

From regulated to deregulated market – DH in Sweden, in the past, today and to the future challenges

CoolDH, May 18, 2022

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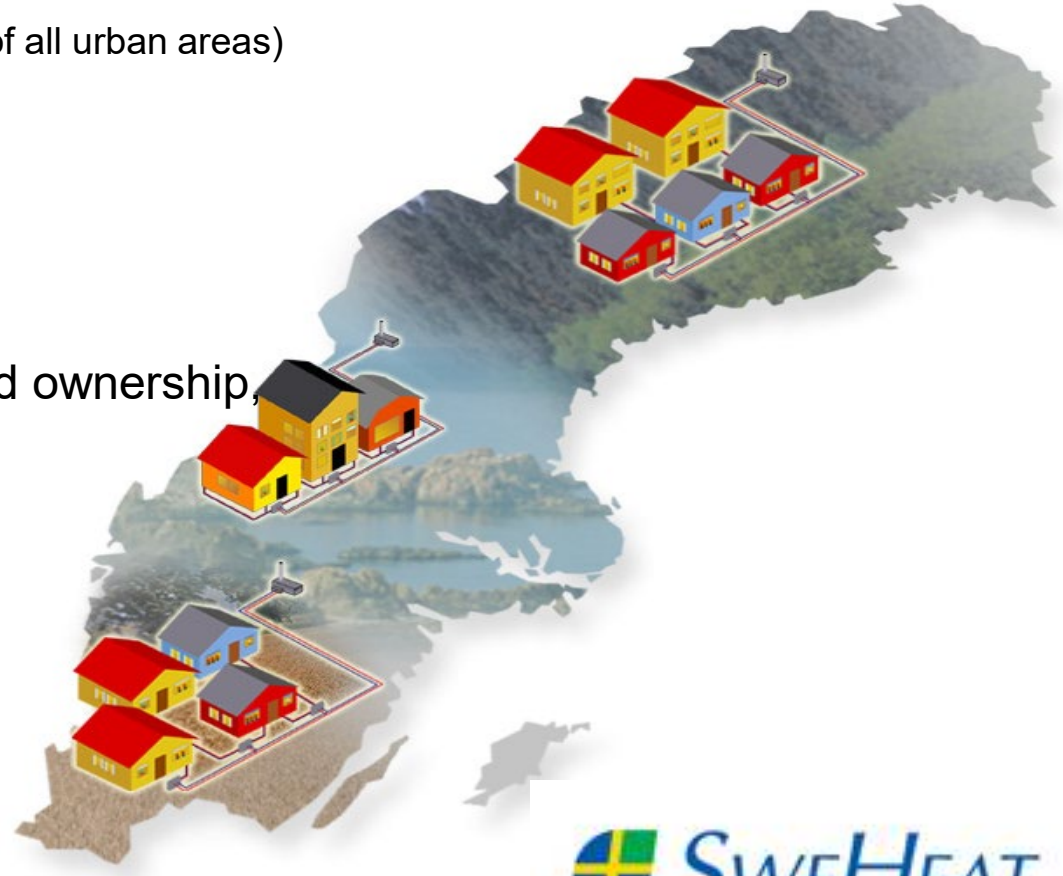
Researcher Innovation Science at Halmstad University



