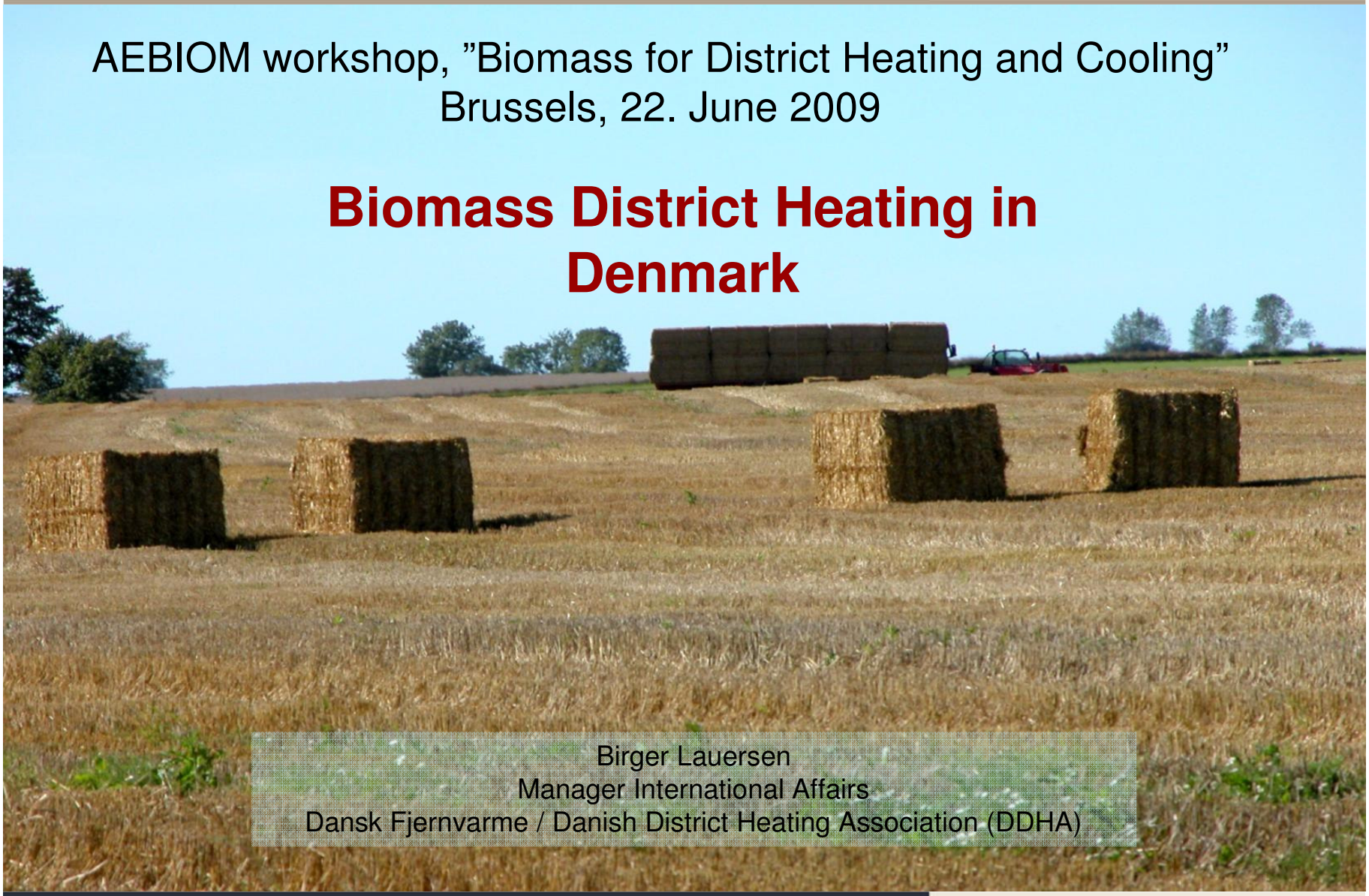
AEBIOM workshop, ”Biomass for District Heating and Cooling”
Brussels, 22. June 2009

Biomass District Heating in Denmark



Birger Lauersen
Manager International Affairs
Dansk Fjernvarme / Danish District Heating Association (DDHA)

