Renewable heat in France and Germany – international perspectives

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Most reductions will have to come from energy efficiency and renewables. With heat accounting for over 50% of final energy consumption, it ought to be a key focus for reductions.
But heat remains the elephant in the room
Heat is the largest energy end-use

Global consumption of heat, 2014

- Other heat: 71%
- Traditional biomass: 16%
- Modern renewables: 7%
- Electricity: 6%
- Other: 6%

Total: 211 EJ

Heat is >50% of global final energy consumption & 38% of CO₂ emissions. Cooling is around 2% of end-use but growing.
Renewable heat – slow progress globally

Global final renewable energy use for heat 2007-21 (excluding traditional biomass)

Use of renewables for heating is increasing but more slowly than for electricity
The EU is the global leader in renewable heat

But much more progress is needed – renewable heat is increasingly lagging behind renewable power.

Source: IEA statistics
Note: IEA statistics do not include heat pumps
How do France and Germany compare against the best?

Source: Eurostat

But

- Different starting points & challenges
- And some good policies:
  - Fond Chaleurs
  - Marktanreizprogramm

Share of renewable heating and cooling 2015

Top 3

Per cent

Per cent

EU 28
Sweden
Finland
Latvia
France
Germany
Ireland
Netherlands
UK

Bottom of the class

17th
22nd
Lessons from Sweden

Sweden has the highest share of renewable heat globally (68.1%). What can Germany and France learn from Sweden?

Fuel input for steam and hot water in Swedish CHP and heat-only plants (1990-2015)

Key success factors:

- Ambitious targets
- High carbon taxes
- Public investment in district heating
- High energy efficiency standards
- Good biomass resource

Source: Statistics Sweden
The pivotal role of district heating in cities

Heat is fundamentally a local issue – local heat planning is important. But also needs an appropriate national/regional policy and regulatory framework.

Munich
- 100% renewable district heating by 2040
- Geothermal as main option

Paris
- 25% renewable energy by 2020
- Biomass and geothermal + waste incineration

Frankfurt
- 100% renewable energy by 2050
- Various renewables, waste heat, power to heat
Cross-sector coupling and a strong push for energy efficiency are key elements of an effective long-term decarbonisation strategy at local level.

Source: Fraunhofer ISE, 2016
Conclusions

- Both France and Germany are lagging behind the leading renewable heat countries
- But need to recognise different starting points
- Some good policies but need more to scale-up
- Need for an energy systems approach – greater coupling of heat and electricity & energy efficiency
- Role of local authorities important but also need national policy & regulatory framework
IEA work on renewable heat

IEA Renewable heating and cooling workshop 7 Feb 17


Forthcoming later in 2017:

Renewables Market Report

Bioenergy Roadmap