

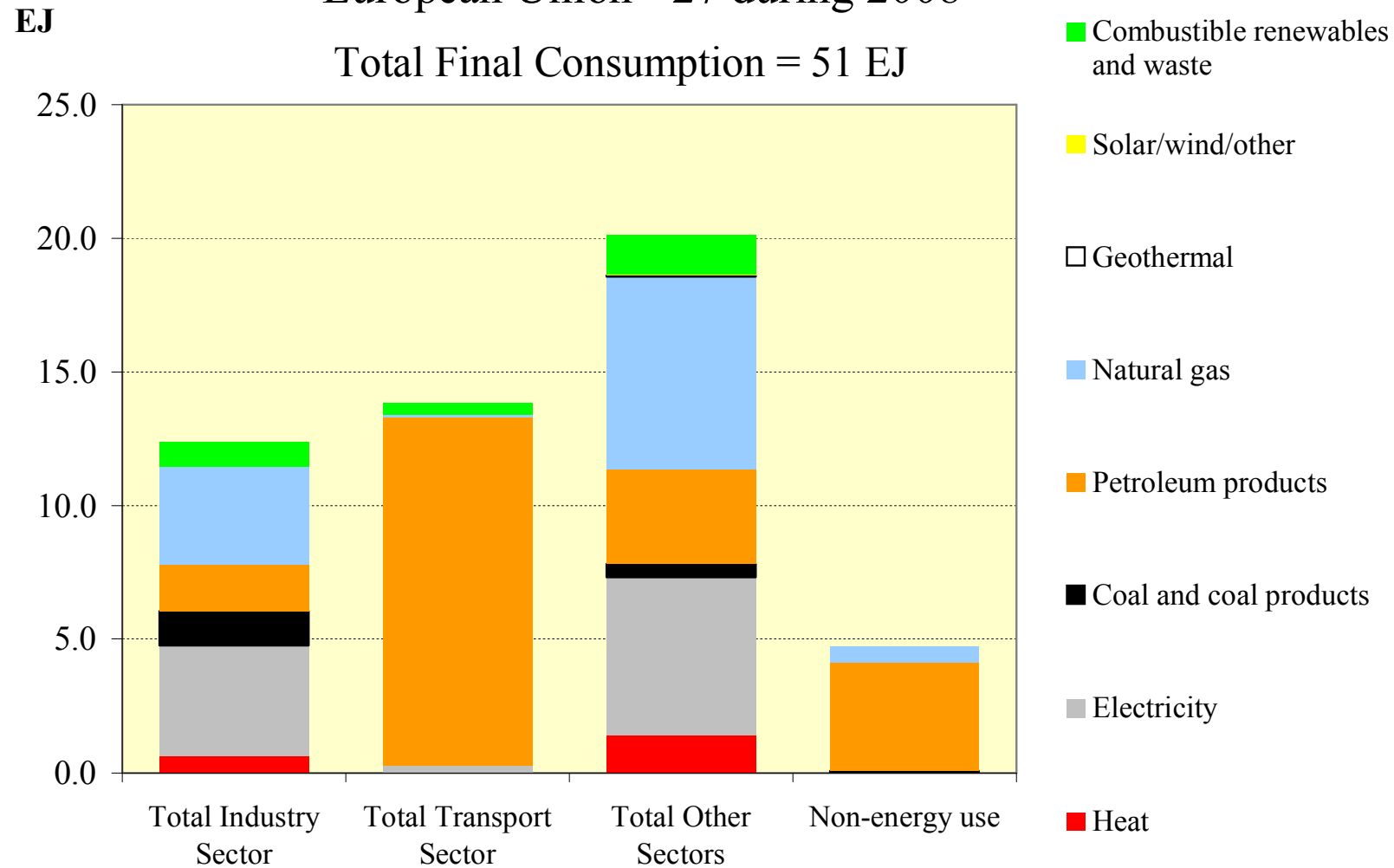
What we do not know today!

