

The role of the bioheat sector for achieving energy policy targets

European Bioenergy Conference, Brussels, 13 May 2014

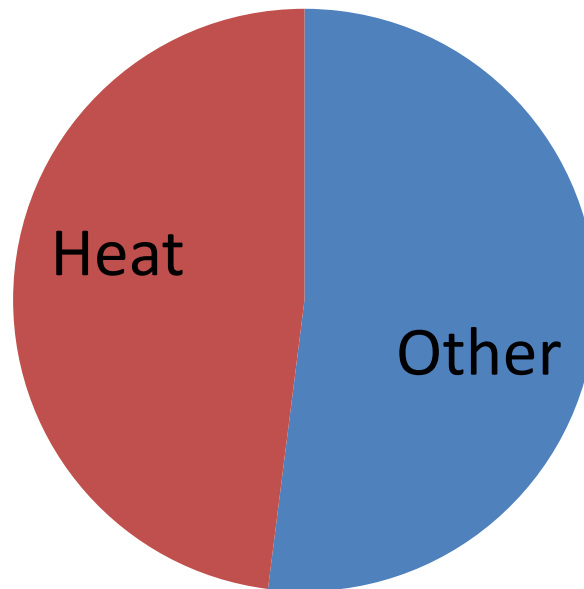
Lukas Kranzl, TU-Wien



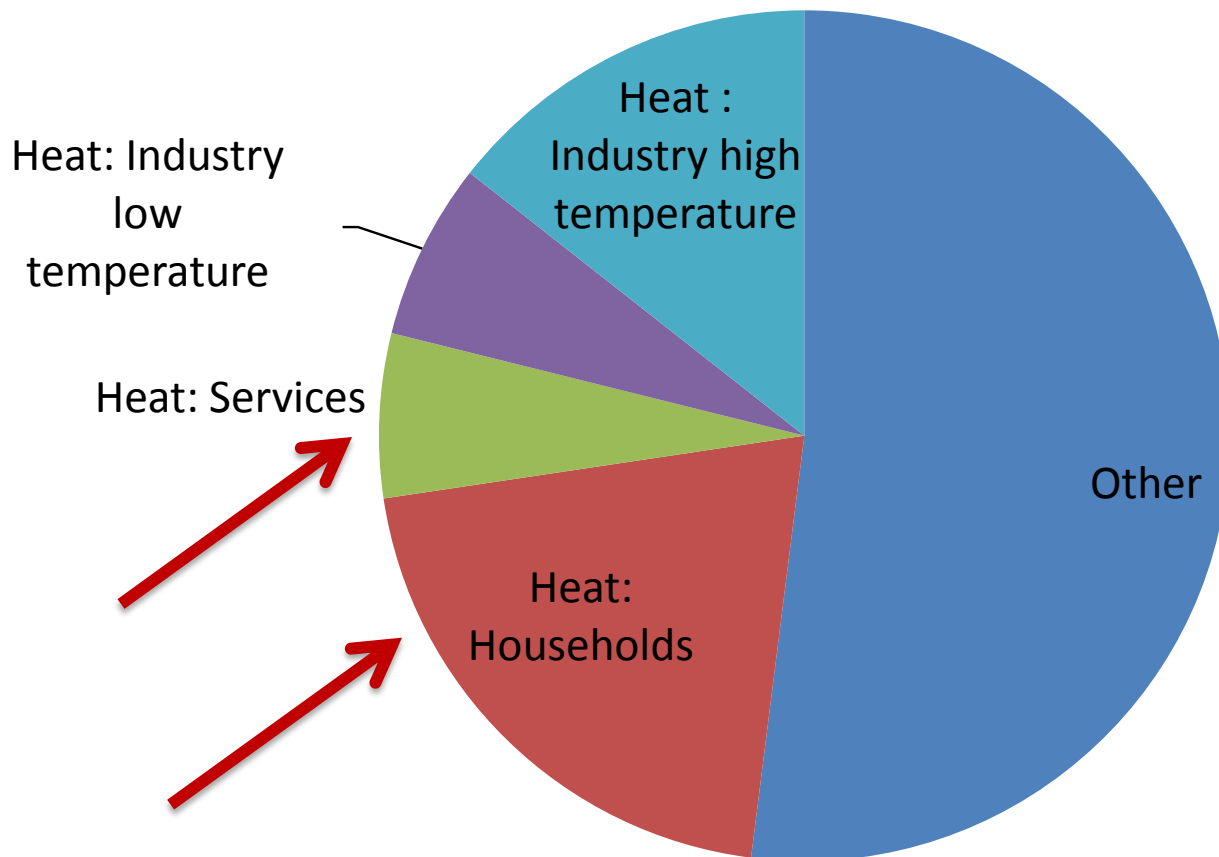
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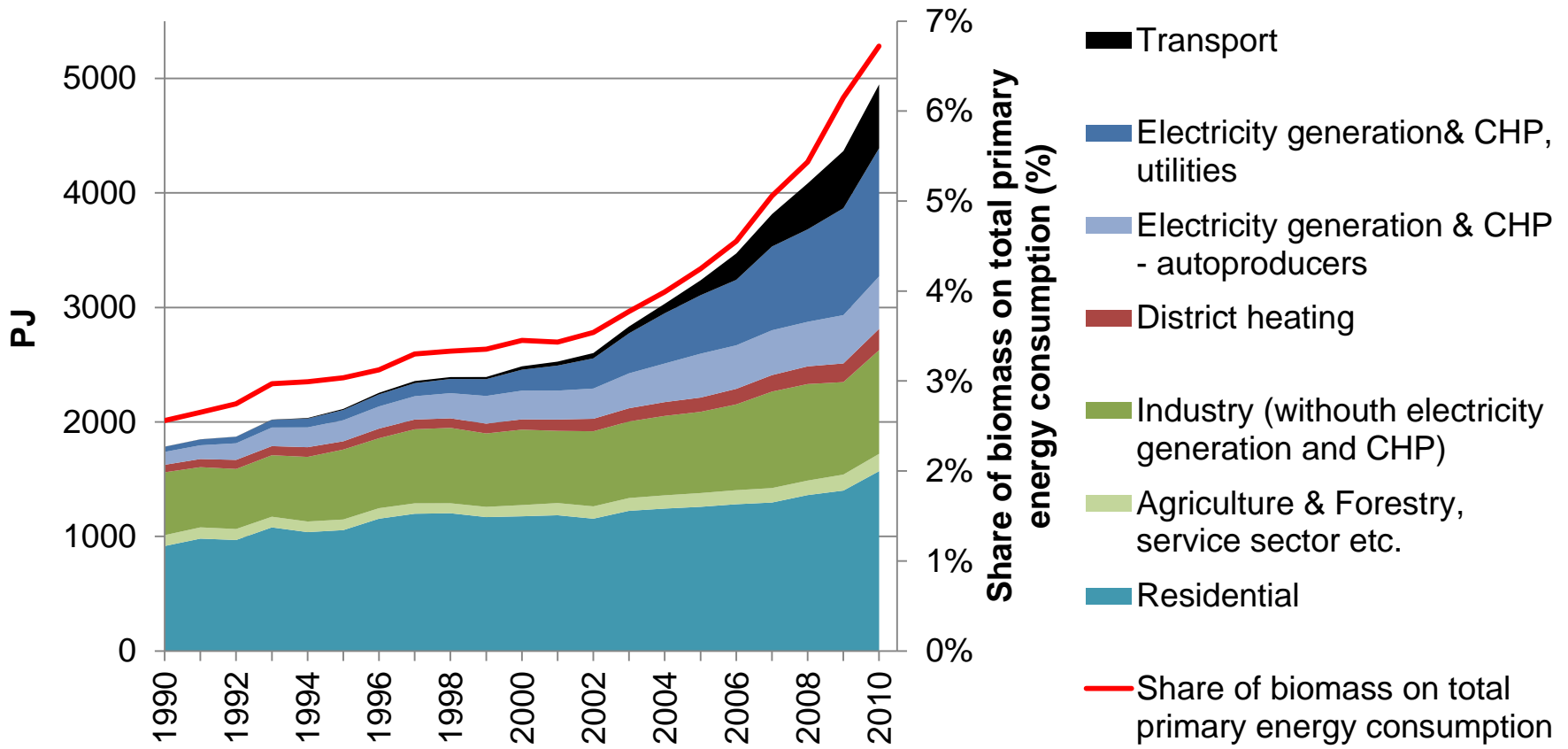
Final energy consumption in the EU-27, 2007



