



China: Energinet.dk meets SPERI, NEA and CPI in Beijing

Energinet.dk participated on 4 December in a Chinese seminar to discuss power system flexibility and investment in generation capacity along with key Chinese actors in the power sector.



Power system flexibility

The Danish TSO Energinet.dk participated in a seminar in Beijing on 4 December organised by the State Power Economic Research Institute (SPERI) about power system flexibility. The participants included representatives from Chinese National Energy Administration (NEA), State Grid, power producers, researchers and representatives from the Jilin Energy Bureau and Baicheng Power Plant. The focus of the workshop was the Baicheng area where the level of curtailment of wind power is high - 33% in 2012 and 20% in 2013. The installed capacity of conventional power and wind power exceeds, by nearly 10 fold, the demand in the province and the export potential to other regions is very large. However, the transmission capacity out of the region is limited, and wind energy is curtailed in order to protect the system during periods of excess supply.

It was apparent from the presentation, that the modern Chinese power plants have some flexibility, but they do not have economic incentives to utilise it. In 2013 a pilot project with a compensation mechanism for the Baicheng Power Plants was introduced to reduce the curtailment of wind. The conventional power plant receives a compensation of 0.40 RMB per kWh to down-regulate in case of excess supply of power. The Baicheng Power Plant had, however, some reservations, because it is losing revenue when it down-regulates, in spite of the compensation.

Energinet.dk presented the Danish experiences with flexibility in thermal power plants down to 10% of full load. The thermal power plants have been forced to develop this ability because of the fluctuations in the power prices,

the increasing role of variable renewable energy and because of new commercial opportunities in the market for balancing services. Further, they presented the mechanisms for balancing the Danish power system.

The Vice-president of NEA, Shi Lishan, concluded the seminar by saying that it is a joint responsibility to remove coal from the Chinese power sector and turn to renewable energy and natural gas for environmental reasons. Shi Lishan also pointed out that the Chinese power industry must change its mind-set and learn more about CHP and integration of renewable energy from the experiences of leading countries, and emphasised, in this regard, the role of Denmark as a pioneer within the field.

Investments in power generation capacity

The large Chinese power producer - China Power Investment Corporation (CPI) - was the host for a workshop about investments in power generation capacity. The workshop was attended by representatives from NEA, Energinet.dk, Danish Energy Agency and the Regulatory Assistance Program (RAP) and EA Energianalyse. CPI was represented by the Deputy Director General for the Department of Thermal Power, Ms. Zhao Fengyun.

The background for the workshop was that CPI has been asked by NEA to undertake a research project about how market mechanisms can enable investments in power generation capacity in China. The project is part of the preparations for larger market reforms in the electricity sector with focus on optimisation of the growth in the power sector and increased competition in the sector. The aim of the workshop was to discuss experiences from other countries, i.e. India, Brazil and Denmark.

RAP presented CPI for a standard procurement model with an open and transparent tendering process when additional new power generation is deemed necessary by the responsible authorities. According to the experience of RAP, this could be a first step towards opening and increasing competition in the electricity market.

Energinet.dk presented the energy based market system in Denmark, where the power producers can invest in capacity, and their investment decisions are based on the revenue streams that the energy markets generate in the spot market, the intraday market and the market for regulating; and in the case of renewable energy also subsidies.

In the European energy based market systems, it is a challenge to ensure

sufficient investments in new capacity and many European countries have already or are planning to introduce a market for capacity. The uniform and optimal model has, however, not been identified yet.

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