

Remo Luetolf, Country Manager and President ABB Switzerland, US–Swiss Energy Innovation Day, July 11, 2014

World record in the Alps

Greater energy efficiency and flexibility for pumped storage power plants

Tomorrow's smart grid

The change of the power landscape



The power landscape is changing fundamentally due to ...

- large-scale integration of renewables (wind, solar) and other decentralized power sources
- unpredictable and multidirectional power flows
- new applications such as fast growing e-mobility

Grid requirements are increasing quickly, calling for ...

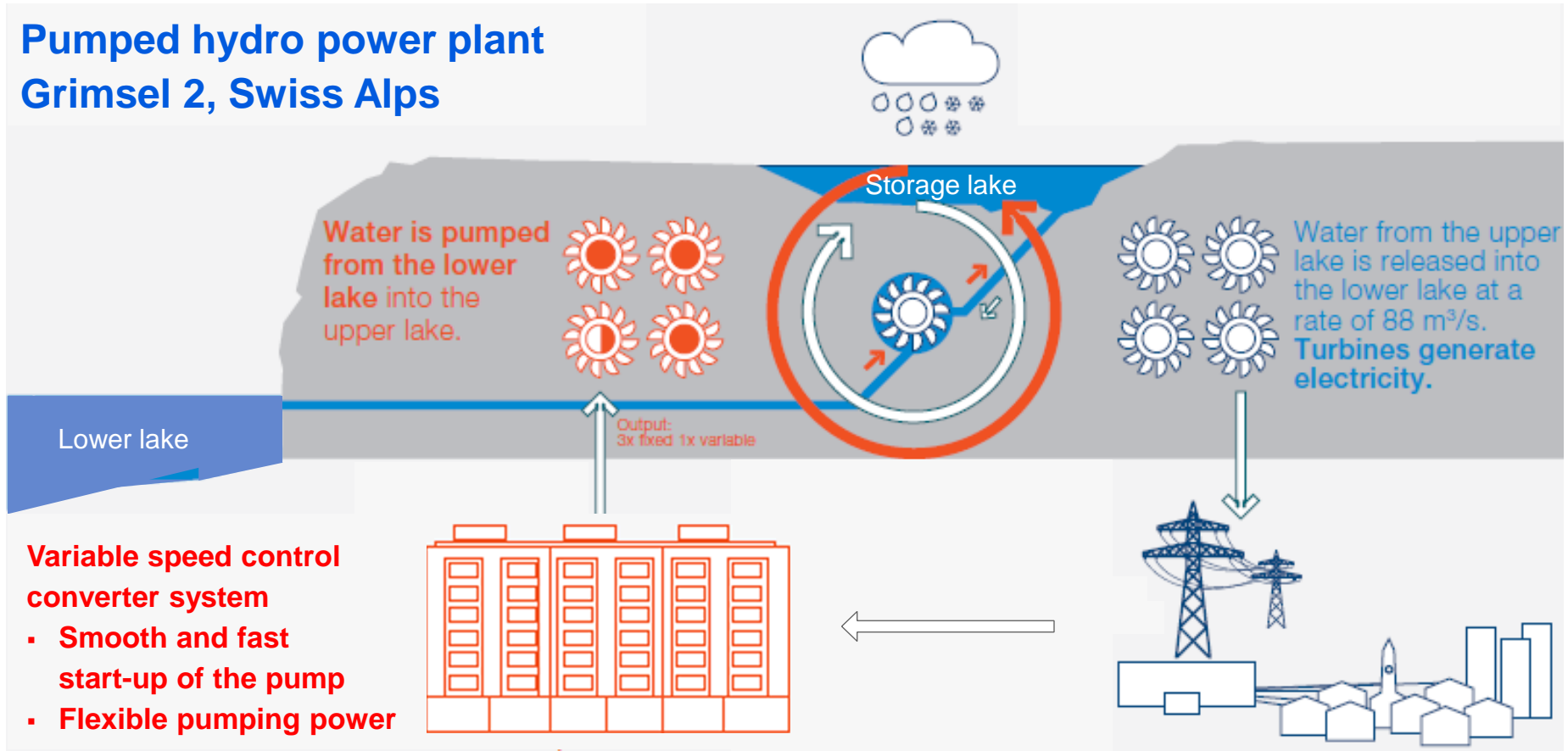
- energy storage to balance large variations in generation over day and night and also seasonal
- real-time data analysis and control of power flow
- effective demand management

Smart ABB technologies facilitate a secure and efficient evolution of the power landscape.