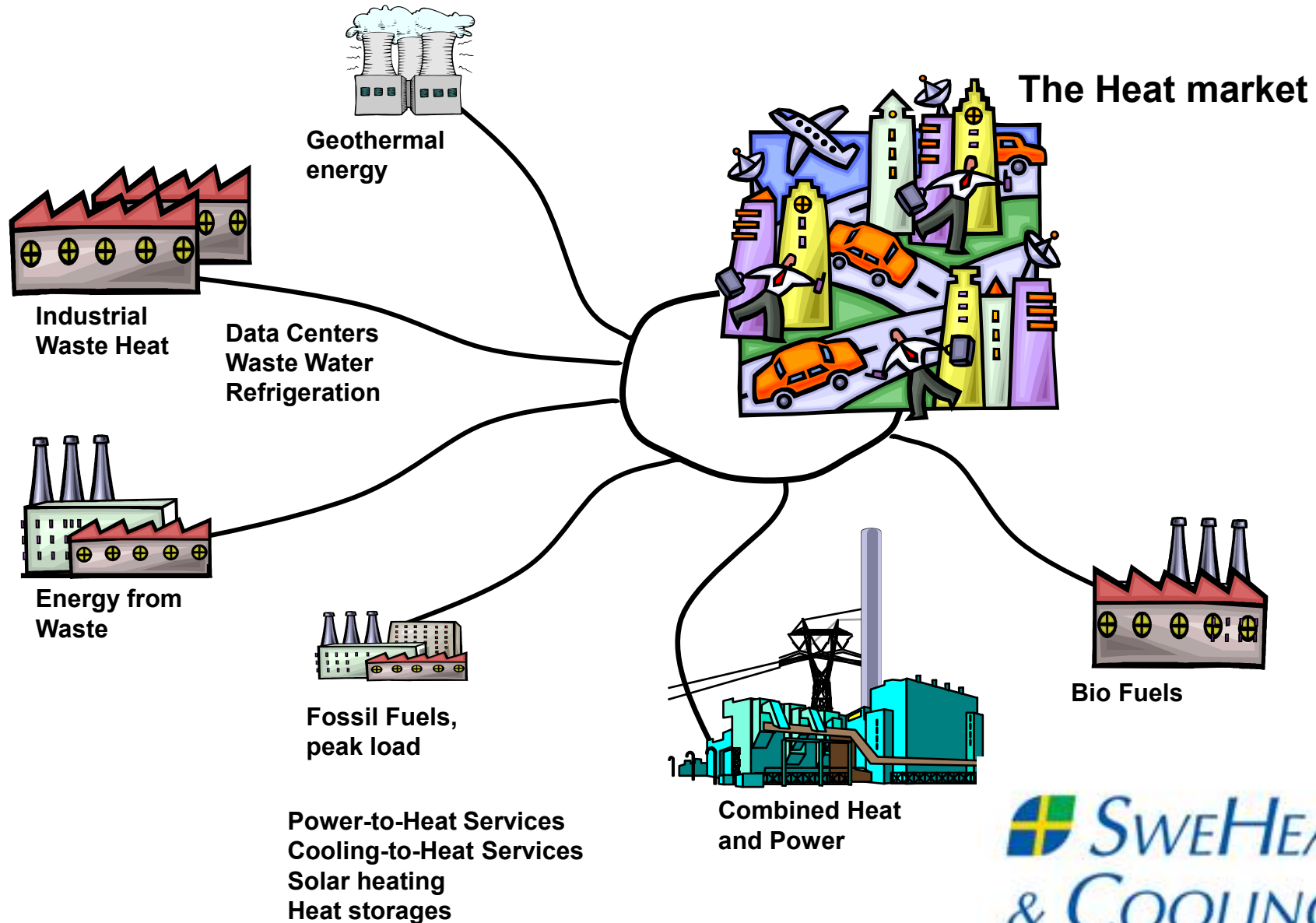
www.sweheat.com

District heating in Sweden

- 60 % of total heat market
- App. 600 system localities (99% of all urban areas)
- App. 50 TWh total production
- App. EUR 4 billion turnover
- De-regulated market, pricing and ownership, since 1993
- Supportive part of Sweden's environmental and climate politics



