



REPUBLIC OF ESTONIA
COMPETITION AUTHORITY

Main developments of District Heating in Estonia

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Regulation and legislation (1)

- ❑ Until 1998 soft type of price regulation by local municipalities
 - had no uniform and transparent rules
- ❑ 1998 introduction of energy act.

Establishment of the national price regulator - Energy Market Inspectorate, which is called today Competition Authority (CA)

- Ex-ante type of price regulation for all DH companies.
- Annual sales more than 50 000 MWh – regulated by Energy Market Inspectorate
- the rest - by local municipalities.

Regulation and legislation (2)

- **2003** District Heating Act was entered into force
 - the price regulation did not change;
 - the local municipalities got the right to establish DH zones;
 - DH companys have granted the exclusive right, without detailed energy planning, to be in natural monopoly status.
- **2010** DH Act was changed
 - all DH prices are regulated by the CA.

Key figures of heating sector

<u>TWh in year</u>	2000	2012	2014	Change comp. 2000
Total heat generation	9,8	9,6	8,9	
CHP	3,8	3,8	4,1	0-8%
Heat-only boilers	6,0	5,8	4,8	-3% -20%
Total heat consumption	8,5	8,6	8,0	
DH consumption	7,4	6,8	6,1	-8% -18%
Householders	4,4	4,0	3,5	-9% -20%

- the consumption of DH and householders has decreased
- heat which is generated in heat-only boilers has replaced by heat generated in CHP-s

Obligation to coordinate heat price by CA – when ?

- companies which **produce heat** in CHP or in heat-only boilers **and sell this heat to customers** (or to a DH network operator) must obtain the approval of maximum price of heat by CA.

„**customer**“ means a person who buys heat distributed **through a DH network**

CA does not regulate the price of heat, which is produced in cogeneration process (CHP) or in heat-only boilers and sold directly to the customer **without using the DH Network.**

Regulated companies today

- there are ca 200 DH companies under regulation of CA:
 - integrated: generation + network (~160) (the most companies are integrated)
 - only heat producers (32)
 - only network operators (9)

One company could have more than one DH area.

The total number of regulated companies which produce and/or distribute heat is 84.

Problem - too many small networks

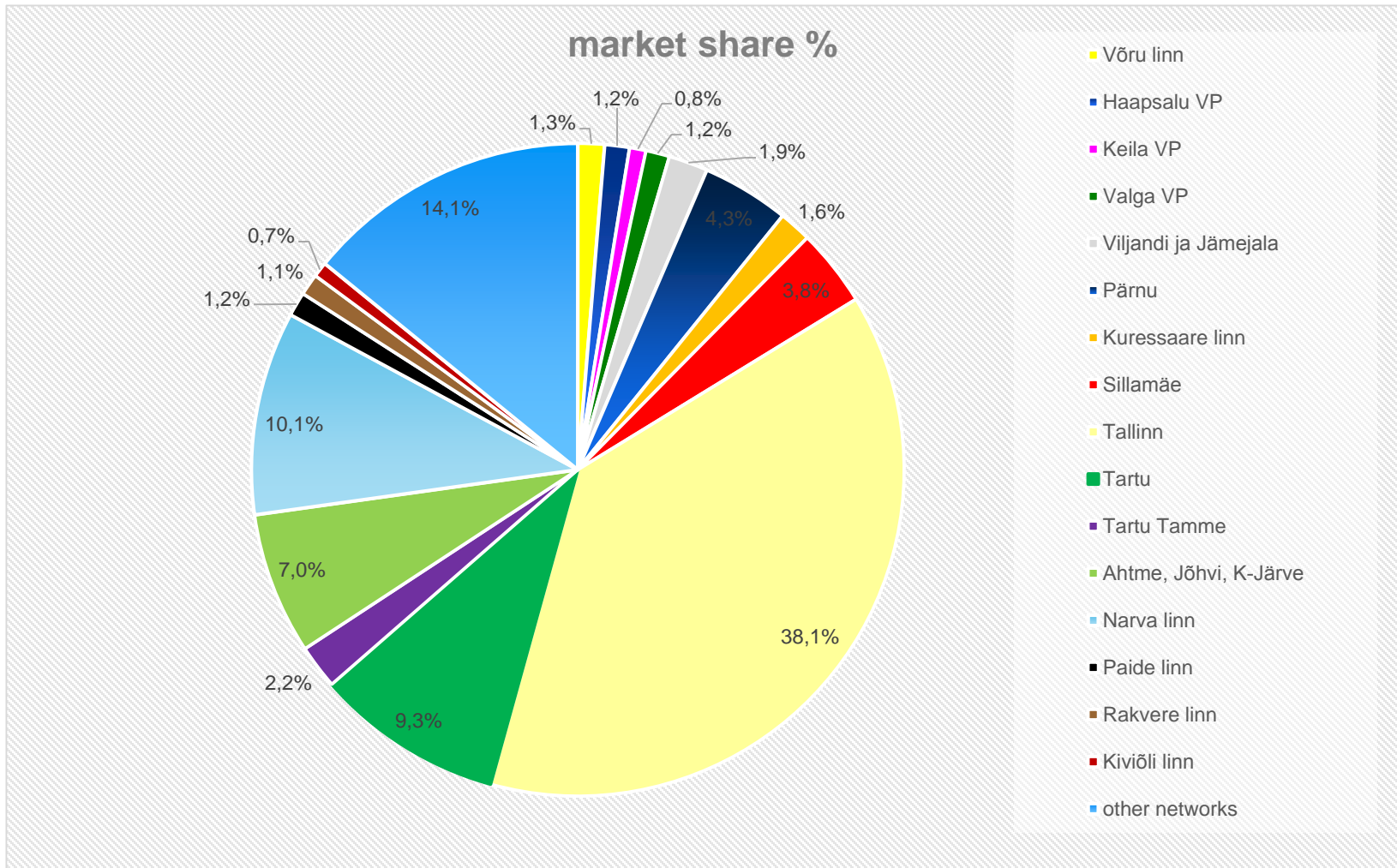
Annual sales:

