

Demonstration of successful modernisation and retrofitting in Austrian biomass-based district heating networks

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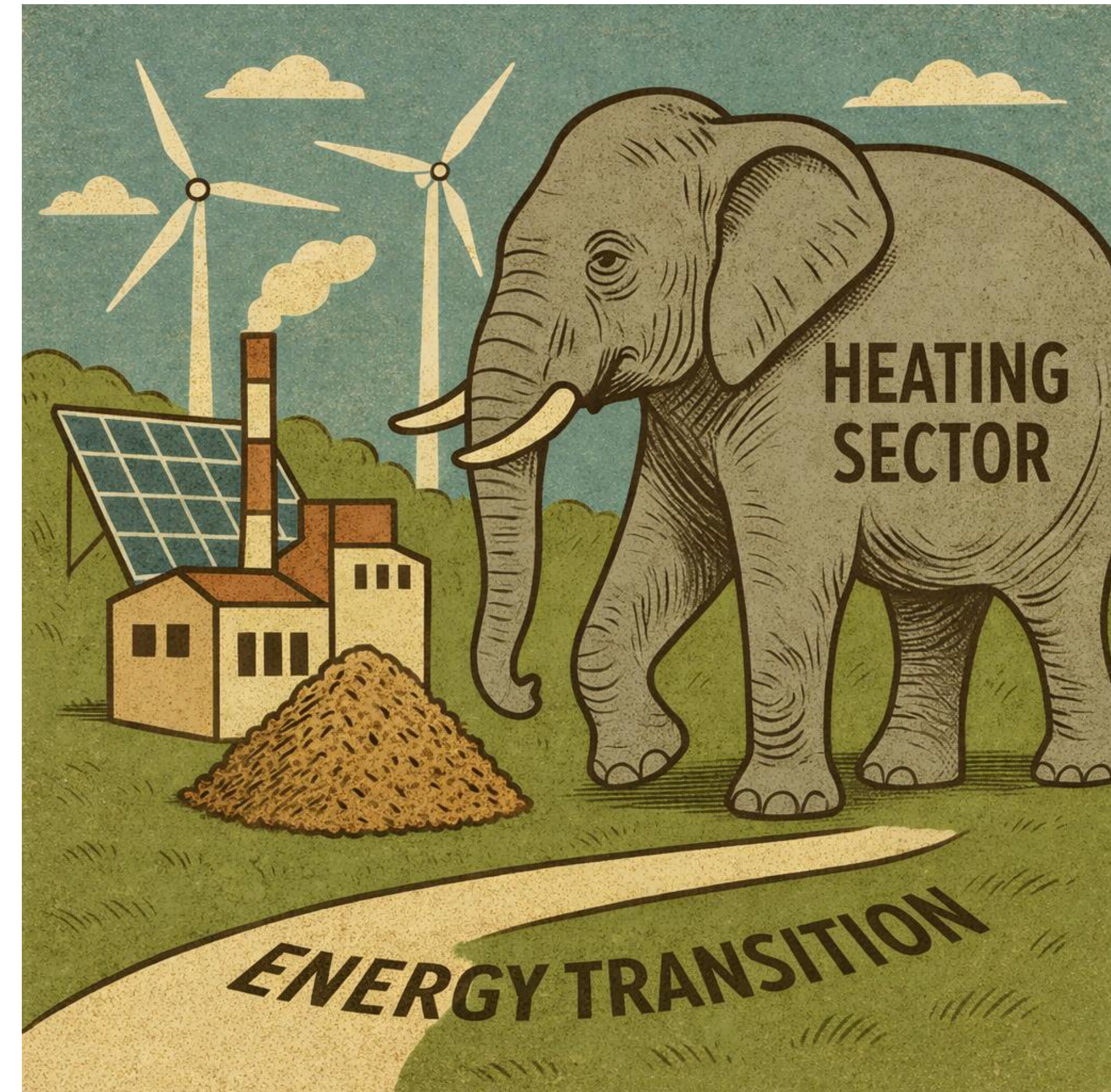
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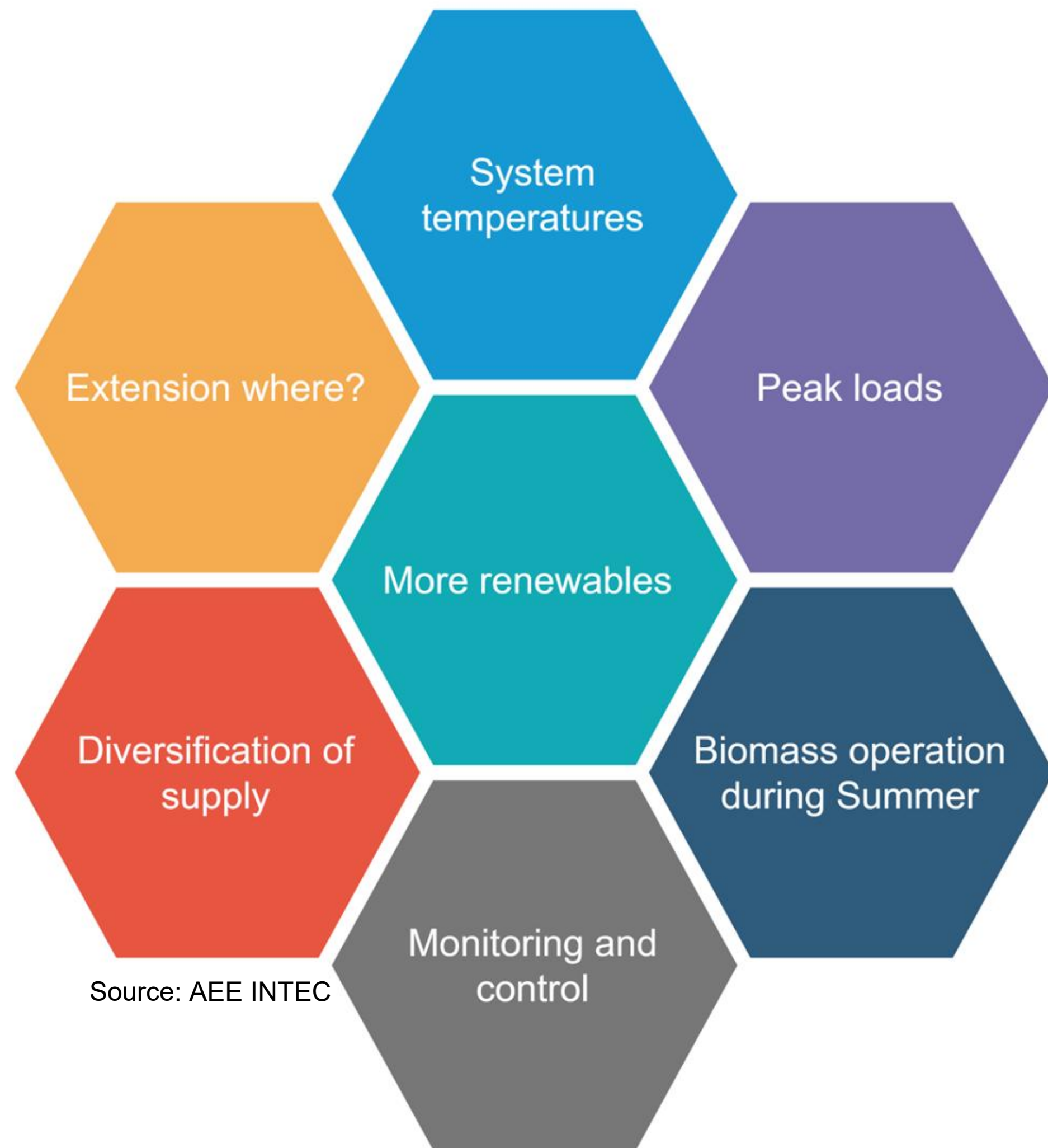
Motivation and Background

