



The Perspective of renewable energy in Finland

Matti Nuutila
Finnish Energy Industries
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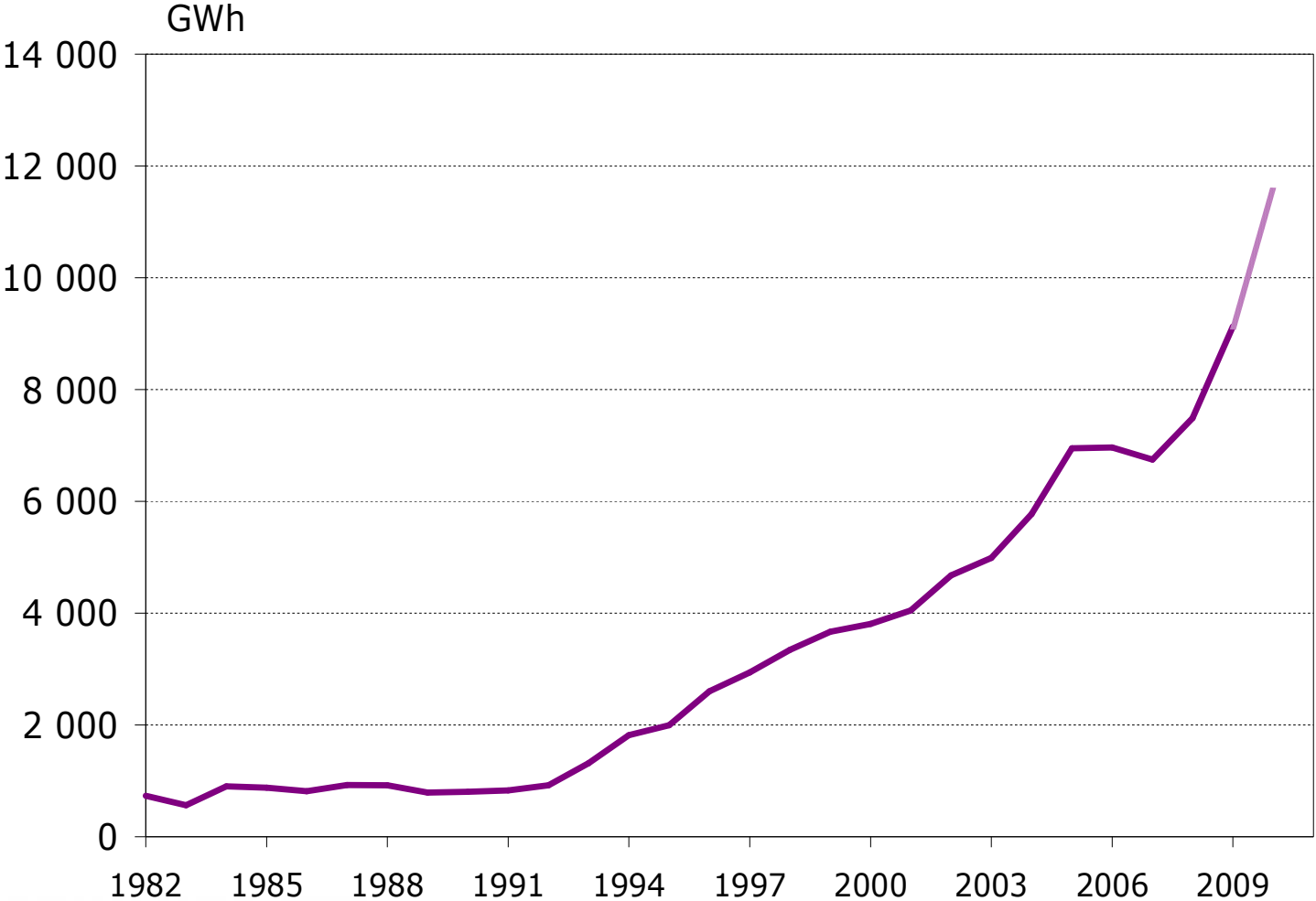
Turning renewable challenges into opportunities

- We have to turn carbon-neutral district heat production challenges into opportunities, like:
 - The overall efficiency of energy use have to be improved
 - We need new boiler investments to renewable CHP production to bring down CO₂ emissions and other emissions as well.
 - Small-scale-generation will complete CHP production in remote areas
 - All kind of waste energy and utilisation of thermal storages can be used for district cooling and DH

