

Third party access to district heating systems - Challenges for the practical implementation

3rd International Conference on
Smart Energy Systems and 4th Generation District Heating
13. September 2017

Veit Bürger, Öko-Institut e.V.
Lukas Kranzl, Andreas Müller, TU Wien
Jan Steinbach, Fraunhofer ISI



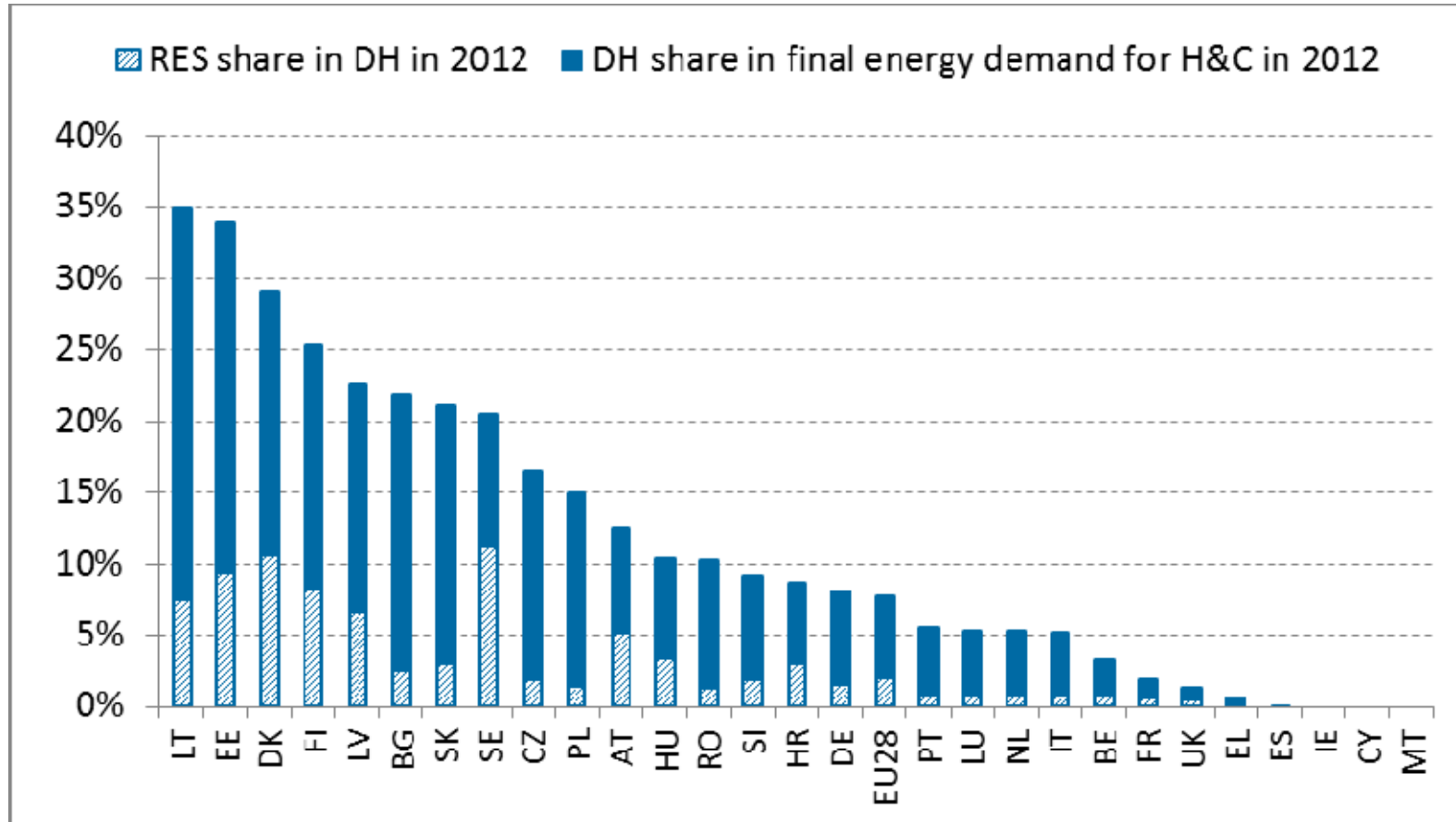
Background

Article 24 para. 4 of the proposed revised RES-Directive provides that Member States adopt measures to ensure non-discriminatory access to district heating and cooling systems for heat or cold produced from renewable energy sources and for waste heat or cold.

“Member States shall lay down the necessary measures to ensure non-discriminatory access to district heating or cooling systems for heat or cold produced from renewable energy sources and for waste heat or cold.

This non-discriminatory access shall enable direct supply of heating or cooling from such sources to customers connected to the district heating or cooling system by suppliers other than the operator of the district heating or cooling system.”

Relevance of the provision



Source: ISI et al. (2016) - Mapping and analyses of the current and future (2020 - 2030) heating/cooling fuel deployment

Research Questions

- How to best and systematically classify different third party grid access models?
- What is meant by the proposed Art 24, how can the proposed provision in the proposed Renewables Directive be classified?
- What are the main technical, economical, regulatory etc. challenges associated with third party grid access?
- Will third party grid access of independent heat/cold producers alone be sufficient to stimulate the uptake of renewables in DHC systems or are additional or other regulations required?