- more than 30 000 MWh 16 networks.
- between 5 000 and 30 000 MWh 27 networks.
- less than 5 000 MWh ~130 networks.

CA regulates ~150 networks which summarized market share is only 14%.

Market share of companies who own 16 networks is 86%.

Market shares of companies regulated by CA



Strong direction to the efficiency (1)

A number of DH companies are with low energy efficiency. Losses in the networks are up to 30%.

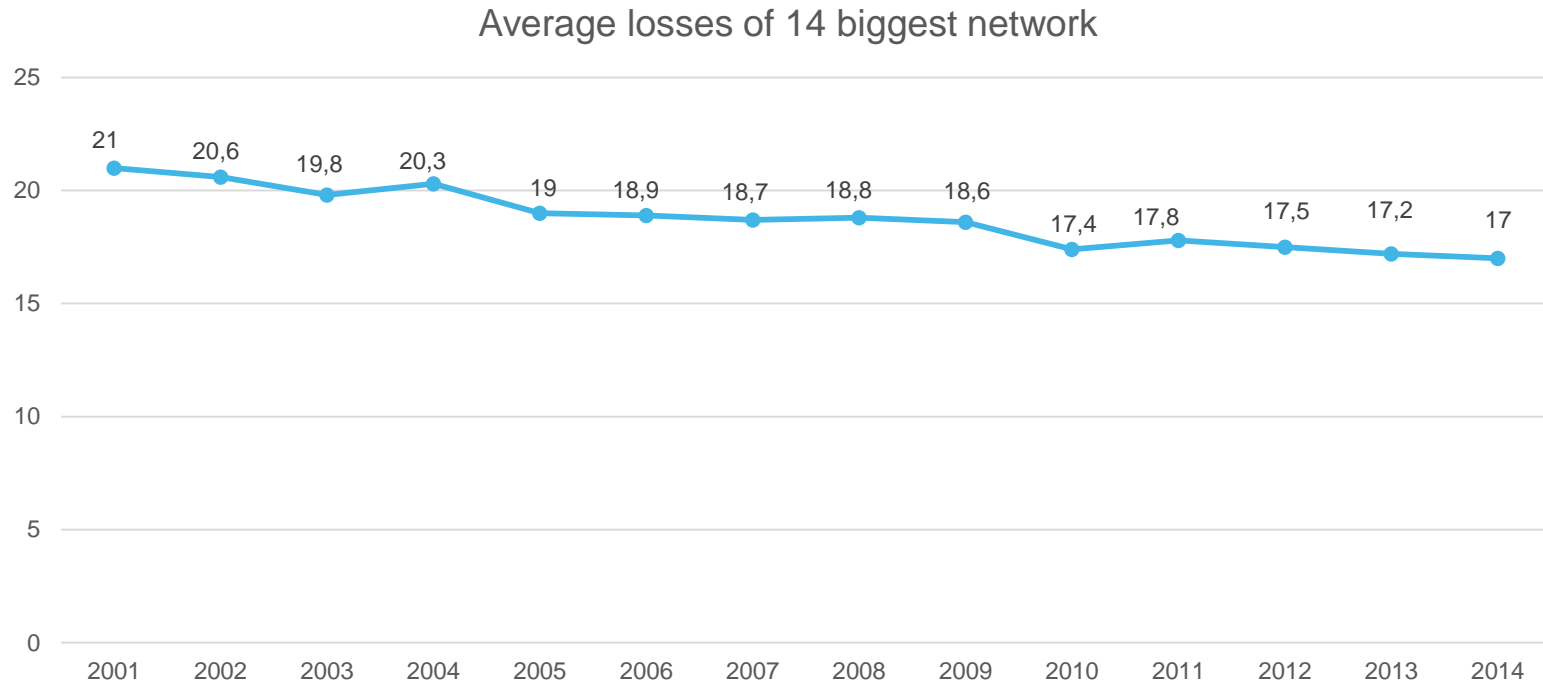
➤ Clear targets set for network efficiency:

2011.	21%
2012.	20%
2013.	19%
2014.	18%
2015.	17%
2016.	16%

The maximum network losses 15% by 2017.

