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Energyplanning in Roskilde Municipality

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Groundwork

Realising the potential for energy savings

Conversion to more renewable energy.

Promoting transition to a more flexible energy

Less energy

More renewable energy



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Headlines Strategic Energiplan 2015-20

Kommunen som virksomhed

Ejer/medejer af forsynings- og transportselskaber

Myndighed

Partnerskaber og facilitering

Oplysning af borgere

STIGENDE GRAD AF INDFLYDELSE

District Heat project

District heat in small villages

District heat in suburban areas (central system)

District heat in new areas

Energy production

Solar heat with heat storage (100 -300.000 m³)

Large heat pump in district heat (wind to heat)

Solar fields

Wind turbines in collaboration with citizens

District heat energy companies (own by municipality / ies)

Cooperation with:

Utility – district heat/ RE /

Heat plant based on garbage (electricity/heat)

Transmission



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Strategic Energyplan

Status:

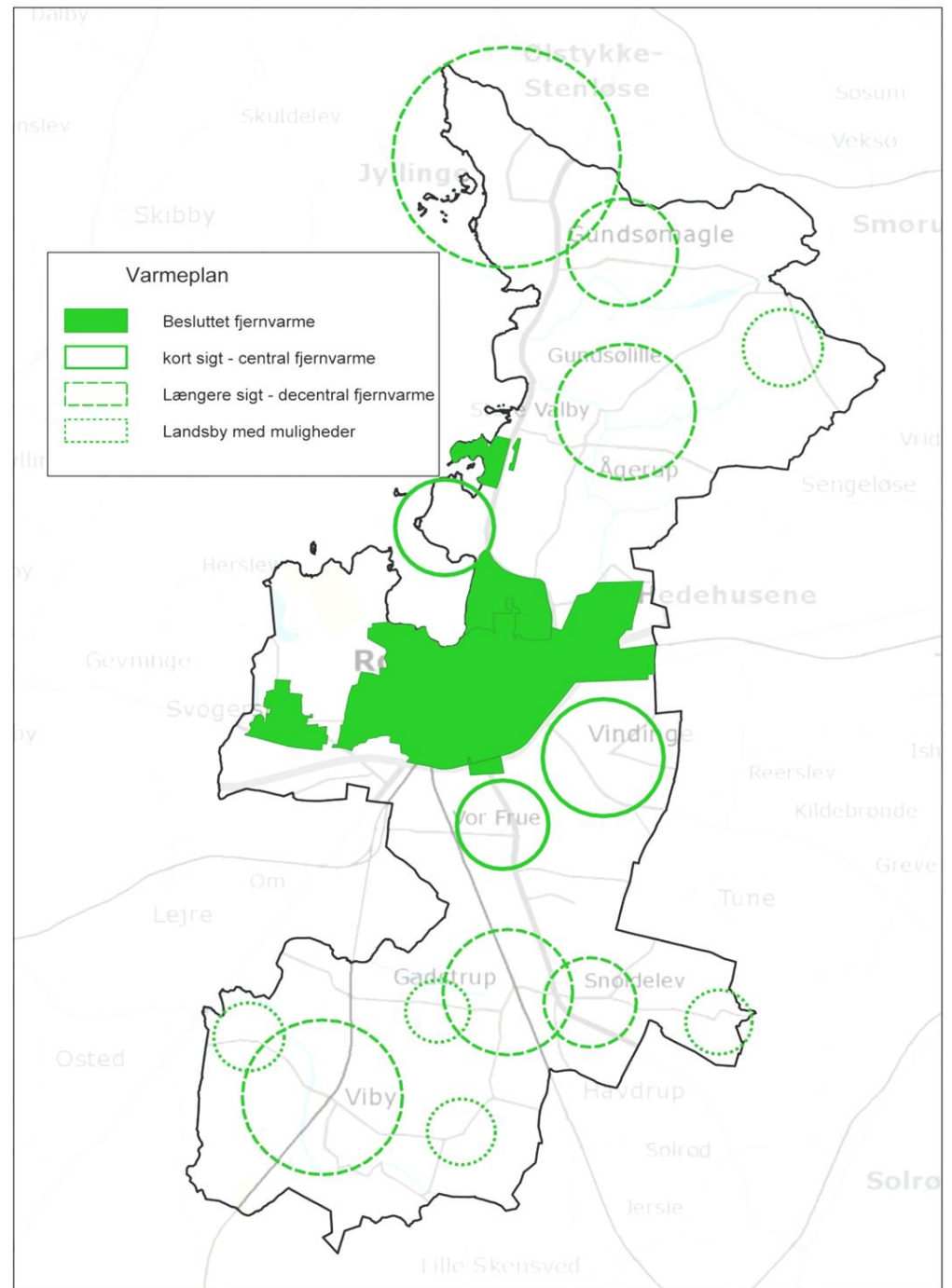
District heat in i Roskilde og Svogerslev

