

A clean energy project



Portugal (Lisboa) (*) : A huge hydro-electric power plant 250 kms south-east of Lisbon in Portugal uses Alstom technology to combine and store wind and hydro energies. This plant has a capacity of 260 megawatts and supplies energy to 175,000 households. The reduction in CO2 emissions is the equivalent to removing 185,000 cars from the road.

The upper reservoir is the biggest in Europe: 85 km long with a surface of 250 square kilometres.

During the day water falls into the lower reservoir, moving the turbines and producing electricity. But at night – when energy consumption falls – the turbine uses wind energy to pump water back into the upper reservoir so that the cycle can continue the next day without significant water loss.

The water flow can be varied according to the energy demands of consumers.

Says Christian Pellerin, Alstom's Project Director: "As you see, we are producing energy. The water circulates from the upper reservoir to the lower one. It isn't just energy production in the day and pumping at night, but energy production can be adapted to demand, practically from minute to minute. In summer we can meet the demands of air conditioning, during wintery cold

Energy wind and hydro-power in Portugal

Escrito por euronews

Martes 06 de Abril de 2010 00:00

spells we can also supply the energy for extra heating.”

Surplus energy produced by water and wind can be stored in the big reservoir in the form of water, rather than being lost.

The Serra de Rei Wind Farm, 140 kms north of Lisbon, also uses Alstom technology to tap wind resources in this coastal area. These huge wind turbines are 80 metres high, and each blade is 37 metres long. The trend is towards building larger wind turbines to optimise land use. Also, the installation covers only 3% of the land beneath it leaving the rest free for agriculture and livestock.

Alexis de-Beaumont, Alstom’s Head of Product, Said: “As you can see today, wind turbines don’t turn all the time, they are still for about 30% of the time. So they produce energy intermittently, and this has to be balanced out across the network by other energy sources. And hydro-electricity, especially at the plant in Alqueva, can supply energy within a few seconds of demand increasing.”

Both wind and water are clean sources of energy and not dependent on imported fuels. The combined utilisation of them contributes to meeting the EU’s target of producing 20% of Europe’s energy needs from renewable sources by 2020.

(*) See the original article and video at euronews .