

## World record in the Alps: Greater energy efficiency for pumped storage power plants

### Helping to implement the Swiss Energy Strategy for 2050: Pumped storage as a central element of the energy supply and grid stability

Baden/Innertkirchen, October 1, 2013 - ABB has teamed up with Kraftwerken Oberhasli AG (KWO) to put into operation the world's most powerful frequency converter for a pumped storage drive. The converter has a capacity of 100 megawatts and plays a major role in helping the pumped storage power plant to operate more efficiently and flexibly.

The Grimsel area is in the high Swiss Alps with an abundance of water. It is ideally suited for pumped water storage with numerous possibilities for reservoirs and substantial differences in altitude. KWO, of which BKW Energie AG has a 50 percent stake, is constantly striving to expand and optimize its existing capacity. Pumped storage power plants make an important contribution to the security of the power supply by providing valuable peak energy, while at the same time regulating the grid.

In the underground power station Grimsel 2, water is released from the upper lake Oberaarsee and falls more than 400 meters through turbines into Grimselsee, a lower lake that serves as a collecting basin. Water from the latter is then pumped back up using surplus energy from the grid. Until now, the pump operation could only be controlled by regulating the number of pumps in operation up to a maximum of four pumps. The frequency converter now allows the speed of one of these pumps to be controlled according to the surplus energy available. With the help of the ABB converter, the pump can now be started, operated and stopped quickly. As a result, water can be used more efficiently and flexibly for power production and contributes to greater grid stability.

"Restructuring the power supply scene without hydropower is completely inconceivable as long as no other mature and affordable storage technology is available. That is why we must get out of the rut of our current subsidy regime," Kurt Rohrbach, president of the Association of Swiss Electricity Producers (VSE) and speaker at the Grimsel media event said.

"One central point in the Energy Strategy for 2050 is to improve energy efficiency. Power electronics makes this possible. With the highest capacity frequency converter ever installed in a pumped storage plant, Grimsel 2 can be operated much more efficiently and flexibly," said Remo Lütolf manager of ABB Switzerland.

"Until now we often had to divert valuable stored water from other reservoirs to be sure we had the power needed to control the pumps at Grimsel 2. With the controllable pump drive, the water can be optimally used for power production," said Gianni Biasiutti CEO of KWO

ABB ([www.abb.com](http://www.abb.com)) is a leader in power and automation engineering. The company enables its power-supply and industrial customers to improve their performance while at the same time reducing their environmental impact. The companies of the ABB Group are active in about 100 countries and have a worldwide workforce of about 145,000 employees, of whom about 7,000 are in Switzerland.

KWO is one of the leading hydropower companies in Switzerland. It supplies an average of 2,350 gigawatt hours of electricity per year, an amount equivalent to the annual consumption of about 1.2 million people.

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