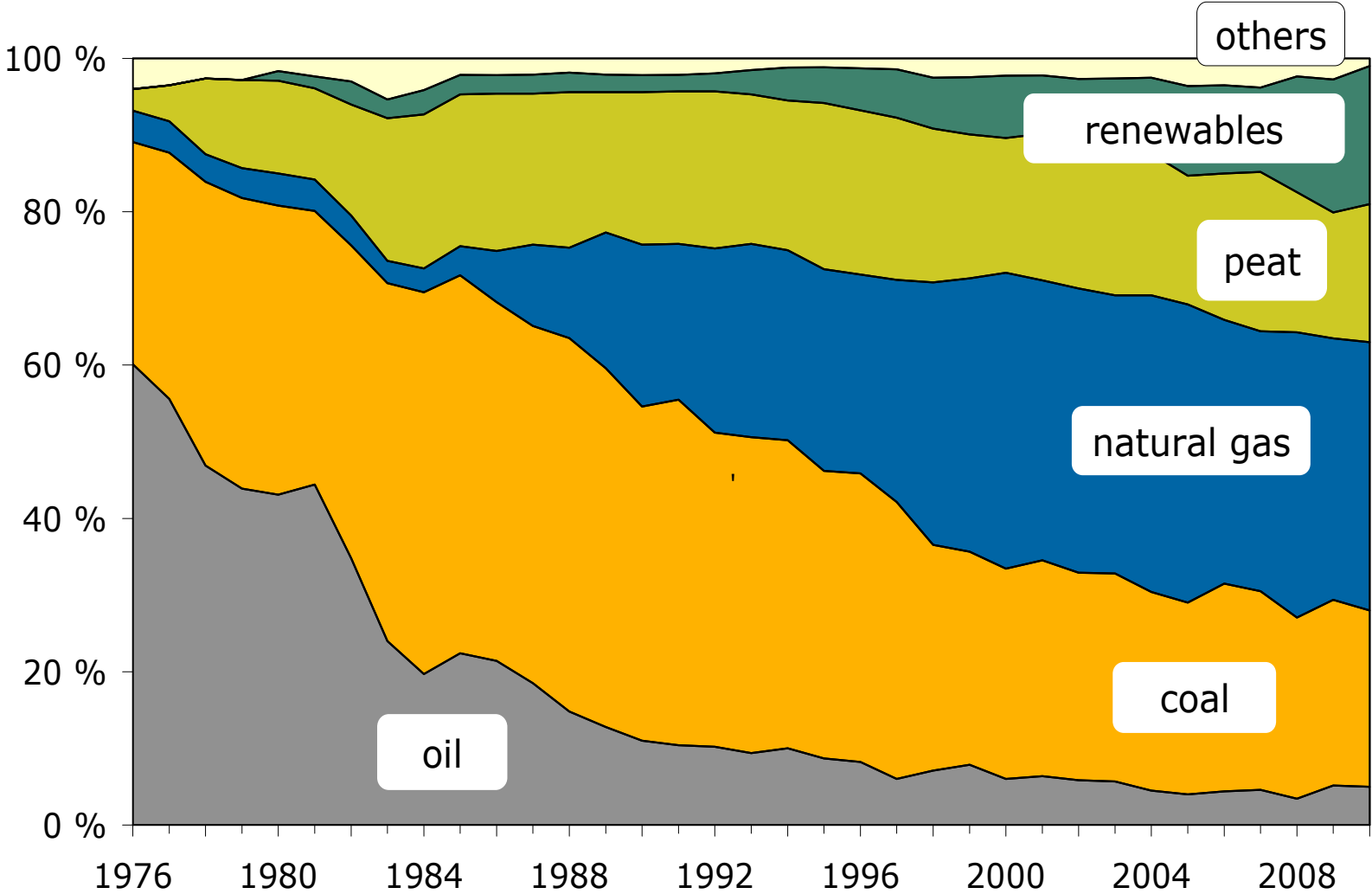
Finland has a strong boom of low-carbon power and heat generation

- There will be a 50% increase in combined heat and power generation with renewables in the DH grids
 - Emissions from district heat generation will reduce from 220 g/kWh (2010) → 25 g/kWh (2050)
 - Emission reduction 25 Mtonn.
 - New wood based boiler capacity 2090 MW_{electricity}

