Developing Heating and Cooling Transition Strategy

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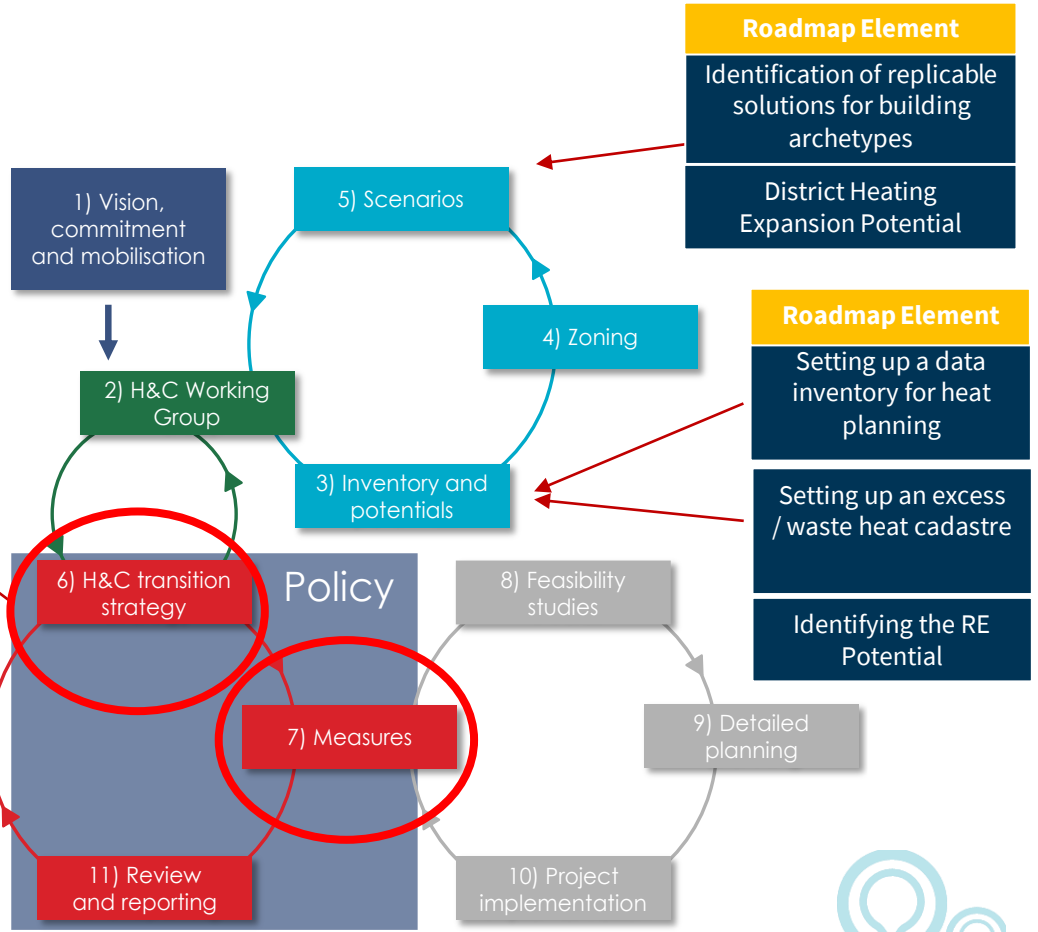
Strategic Heating and Cooling Planning