Final energy consumption in the EU-27, 2007



Biomass use in the EU-27



European Policy Framework with Impact on RES-H

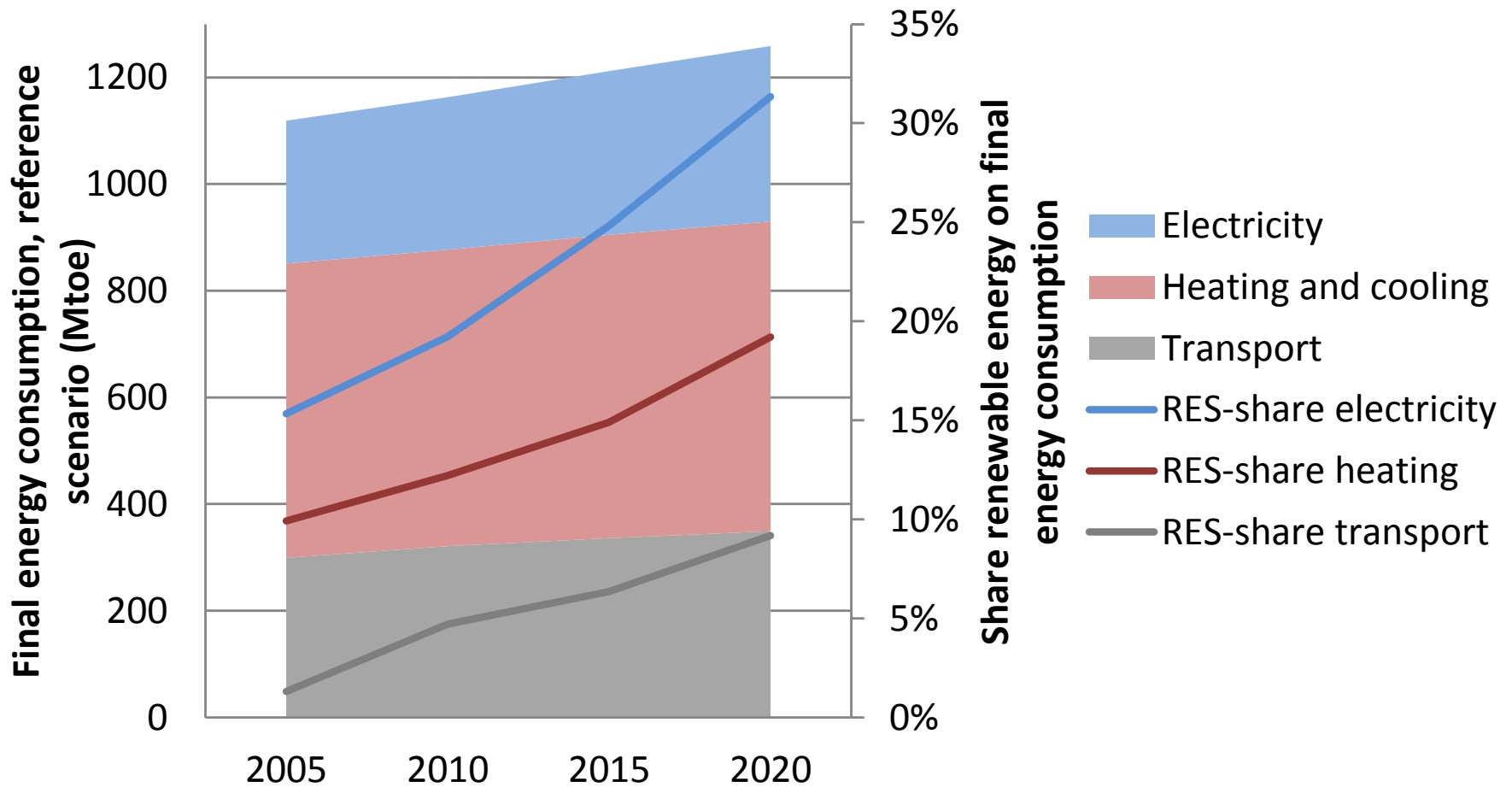
- Renewable energy directive (RED)
 - National renewable energy action plans (NREAPs)
 - Member States shall, in their building regulations and codes or by other means with equivalent effect, **require the use of minimum levels of energy from renewable sources** in new buildings and in existing buildings that are subject to major renovation.
- Energy performance of buildings directive (EPBD recast)
 - ‘nearly zero-energy building’ means a building that has a very high energy performance; the nearly zero or very low amount of energy required should be covered **to a very significant extent by energy from renewable sources**
- Energy efficiency directive (EED)
 - Energy saving targets and efficient district heating and CHP