World's most powerful converter in hydropower station

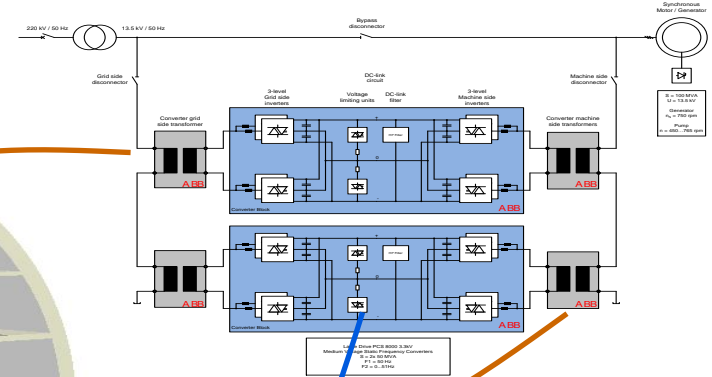
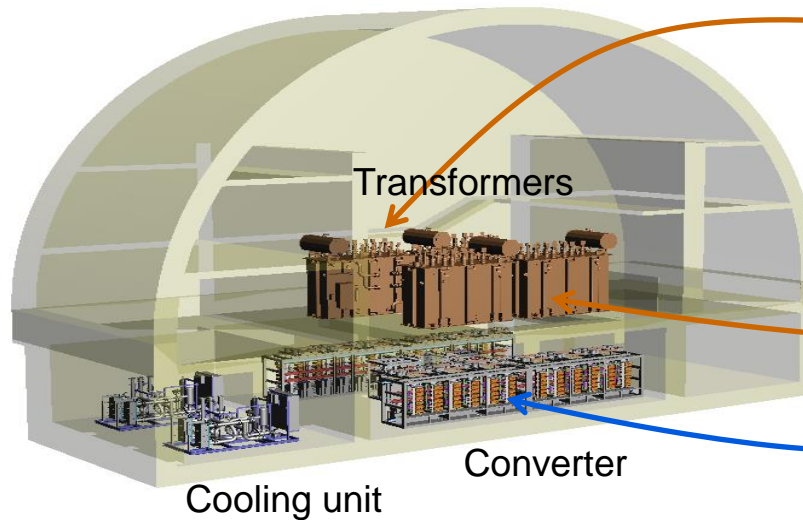
Highly efficient and flexible operation of the plant

Pumped hydro power plant Grimsel 2, Swiss Alps



Variable speed drive retrofitted to synchronous machine

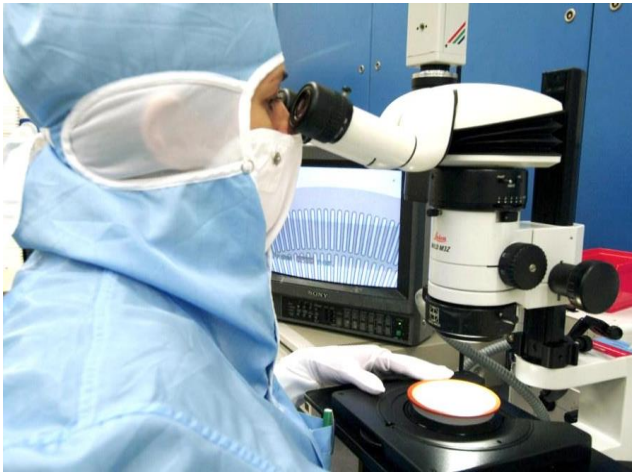
ABB PCS 8000 XLD 100 MVA converter system



- Nominal power of converter system 100 MVA
- Speed variation 600...765 rpm (40...51 Hz)
- Pump power variation 45 ...94 MW
- Efficiency of converter system >97% (in pump operation)
- Additional benefit Var power regulation ± 100 MVA

Towards a sustainable energy future

Smart solutions using leading-edge technology



With leading-edge technology, ABB helps its customers ...

- to increase efficiency and productivity
- to improve grid reliability
- to reduce environmental impact

Power and productivity
for a better world™