Sven Werner
Halmstad University

The current situation 1

European Union - 27 during 2008

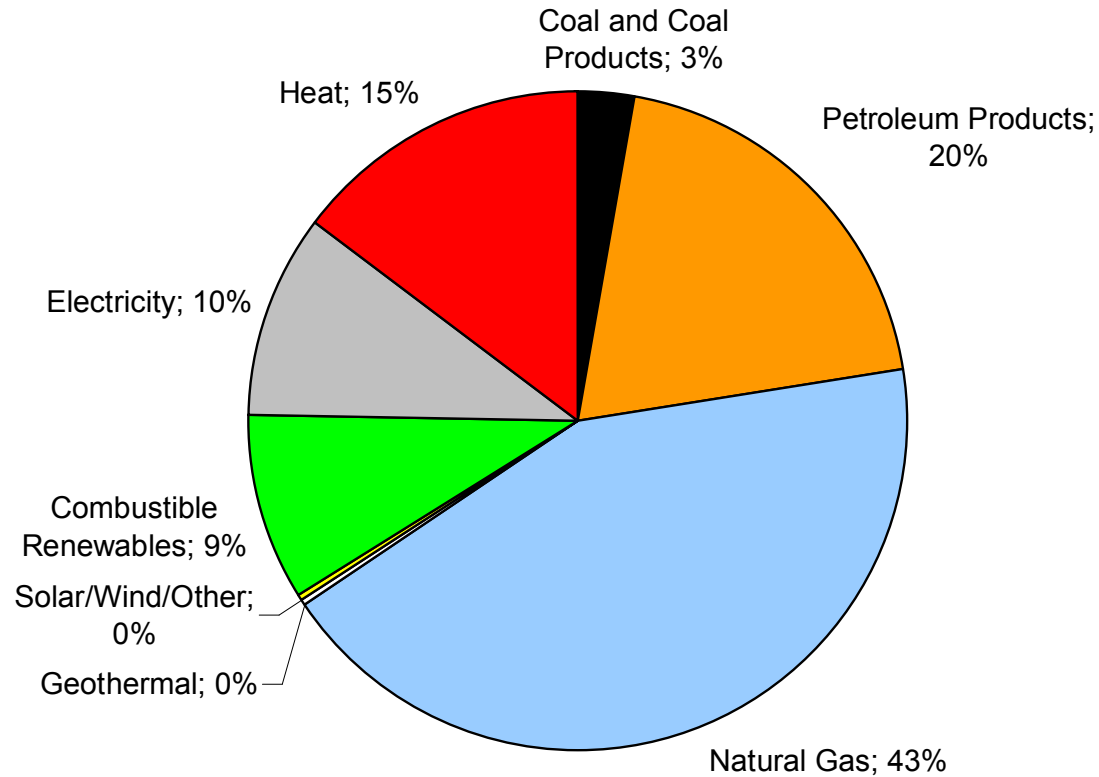
Total Final Consumption = 51 EJ



The current situation 2

EU27 during 2007, Origin of heat supply for heat demands in buildings (both residential and service sectors)

Total heat supply was 11.8 EJ, not including indirect heat supply from all indoor electricity use



