Renewable heating and cooling technologies: biomass, geothermal and solar thermal

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Xavier noyon, ESTIF Secretary General
I’m backing renewable heat
In 2007, a share of 48% of the final energy consumption in EU 27 was in the form of heat.

Heat accounted for:

- 86% of the final energy consumption in households,
- 76% in commerce, services and agriculture
- 55% in industry.
Heating main features as an energy

- must be supplied close to demand (decentralised or local network)
- must be supplied at the required temperature (low-medium-high)
- Load profile specific to end user

H&C = 81% of energy consumption in a house
Despite growth (economic-demographic) and an increasing demand for comfort, the heat demand is expected to decrease due to efficiency gains.

Distinction between low and high (>250 °C) temperature heat (in BAU)

BAU: Business as usual
RDP: Full R&D and Policy driven
The Directive 2009/28/EC on the promotion of the use of energy from renewable sources states in art. 2:

The following definitions also apply:

a) ‘energy from renewable sources’ means energy from renewable non-fossil sources, namely wind, solar, aero thermal, geothermal, hydro-thermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;

Of the renewable energy sources listed, only some technologies provide heating and cooling:

• solar thermal
• biomass
• geothermal
• aero/hydrothermal (with the use of heat pumps)
The renewable heat technologies
RES Heating & Cooling in the NREAPs

Aerothermal

Solar Thermal

Geothermal

Biomass for Heat

European Solar Thermal Industry Federation
Common issues for the RHC sector

- The market for renewable heating and cooling is of different nature than the one for electricity; it is decentralised, with many diverse player, there are no ‘utilities”, it does not require the same infrastructure (except District heating).

- The non-technical issues can be classified as:
  - Policy and Legislation
  - Stimulation/financial support
  - Standardisation and certification
  - Training/installation
  - Communication

- Electrification of heat
Thank you for your attention