Network losses generally have decreased because of high investments.

Network losses



Losses 2001: 958 GWh 2014: 678 GWh.
Network losses have reduced 280 GWh.

Strong direction to the efficiency (2)

➤ Energy efficiency for heat generation

Natural gas 92%

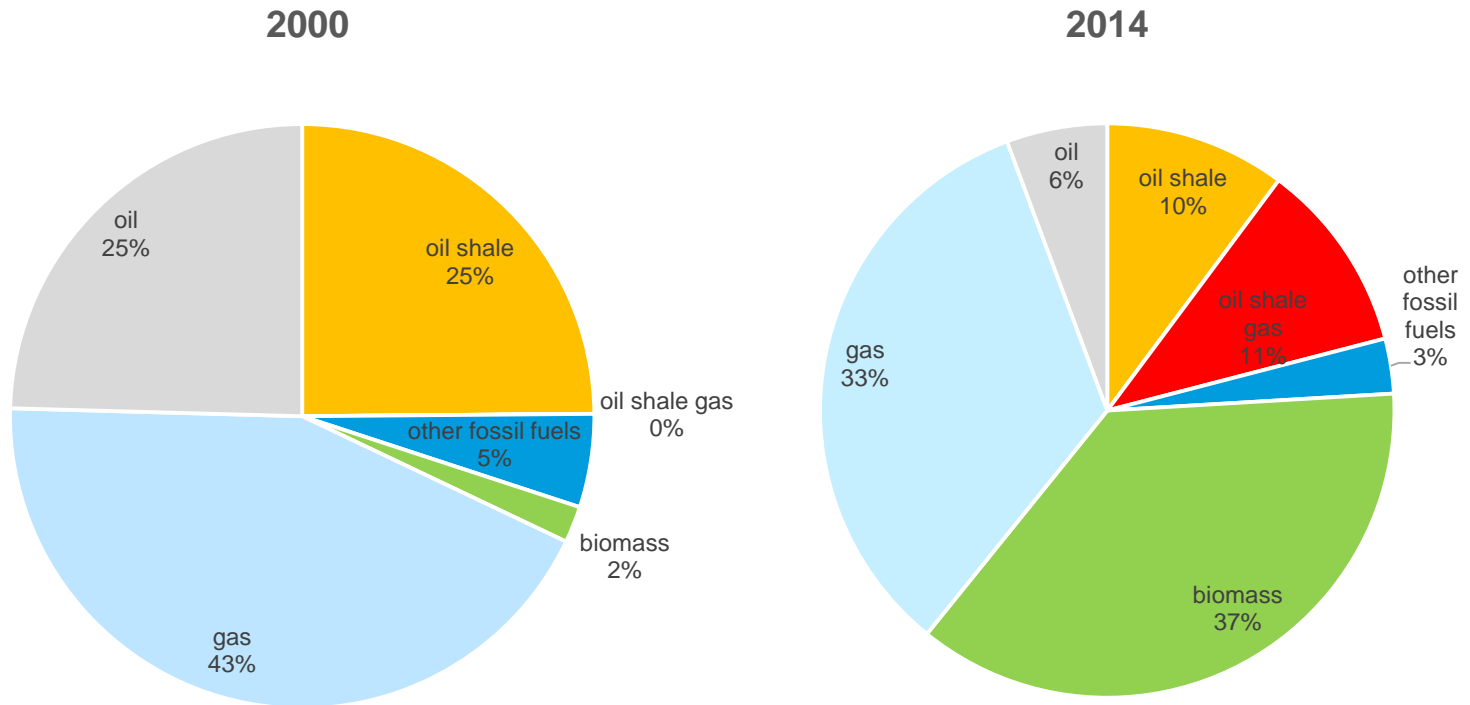
Fuel oil 90%

Solid fuels 85% (grate burning boilers)
90% (fluidized bed technology)

- ✓ Have made / are making investments in boiler houses to change fuel type.
- ✓ Have increased heat share which is generated in CHP-s.

