Global view on Renewable Heating and Cooling

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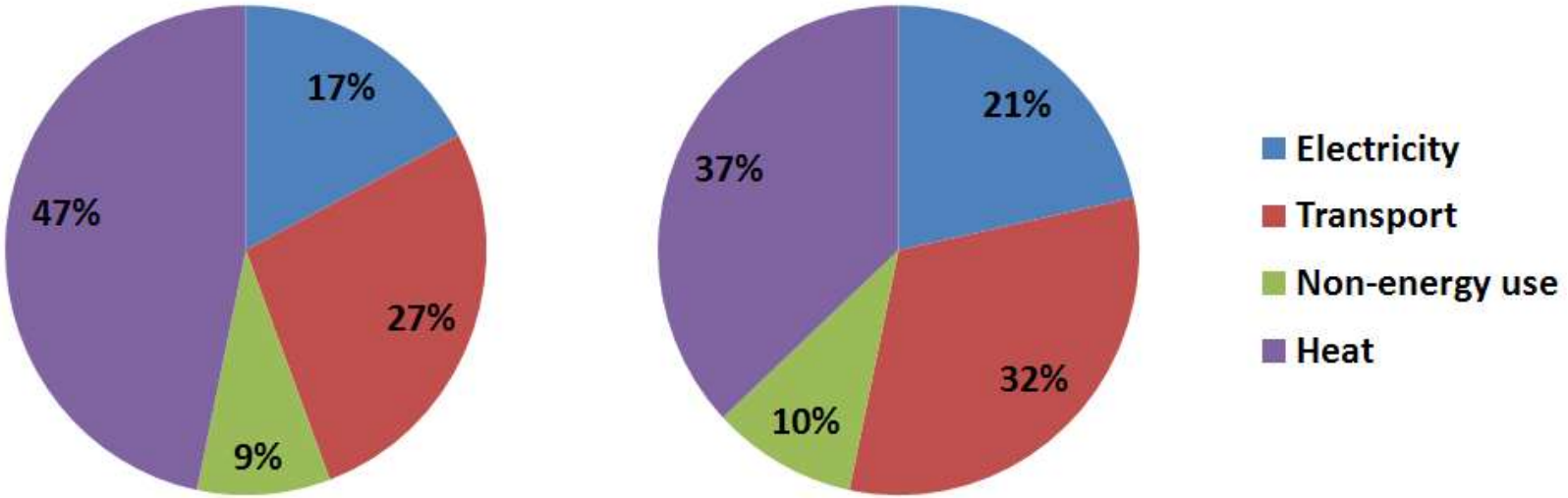
Renewable Heating and Cooling conference

27 April 2012

Final energy use for heat

in 2009 (IEA, 2011)



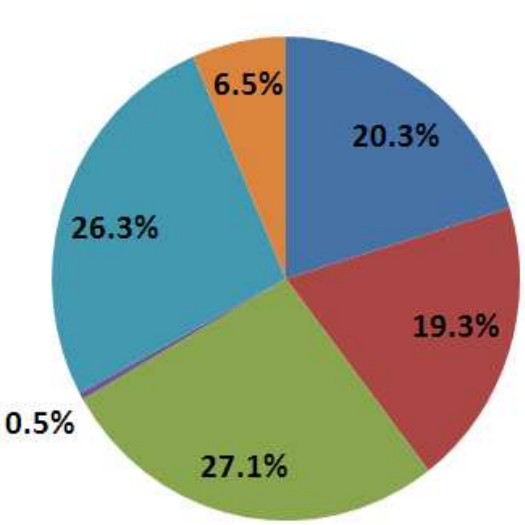
World

OECD

- Heat has an important role to play in encouraging efficiency measures and large scale deployment of renewables

Fuel mix in final energy consumption for heat

in 2009 (IEA, 2011)



