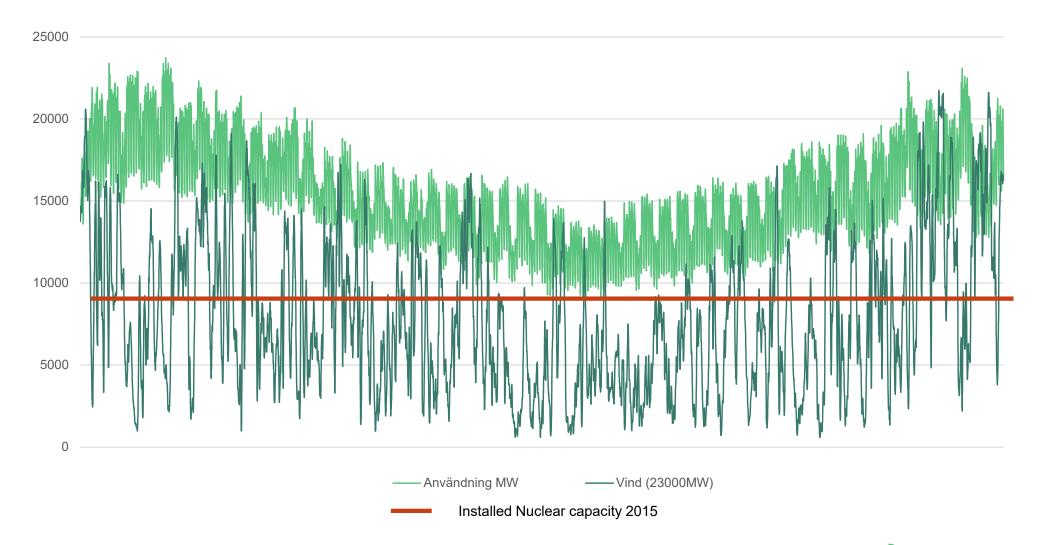
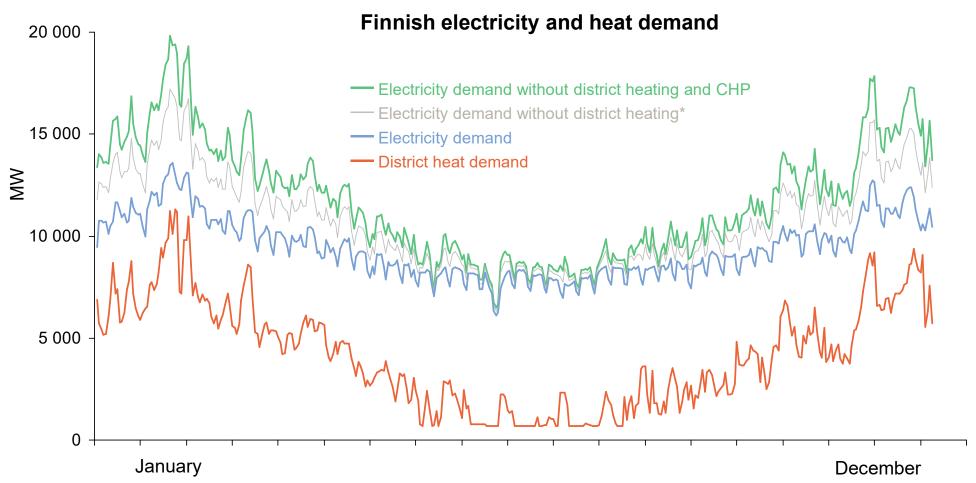


## Hourly based electricity consumption in Sweden 2016 -> 23 GW Wind (simulated) 75 TWh/year





## Centralised heating enables more intermittent wind and solar production



<sup>\*</sup>Heat demand produced with heat pump increase electricity demand with 1/3 of the heat demand





Esa.Hyvarinen@fortum.com

@EsaHyvarinen