Questions

- What is the role of biomass in residential and service buildings for achieving RES-H/C targets in 2020?
- What are relevant interactions of biomass heating with other RES-H/C technologies and efficiency improvement?
- What should be the further role of biomass heating in the mid- and long-term?

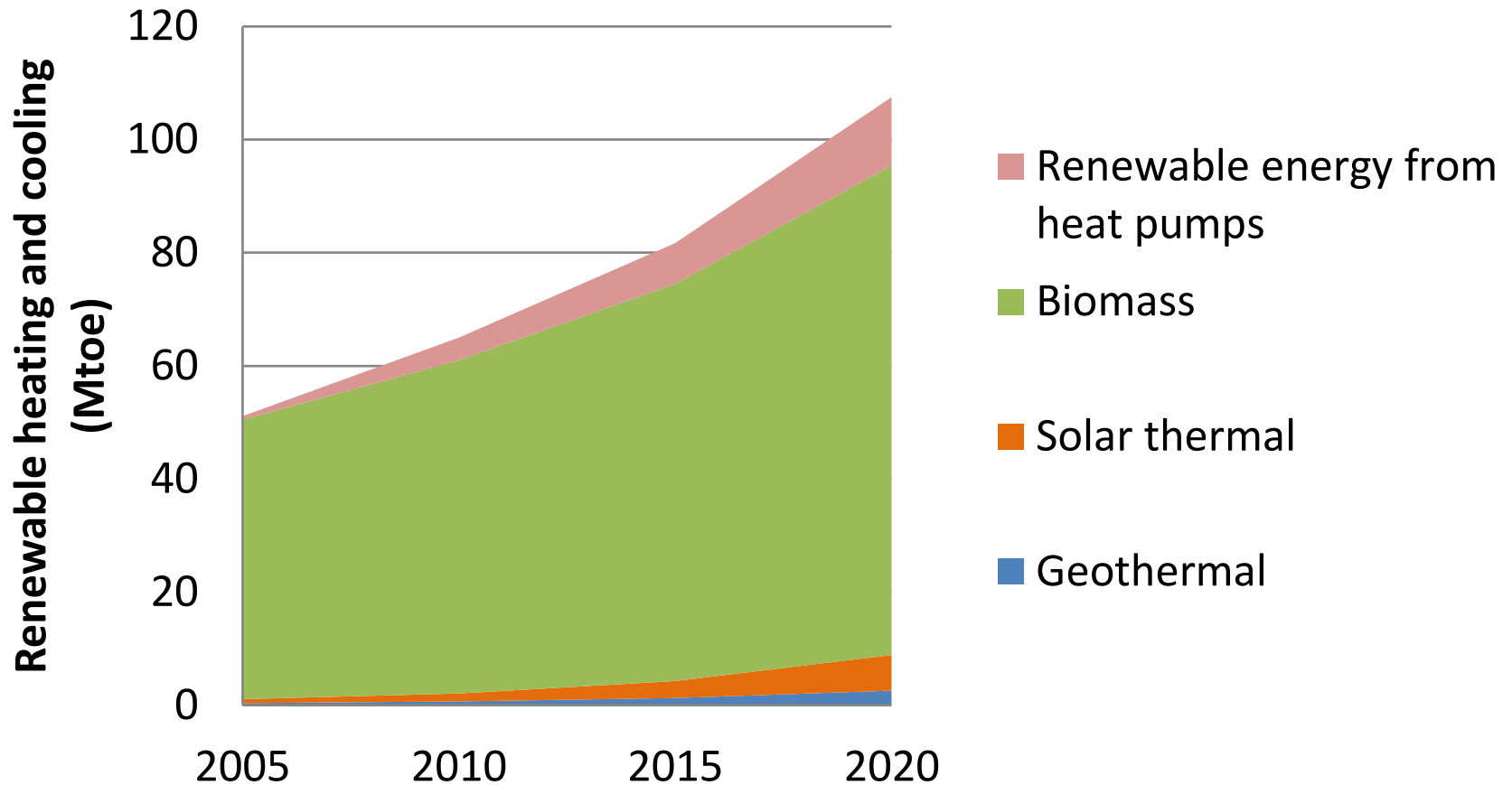
2020 TARGETS: NREAPS

Final energy consumption and RES-share according to NREAPs, EU-27, reference scenario