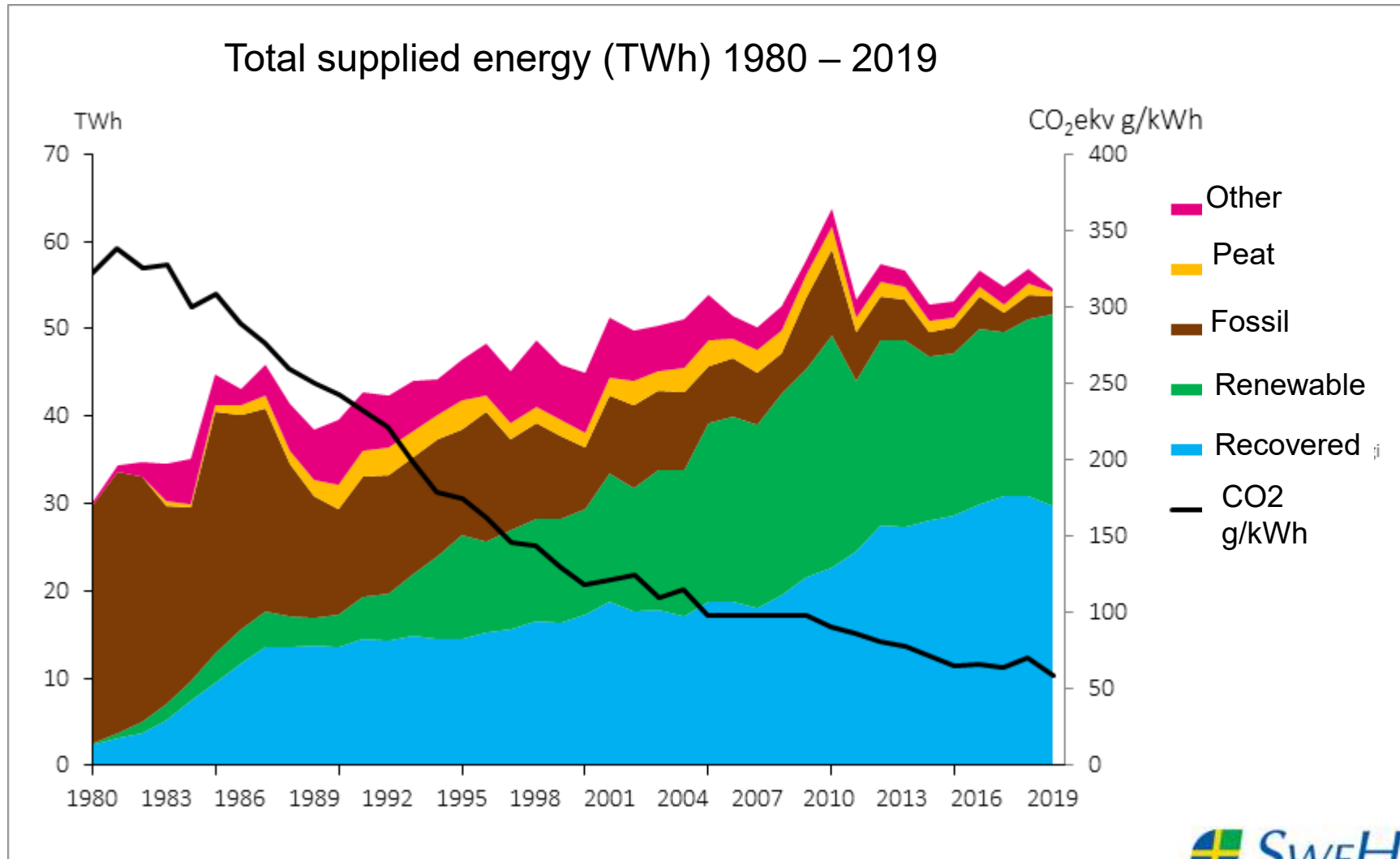
From multiple sources to multiple user



Source: Sweden Environmental Ministry

The logo for SWEHEAT & COOLING, featuring a stylized Swedish flag (blue and yellow) to the left of the text "SWEHEAT & COOLING" in a blue, sans-serif font.