Danish District Heating Association

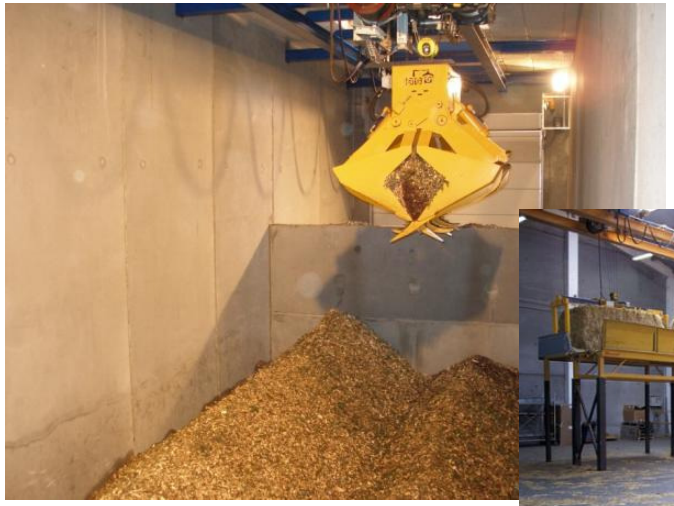
Dansk Fjernvarme

- 401 members representing 99% of national DH-sale
  - From 100 consumers in villages – 3 GWh/y heat production
  - To 100.000 consumers in towns – 3.000 GWh/y heat production
- DH covers 46 % of heat market
  - 61 % of households
- 80 % CHP in DH
- Average heating cost with DH around ½ of cost of individual oil or gas

Biomass Plants in District Heating

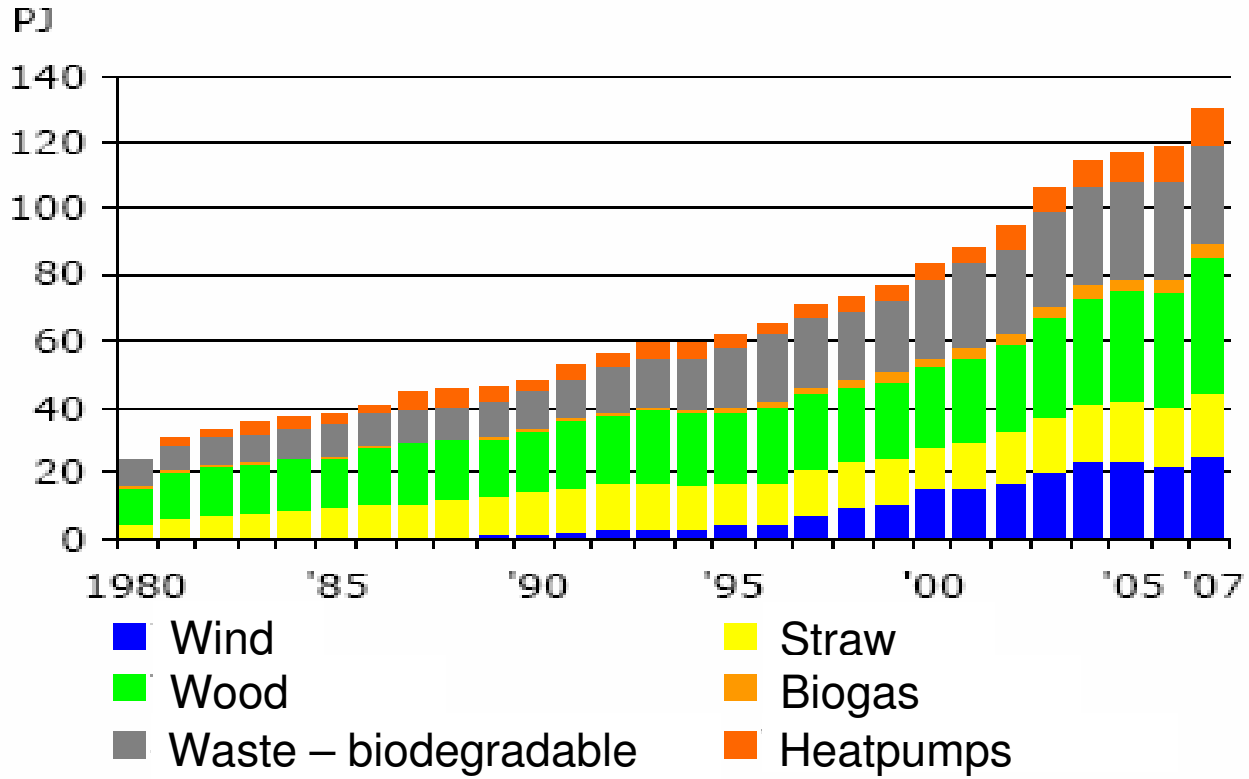
- App. 150 biomass district heating plants in DK
  - 60 Straw fired
  - 90 Wood chips and/or wood pellets