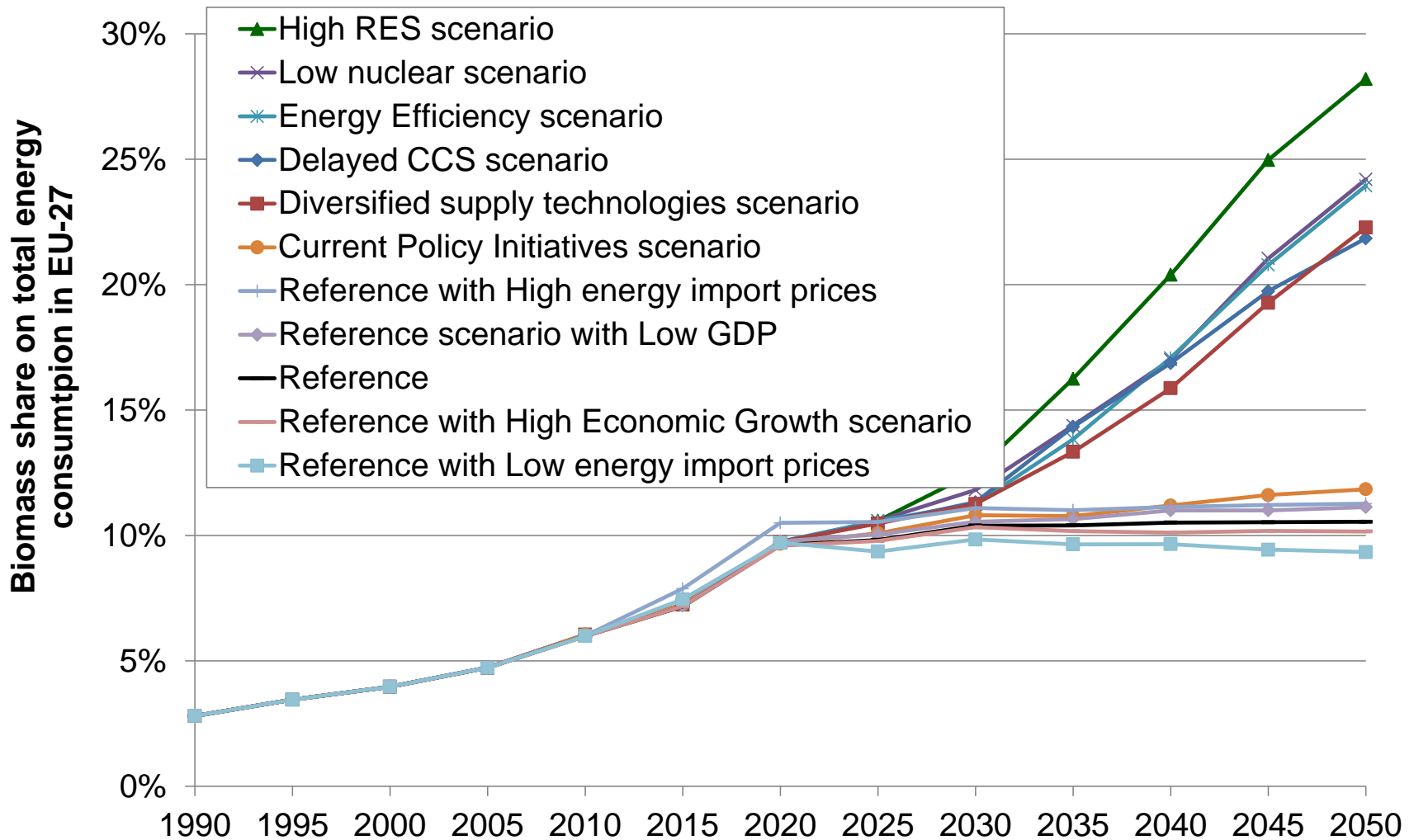
Renewable heating and cooling according to NREAPs, EU-27

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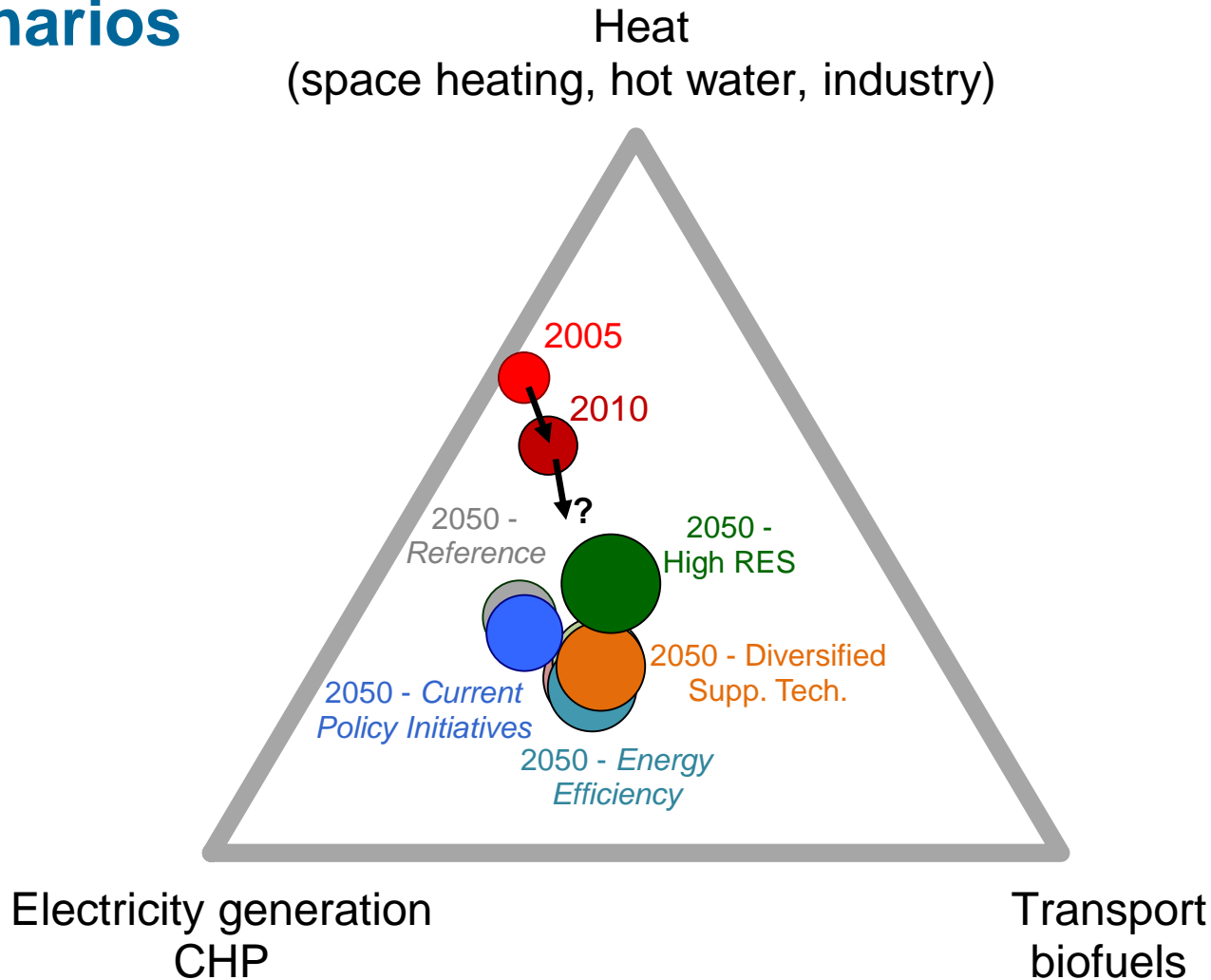


