

TAKING  
**COOPERATION**  
FORWARD



TT1: Getting started and key factors for success  
Rottenburg, 29.11.2019



**Renewable district heating**  
Facts and benefits



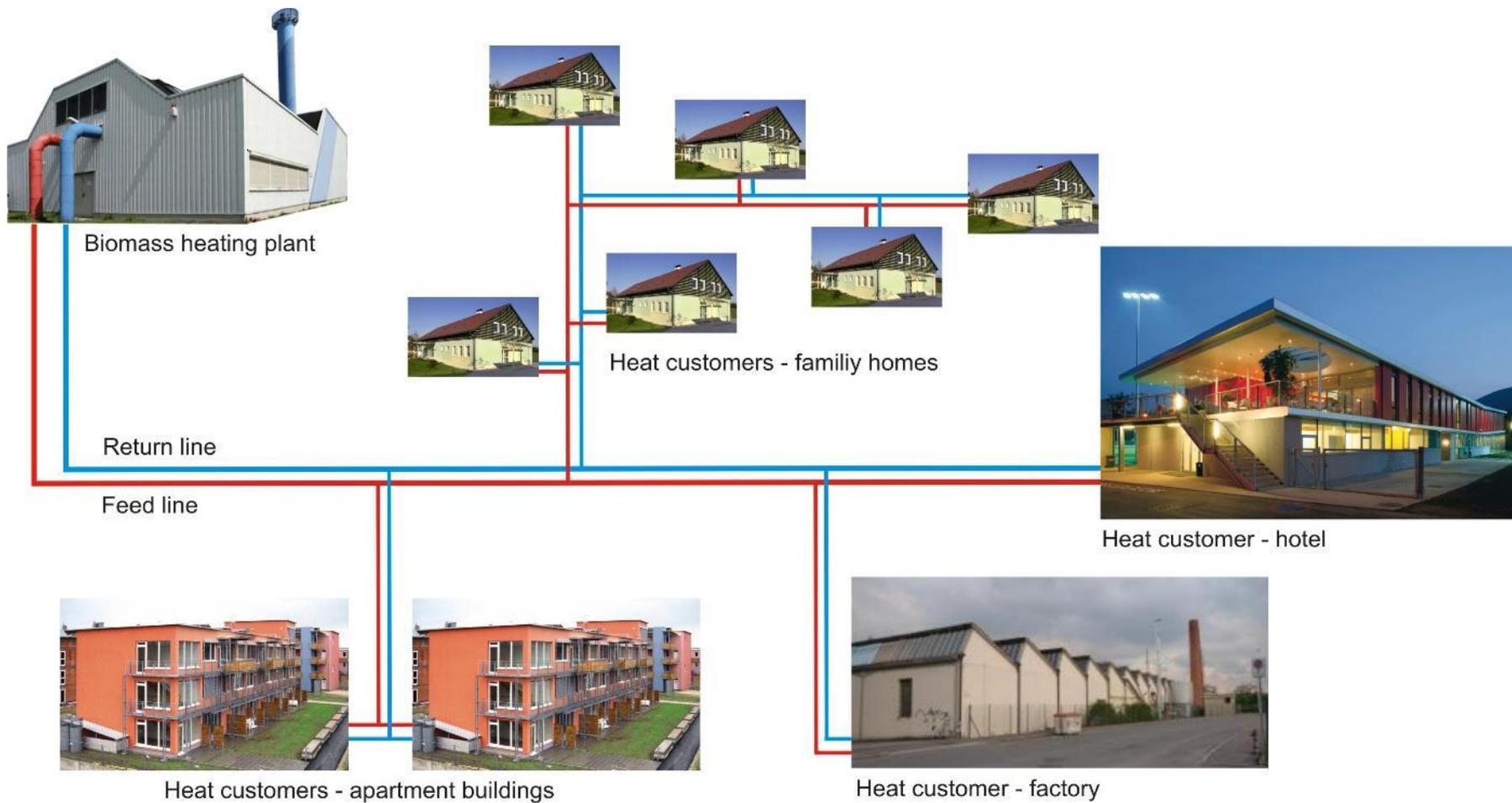
ENTRAIN | AEE INTEC | Sabrina Metz

# WHAT IS RENEWABLE DISTRICT HEATING?

- Protecting the climate
- Adding value to the region
- More jobs in the region
- No money to oil-producing countries
- Money stays in the region
- Convenient
- Better air quality
- Secure and reliable heat supply
- Price stability



