



Stadtwerke München (SWM)

Driving the integrated energy transition in Munich

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Berlin, 1 October 2019

SWM's targets

- Cover Munich's electricity demand from renewable sources by 2025
- Fully electrify public transport, based on RES-E, by 2030
- Convert the district heating system to renewables by 2040 (including district cooling)

European approach from the beginning

Currently well on track



How does it work?

- ▶ Conversion of power generation from nuclear and fossiles to renewables, primarily wind (>70% accomplished)
- ▶ Conversion of district heating to renewables, primarily geothermal heat (5 plants running, 1 under construction, 2 in planning phase)
- ▶ Replacement of diesel buses by electric busses (starting)



What is the increase in electricity demand?

- ▶ We expect an increase of electricity demand of ~30% by 2040
- ▶ Exact numbers depend on degree of electrification of private vehicles and price of carbon-neutral gases; hard to forecast

How can we make the system flexible?

- ▶ Integration of all small-scale generation and demand into our virtual power plant, including charging infrastructure for busses, geothermal plants, power2heat, cooling etc.
- ▶ Heating sector shows significantly higher potential for sector integration than transport sector
- ▶ Flexibility of the system must also take into account requirements of the distribution grid (e.g. charging)



What do we need from politics?

- ▶ Prices on CO₂ across all sectors
- ▶ No discrimination against renewables in regulation of and support for district heating and cooling systems