- Typical 1-10 MW
- Several large co-fired CHP-plants



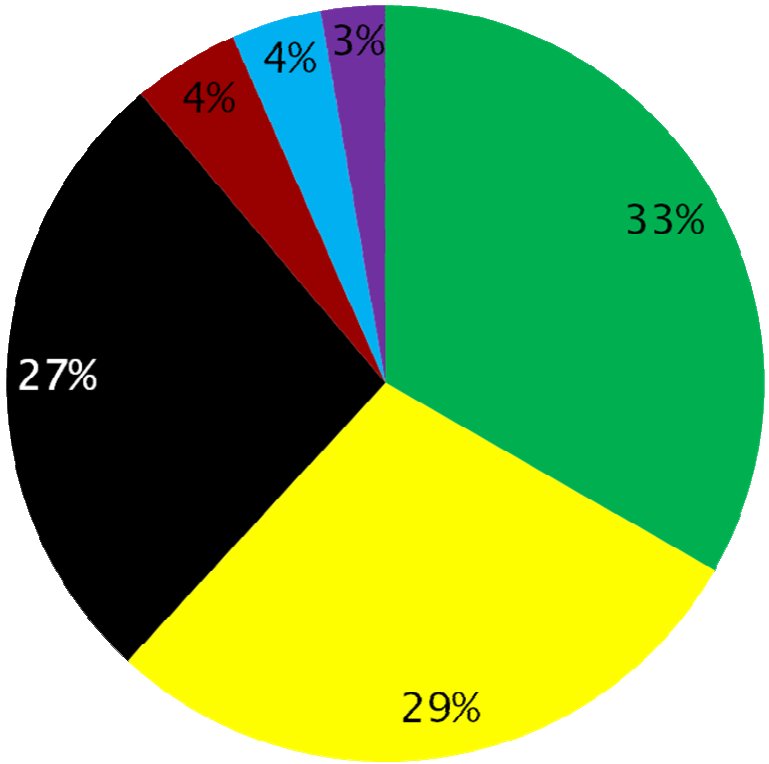
Production of Renewable Energy

- Renwable energy in Denmark app. 17% (2007)
- Biomass app. 70% of renewable energy



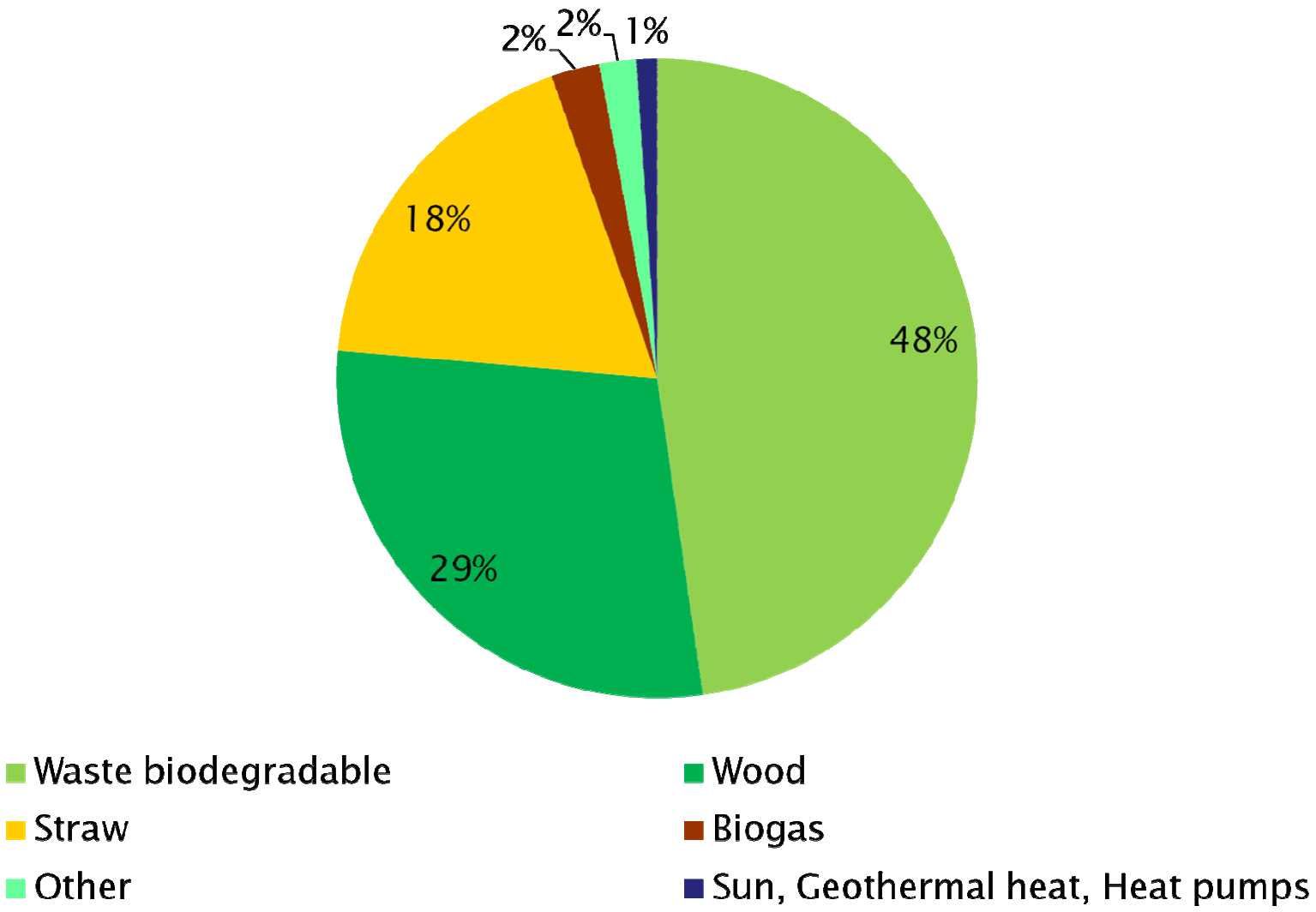
Source: Energy Statistics 2007, Danish Energy Agency