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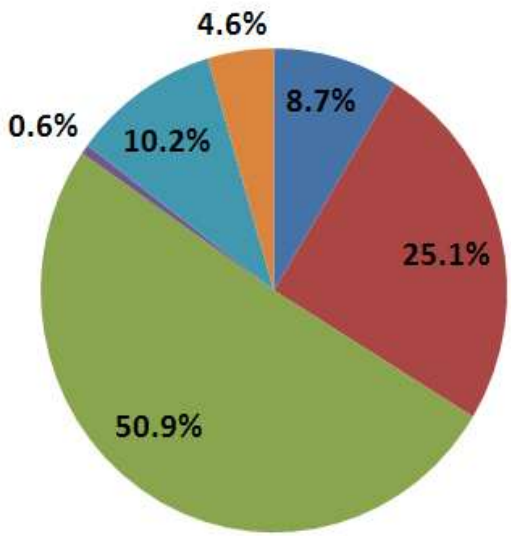
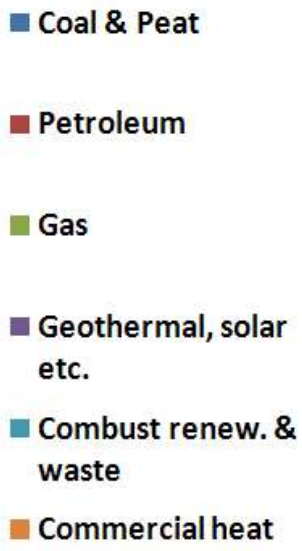


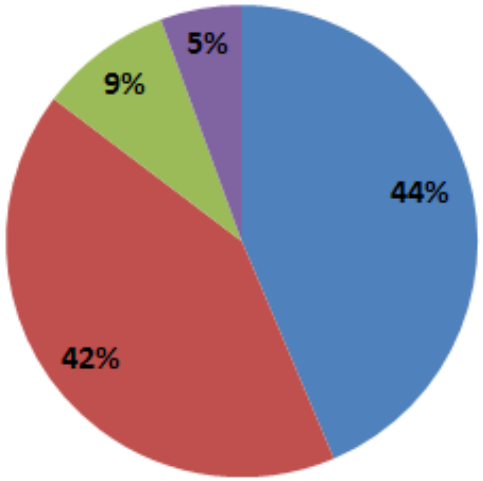
OECD



- OECD shows high dependency on gas used for heat, renewable heat is dominated by biomass

Final energy use for heat per sector

in 2009 (IEA, 2011)



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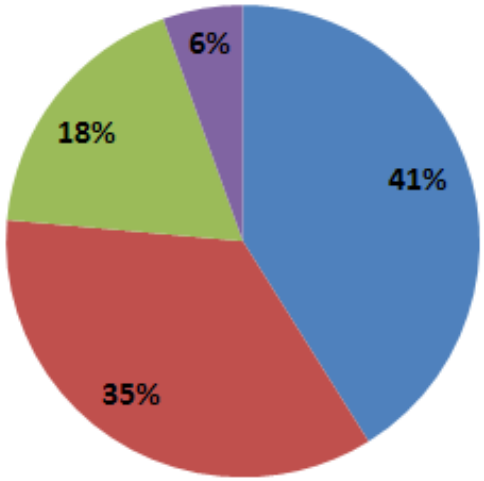