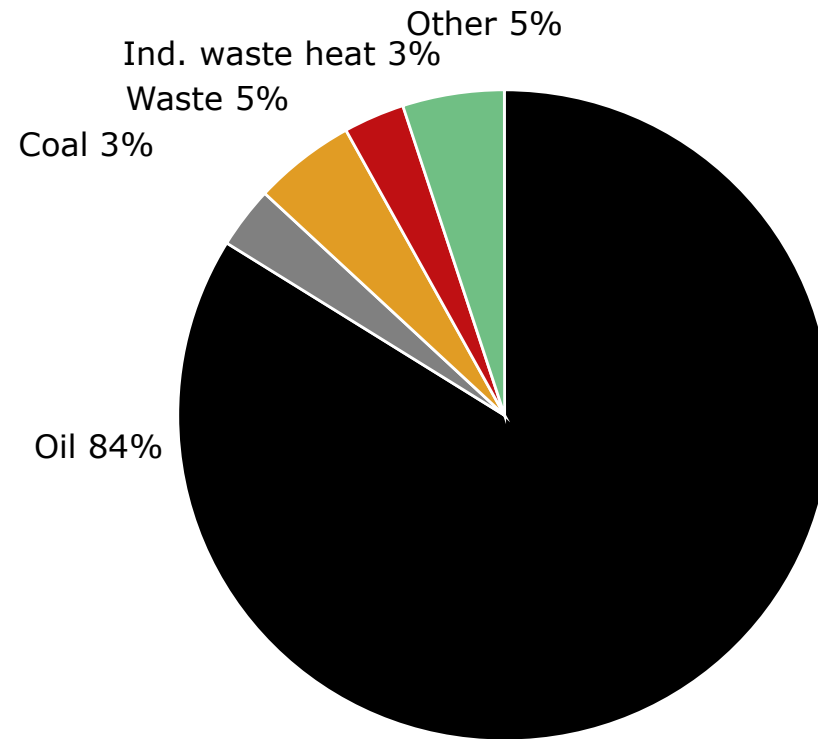
Phasing out fossil fuels in DH



Source: Sweden Energy Agency

District heating heat sources 1981

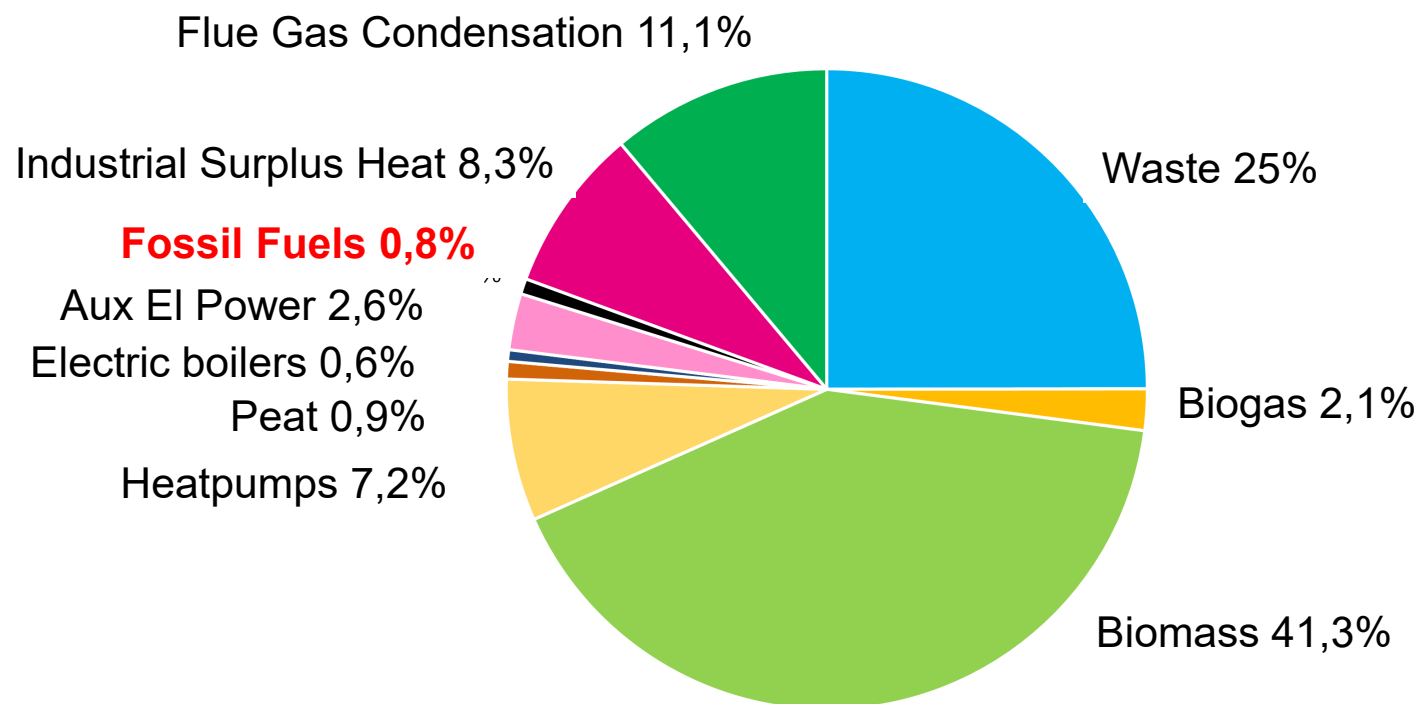
Total production: 27 TWh



Source: Sweden Energy Agency

District heating heat sources 2020

Fuel mix 2020 DH appr 50 TWh



Source: Sweden Energy Agency

Today

- ▶ Competition with heat pumps
- ▶ Increased demand of cooling
- ▶ Turbulent electricity prices (CHP), power constraints, ancillary service
- ▶ Maintenance debt on infrastructure
- ▶ EU Policy pressure on biomass and waste
- ▶ BECCS Bioenergy Carbon Capture and Storage

Looking into the future

- ▶ Each DHC system adapted to local conditions and system temperatures
 - ▶ Heat capture - **Circularity**
 - ▶ Heat/Cold demand (also industries)
 - ▶ Storage
- ▶ Focus on asset management
 - ▶ **Preservation** and life extension
 - ▶ Monitoring and selective replacement
 - ▶ Higher utilisation
 - ▶ Integration with demand side