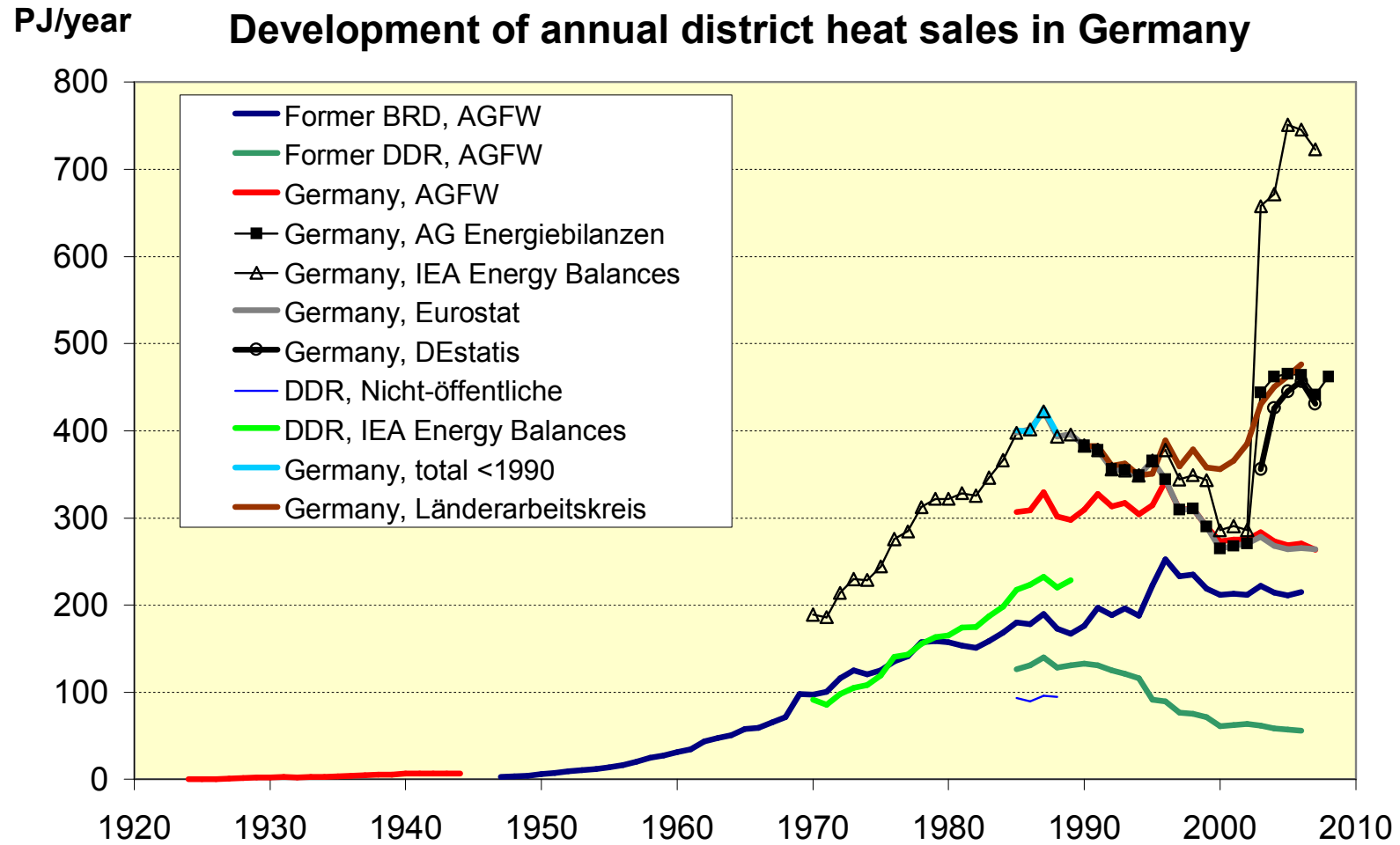
Agenda

1. Non-harmonised time series in international energy statistics
2. Energy statistics and distributed generation
3. District heat prices
4. The benefits of district heating
5. District cooling statistics
6. Conclusions