# HOW DOES RENEWABLE DH WORK?



# COSTS AND EFFORT FOR DH-CUSTOMERS

- Delivered heat is ready to use
- No space & costs needed for furnance
- Heat costs include service, maintance
- All-round carefree package
- Heat supply is guaranted and reliable
- Price-stability is guaranted by contract
- Direct comparison of costs of p.e. heating oil leads to wrong conclusion
  - Heating oil, gas etc. still needs to be converted into heat (losses!)



## In Austria - Heat customers max. 50 kW

Price per kWh: 45 - 87 [€/MWh]

Basic charge: 13,00 - 26,00 [(€/kW)/a]

Metering charge: 80,00 - 130,00 [€/a]

(source: qm heizwerke project database)



# CO<sub>2</sub>, WOOD-USE AND CLIMATE PROTECTION

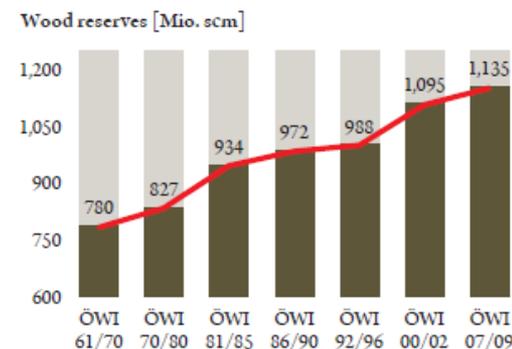
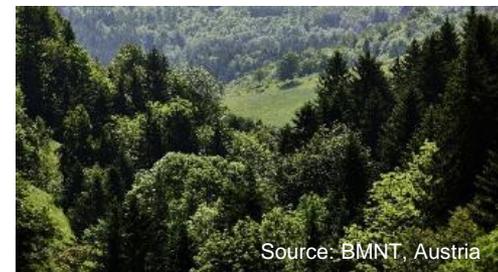


Source: Austrian Biomass Association



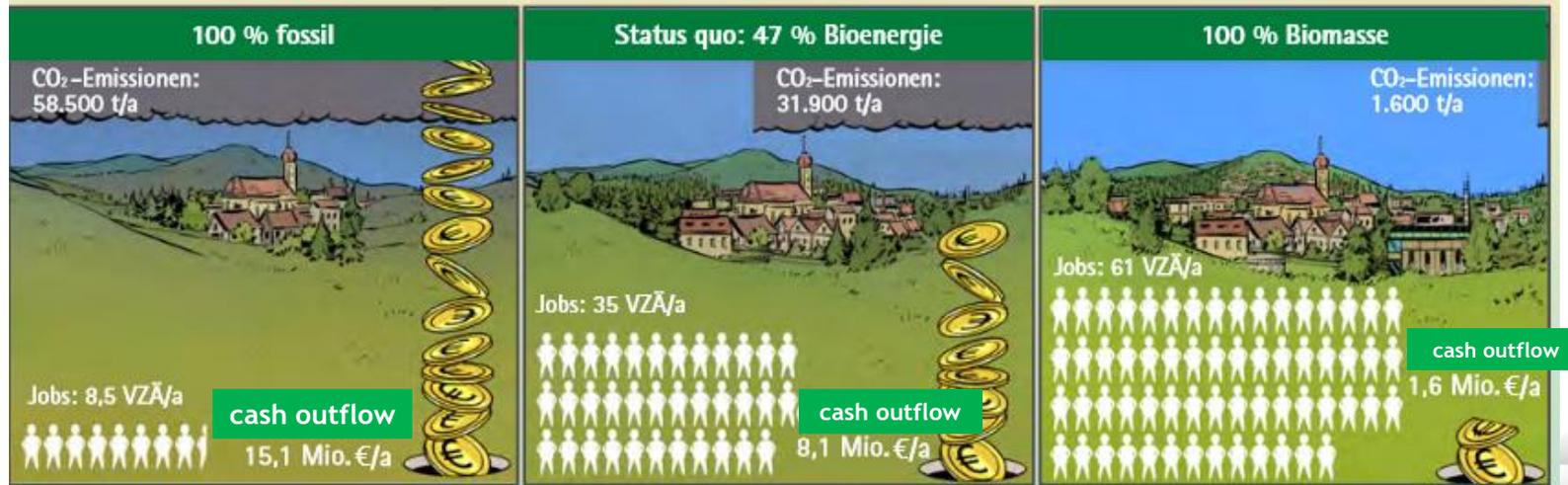
# WHAT ARE THE ECOLOGICAL EFFECTS?

