



Benchmarking in the Danish heating sector

Anders Hasselager
Senior Policy Advisor
Kiev, 15 June 2016



Danish Energy
Agency



Danish District Heating

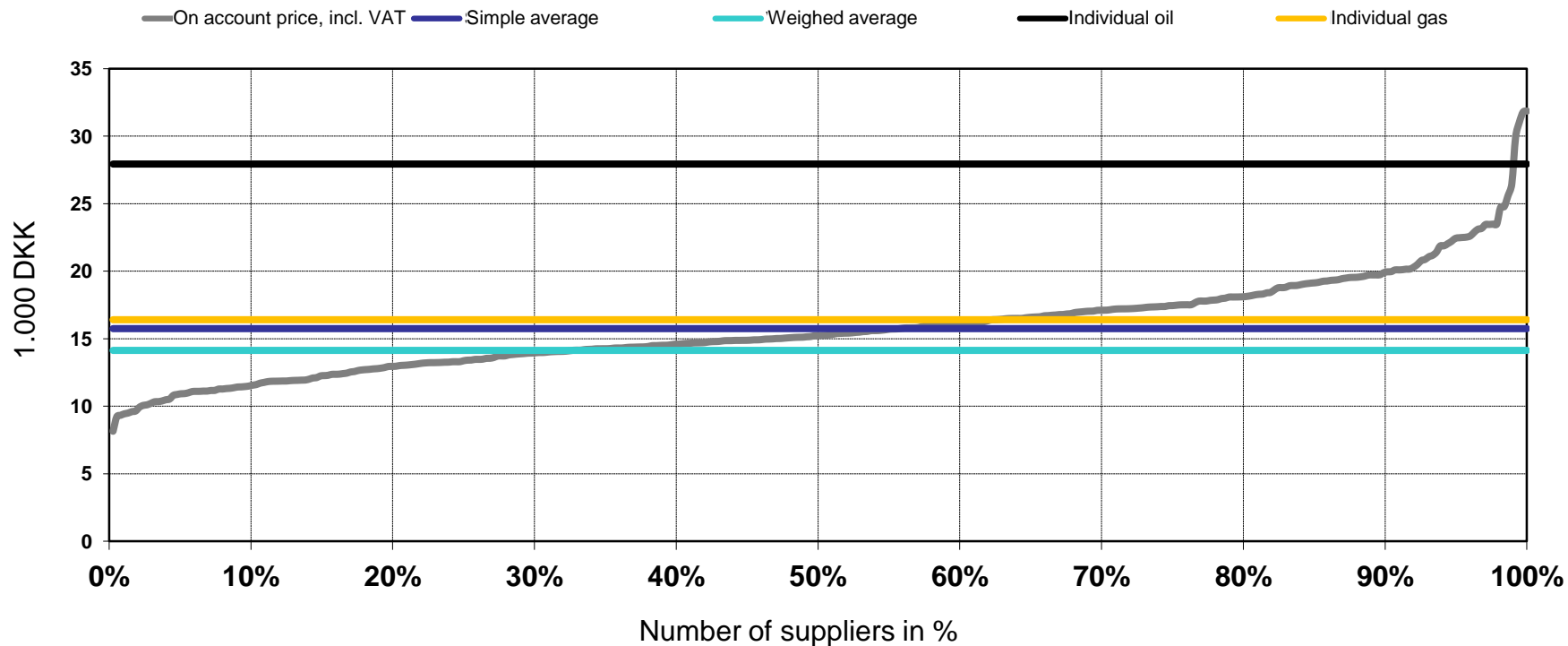
Please remember

- The heating sector is a monopoly and under political control.
- Heating tariffs must reflect the true costs for production, distribution and consumption.
- All Danish house owners do not pay same tariffs for heat



District heating prices, incl. VAT 2014

On account prices 376 suppliers (18,1 MWh, 130 m2 standard house)



House size: 130 m³ – 18,1 MWh/y.
Oil price average first nine months 2013
Gas price first six months 2013
Degrees of efficiency: Oil 85 %, N-gas 95 %, no depreciation

Why do we use benchmarking

- Compare consumer prices and expenditures for district heating companies (Performance of DH-company)
- To fulfil requirement mentioned in Heat Supply Act and Financial Statement Act.



Who do the Benchmarking

- The Danish yearly benchmarking survey is made by the District Heating Association which make a standard account plan
- The Danish national energy and competitions authorities are not involved in the benchmarking survey
- Today it is voluntary for the DH-companies to participate in benchmarking activities.

What do we benchmark!

- 3 main accounts
 - **Production figures**
 - **Distribution figures**
 - **Administration figures**



Accounts for Production

- Clear definitions of content
- All expenditures for production of heat including
 - All types of fuels (volume and value)
 - Electricity consumption
 - Internal distributions within heat plant area
 - Accumulation of heat
 - Heat exchanger to distribution net
 - Salaries for working in production
 - Depreciation of plant/grid investments

Accounts for Distribution

- Clear definition of content
- All costs ab heat exchanger at the DH-plant to heat exchanger at the consumer including:
 - Pumps and water treatment
 - Electricity for running the distribution net
 - Maintenance costs
 - Salaries for workers at the distribution net
 - Heat metering systems at the consumers/households

Accounts for Administration

- Clear definition of content
- All cost for the overall administration including
 - Administration of the plant and outdoor areas.
 - All consumer accounting systems
 - Guide to energy savings in households
 - PSO administration and development of DH-systems
 - Salaries to management
- Splitted accounts (transport, meeting expenditures etc.)

Benchmarking reports

1 Benchmarking		Internal heatloss					Energy consumption for heat production					
2 Heat plant	Density of Consumers (MWh delivered pr. m3)	Production. MWh	Delivery on net	Internal heat loss	Heat-loss in % of heat production	Oil MWh	Gas MWh	Wood pellets MWh	Straw MWh	Wood chips MWh	Biogas MWh	Solar MWh
118	KJELLERUP FJERNVARME	1,5		50.759			230			51.330		
119	KONGERSLEV FJERNVARMEVÆRK A.M.B.A.										13.068	
120	KVÆRNDRUP FJERNVARME A.M.B.A.	0,9		16.236					16.236			
121	LANGÅ VARMEVÆRK A.M.B.A.	1,5	28.186	20.439	7.747	27,5%						
122	LAURBJERG KRAFTVARMEVÆRK	1,1	3.348	7.911							4.726	
123	LEM VARMEVÆRK	2,2	45.642	44.678	964	2,1%		10.449		35.146		
124	LEMVIG VARMEVÆRK A.M.B.A.	1,0		78.252			126		500	51.107	16.410	
125	LYSTRUP FJERNVARME A.M.B.A.	1,2	85.616	85.616								
126	LØGSTRUP VARMEVÆRK A.M.B.A.	0,9	14.527	14.171	356	2,5%		3.691				
127	LØGSTØR FJERNVARMEVÆRK A.M.B.A.	1,1		84.194					16.697	46.459		6.789
128	LØGUMKLOSTER FJERNVARME A.M.B.A.	1,0	34.222	29.711	4.511	13,2%						
129	LØKKEN VARMEVÆRK A.M.B.A.	1,2	27.507	27.507					2.372	25.639		

Benchmarking results

- The average expenditures for a district heating company
 - 70% - Fuels
 - 25% - Production and distribution
 - 5% - Administration



- Latest Danish Energy Regulator cost report:
http://energitilsynet.dk/fileadmin/Filer/Engelsk/Results_and_Challenges_2015.pdf