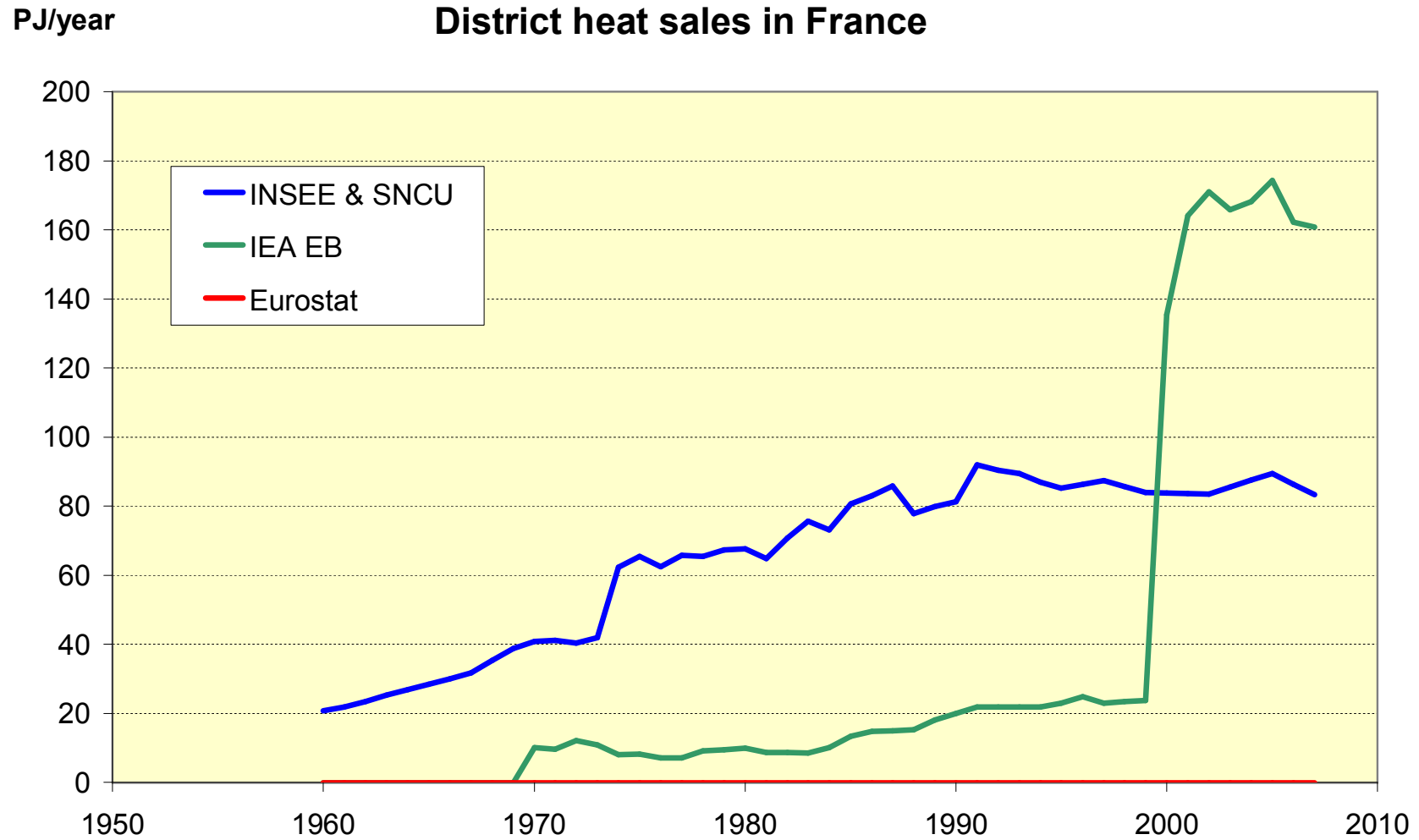
1. Non-harmonised time series

- Different statistical databases have different DHC statistical values
- 3 examples of final DHC consumption: Germany, France and Italy

