

Third Party Access to Existing Municipal Energy Infrastructure: Lithuanian Centralized District Heating Case Analysis

DIANA KORSAKAITE, ASSOC. PROF. DARIUS BIEKSA, DR. EGLE BIEKSIENE
FLORENCE, 21-22 JUNE, 2018

Framework of the conducted research

Objective:

- to present and assess the impact of regulatory reform conducted in DH sector in Lithuania, suggest further regulatory steps to complete the reform;

Subject:

- Lithuanian district heating sector reform, enabling effective third party access to existing infrastructure and essentially transforming the architecture of the sector;

Academic and practical novelty of the work:

- recent regulatory reform of DH generation market is analyzed and impacts of the fresh reform are assessed;

Practical applicability:

- may be considered in terms of reforming further Eastern European markets of countries under transition as well as reforming other municipal sectors introducing market based principles;

Methods:

- Systemic analysis;
- Statistical analysis.

Market Organization Scenarios

Market organization types by Openness-to-competition and Regulatory Measures applied:

- No-competition full-regulatory control;
- Intra-sectoral intervened competition;
- Inter-sectoral intervened competition
- Inter-sectoral non-intervened competition.

Model of market Organization:

- vertically integrated monopoly – no TPA;
- Single buyer model – negotiated TPA;
- Single buyer model – regulated TPA;
- Network access mode (network neutrality) – full TPA.

Preconditions for reform in Lithuania

Wider context in 2010:

- Reluctance of municipalities to act
- Postponed investment decisions
- Sky rocketing natural gas prices
- Significantly lower prices for and availability of biomass
- National “anti Gazprom” policy at its peak
- 3rd EU package widely regarded as salvation

DH in Lithuania:

- DH market size >50 % of entire heating market;
- Heat demand – 7,5 TWh/year
- Total production – 8,9 TWh/year
- Heat losses in pipelines – 15,5 %
- Length of pipelines – 2515 km
- Primary fuel consumption – 89,2 kg.o.e./MWh
- Fuel structure 2017: biomass (64,2%), natural gas (33,3%), other (2.5%).

Design of regulatory framework

Pillars of conceptual model:

- **Technical** - Ensure technical abilities for newcomers to enter the sector & stay in – model of rTPA – GridCode by Regulator;
- **Economic** - Instrument to contract thermal energy with guarantee of no final (system) price increase and guarantee of technical reliability (SS) – model of Single buyer – wholesale price algorithm by Regulator;
- **Competitive** - Prevent anticompetitive behaviors and reimbursement of damage and sanction in case of anticompetitive action – model of ex ante competition regulation – Market supervision rules by Regulator

Contracting thermal energy model:

- Monthly auction;
- Price is the determinant of winning bids;
- In case of equal bids, priorities are pre-established by Regulator;
- Variable costs as price limit (I phase);
- Reserve capacities;
- Publicity / transparency and historical information accessibility – mandatory;
- No secondary market is allowed.

Phases of reform:

- Transitional phase – IHPs competing on partial costs and incumbent is secured;
- Target market model – competing on full prices.