3 Gas supply areas close to DH

5 Gas supply far from DH

18 villages with oil and electricity

Single houses



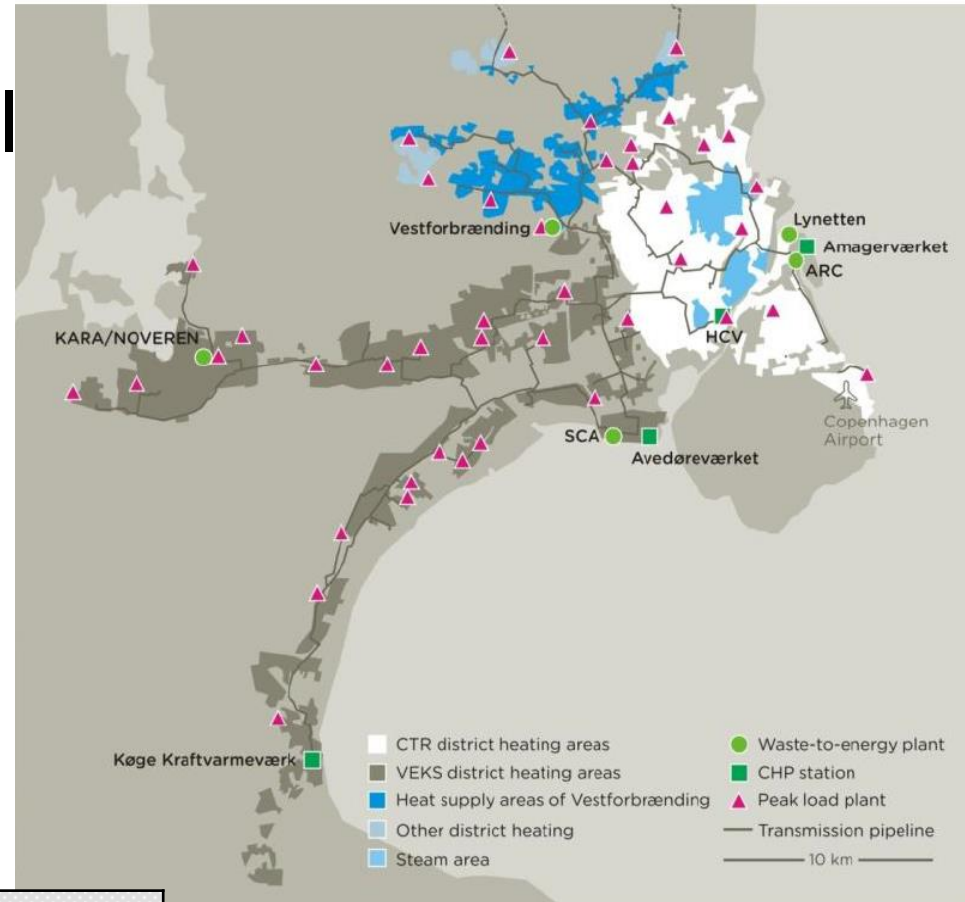


Municipal/Joint municipal energy companies

Waste company **KARA / NOVEREN** Producing electricity and district heating

VEKS transmits district heating from **KARA** and others in the central district heating system - communal pool price from production plants

Roskilde Utilities (Fors) buys heat from **VEKS** and sells district heating to customers (citizens)

