Integrated district heating planning and operation

Main barriers and solution pathways

Implementation map

Please find detailed information on the policy approach in the ENEFIRST report "Priority areas for implementing Efficiency First"

https://enefirst.eu/reports-findings/

Short introduction to the policy approach

Integrated district heating planning and operation

In light of the E1st principle, district heating planning and operation should determine an optimal mix of both various **supply options** (generation, network, storage) and **demand-side measures** (e.g., thermal renovations in buildings). Such an integrated planning approach essentially requires **guidelines** for national and local authorities and DH companies to evaluate the costs and benefits of all relevant investment options, as well as effective **regulatory instruments** to incentivise private DH companies to exploit demand-side potentials.

Business as usual	**E1st** scenario
District heating system expansion and upgrades based on **exogenous energy demand**	District heating system expansion and upgrades based on **endogenous energy demand** (e.g., taking into account expected impacts from energy efficiency policies)
District heating companies have **no direct incentive** to bring about demand-side energy savings	District heating companies are incentivized to bring about demand-side energy savings through **DSM** (Demand-Side Management) **measures**

Overcoming the main barriers to the design and implementation of E1st

Integrated district heating planning and operation

I. Policy design

Main barriers

*Main **barriers** to policy design*	Stakeholders required to act	*Solutions to overcome the barrier*
Lack of **regulatory framework**	EU; National authorities	Existence of **long-term visions** and policies + **integrated** regulatory framework (supply + demand)
Lack of information and knowledge for new innovative services	EU; National authorities	Research projects and experience sharing
Split incentive between building owners, DHC operators, and society as a whole	National authorities; Local authorities	Incentive framework: **Balanced instruments** that enable good conditions for demand- or supply investments
Supply side competition	National authorities; Local authorities	Regulations allowing national or local authorities to define zones where **connection to DH** networks is **mandatory**

Possible legislative or other changes

Revise **Art.14 and Annex IX of the EED** to include demand-side resources in the scope of CBA
Calls for projects. **Support** to activities (working groups, conferences, guides, etc.) for experience sharing
Revise **remuneration schemes** for DH companies. Investigate how "**thermal comfort as a service**" could be developed
Transfer of good practice models (see regulations with different conditions in e.g., Denmark and France)

Overcoming the main barriers to the design and implementation of E1st

Integrated district heating planning and operation

II. Policy implementation

Main barriers	*Main **barriers** to policy implementation*	Stakeholders required to act	*Solutions to overcome the barrier*	Possible legislative or other changes
	Lack of capacity (tools, human resources)	**National** authorities	Human resources in regulatory authorities. Data availability	**Plan** the resources needed. Ensure **regulations** provide access for local authorities to data
	Lack of practical experience with integrated planning	**National** authorities; **Local** authorities	Demonstration projects Best practice exchange	**Calls for projects**. **Support** to activities for experience sharing
	Difficulties to assess the impact of energy saving measures vs. heat supply	National authorities or agencies	Guidelines and case studies, regular publications with reference values	Clarify what body is **responsible** for providing technical support

Further reading

- ENEFIRST report "Priority areas for implementing Efficiency First"
  - Chapter 3.4.3 Identified policy approaches about district heating

- Suggestions of relevant references:
  - Chittum et al., 2014. How Danish communal heat planning empowers municipalities and benefits individual consumers. *Energy Policy*, 74, 465–474.
  - DEA, 2017. Regulation and planning of district heating in Denmark. Danish Energy Agency.
  - Rutz et al., 2019. Upgrading the performance of district heating networks. Technical and non-technical approaches. Munich: WIP Renewable Energies.