DH competitive reform implementation in Kaunas

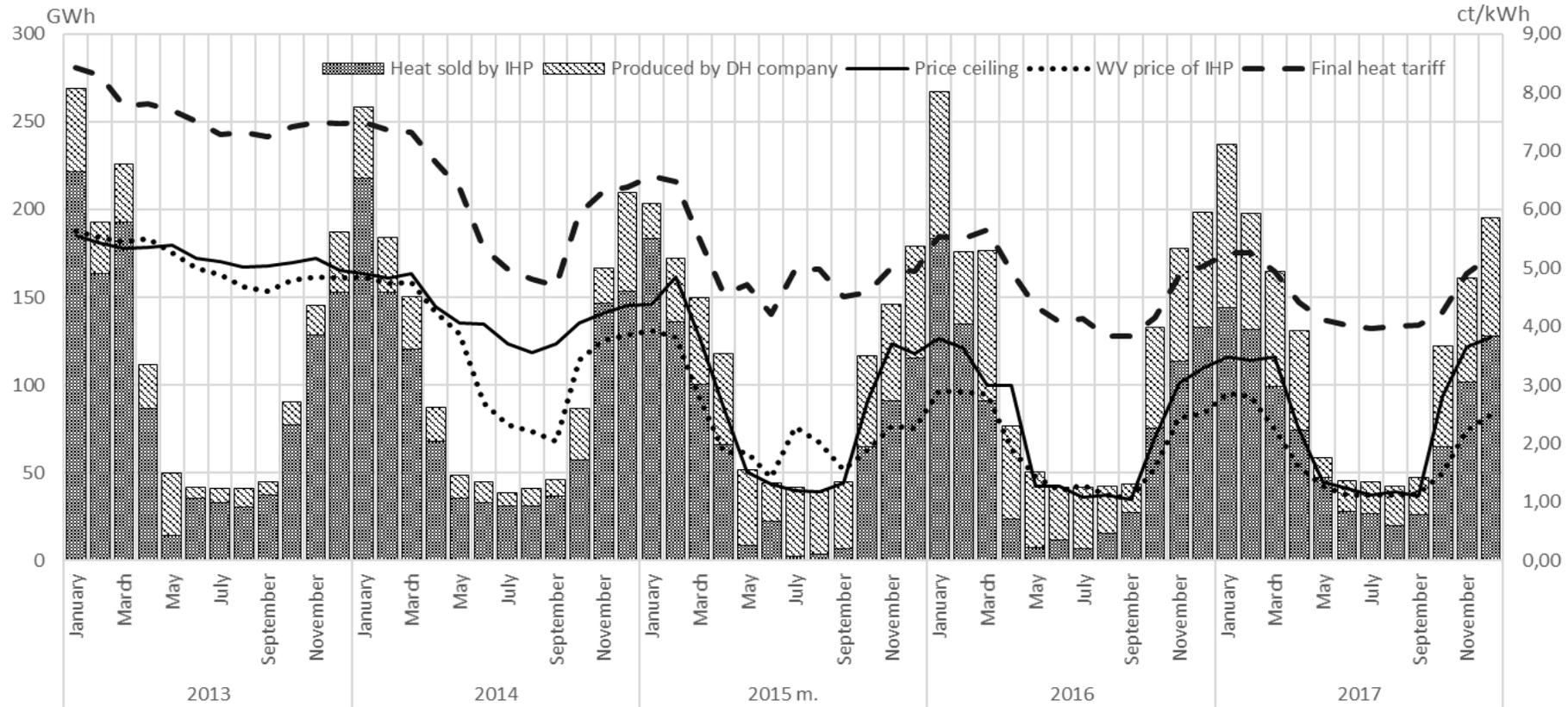


Figure 3 Market opening in Kaunas DH system 2013-2017

DH competitive reform implementation in Klaipeda

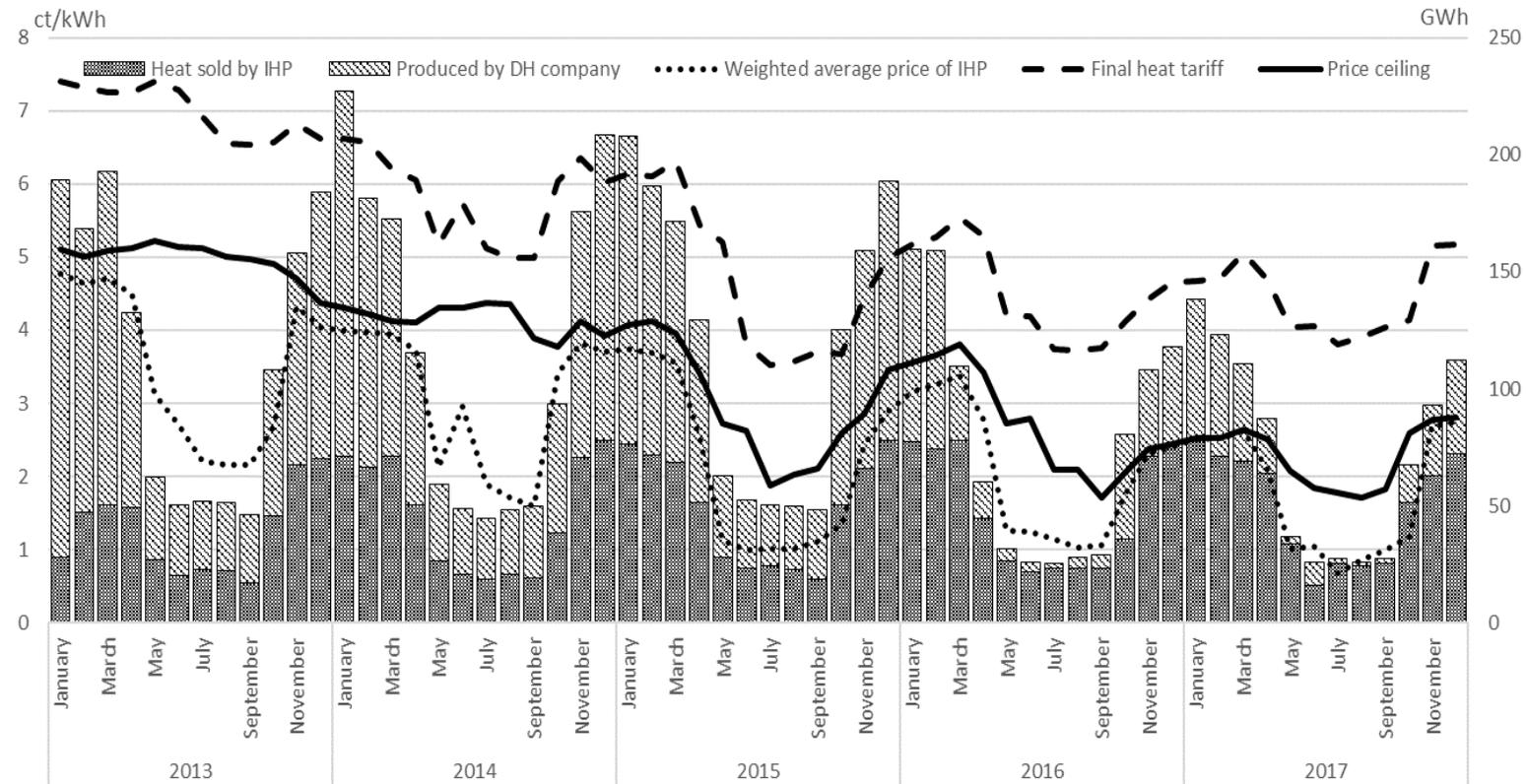


Figure 4 Market opening in Klaipeda DH system 2016-2017

Finalizing competitive market design and moving forward

Candidates for non-competitive terms:

- Peak load capacities (1/3 operational capacity, spec technical regulation) – less 1000 hours/year;
- Balancing.