LONG TERM ENERGY FORESIGHT

Share of bioenergy in EU Energy Roadmap scenarios

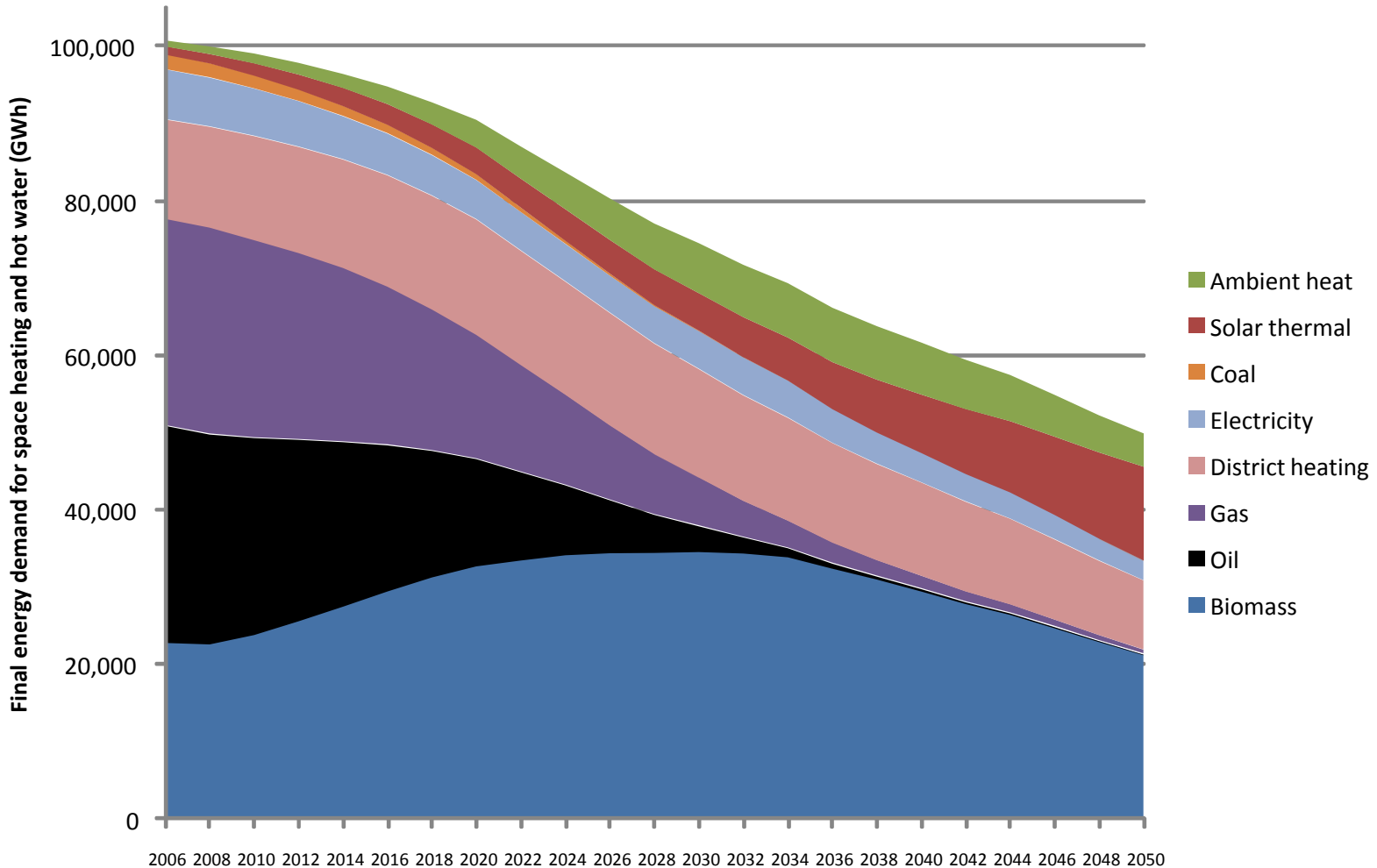


Structure of biomass use in EU Energy Roadmap scenarios



SCENARIOS SPACE HEATING?

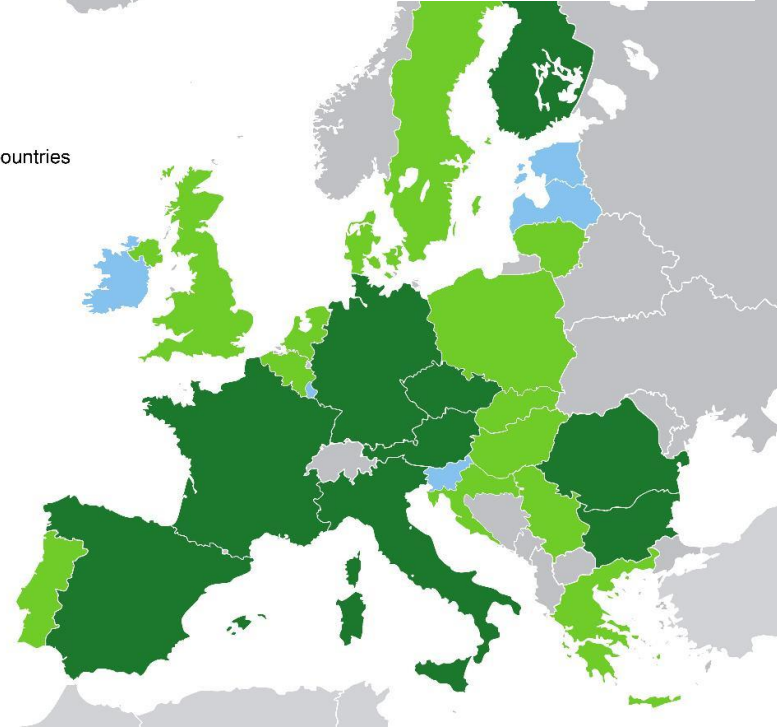
Final energy demand space heating and hot water, example of Austria, Bioheating-Roadmap-Scenario

