least for environmental protection reasons. For this reason, policymakers and the energy industry are opting primarily for new biomass and wind power installations. By 2010, European wind power production will be twenty times greater than in 1995.

But precisely because of this boom in wind power, pumped storage hydropower plants will also be clear winners in the

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European electricity business. This is because whenever the wind dies down, expensive electricity, primarily from pumped-storage plants, must be bought in at short notice to compensate and keep the European grids stable. In the next ten years, to say that demand for hydropower is surging will be more than a mere play on words.

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