- Heating, accounting for 50% of energy consumption, is the key driver of the energy transition
- A high number of biomass-based heating networks in regions and small towns with a high share of renewable heat supply
- Urgent need for retrofitting and modernisation to meet future challenges and requirements



Source: AI generated / AEE INTEC

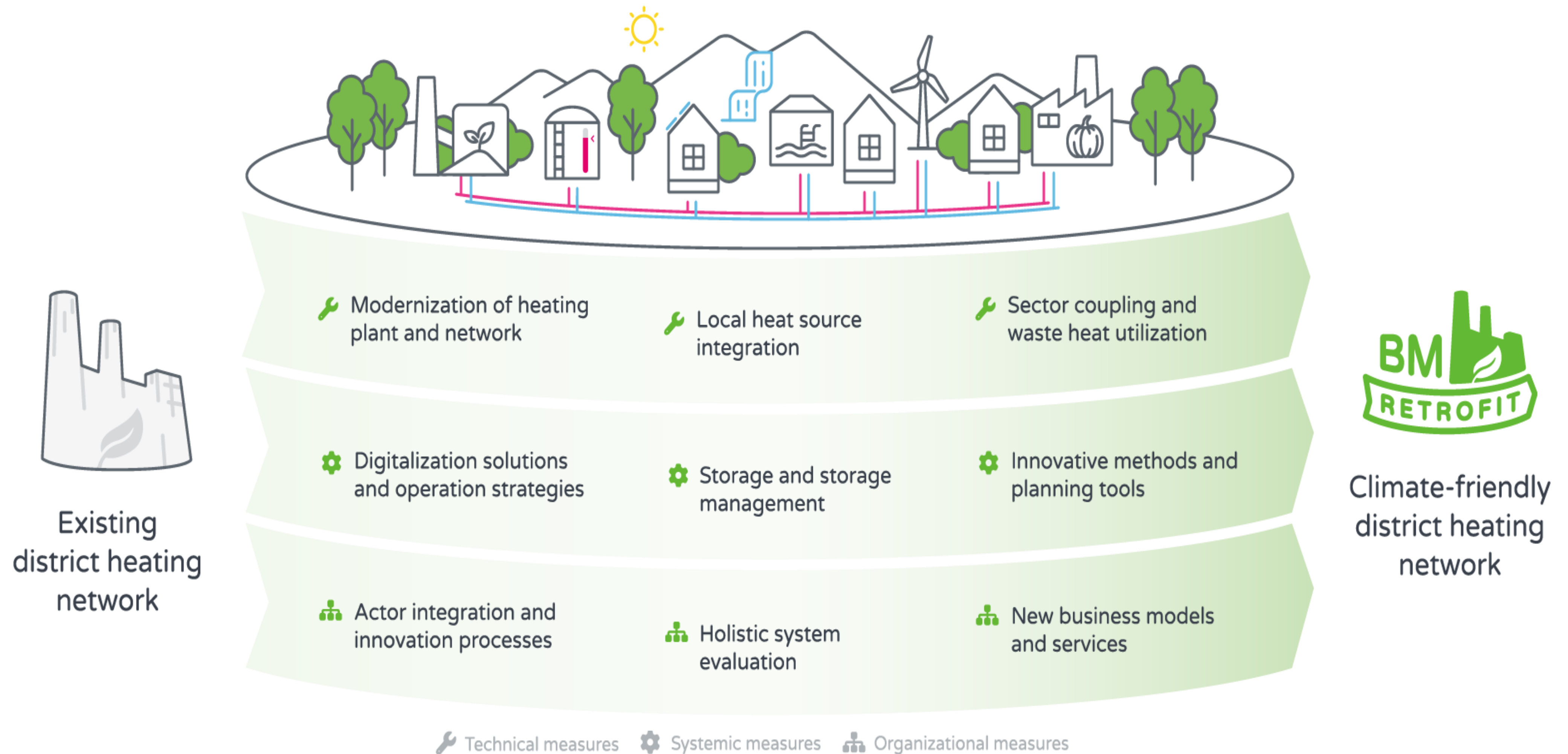
Challenges and main goals



Source: AEE INTEC

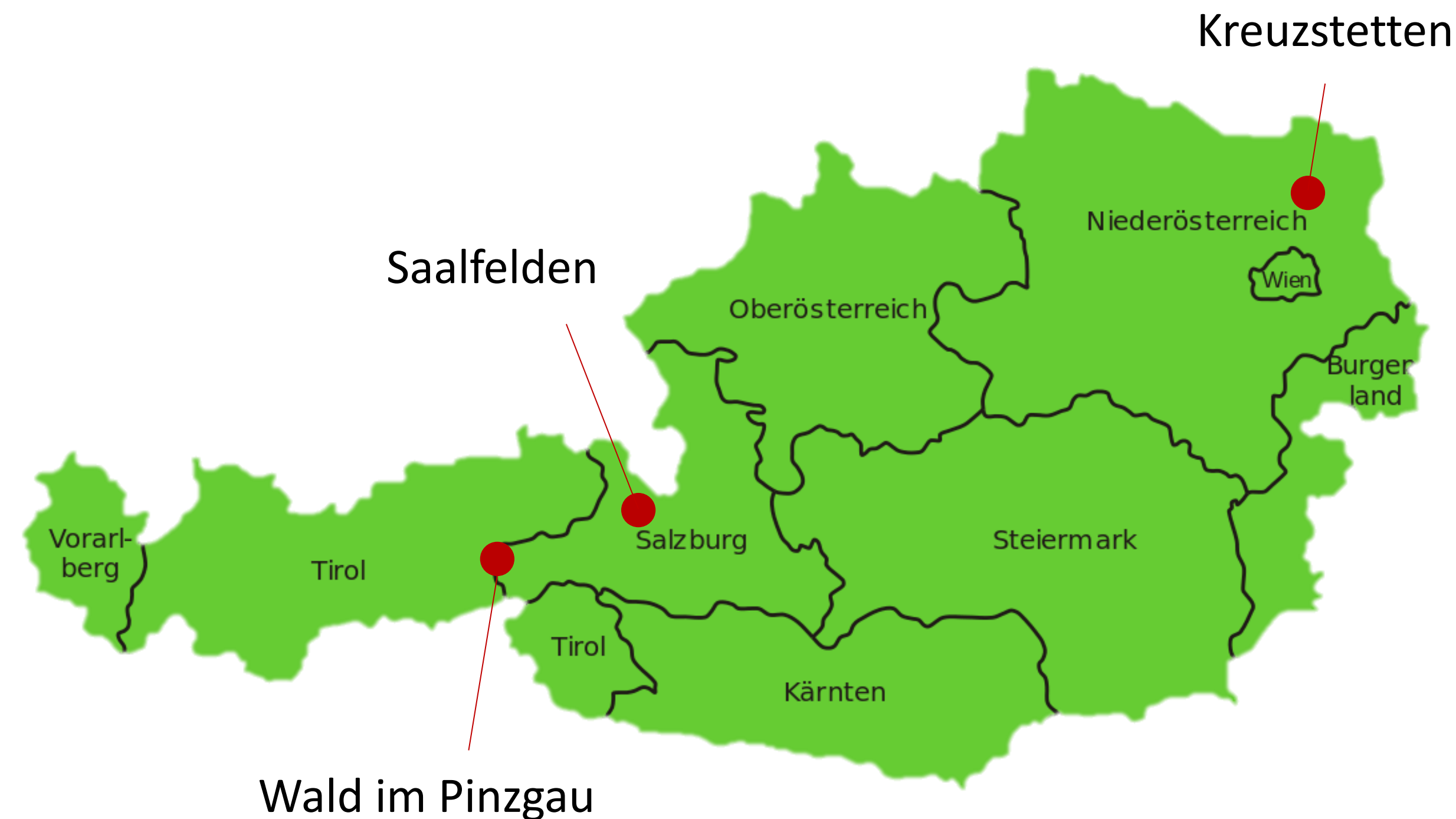
- Increasing flexibility and system efficiency
- Reducing the share of fossil fuels and utilising regional resources
- Expanding supply capacity and security of supply
- Efficient and sustainable provision of future heating requirements
- Ensuring compliance with regulatory frameworks (EED III, RED III, EPBD)

Main result: Holistic and systemic methodology



Source: Green Energy Lab

Main result: Demonstration projects and solution approaches as blueprints



Source: AEE INTEC

- Wald im Pinzgau: Waste heat from nearby hydropower, P2H application, storage
- Saalfelden: Storage, flue gas condensation incl. heat pump cascade and control strategy (CO-lambda)
- Kreuzstetten: Improved operational management (boiler, storage, system temperatures) and strategic/economic measures
- Three solution approaches as “good practice” examples

