Integration of Renewable Energy Sources into existing District Heating and Cooling Systems (RES DHC)

IEA DHC Annex TS5 concept

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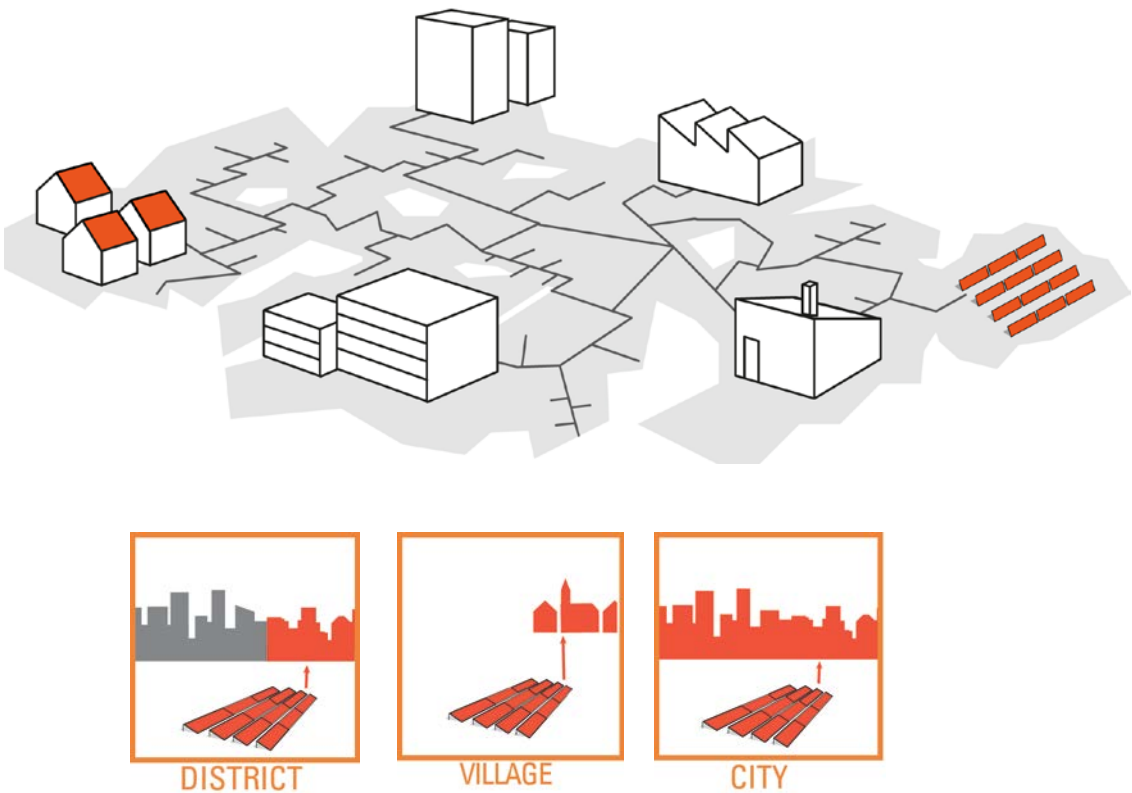
District Heating – Platform for RES and efficiency technologies



- biomass
  (heat plants, CHP)
- solar thermal
- geothermal
- CHP
- industry surplus heat
- power-to-heat from RES
  (electric boilers, heat pumps)
- thermal energy storage

Scope

Scope: Integration of high shares of **renewable energy sources** (RES) into existing DHC systems with focus on **large-scale solar thermal, large heat pumps, renewable P2H-systems, biomass, geothermal and large heat stores in combination with CHP and surplus heat.**

- Technology neutral with regard to technologies
- Focus on existing DHC systems
- Focus on DHC topics (network integration and effects, operation concepts, effects on CHP operation)
- DHC enterprise driven project approach
- Focus on R&D (also for non-technical topics)

Aims

- **Gain knowledge about and develop enhanced and cost efficient solutions** for the **technical and operational integration of RES** plants into existing DHC systems
- **Provide practical know-how** on RES DHC project development, technical solutions and business cases to the DHC market actors
- Develop and show-case innovative **demo cases driven by DHC market actors** and in cooperation with RES market actors (technical and organizational solutions)
- Develop advanced instruments **addressing non-technical market barriers and opportunities**
- **Establish renewable heat sources** as environmentally friendly and emission free heat generation technologies for the DHC sector

Methodology, potential subtasks (tbd)

Approach: R&D activities are "DHC sector-driven", i.e. based on the technical and organizational framework of the DHC sector, focus on network integration topics, demo cases

Subtask A: Integration of RES heat plants into DHC systems (technical and operational) and large heat stores in combination with CHP and surplus heat

Subtask B: Decentral integration of RES heat into DHC systems: technical solutions for substations, effects on network operation (distributed systems, prosumer models)

Subtask C: Innovative instruments addressing non-technical aspects: economics, life cycle analyses, legal framework, business models, area availability for RES

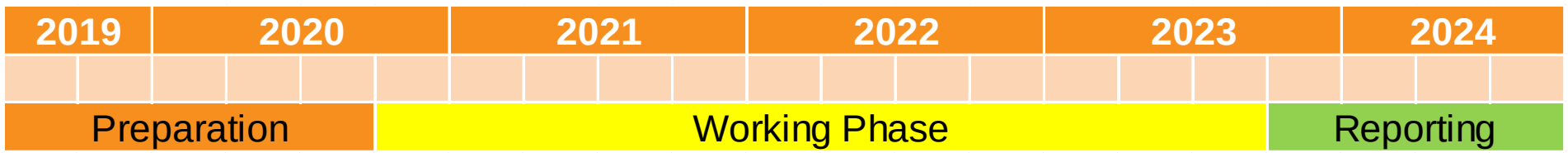
Subtask D: Dissemination and know-how transfer to the DHC sector

Target audience

Target audience:

- Heat suppliers and DHC network operators (as knowledge receptors, owners and investors of demo cases)
- Technology suppliers, planners and service providers of the DHC sector
- National and regional Authorities (legal framework, support instruments) and local authorities
- Citizens and DHC-end users

Time schedule



May 2019: **approval to annex concept** by IEA DHC ExCo Meeting

October 2019: start of **preparation phase**

October 2020: start of **working phase** (final annex text available)

October 2023: start of **reporting phase**

Sept. 2024: end of the Annex

Thank you for your attention!

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