



**EUROHEAT  
& POWER**

# **Euroheat & Power**

Leading the road towards Copenhagen:  
District heating and cooling in European  
policies

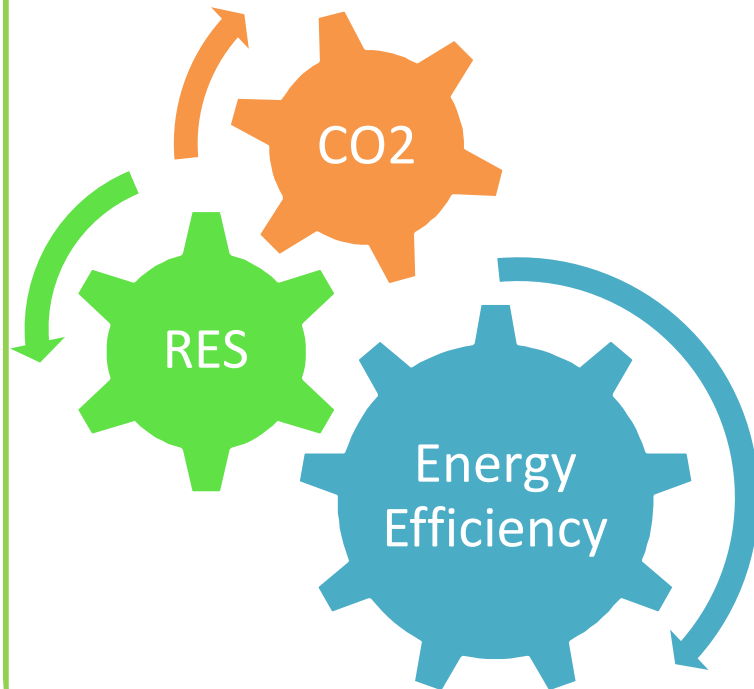




## Content

1. The role of DHC in the future low-carbon economy
2. The role of DHC in recently adopted EU legislation
3. The challenges ahead
4. Conclusions

## Energy revolution



- Limit temperature rise to 2° C
- Reduce CO2 by 20% or 30%
- Improve energy efficiency by 20%
- Increase renewables to 20% (80% of this target to be achieved by biomass)
- Increase biofuels to 10%
- **Reduce CO2 by 80% by 2050**

## Towards 2050: electricity

- Renewable energies, mainly wind (large off-shore) and biomass
- No coal and gas-fired condensing power plants without CCS
- Nuclear power plants
- Use of electricity in transport

If based on large-scale centralised solutions only, the EU will be locked into a fundamentally inefficient system



## Horizon 2050: heat

If based on more decentralised (local) solutions, large quantities of waste heat can be recycled and substitute fossil fuels

- Comfort demands (including new demands such as cooling) can be covered at affordable prices
- Together with individual renewable energies in less densely populated areas, DHC holds the prospect of accelerated decarbonization of the heating and cooling markets