OECD

Industry

Residential buildings

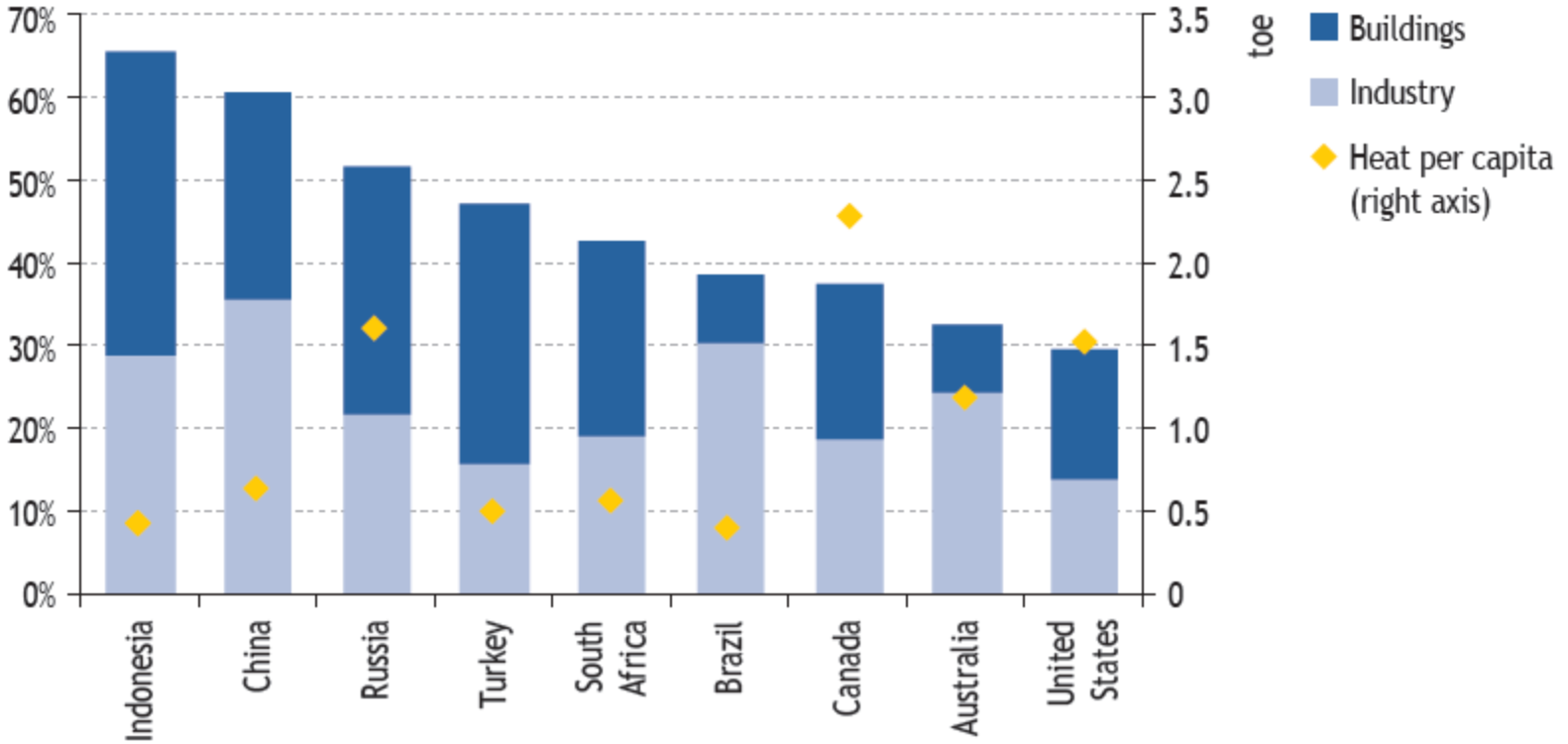
Commercial build.

Agriculture, Forestry/Fishing

- Heat demand is not just coming from buildings: industry has a substantial share