District Heating by Fuels - 2007

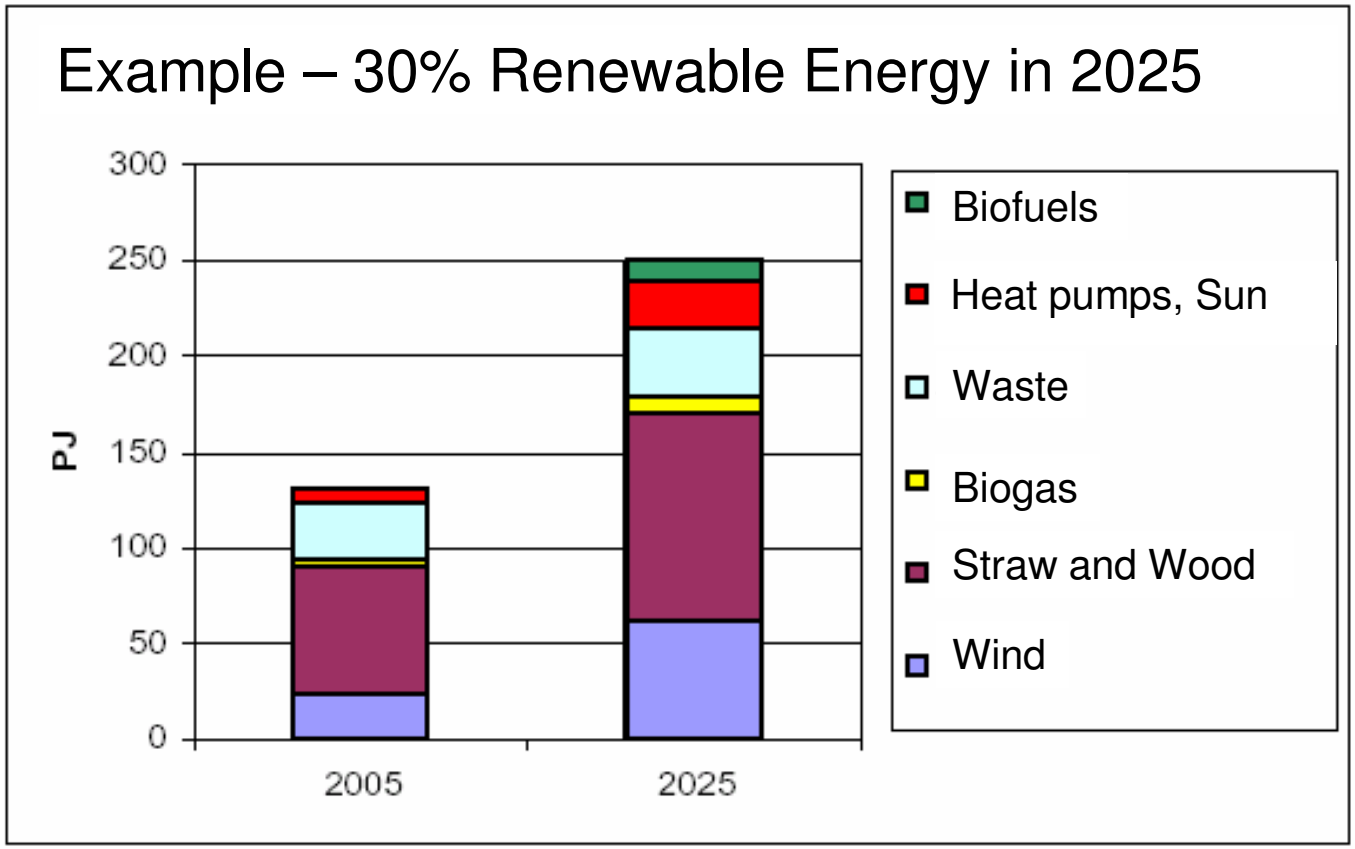


- Renewable Energy
- Natural gas
- Coal
- Waste non biodegradable
- Oil
- Waste heat