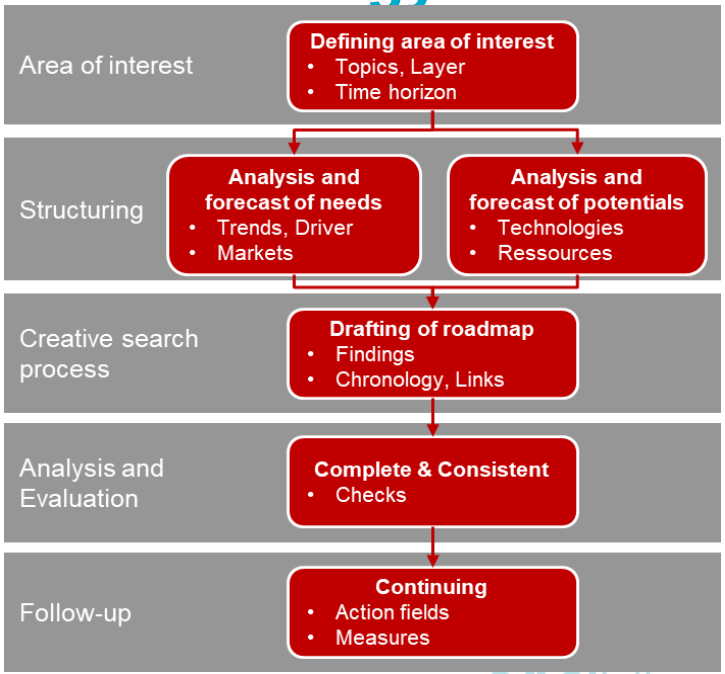
Strategy contains a roadmap

Identifying and addressing the roadmap elements



Developing a heating cooling transition strategy

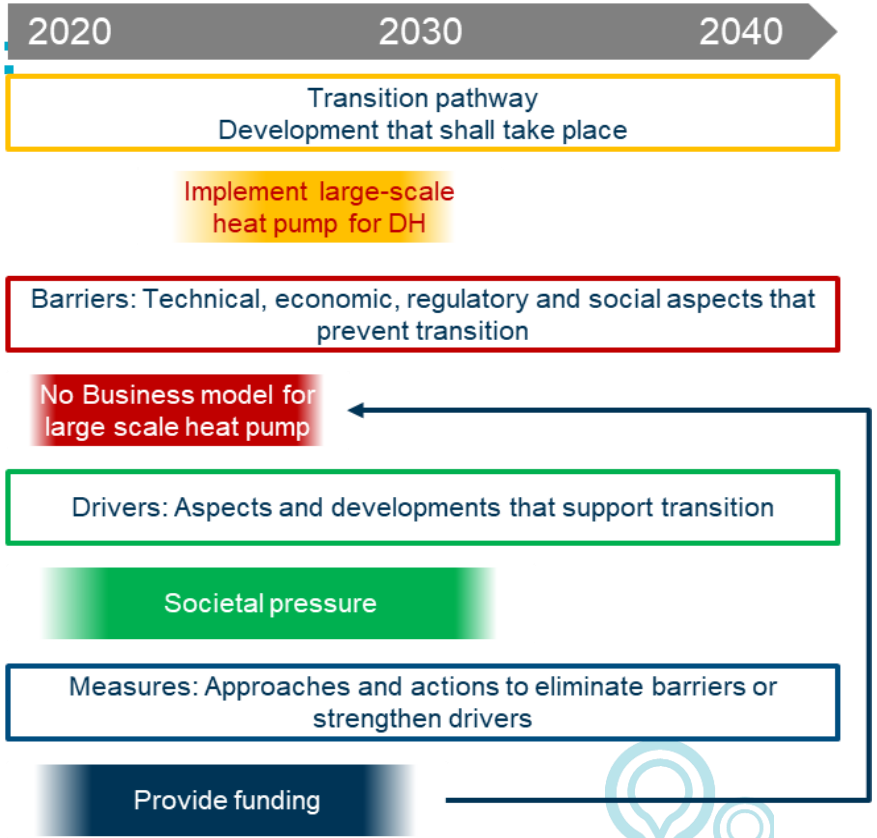
- Understand the baseline
- Set targets: Identify key performance indicators
- Identify Opportunities: energy savings, RE integration
- Develop a detailed road map: Plan, timelines, milestones
- Implementation: stakeholder engagement, funding, monitoring progress



Source: AoH, Fraunhofer ISI

Transition strategy Road Map:

- Provide decision-makers with an overview of interrelationships, conditions, and opportunities of a change process over time
- Assessment of future opportunities and risks
- Specify upcoming development steps and responsibilities
- Possibility of chronological linking of different components of the process
- Focus on a vision or a goal on the short and medium term



