District heating as a source of flexibility in the Nordic electricity market

The present share of variable renewable energy (VRE) generation such as wind power and solar photo voltaic is relative high in many of the Nordic countries. E.g. wind power generated 42% of the annual electricity consumption in Denmark in 2015. The share of VRE is expected to increase in the years to come in order to reach the ambitious renewable energy deployment targets in the Nordic and Baltic countries. Transformation to an energy system increasingly based on VRE will escalate the requirement for flexible operation of the entire energy system, including improved integration among energy sectors. District heating (DH) is an important sector in the Nordic energy system and has a large potential for increased flexible operation in relation to the future electricity system. This potential is only partly exploited today. One reason for this is the differences in regulatory framework conditions for DH compared to the electricity market, e.g. different energy taxes, which may hinder the potential benefits from systems integration and lower the realisable potentials.

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