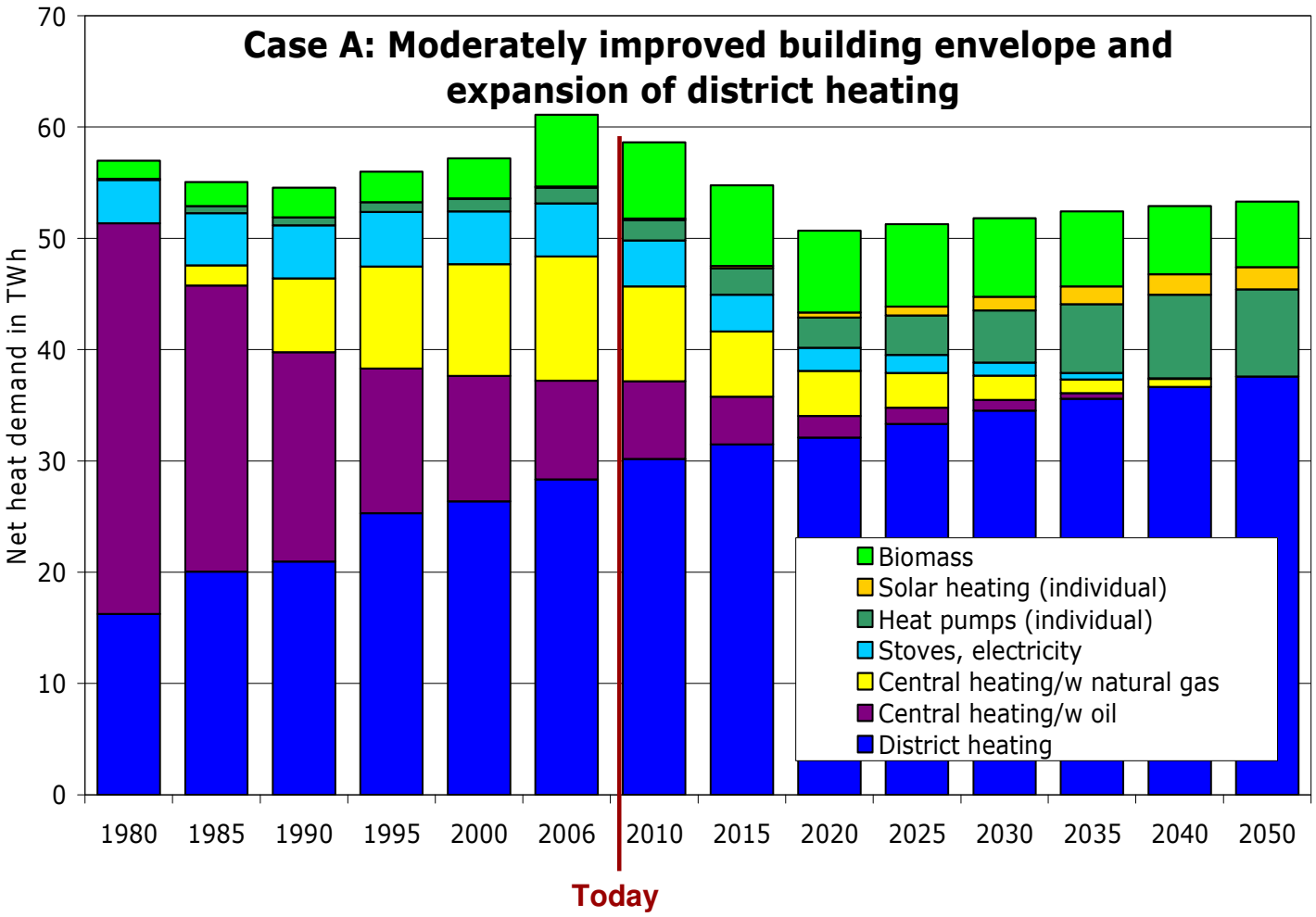
Renewables in District Heating 2007



Expectations National Plans

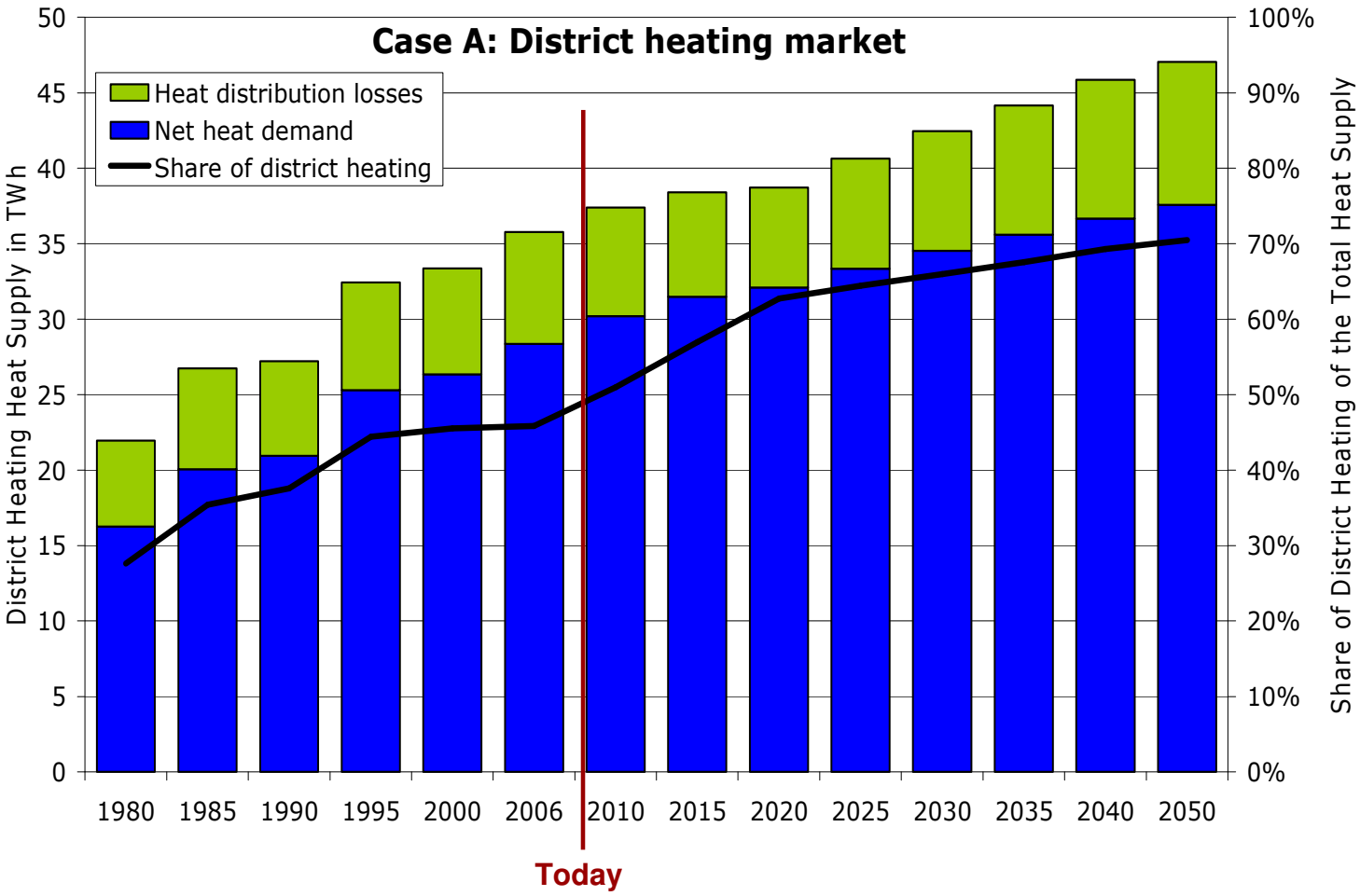