- Less CO<sub>2</sub>-emissions as biomass is CO<sub>2</sub> neutral
  - Positive impact on climate protection
- Heat from waste-heat and solar thermal
  - No extra emissions
- District heating leads to less small furnaces
- Heating plants are very efficient
- Less fine dust and less NO<sub>x</sub>-emissions
  - Positive effects on human health and on climate protection
- Usually domestic wood is used for biomass-DH
  - There is enough wood in the forests
  - Sustainable forest management
  - Positive effects on biodiversity



# WHAT IS THE REGIONAL IMPACT?

- More employment:
  - Construction and operation of the plant
  - Regional fuel supply
- Money stays in the region:
  - Regional companies
- Secure and reliable heat supply



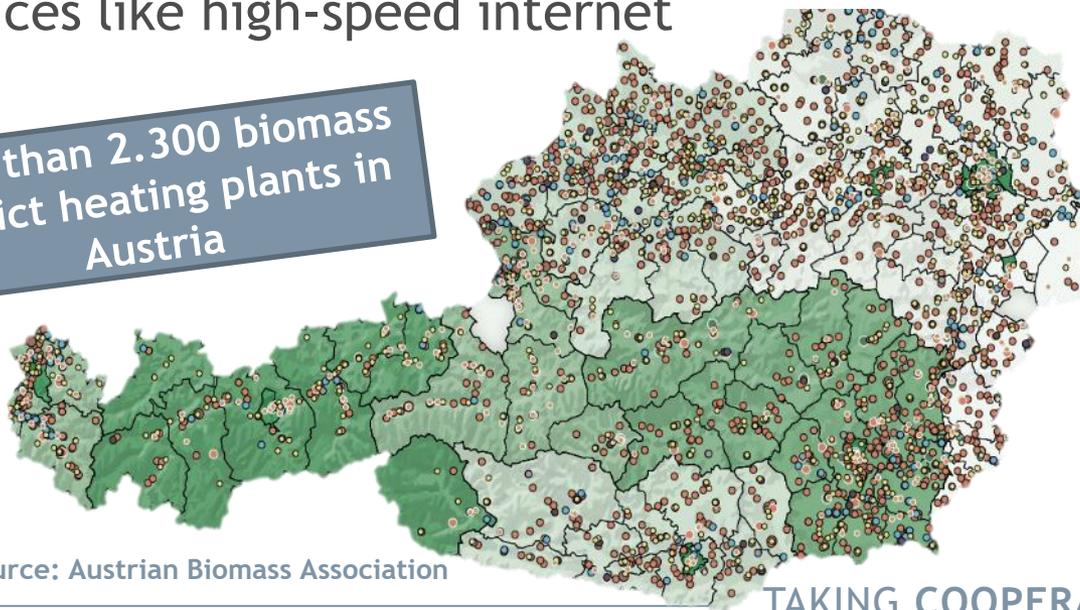
Study Regional Effects of Renewable Heating in Hartberg, Austria