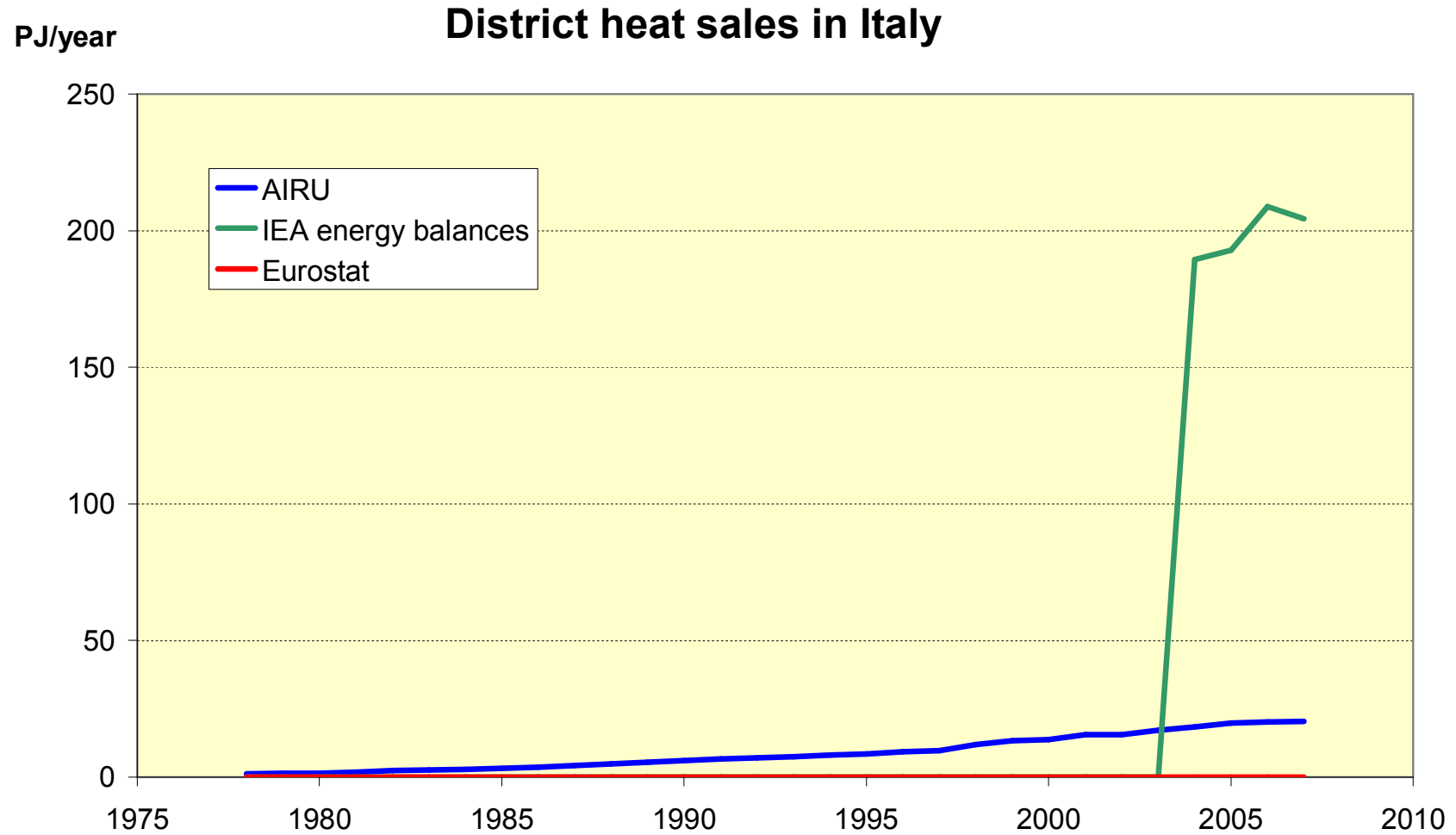
1. Non-harmonised time series: Germany



1. Non-harmonised time series: France



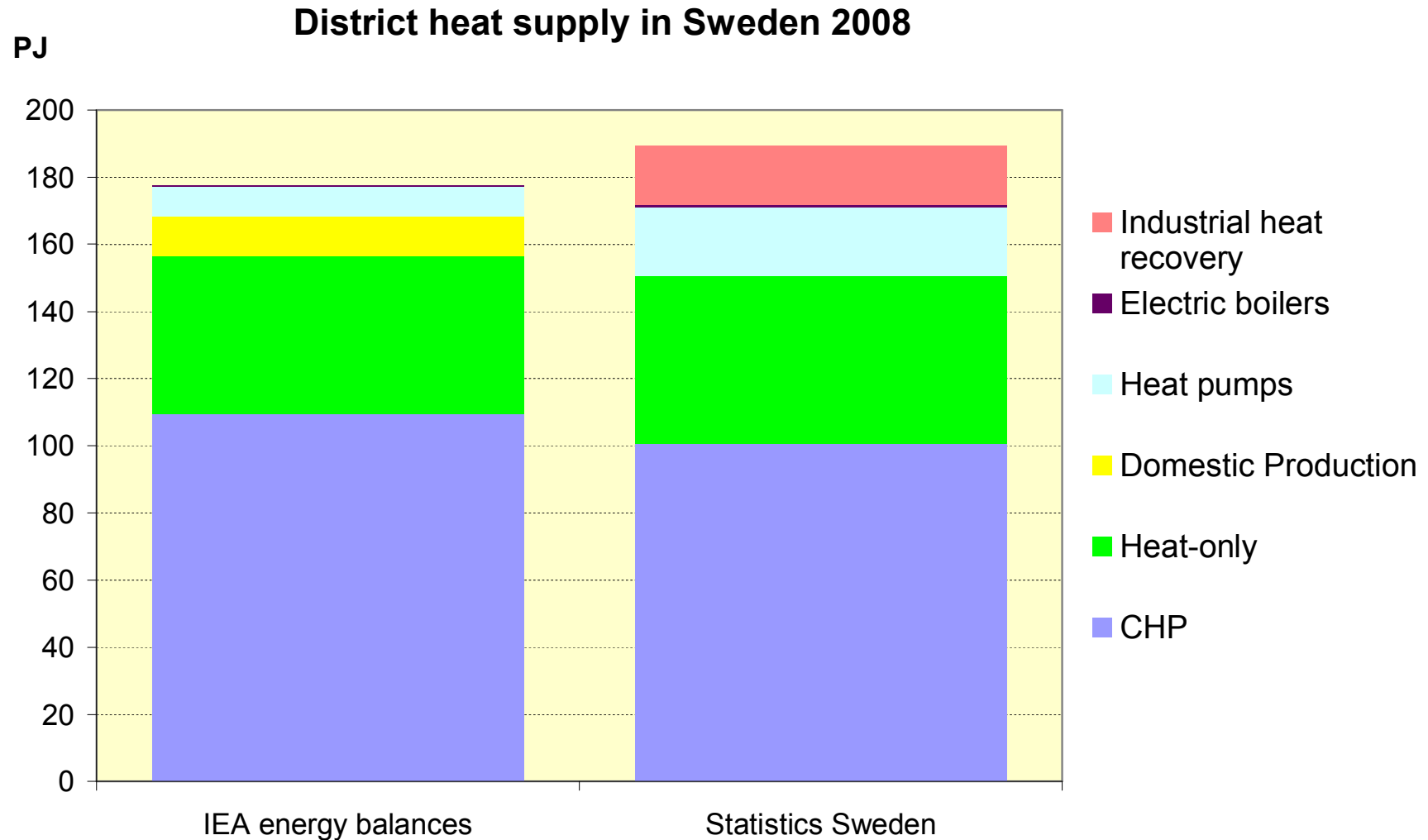
1. Non-harmonised time series: Italy



2. Distributed generation

- Current energy balance methods presume central generation in the energy sector and only final consumption at consumers
- Distributed generation is currently forced into the energy sector in energy balances (industrial CHP, blast furnaces etc)
- Hence, recovery of industrial excess heat is not recognised in energy balances (heat delivery from a use sector back to the energy sector):
Example from Sweden