Relevance of heat in different climates

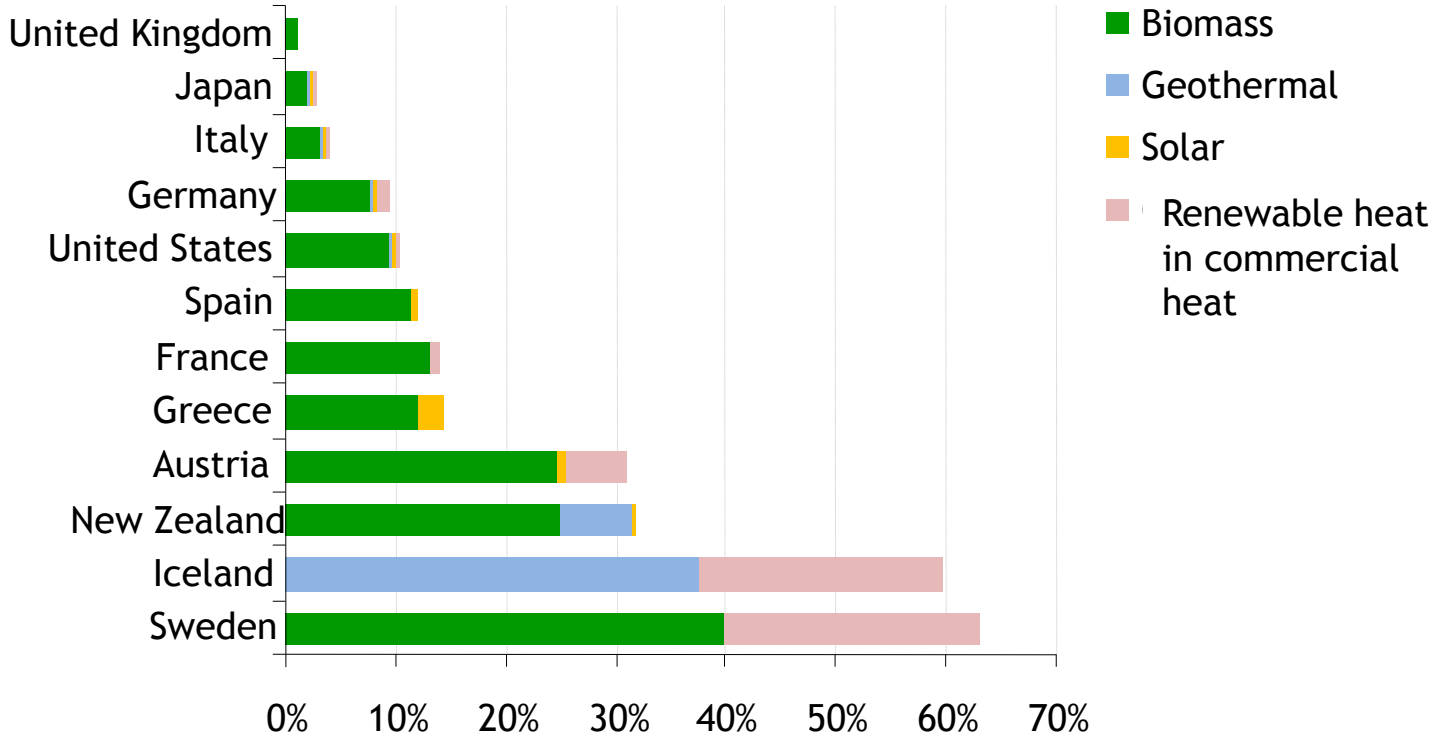
in 2008 (IEA, 2010)



- **Warm climate countries show considerable energy use for heat**

Share of renewables in total heat demand by type in selected OECD countries

in 2008 (IEA, 2010)



- **The share of renewable energy in total demand for heat varies widely in OECD countries: ample room for increasing RES-H levels!**

Rationale for more attention to RES-H

- Substantial shares in final energy use
- Energy security issues related to fossil fuels used for heat
- Industry sector just as important as building sector: heat is just as relevant in warm climate countries
- Big differences in shares of RES-H per country demonstrate that there are great opportu-nities to increase RES-H in many countries

-> Why only modest attention and how to address with policies?

Barriers to deployment renewable heat

Challenges HEAT SECTOR

Investor climate:

- Fragmented market: variety of stakeholders
- Fragmented finance: millions of investors
- Diverging investment decision criteria and “split-incentive” problem

Market infrastructure:

- Gatekeepers between supply and demand
- Suppliers of fuels as liable parties
- Incumbent heat infrastructure influence potential alternatives

Climate influence:

- Space heating demand dominant in cold climates, industrial heat dominant in warm climates: resulting in different heat infastructures

Renewable energy policy principles
(IEA, 2011)

