

Eco-efficiency and EU legislation





Eco-efficiency in cities

- What kind of urban sprawl
- What kind of architecture
- What kind of transport
- What kind of waste management
- What kind of local resources to secure
- What kind of electricity production and
- What kind of comfort
- What kind of jobs

for the cities we want to live in?



What if in the future

- 80% of the population will live in cities
- Building stock will become more efficient
- Use of floor space / capita will increase
- Hot tap water demand will increase
- Cooling demands will increase
- New comfort demands will arise
- Electricity production will be less efficient
- Electricity production will be low-carbon
- Transport will be based on low-efficiency energy (biofuels or electricity)





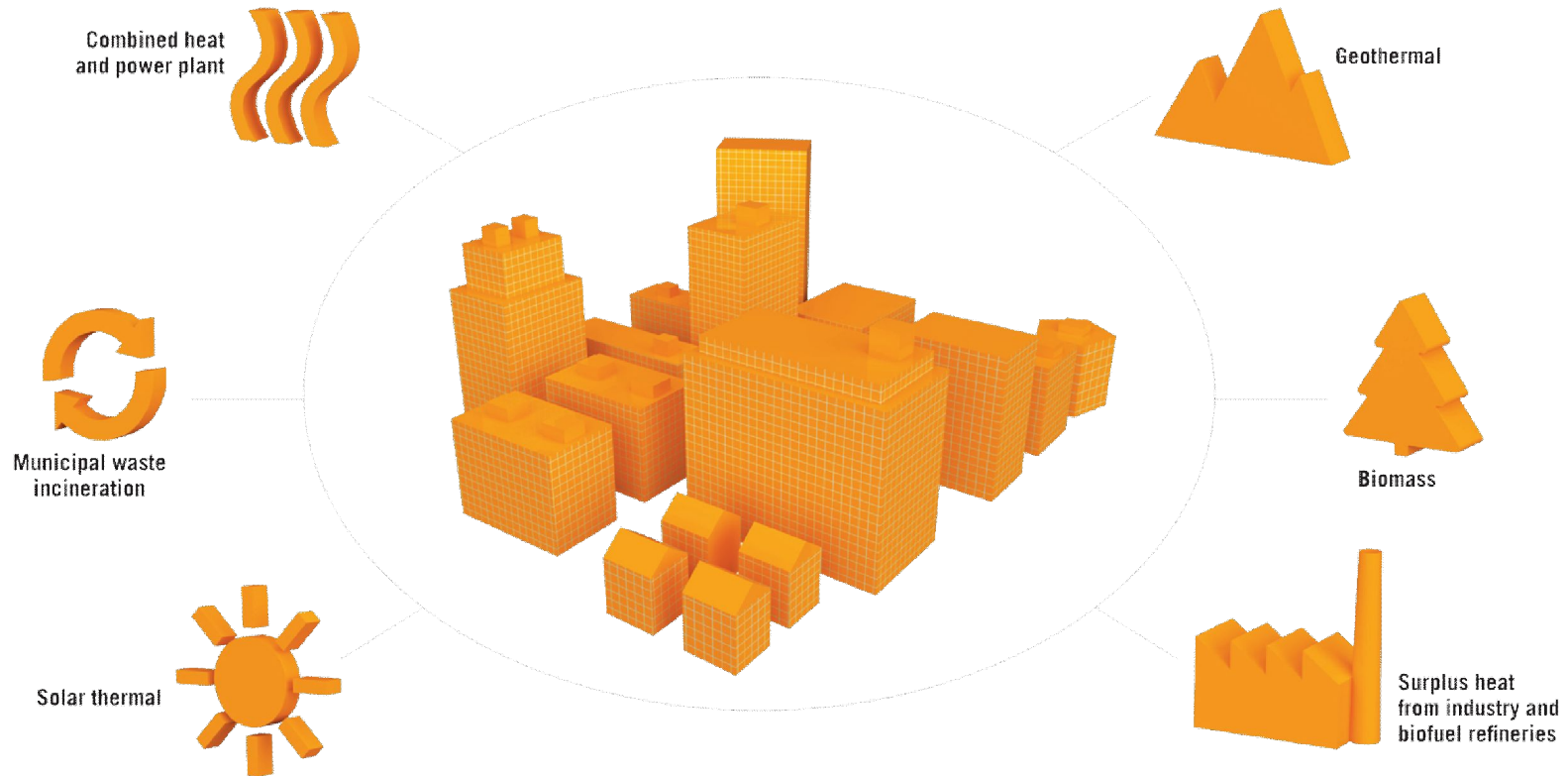
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**What if energy that today is wasted in
electricity and industrial production...**





...could be recycled to comfort?





District heating and cooling in the EU

- Approx. 5000 district heating schemes in EU, covering hot tap water, space heat and low-temperature industrial heat demands
- Market shares between 1% and 70%, on EU average less than 10%. Wide-spread in the Nordic countries and Eastern Europe. Low market shares in the 5 biggest EU countries.
- District cooling (free cooling, residual cooling, waste heat) is emerging as new efficient technology

Today, district heating saves 113 million tons of CO₂. Doubling the sales of district heat in Europe would

- Reduce primary energy consumption by 2,1 EJ/a (Primary energy consumption of Sweden)
- Reduce import dependency by 4,5 EJ/a (Primary energy consumption of Poland)
- Reduce CO₂ emissions by 400 mln tons / 9,3% (Emissions of France from fossil fuel combustion)