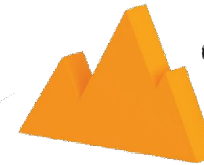


# Fossil fuels for heating?

Combined heat  
and power plant



Geothermal



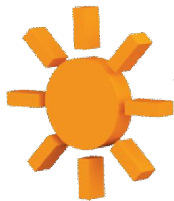
Municipal waste  
incineration



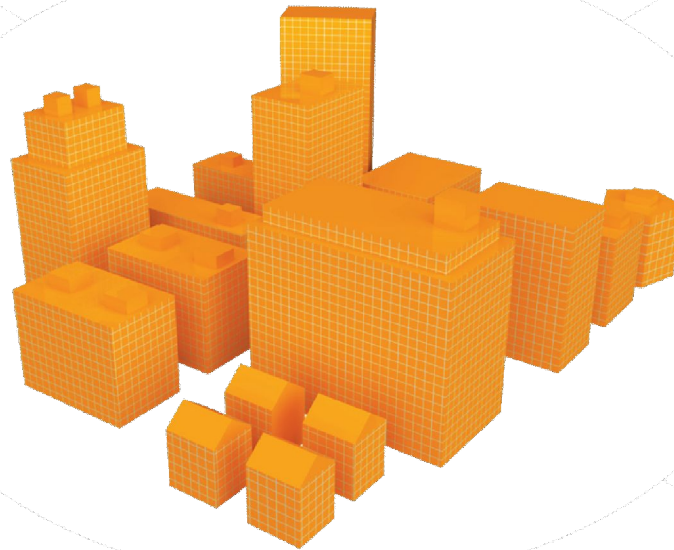
Biomass



Solar thermal



Surplus heat  
from industry and  
biofuel refineries



## EU energy and climate agenda

- New Directive promotion of renewable energy ✓
- Recast of emissions trading Directive (post-2012) ✓
- New Guidelines for environmental state aid ✓
- Recast of buildings Directive
- Green public procurement
- Consumer policies
- New energy efficiency action plan (EEAP)
- Low-carbon infrastructure financing
- EU sustainable cities financing

## Emissions Trading Directive (I)

- Auctioning exemptions for CHP-heat and DH only temporary
- But: Carbon leakage from ETS to non-ETS, no possibility to pass on cost
- Free allocation:
  - Individual allocations for free “at 100%” or at 80% down to 0% in 2027
  - % is of amount determined by benchmarks
  - Correction factor may have to be applied
  - Review after Copenhagen, which may adjust percentage of free allocation



## Emissions Trading Directive

- Lack of European statistics on DHC
- Conflicts of interest:
  - benchmark „unfair“ to many, as DH is a local business depending on local circumstances (availability of waste heat sources, alternative infrastructures)
  - Conflict of interest: variations in fuel allocation
- Heat or district heat?
- Grandfathering?
- Relation to non-ETS sector: taxation?
- Revenue recycling?

## Renewables Directive (I)

- *“It is appropriate for Member States to consider mechanisms for the promotion of district heating and cooling from energy from renewable sources”*
- *“Member States shall recommend... to ensure equipment and systems are installed for the use of electricity, heating and cooling from renewable energy sources and for district heating and cooling when planning, designing, building and renovating industrial or residential areas. Member States shall, in particular, encourage local and regional administrative bodies to include heating and cooling from renewable energy sources in the planning of city infrastructure, where appropriate”*

## Renewables Directive (II)

- *“Member States shall ensure that guidance is made available... to consider the optimal combination of renewable energy sources, of high-efficiency technologies and of district heating and cooling when planning, designing, building and renovating industrial or residential areas”.*
- *“Member States... shall assess the necessity to build new infrastructure for district heating and cooling produced from renewable energy sources... Subject to that assessment, Member States shall... take steps with a view to developing a district heating infrastructure to accommodate the development of heating and cooling production from large biomass, solar and geothermal facilities”.*

## Challenges ahead (I)

- A lot of attention is paid to new infrastructure for energy imports. Equal attention should be paid to infrastructure that avoids energy imports (DHC);
- Primary energy demand is growing fast, electricity demand even faster. Using free resources for heating and cooling sets free electricity capacities for other purposes (i.e. transport)

## Challenges ahead (II)

- European policies must trigger locally integrated solutions for buildings, energy efficiency, renewables and infrastructures.
- Local ≠ individual building. The concept of eco-buildings must be expanded to eco-districts.
- Currently RES solutions are often given priority over energy efficiency. Primary resource efficiency and cost-effectiveness must be key for comparison. The EU must adopt a clear hierarchy on energy use.



## Challenge: Energy hierarchy

Enhanced end-use efficiency

Reuse/recycle  
(DHC)

RES



## Conclusion

- A revolution does not follow market rules. It's radical. It's painful. It's a massive transformation of the whole society.
- DHC is to be recognized as an indispensable optimization element in the necessary energy system change, holding the promise of a rapid decarbonisation of the heat markets.
- The new pace and packaging of EU energy and climate policy is a challenge in itself... to be followed

Thank you for attention.  
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