Source: AoH, Fraunhofer ISI

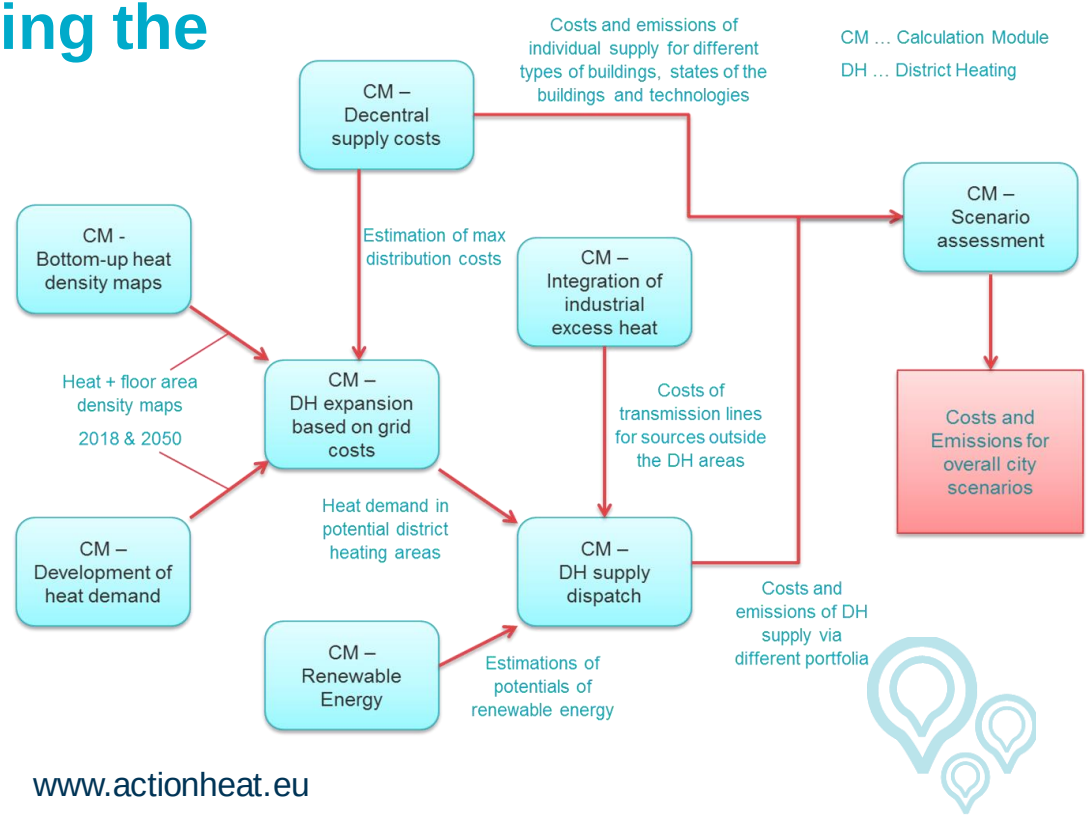
Policy Measures

- Identifying policy intervention measures to meet the strategic goals (milestones)
- Working group develops a proposal in consultation with the stakeholder group.
- Find policies and measures that can be legally implemented and supported by the stakeholders
- Identify implementable projects with high success rates and impact
- Identify quantitative evidence to support policy adoption to meet strategic targets
- ‘Translate’ EU policy framework (EED, RED, EPBD) into local policy →to understand the municipality’s room to maneuver

Hotmaps for developing the roadmap

- Use of available default data
- Application of a combination of Calculation modules
- Development of scenarios
- Comparision and identification of suitable scenarios
- Development of policy measures

Scenario Toolchain Hotmaps

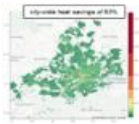


Application in San Sebastian

Element 1: Identification of replicable solutions for building archetypes

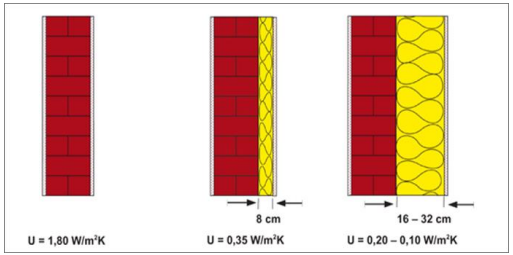
- What are the renovation target and related energy-saving target with intermediate milestones

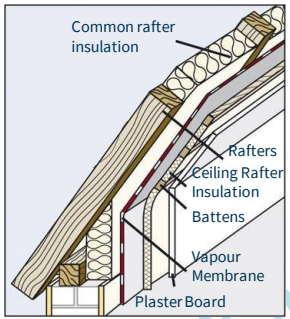
- In which buildings which renovation measures?