Heat Demand and Sources



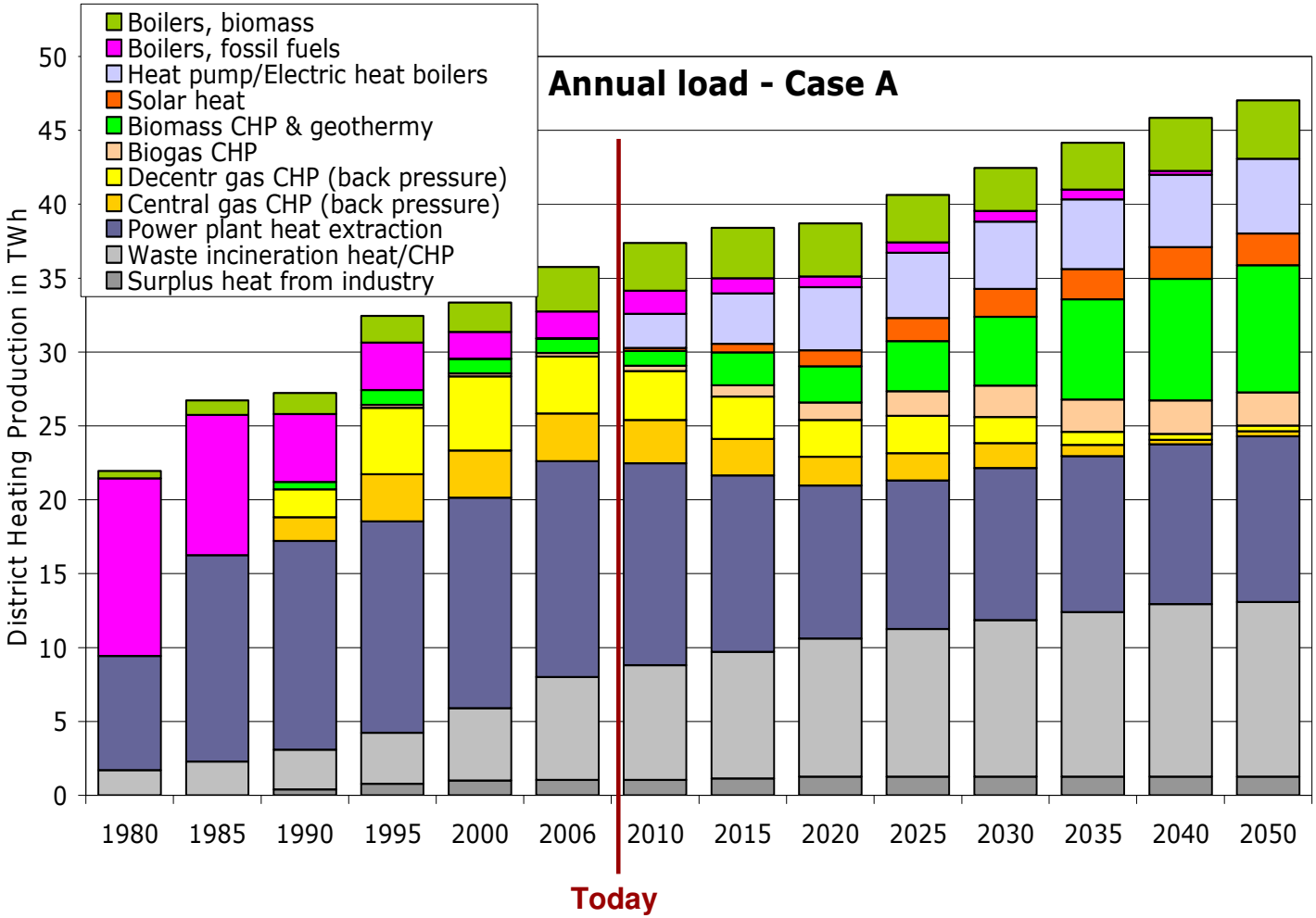
Source: Heat Plan Denmark,
Danish District Heating Association, Aalborg University & Ramboll 2008