# CURRENT STATUS AND EXAMPLES

- District heating grids are an important infrastructure
- Best Practice Examples: inclusion of other renewables (solar thermal, waste heat)
- Becoming more and more efficient:
  - Lower system temperatures and losses of the grids
  - Heat recovery systems in the plants
- Services like high-speed internet

More than 2.300 biomass district heating plants in Austria



Source: Austrian Biomass Association



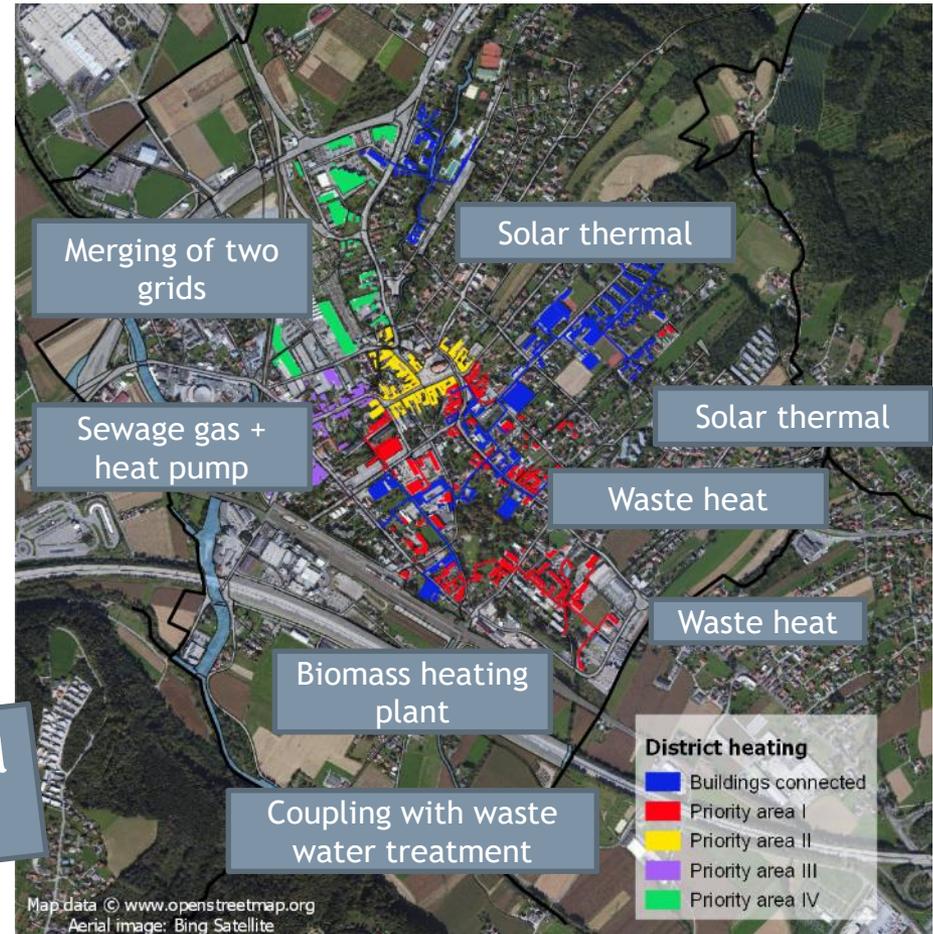
Source: AEE INTEC



# THE FUTURE OF DISTRICT HEATING

- Future energy hub
- Include various renewables:
  - Waste/Excess heat
  - Solar thermal
  - Heat pumps
- Higher heat storage capacities
- Coupling of grids
  - Merging of existing grids
  - Symbiosis with electricity grids (sector-coupling)
- Cooling grids

Example of regional energy hub





# THANK YOU!



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# FACTS ABOUT RENEWABLE DISTRICT HEATING

How does renewable district heating work?

Costs and effort

CO<sub>2</sub>, wood use and climate protection

What are the ecological effects?

What is the regional impact?

Current status, examples and outlook

Summary