Domestic renewable energy sources in production of district heat and CHP



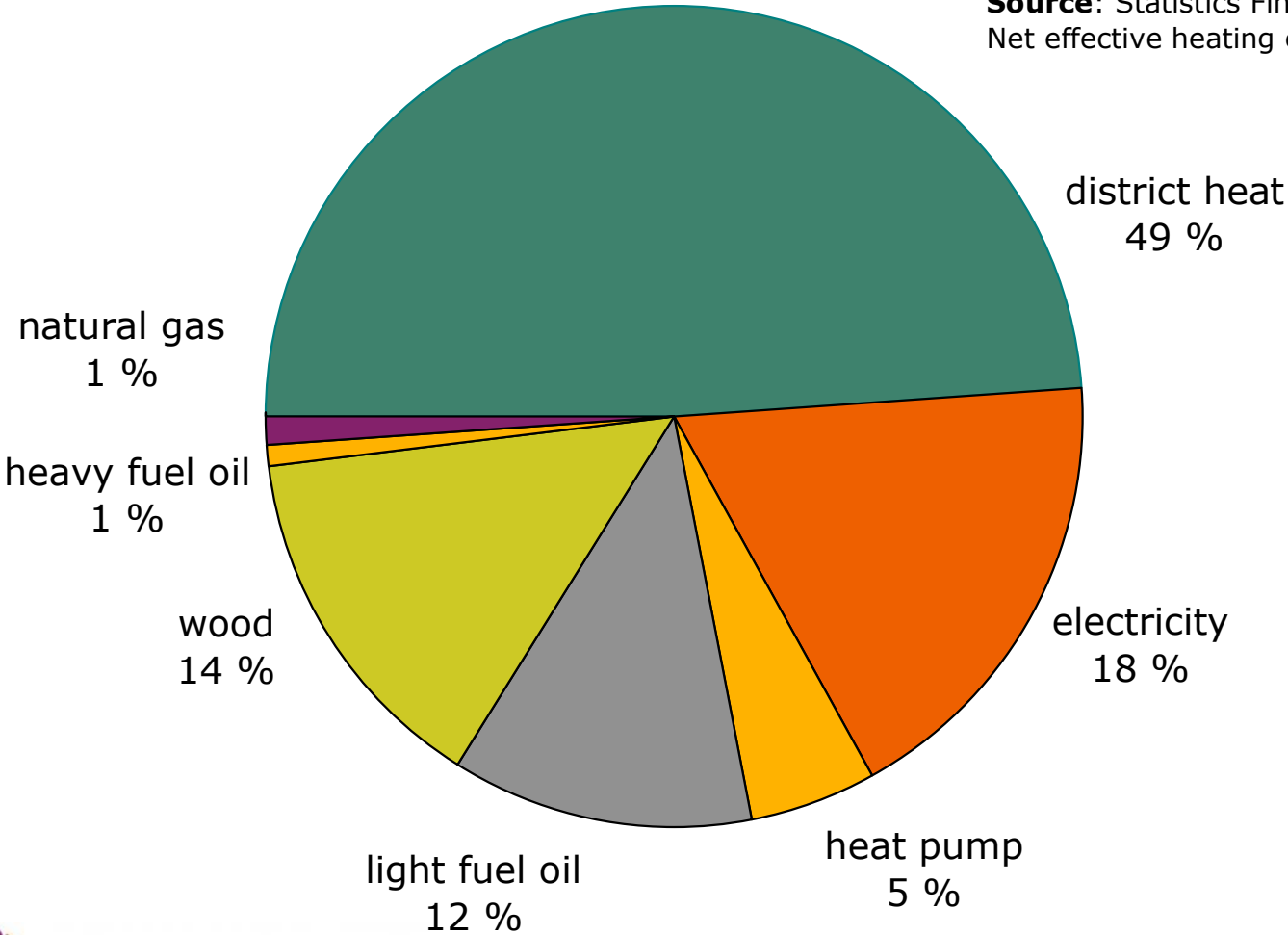
Fuel consumption in production of district heat and CHP



Market share of space heating

Residential, commercial and public buildings

Source: Statistics Finland
Net effective heating energy, 2009



Preconditions for the low carbon society

- A stable and predictable operating environment must be ensured for energy investments
- Far-sighted and consistent energy policy
- All operators commit to the climate target in the long run
- Functioning renewable fuel markets
- A wide selection of technologies and fuels available for operators
 - Social steering is directed to the climate targets instead of the means
- Emission prices are determined by the market
- No steering methods that overlap or contradict with those of emissions trading
- Regional planning, power plant environmental permit systems will be accelerated
- District heat price must be kept competitive