DH Demand and Market Share



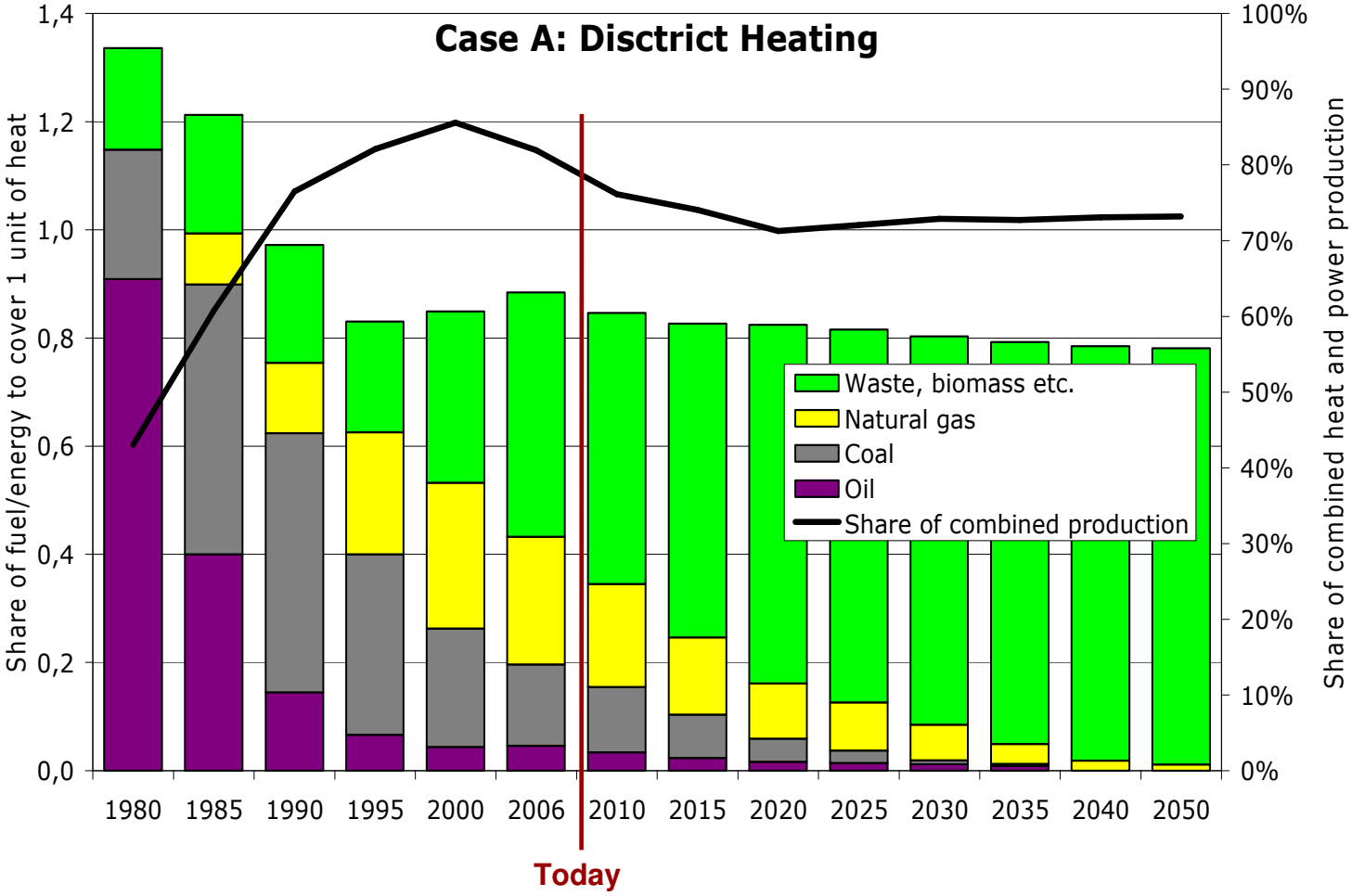
Source: Heat Plan Denmark,
Danish District Heating Association, Aalborg University & Ramboll 2008