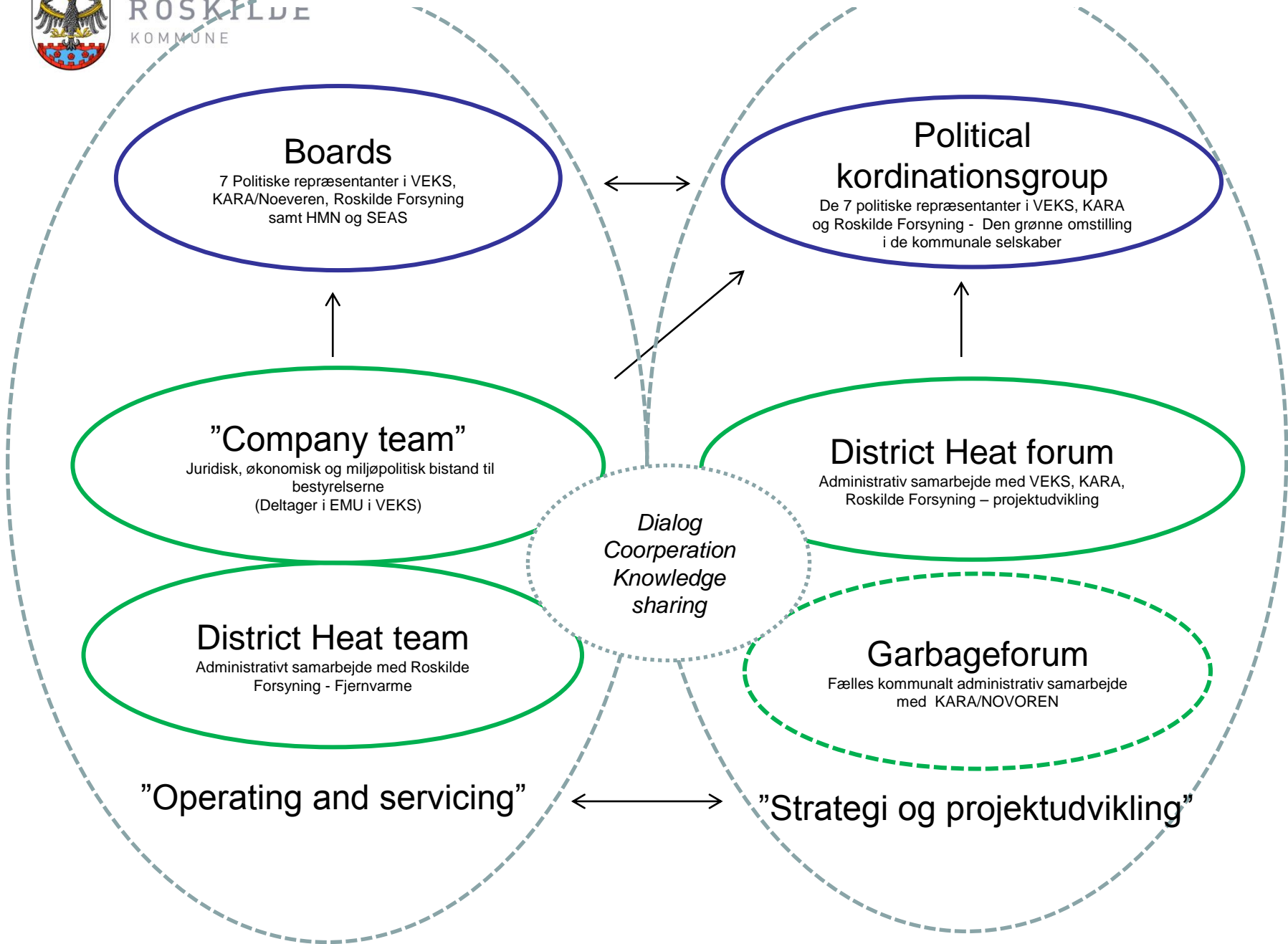


Company	Corporate form	Turnover
Roskilde Utility	Holding	32 mio. euro
VEKS	General partnership	124 mio. euro
Kara/Noveren	General partnership	578 mio. euro