Fuels used in heating sector

THE SHARES OF USING FOSSIL FUELS AND GAS HAVE REDUCED AND ARE REPLACED BY USING BIOMASS AND PRODUCTION RESIDUES



Main developments in last years

□ Sales prices of heat have generally been dropped because of

- lower fuel prices;

- investments made to change the fuel type (more expensive fuel has replaced to cheaper);

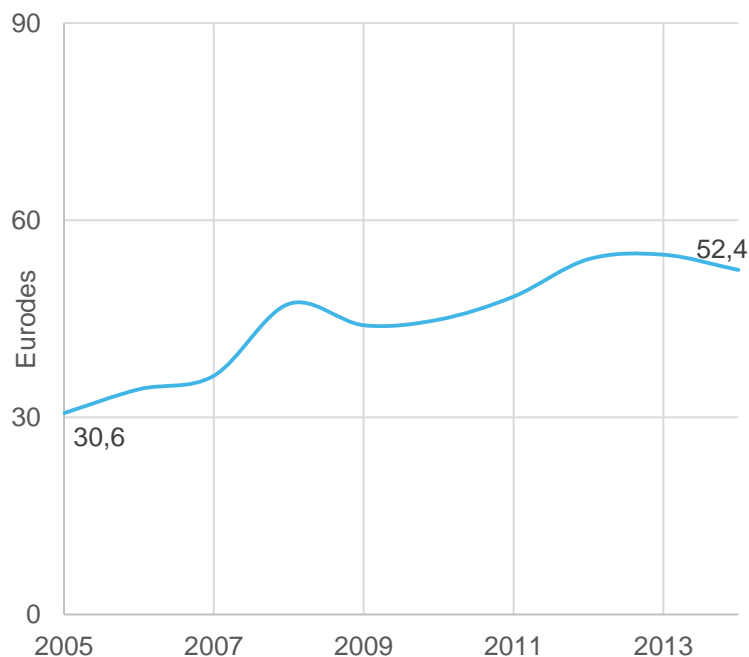
- investments made to reduce the network losses;

These investments are mainly supported by EU money (such supports CA don't allow to include to the heat price);

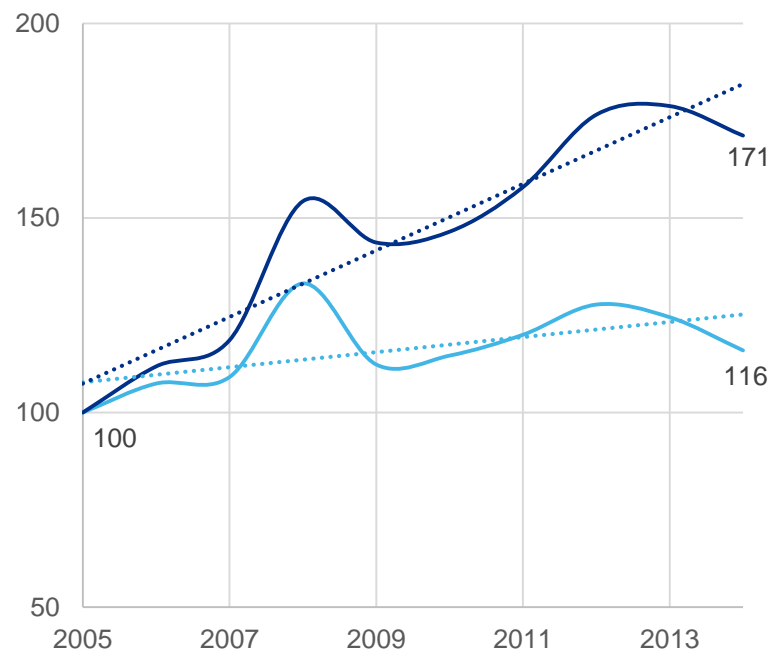
- cost saving targets for operational costs are met.

Change of average heat cap-prices

Average heat cap-price approved by CA (for 11 biggest companies)



approved cap-price change (71%) vs change in real prices (16%)



— hindade reaalne protsentuaalne muutus
— kooskõlastatud hindade protsentuaalne muutus

Lessons learned

- The DH sector is overregulated.
- The market could be open:
 - No DH zoning
 - ex-post price control
- In smaller places DH is not always the best heating solution
 - low sales volume and consumption density
 - old equipment, low efficiency
 - high network losses
 - high sales prices (mainly used shale oil and gas)

Future plans – amendments

2016 New DH Act draft.

Amendments to the DH Act

- ▣ Fixing of reference tariff to the whole country.
- If the company is able to sell heat below or with reference tariff, there is no price control for him.
- Undertakings, which are unable to sell heat with reference price need to have their maximum heat price approved by the CA.

New DH draft act.

Is planned enter into force on 1.07.2016

- Less regulation and administrative work.
- Reference price is based on bottom up LRAIC model.

Modelling an effective DH system: an ideal boiler-house with an ideal DH network, which uses modern and optimal technological solutions that would ensure production of heat with the least expensive fuel, and distribution of heat via an efficiently functioning network.



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Thank You!

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