- Where?

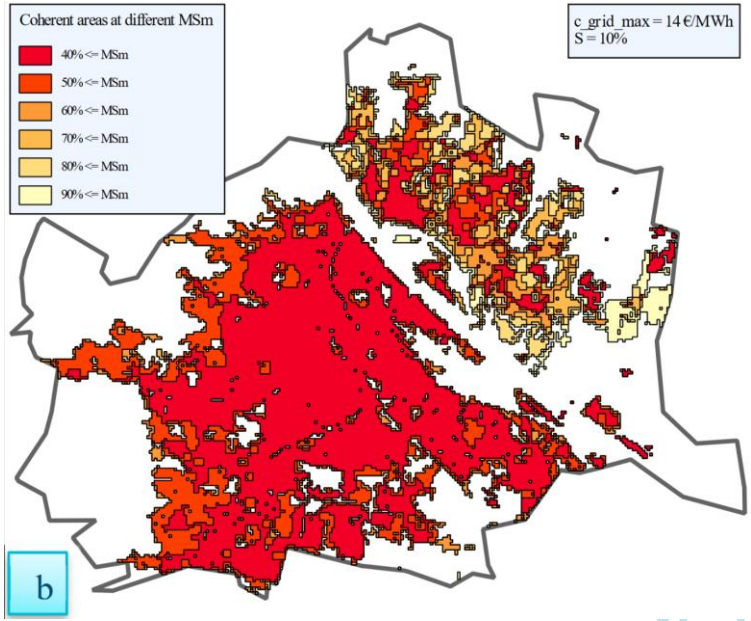
- Economic impacts: investments, created a turnover.
- Which policies, which measures on the local/regional level?





Element 2: Identification of feasible locations for a district heating network

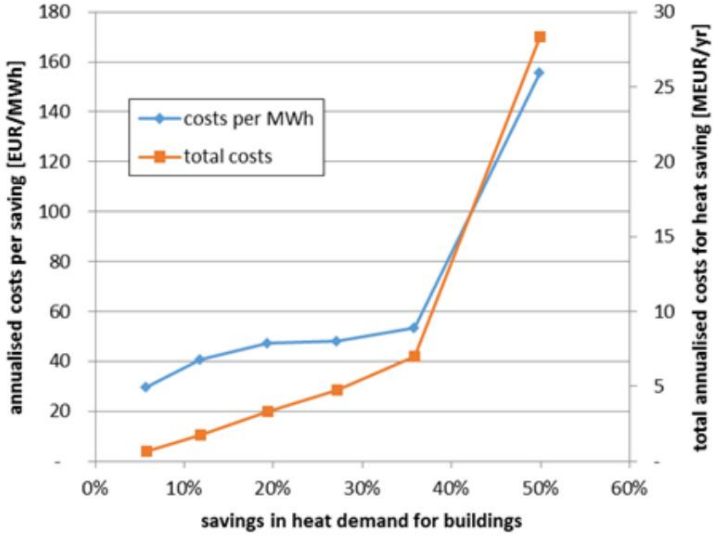
- Heat demand density in the region
- Building gross floor area
- Renovation rates
- Coverage rate of a DH region



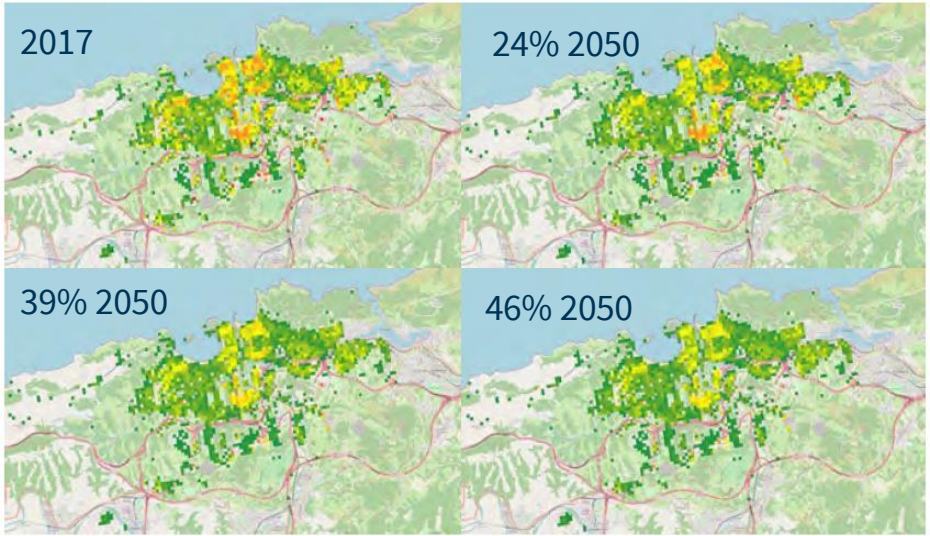
Renovation Scenarios and Costs (San Sebastian)