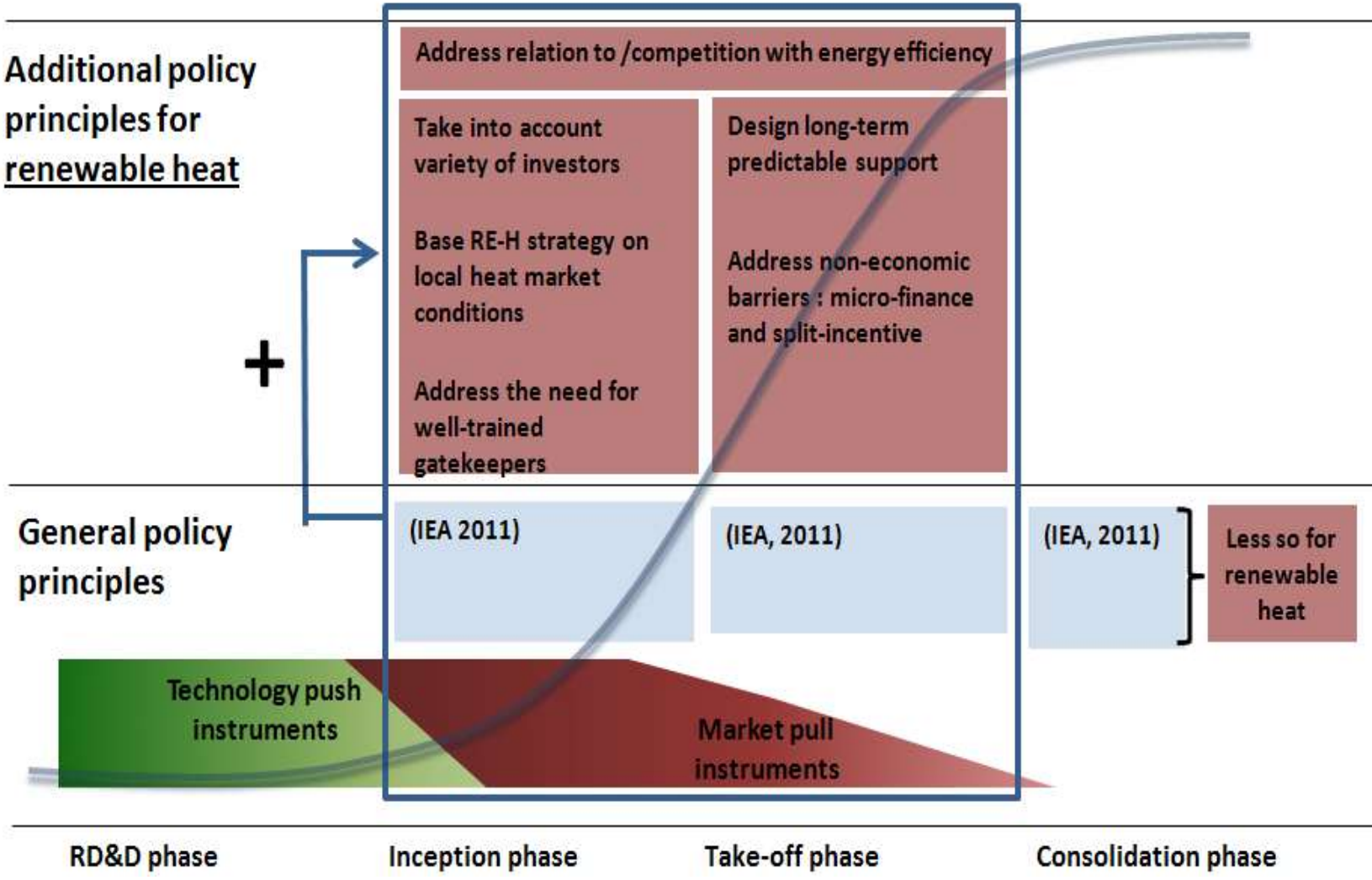
	RD&D phase	Inception phase	Take-off phase	Consolidation phase
General policy principles	**Develop a clear roadmap**, including targets that generate confidence **Provide a suitable mixture of support**, which may include both capital and revenue support Ensure that the necessary **regulatory framework is in place and streamlined** Provide **support for** the	**Ensure a predictable and adaptable support environment**, backed by credible and ambitious targets **Ensure continued growth** in deployment, **while controlling total policy costs**, and encourage improved cost competitiveness	**Deal with system integration issues** (such as the biofuels blending wall or system integration of variable renewable power) Ensure that **energy market design** is commensurate with high levels of RE penetration **Maintain public**

Technology push instruments

Market pull instruments

Renewable heat policy: additional principles

(IEA, forthcoming 2012)



Conclusions

- Renewable heat sector in between renewable power and energy efficiency:
  - commercial heat may use power experience
  - small scale: energy efficiency experience?
- Heterogeneity of heat market subject to additional policy principles in inception phase and take-off phase of technology development
- Consolidation phase: RES-H favorable
- Custom-made policies needed per target group
- Addressing non-economic barriers, especially new financing models, important

Thank you for your attention