2. Distributed generation: Industrial heat recovery in Sweden



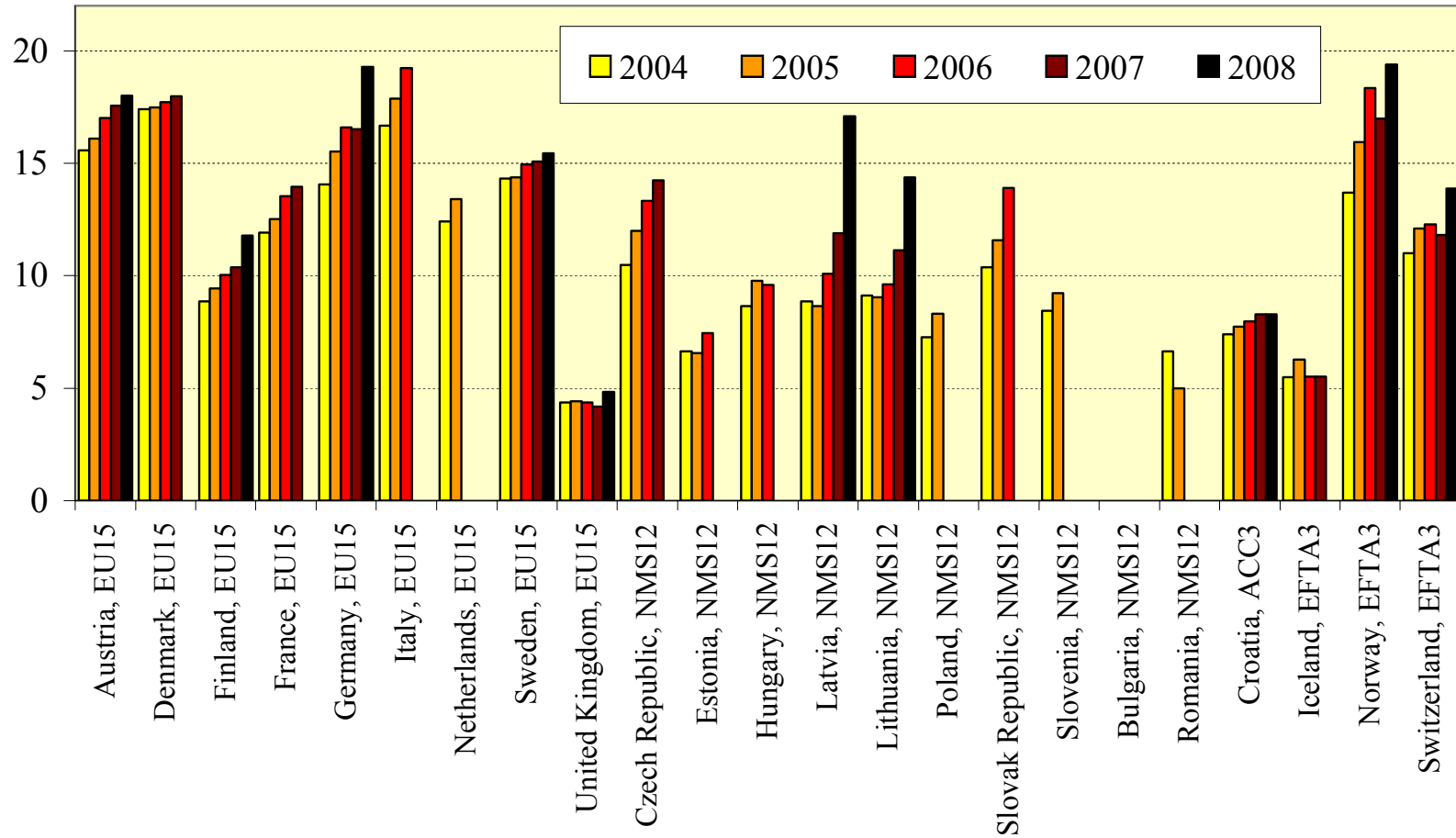
3. DHC prices

- The EU price directive for electricity and natural gas use makes these prices very transparent through the Eurostat reports
- Oil and gasoline prices are also available from the European Commission and IEA oil price monitoring reports
- Since DHC prices are not included in these price reports, DHC delivery prices are not transparent today

3. DHC prices

EUR/GJ

European district heat price levels, 2004-2008



4a. DHC Benefits

- The fundamental idea of district heating is to find secondary heat resources without any alternative use (as excess heat from thermal power generation, waste incineration, and high temperature industrial processes). This urban heat recycling substitutes ordinary energy supply for space heating in buildings.
- District heating is a shortcut in the energy system, that do not fit into the traditional energy statistics and balances, presuming central generation to be distributed to the final consumers.

