PAUL SCHERRER INSTITUT

PSI

ENE / NES Colloquium

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Swiss Electricity Supply Options: Techno-economic Analysis

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About 40% of the Swiss domestic electricity supply is sourced from nuclear energy. Following the Fukushima nuclear accident, the Swiss Federal Council decided to phase out nuclear energy. Since then future options for electricity supply have been discussed and highly debated. In September 2012, the Swiss Federal Office of Energy published the 2050 Swiss Energy Strategy, which foresees three future energy scenarios with different electricity demand pathways: Weiter wie bisher (Business as usual); Politische Massnahmen (Policy Measures) and Neue Energiepolitik (New Energy Policy). We explored plausible electricity supply mixes for the three demand pathways using the Energy Economics Group's Swiss TIMES Electricity Model - a cost optimization framework with a long time horizon and an hourly representation of the electricity load curve. The focus of the seminar is to answer: What are the options for reconfiguring the electricity system without nuclear electricity? What are the tradeoffs in terms of cost, supply security and climate change mitigation goals? Where are some of the challenges, barriers and uncertainties?