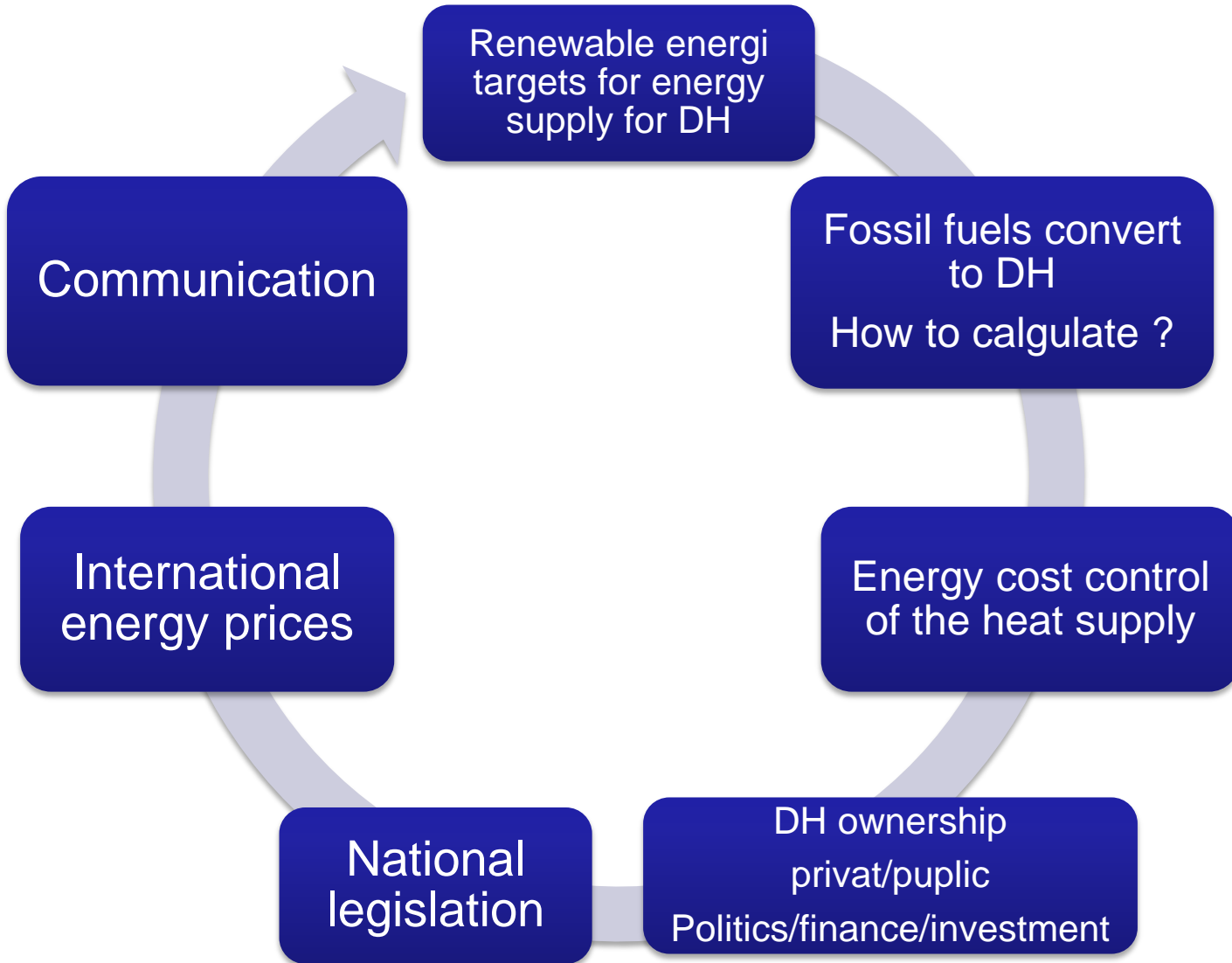
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Political/administrative organization energy sector





Big Picture





DH in small villages

As homeowners :

- Fixed price over many years
- Fast heat supply that is future-proof
- All costs are in the current heat price.
- No contingencies for reinvestment , service / maintenance.
- No time spent on individual heat.
- Faster resale.
- Modified heating comfort