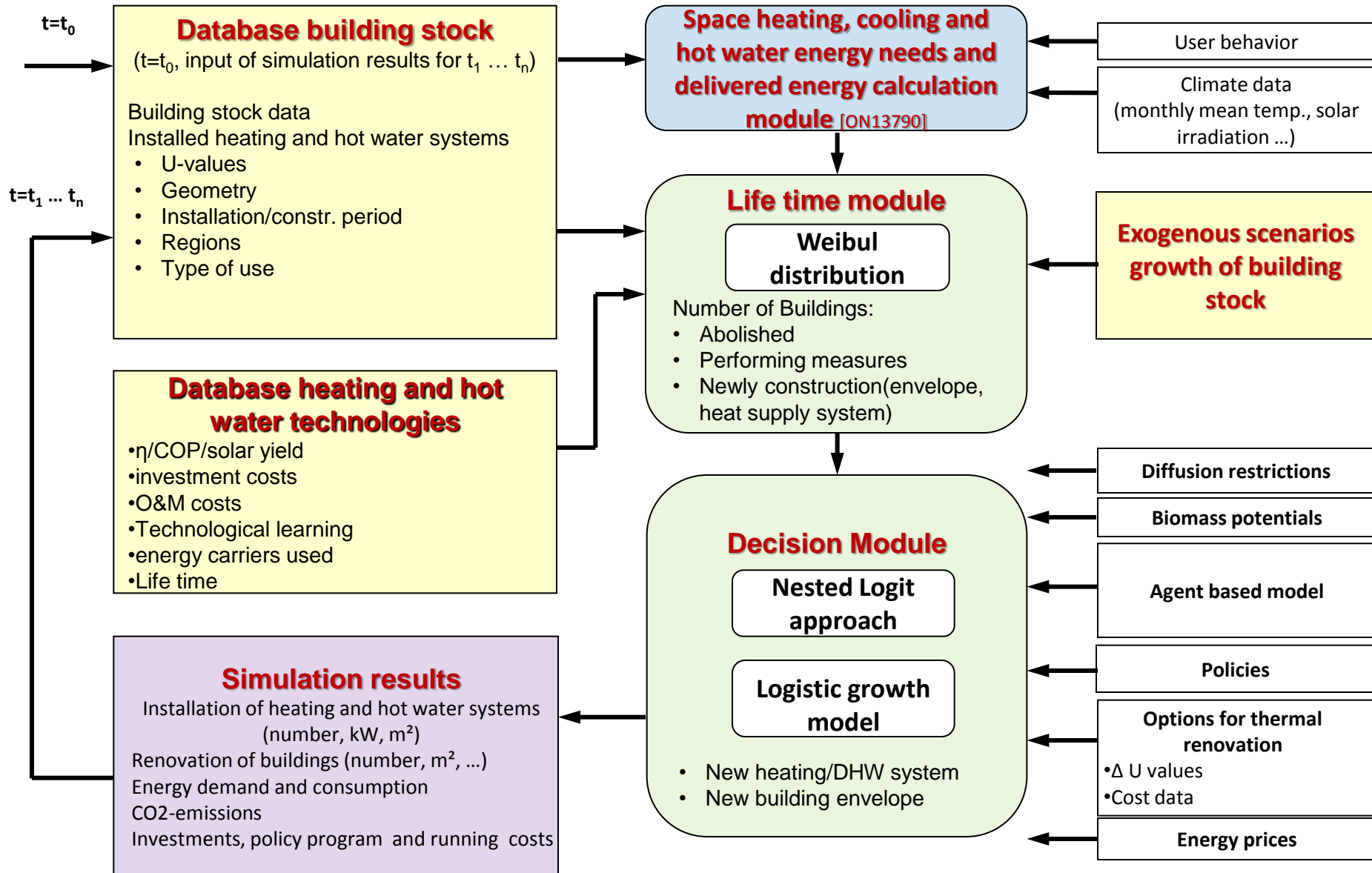


Policies to ENforce the TRAnSition to Nearly Zero-Energy buildings in Europe (ENTRANZE)