Design features for DH third party grid access models

DH retail market

- Single supplier vs. open retail market with several competing suppliers
- Price regulation yes/no

DH grid (grid access and grid access conditions)

- Voluntary vs mandatory grid access
- Negotiated vs regulated grid access
- Regulated grid charges yes/no

Heat production

Institutional: No unbundling requirement vs partial unbundling (e.g. production <-> grid/retail) vs full unbundling

Transparency: mandatory transparency about prices, transactions, system costs yes/no

What is meant by the draft Art. 24 RED?

DH retail market

- Single supplier vs. open retail market with several competing suppliers
- Price regulation yes/no ?

DH grid (grid access and grid access conditions)

- Voluntary vs mandatory grid access
- Negotiated vs regulated grid access ?
- Regulated grid charges yes/no ?

Heat production

Institutional: No unbundling requirement vs partial unbundling (e.g. production <-> grid/retail) vs full unbundling ?

Transparency: mandatory transparency about prices, transactions, system costs yes/no ?

TPA: Dimensions to consider and issues to resolve

Technical dimension

TPA might change the topology of a DH system (e.g. centralised -> more decentralised system with a variety of different heating sources with different physical/technical characteristics being connected to the grid)

Change in topology might require technical adaptations resp. investments in the infrastructure to ensure the technical performance of the grid

Economic dimension

How can the system rules for grid access ensure investment security which is required to make a project bankable?

How can the trade off between long-term supply contracts (as requested by the investor) and consumer protection issues be resolved?

How can the market be designed as to be attractive for investments in the infrastructure (new grids/modernisation) and new capacity?

Regulatory requirements

Regulation is required to ensure fair and non-discriminatory market conditions for all system participants (avoiding incumbent DH companies setting restrictive technical requirements for grid access or unfavourable cost allocation mechanisms)...

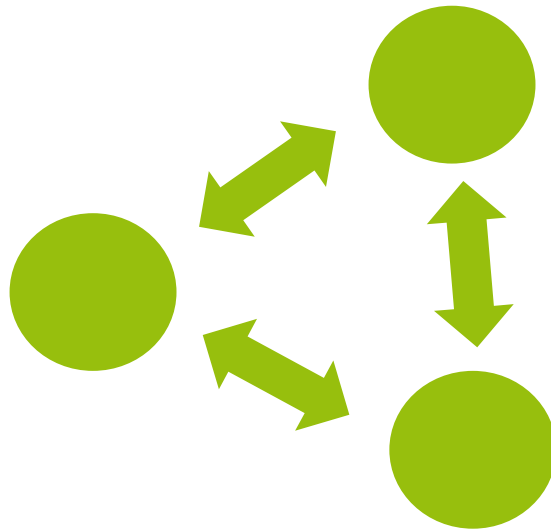
...especially if unbundling is not required.

Areas to be regulated (regarding the use of the grid) , e.g.:

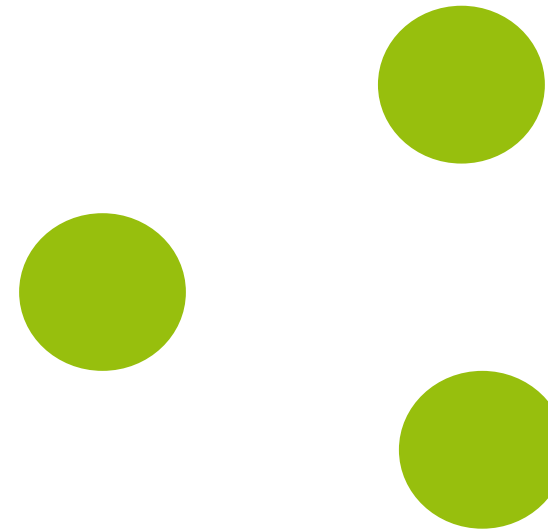
- Pre-qualification criteria, grid code, grid charges
- Allocation of costs to adapt the infrastructure and system topology
- Allocation of sunk costs
- Allocation of balancing costs, costs for back-up capacities
- Allocation of benefits such as flexibility/inertia benefits of the grid

Regional dimension

Electricity, gas:
large, connected markets



District heating:
smaller, separated markets



Considering the regulatory complexity of TPA:
Is there a reasonable minimum regional scale for TPA in DH grids?

Third party grid access and RES

Is third party grid access as foreseen by Art. 24 an appropriate instrument to stimulate the uptake of RES in DH systems?

- Tinbergen rule: *For each and every policy target there must be at least one policy instrument. If there are fewer instruments than targets, then some policy goals will not be achieved.*
- Art. 24 mainly aiming at strengthening competition in the DH sector (which is an important target!)
- If lack of competition is one of the reasons for low RES uptake in the DH sector, Art 24 might help
- However, lack of competition does not seem to be the key barrier -> TPA alone might not be sufficient for RES uptake given the local scale of DH systems
- Additional/alternative policy instruments required to support RES market penetration in DH sector
- Additional/alternative measure would e.g. be a RES quota for DH operators

Conclusions

- Clarification would be important: What is Art. 24 mainly aiming for:
 - Strengthening competition at production or retail level?
 - Strengthening consumer power by allowing them to choose between different energy sources/supplier?
 - Stimulating RES uptake in DH systems?
- Further regulation or at least guidance for the implementation of Art. 24 (e.g. regarding unbundling) would be rather helpful
- Opening of DH systems in the sense of Art. 24 increases level of required regulation (especially, if unbundling was not required)
- While Art. 24 is mainly aiming at increasing competition in the DH sector other political instruments seem more appropriate to stimulate uptake of RES in this sector.

Thank you for your attention!

Do you have any questions?