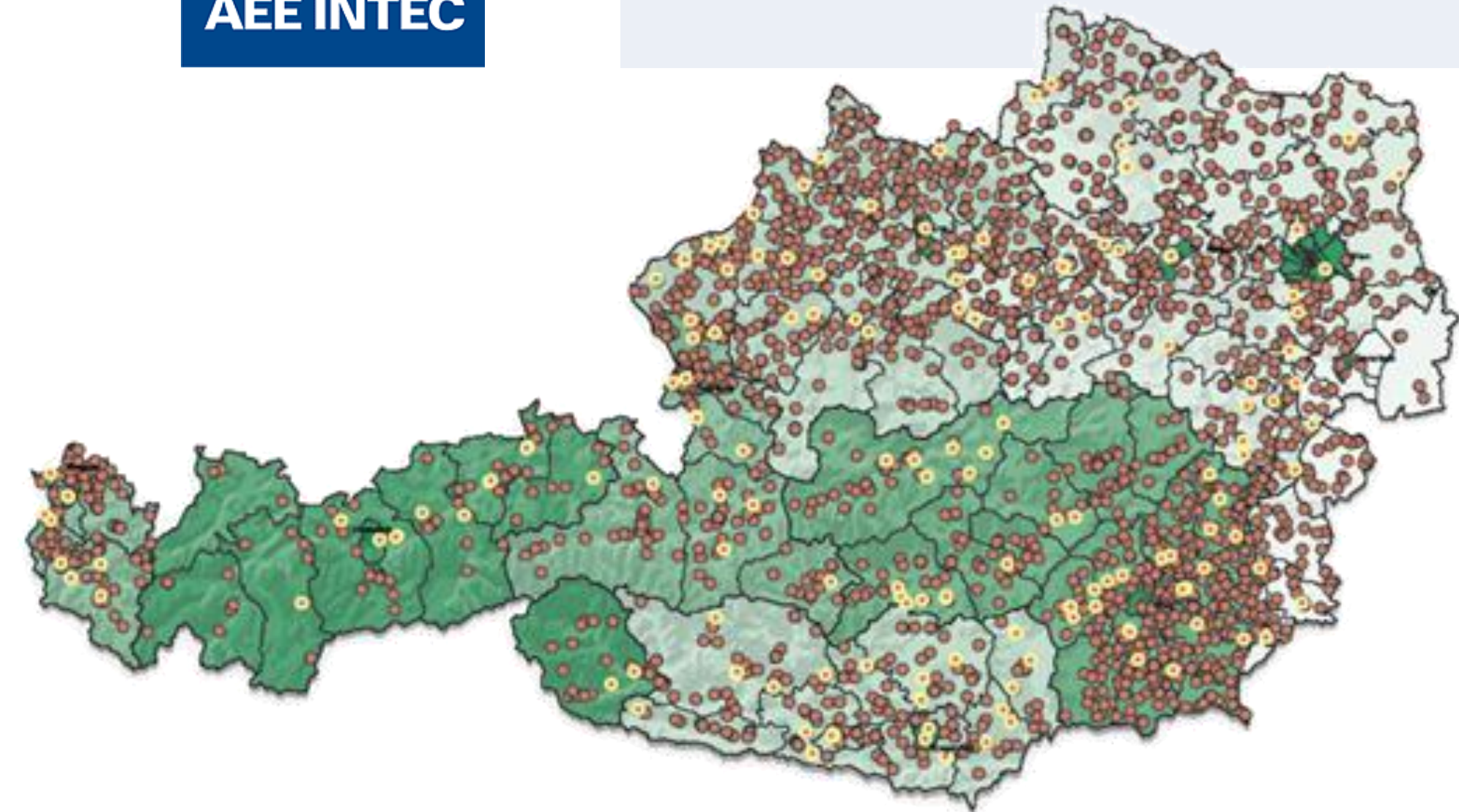
Main result: USP and added value

- Conservation of biomass resources and reduction of local emissions
- Optimised use of available local/regional energy sources and waste heat
- Increased efficiency and flexibility to ensure cost-effective operation
- Exploitation of synergies and development of a future-proof energy system



Source: Klimafonds / Krobath

Target group and market potential



Source: Austrian Biomass Association



Source: Joachim Kelz /
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- Operators of small and medium-sized district heating networks and municipal utilities
→ strategic expansion of district heating
- Local authorities and regions
→ spatial energy & municipal heat planning
- High scalability and multiplication potential
→ 2,500 district heating networks in Austria

Measures to foster market implementation



- Using demonstrators as showcases
→ workshops, trainings, site visits
- Strengthening regional partnerships
→ connecting local authorities, energy suppliers and relevant stakeholders
- Provision of practical planning tools
- Integrating holistic system assessments into funding schemes



Source: Klimafonds / Krobath

Summary and take-home messages

- Development and implementation of retrofitting measures and continuous adaption is a vital and long-lasting process
- Stepwise and consequent reduction of system temperatures as a key measure → start as soon as possible
- Use all options (holistic view) for improving e.g.
 - Integration of locally available energy sources
 - Extension/densification of network → link to spatial energy planning
 - Synergies to other infrastructures or ongoing developments
- Bad actor and stakeholder integration and communication
→ no appropriate retrofitting possible



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IDEA TO ACTION

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