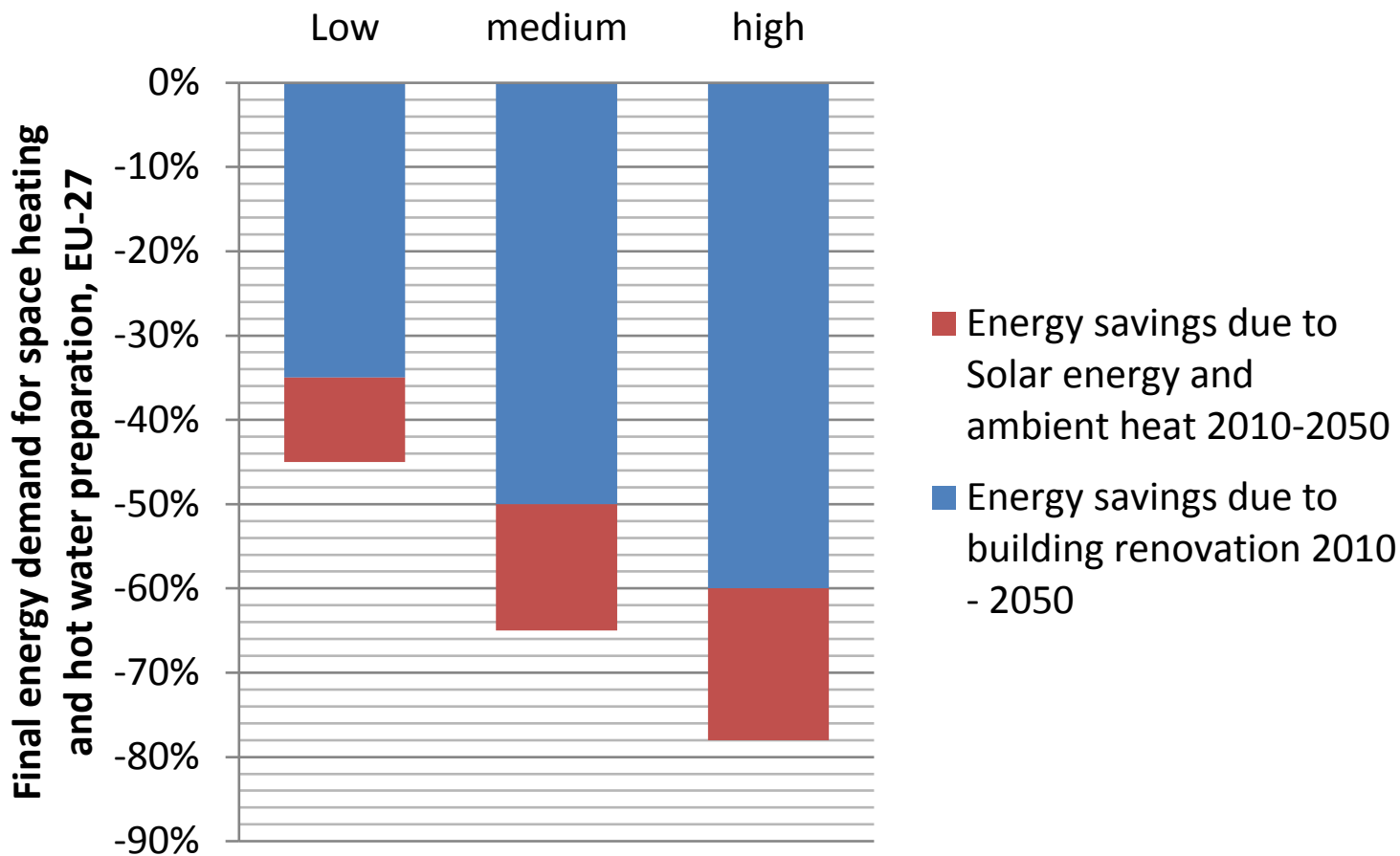


- *Duration: April 2012 – September 2014*
- *Objective: assist policy makers in developing policy packages achieving a fast and strong penetration of NZEB and RES-H/C in line with the EPBD and the RED*
- *Partners: EEG, NCRC, Fraunhofer, CENER, eERG, Oeko, SOFENA, BPIE, Enerdata, SEVEN*

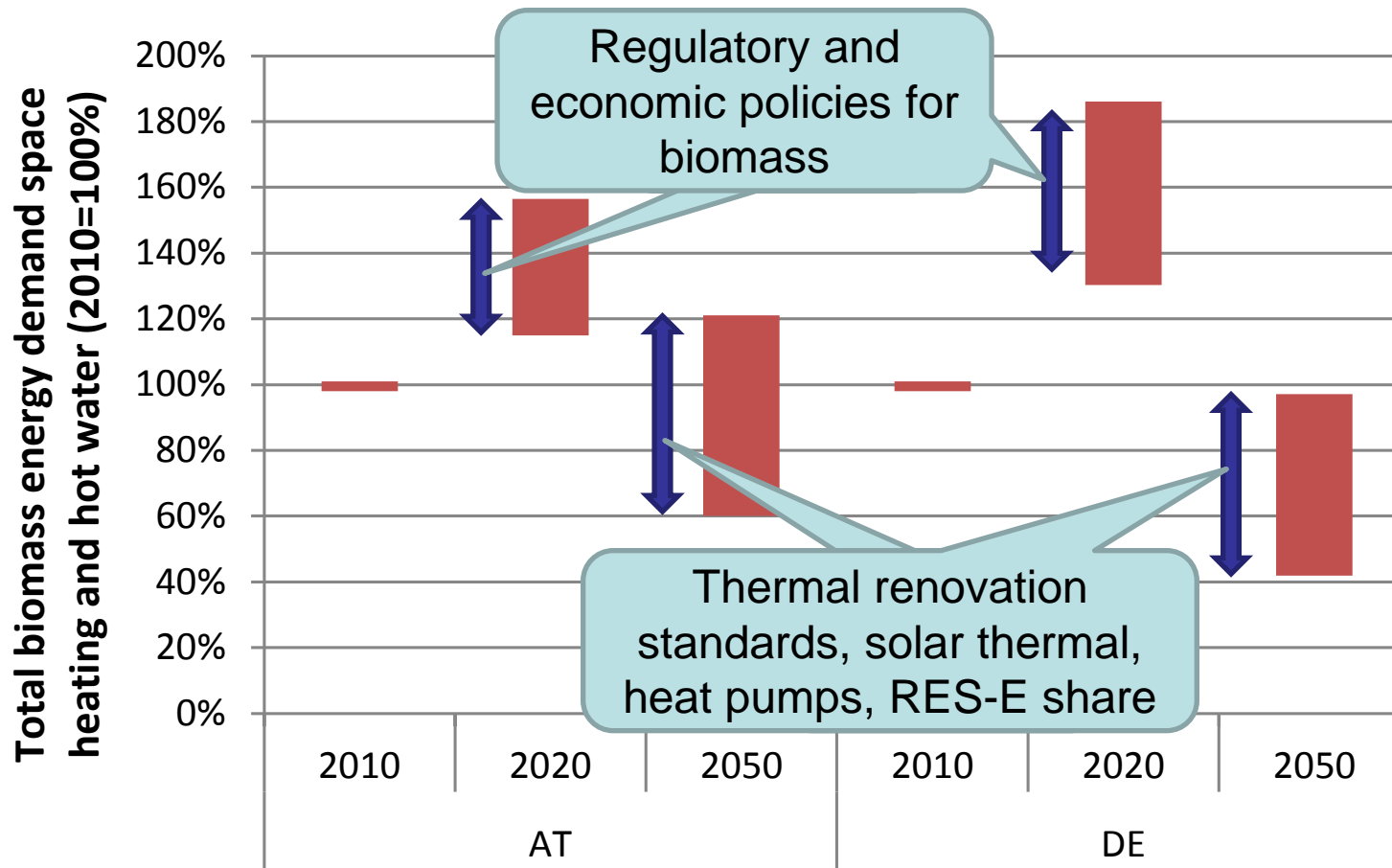




Energy savings in the space heating and hot water sector until 2050?