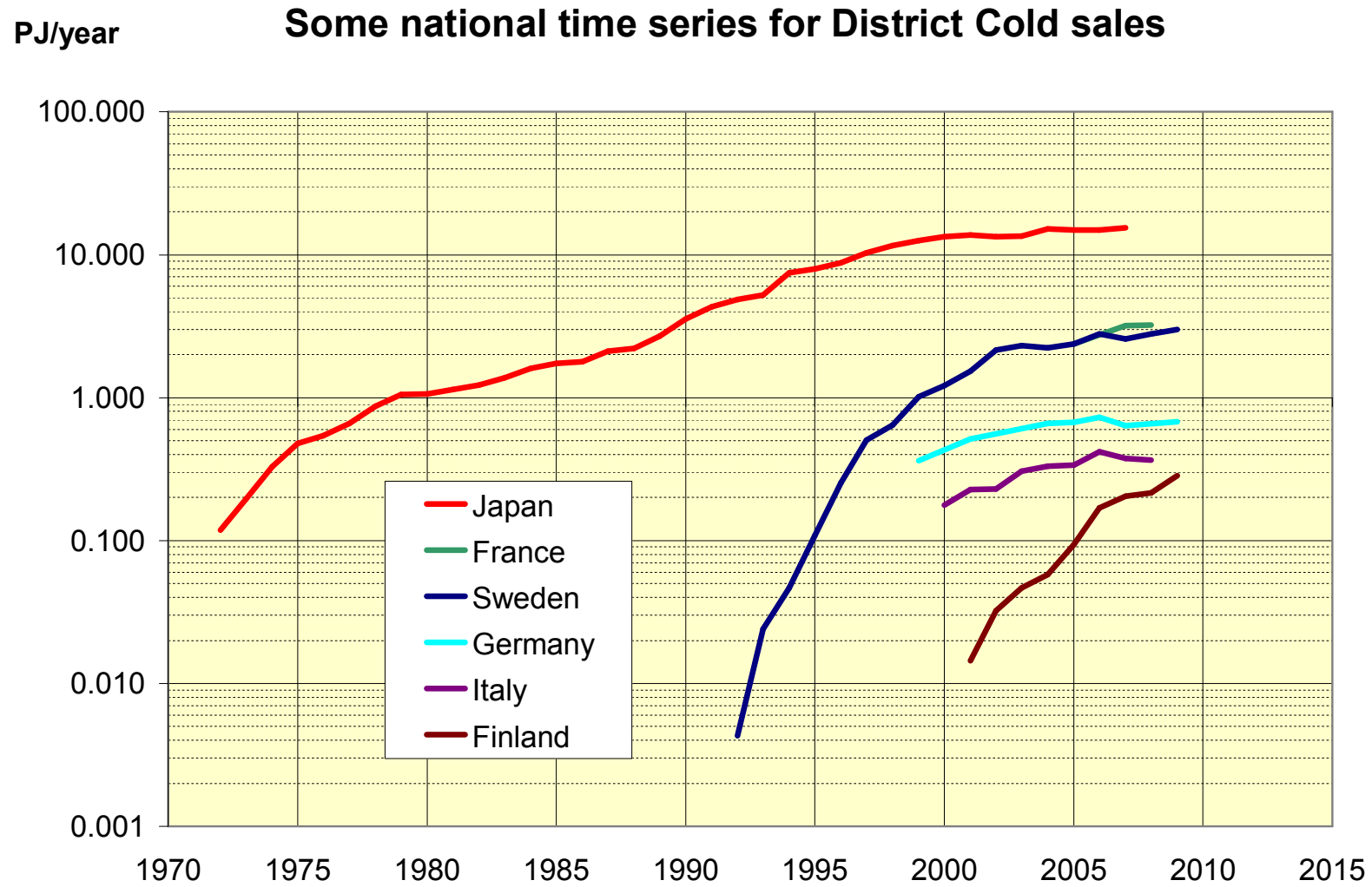
4b. DHC Benefits

- The synergy benefits with district heating are often allocated to the synergy partners
- The whole benefit of CHP is allocated to the electrical side, the whole benefit of industrial heat recycling is allocated to the industrial processes, and the whole benefit of waste-to-energy plants is allocated to waste management.
- Hence, nobody can identify the benefits of district heating in international energy statistics.
- Currently, almost all information windows about the district heating benefits are painted with black colour. We need more guiding light and transparency in this respect.

5. District cooling

- District Cooling is a new emerging business and the annual volumes of cold sales is growing
- So far, only national statistics are available
- No international organisation (except Euroheat & Power) gathers statistical information about district cooling

5. District cooling



6. Conclusions

1. Non-harmonised time series in international energy statistics is a fact
2. Distributed generation disregarded in international energy statistics
3. No European collection of district heating prices (except for inflation estimations)
4. The DHC benefits can not be identified in international energy statistics
5. District cooling disregarded in international energy statistics

The End

- Finland has the best national district heating statistics in the world
- It provides 100% transparency