District Heating Heat Sources



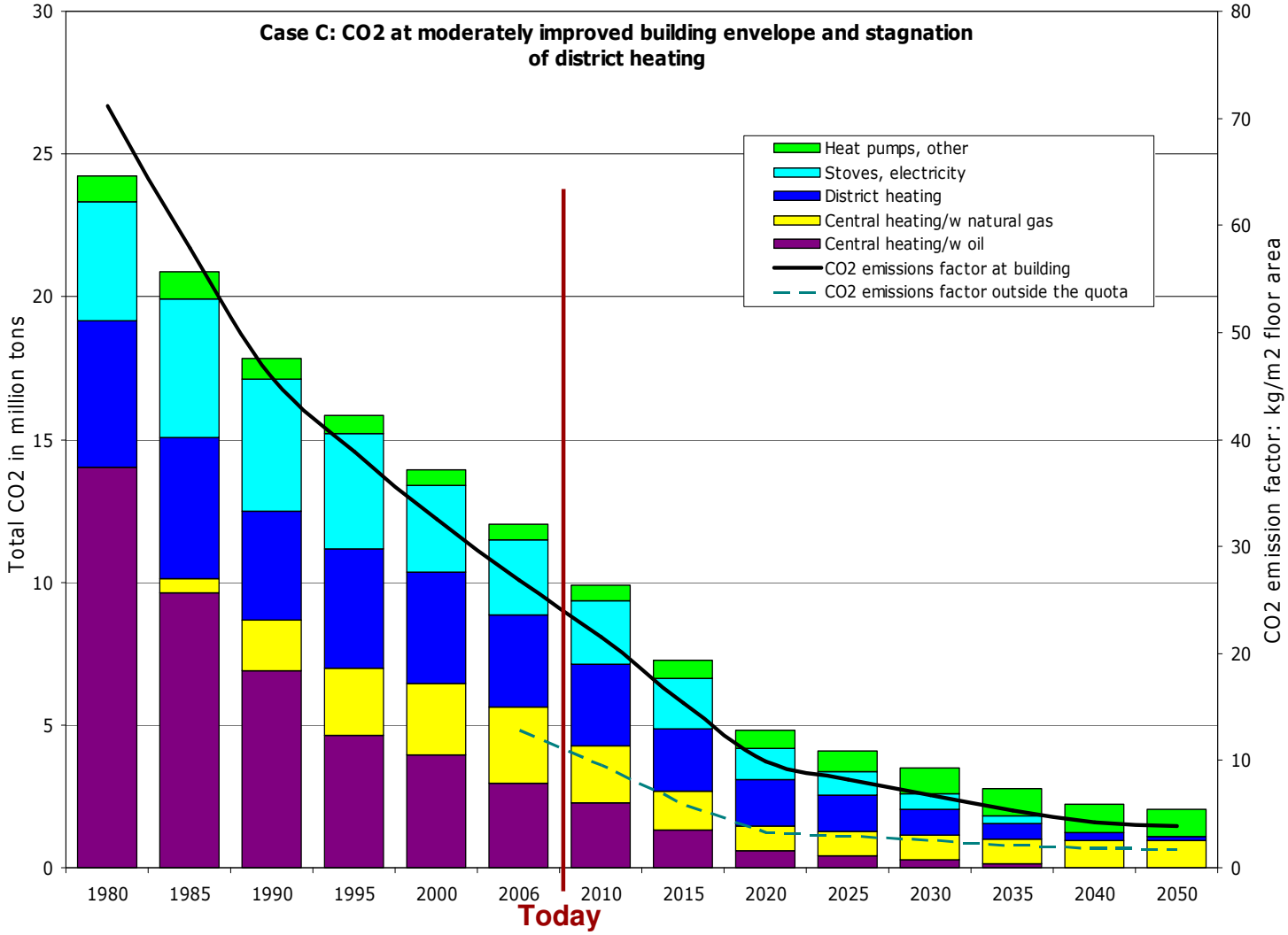
Source: Heat Plan Denmark,
Danish District Heating Association, Aalborg University & Ramboll 2008

Fuels and Share of CHP



Source: Heat Plan Denmark,
Danish District Heating Association, Aalborg University & Ramboll 2008

To the Future



Source: Heat Plan Denmark,
Danish District Heating Association, Aalborg University & Ramboll 2008

Issues for the Future

- Availability of biomass
- Competing uses
- Taxation
- Technological developments
  - Higher efficiencies
  - Small scale CHP

Biomass avaliable for energy purposes 2006 (Danish Energy Agency)			
PJ	Danish potential	Consumption of Danish resources	Imports
- Straw	55	18,6	0
- Wood	40	33,7	16,1
- Biomasse for biogas	40	3,9	0
- Biodegradable waste	30	31,0	0
Total	App.165	87,3	16,1