Total biomass energy demand for space heating and hot water (2010=100%), AT, DE: 2010, 2020, 2050

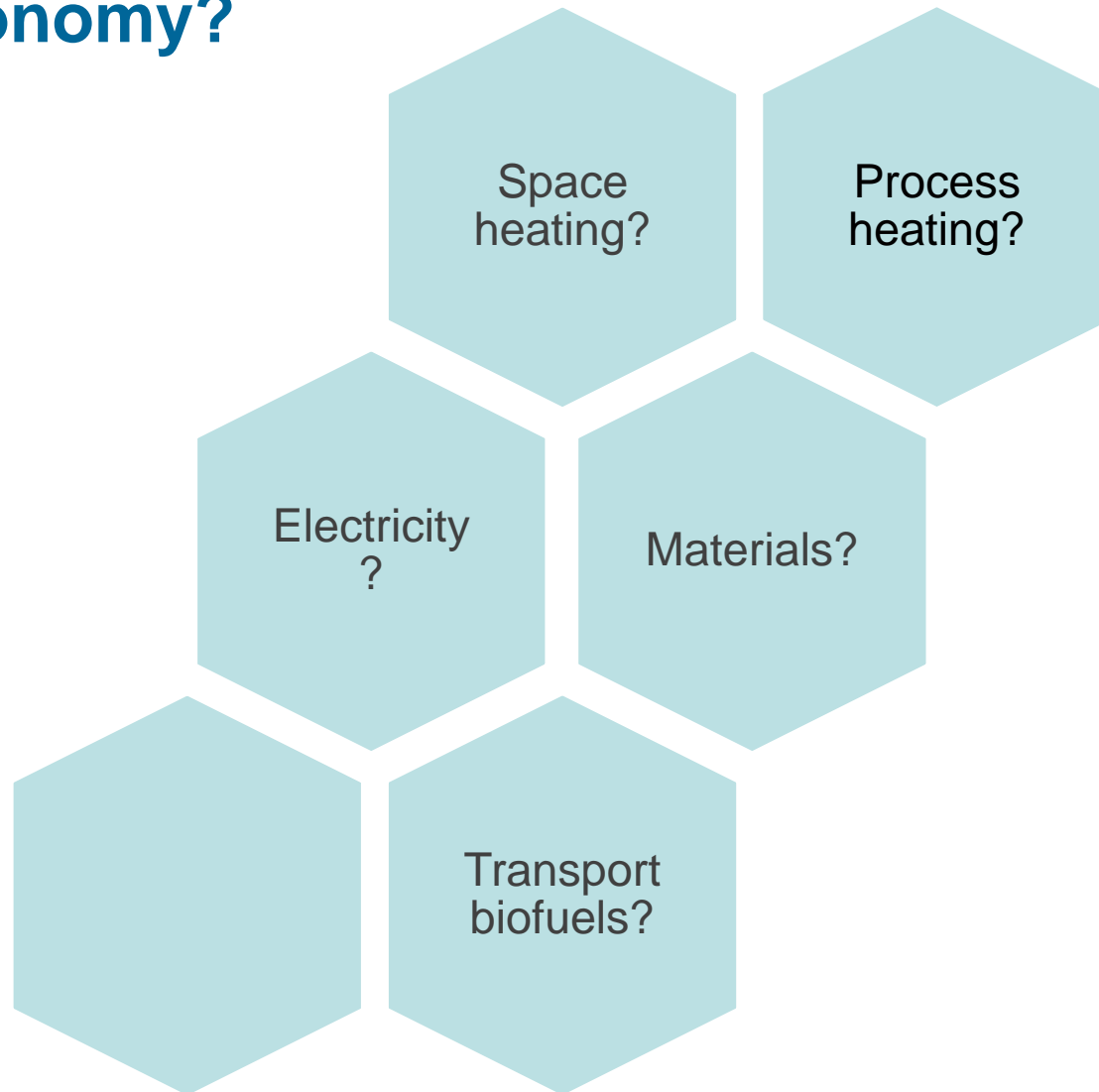


CONCLUSIONS

Conclusions

- Biomass delivers by far the largest share of renewable heating, currently and according to targets for 2020
- Most scenarios show strongest growth of biomass after 2020 for electricity generation and transport biofuels
- Biomass space heating reduces in most scenarios after 2020.
- Thermal building renovation, solar thermal and ambient energy can strongly reduce delivered energy to buildings.
- Thus, with lower bioenergy consumption a higher share of buildings could be provided with space heating service.
- Tapping the building's efficiency potential is a precondition for a sustainable, resource efficient low carbon energy system.

Role of biomass in a sustainable, low-carbon, bio-based economy?



Conclusions

- As long as there is a substantial energy consumption for space heating, biomass space heating is one of the cheapest and most attractive options for GHG-reduction.
- Policies are required to support these options, in particular obligations combined with economic incentives.
- In the long term, high exergy applications for biomass should be advanced:
 - High-temperature process heat applications
 - Electricity generation, CHP and district heating
 - Transport fuels
 - Materials and cascadic use
- High energy efficiency standards and biomass have to be integrated in order to achieve a high contribution of biomass heating with a limited resource consumption.

Further information:

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The logo for ENTRANZE, consisting of the word 'ENTRA' above 'NZE', followed by a graphic of two overlapping rectangular shapes, one light blue and one dark blue.