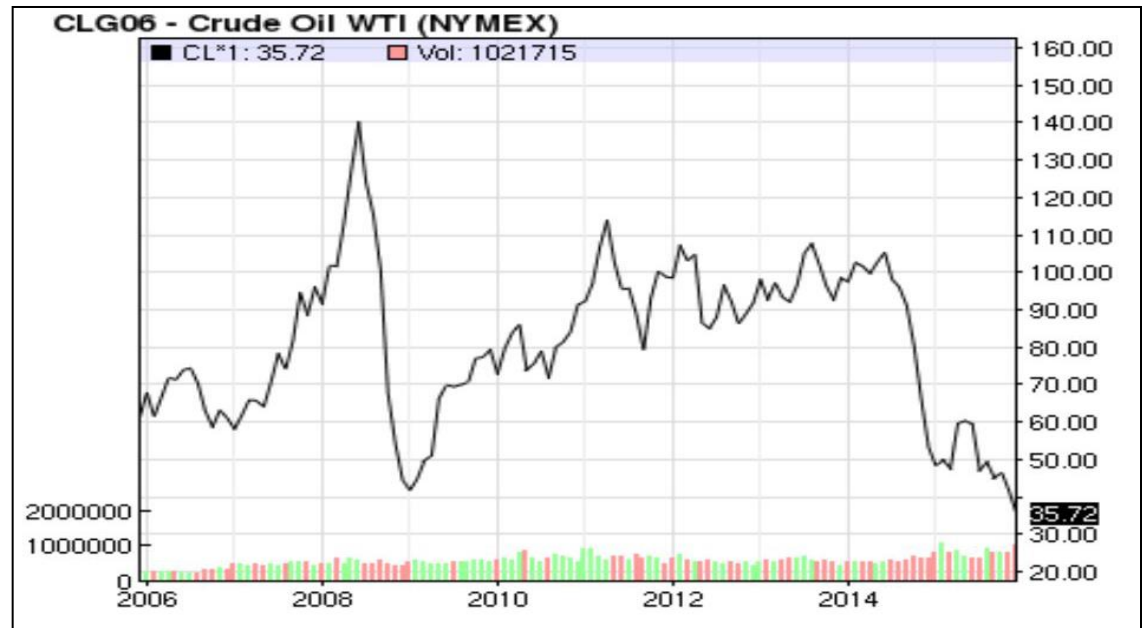
As village:

- The annual energy spending goes to investment in the village (infrastructure).
- Along with the investment opens up new possibilities for energy solar / electric etc .
- There must be serious decisions along the way - enhanced Community.

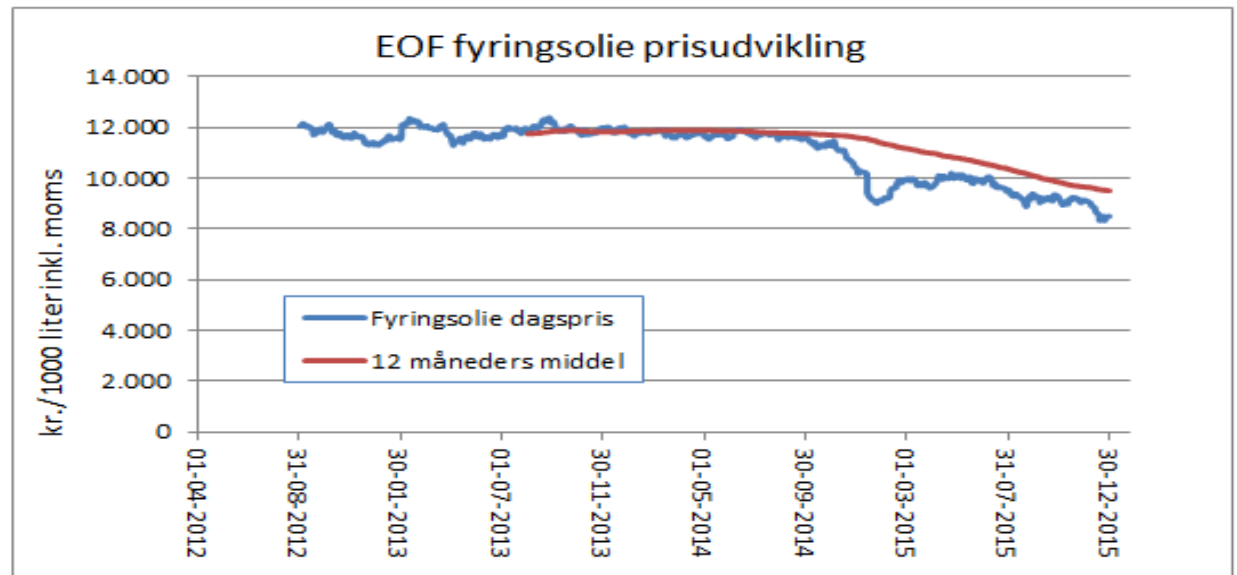


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International market
development for
oil **without** duties and VAT.



National market
development for electricity
prices **with** taxes and VAT
about 50%.