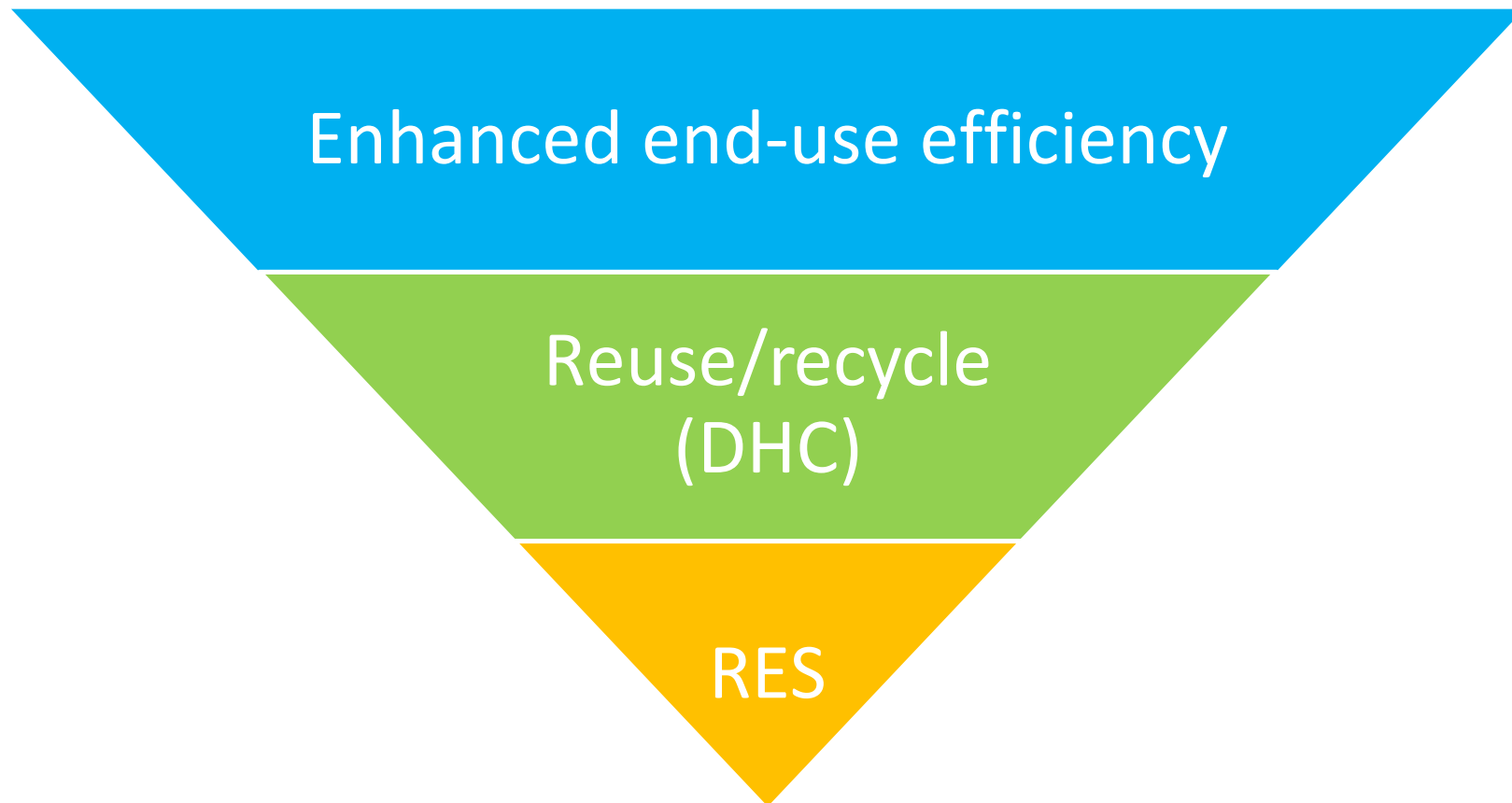
Local needs vs. EU policies

Local conditions (bottom up)	↔	Overall objectives (top down)
Small tech	↔	Big tech
Local actors	↔	Global actors
Local welfare	↔	Cross-border trade
Focus on system optimization	↔	Focus on technologies



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Energy system efficiency





Current EU policies

- Fail to incentivise energy recycling and the necessary heating and cooling infrastructure
- Focus more on infrastructure for energy imports than on infrastructure for avoiding imports
- Do not recognise heating and cooling as sector in its own rights



Examples

- The Cogeneration Directive has proven little effective and ignores district heating and cooling
- The Buildings Directive encourages RES but discourages the use of surplus heat. Eco-cities \neq aggregation of eco-buildings.
- RES policies do not encourage efficiency
- The ETS does not take care of energy savings in the residential sector, nor of business models
- The Economic Recovery Plan focuses on interconnections, not on energy saving infrastructure
- The Energy Efficiency Action Plan is stalled...

But do we really want...

- Coal-fired plants with carbon capture and storage but without heat recovery
- Biomass plants without heat recovery
- Biofuel refineries without heat recovery
- Methane emissions from landfill instead of waste incineration combined with power and heat recovery?
 - ▶ To heat up rivers and the atmosphere?

If not...

Interventions in housing need to be integrated with energy infrastructure and supply policies with a view to contribute to urban development and improving the quality of life of all European citizens.



Conclusion

Securing heating and cooling comfort is neither a problem of energy availability nor carbon content, but of organization and investment.

DHC is an indispensable backbone for eco-efficient cities, holding the promise of a rapid decarbonisation of the heating and cooling markets while securing comfort at affordable prices.

Europe needs a strategy for heating and cooling!



Thank you for your attention

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