Sub-markets to be constructed:

- Operational generation capacities sub-market shall move into full-scale competition over total costs;
- Peak load generation capacities sub-market shall be kept as a monopoly secured by Regulator;
- Balancing function & reserves (back-up capacities) sub-market - shall be kept as a monopoly secured by Regulator for the time being, however potentially subject to reconsider at later stage.

Finalizing competitive market design and moving forward

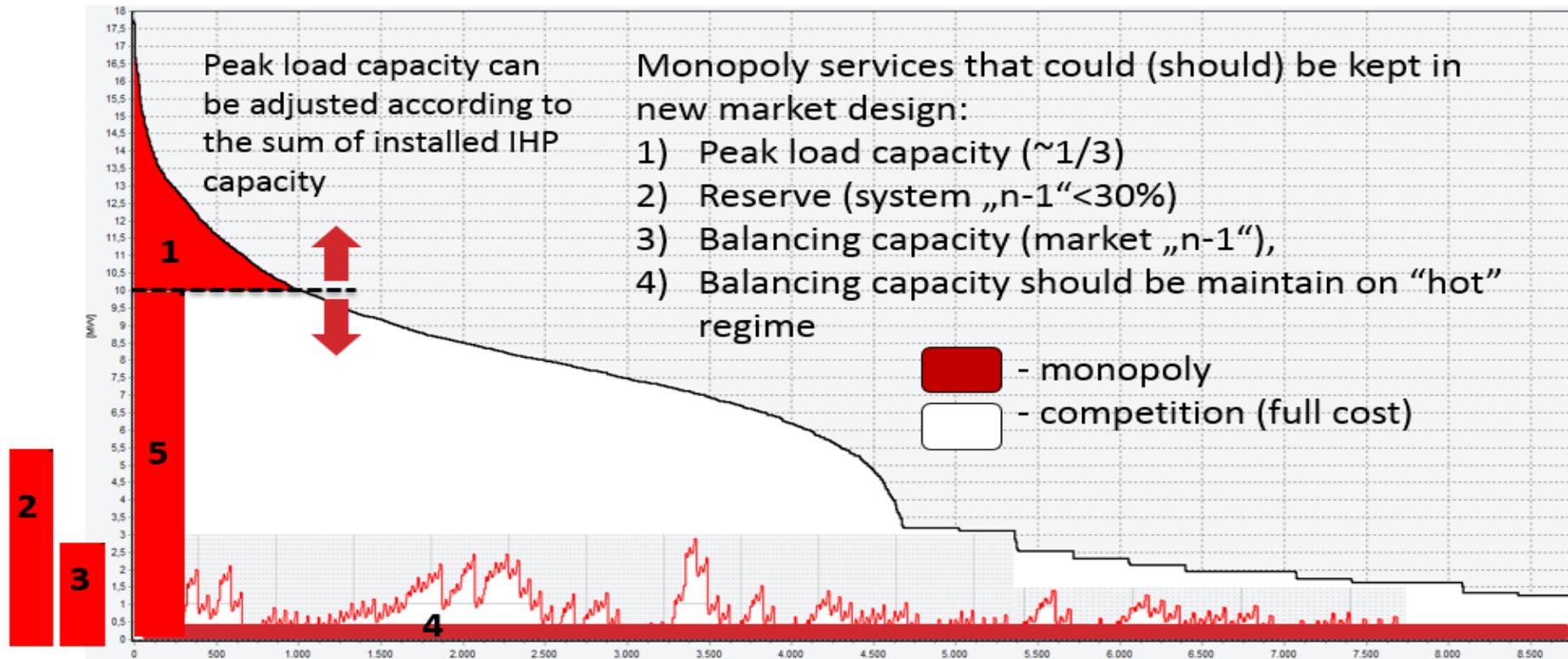


Figure 5 Design model of fully liberalized DH generation market

Results and Conclusions

Conclusions:

- DH competition transformation is possible and delivers benefit to final consumers, numbering to mill EUR annually;
- Transition implemented in phased approach ensures security of supply, albeit may be considered as discriminatory approach;
- Three major conditions were decisive:
 - dependability on gas;
 - high gas prices;
 - potential of alternatives.

Discussion:

- Long lasted theoretical discussions considering possible (or not) competition in DH now has a real case: pros and cons;
- Analysis of Stakeholders positions;
- Lessons learned from the process and recommendations for the reform replicability.

Thank you !