Økonomiske modeller

Fjv.kunde inkl. moms kr. pr. år	Ramsømagle			Snoldelev-Hastrup			Ørsted		
	60%	80%	100%	60%	80%	100%	60%	80%	100%
A Halmkedel	27.942	24.163	22.037	26.288	22.896	21.382	22.385	19.967	18.821
B Træpillekedel	28.968	26.039	24.426	28.634	25.772	24.600	24.771	22.890	22.074
C Træfliskedel	26.542	23.082	21.138	25.213	22.049	20.683	21.385	19.203	18.194
D Pille+VP	28.485	25.488	23.831	28.006	25.107	23.910	24.154	22.234	21.393

Basisrente + garantiprovision 2,63%
Løbetid, år 30 år

Fjv.kunde kr. pr. år inkl. moms	Ramsømagle			Snoldelev-Hastrup			Ørsted		
	60%	80%	100%	60%	80%	100%	60%	80%	100%
A Halmkedel	20.753	18.209	16.764	19.592	17.355	16.290	17.248	15.574	14.733
B Træpillekedel	23.056	21.079	19.975	22.929	21.007	20.144	20.547	19.198	18.557
C Træfliskedel	19.987	17.615	16.268	19.001	16.887	15.901	16.697	15.150	14.384
D Pille +VP	22.275	20.223	19.071	21.964	20.009	19.125	19.605	18.221	17.557

Basisrente + garantiprovision 2,63%
5 års afdragsfrihed....

Individuelt kr. pr. år	
Oliefyr	21.705
Oliefyr m/investering	23.582
Jordvarme	25.055
L/v-varmpumpe	23.190
Træpillefyr	23.198



What determines the final price of district heat?

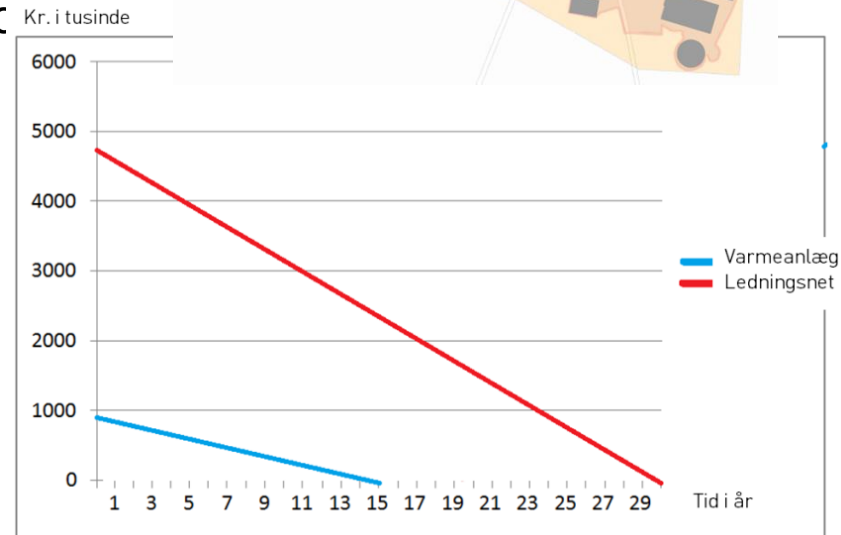
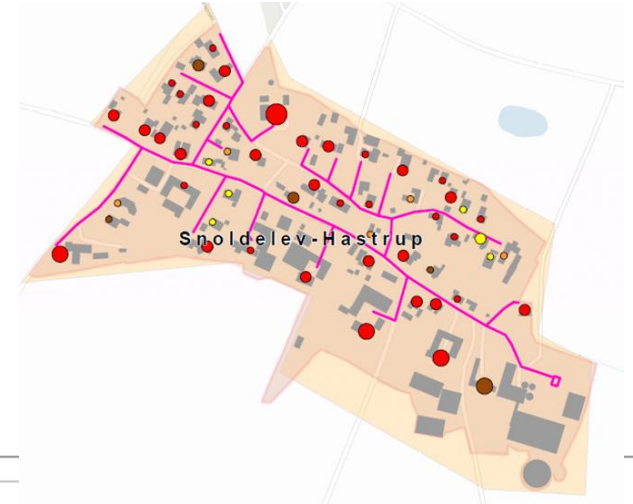
Connecting degree, how many will

Construction costs / pit work / location

The price structure - fixed tariff / consumptic

Interest rates and repayment periods.

Any taxes on biomass





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