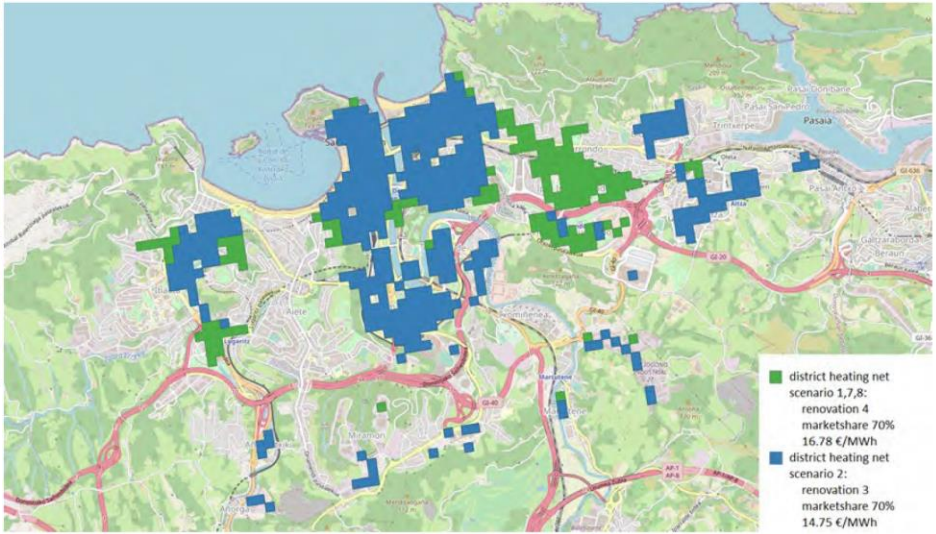
scenario name	savings in demand for space heating	saving in total heat demand (space heat + domestic hot water)
renovation scenario 1	11%	10%
renovation scenario 2	22%	21%
renovation scenario 3	31%	27%
renovation scenario 4	40%	33%
renovation scenario 5	49%	40%
renovation scenario 6	60%	47%

- % of buildings to be renovated
- Investments required



Results from Hootmaps (San Sebastian)





Drivers and Barriers (San Sebastian)

Drivers

- Active participation in Climate change, Energy Efficiency and Urban Sustainable mobility program
- First-of-its-kind strategic heating and cooling planning process

Barriers

- H/C planning was not a priority
- DH supply development was seen to be difficult in the existing compact dwelling
- High investment costs

Defining roadmap milestones (San Sebastian)

- Further analysis of heat-saving potentials
- **Feasibility studies on predefined renovation activities** based on outcomes regarding which buildings to perform at which level of ambition
- Inclusion of the **renovation status** of buildings in the building database
- **Plan financing/financial** assistance in the renovation activities of building stock and renovation targets for different buildings
- Engage house **owners to refurbish** their buildings to the lowest energy demand
- Convince **investors to build more ambitious new constructions** more ambitious than the national standard
- Monitoring and reports

Hotmaps Case Studies

Conclusion

- Strategic transition provides the possibility to design a goal-oriented path with a strict timeline and milestones
- Data-driven process
- Overall strategic transition requires consideration of both the demand and the supply
- Demand → improve the energy efficiency of the buildings, implement deep renovations
- Supply → increase RE integration, efficient technologies
- Effective coordination and collaboration among stakeholders
- Finding Public-private partnerships and innovative financing mechanisms

Thank you

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