



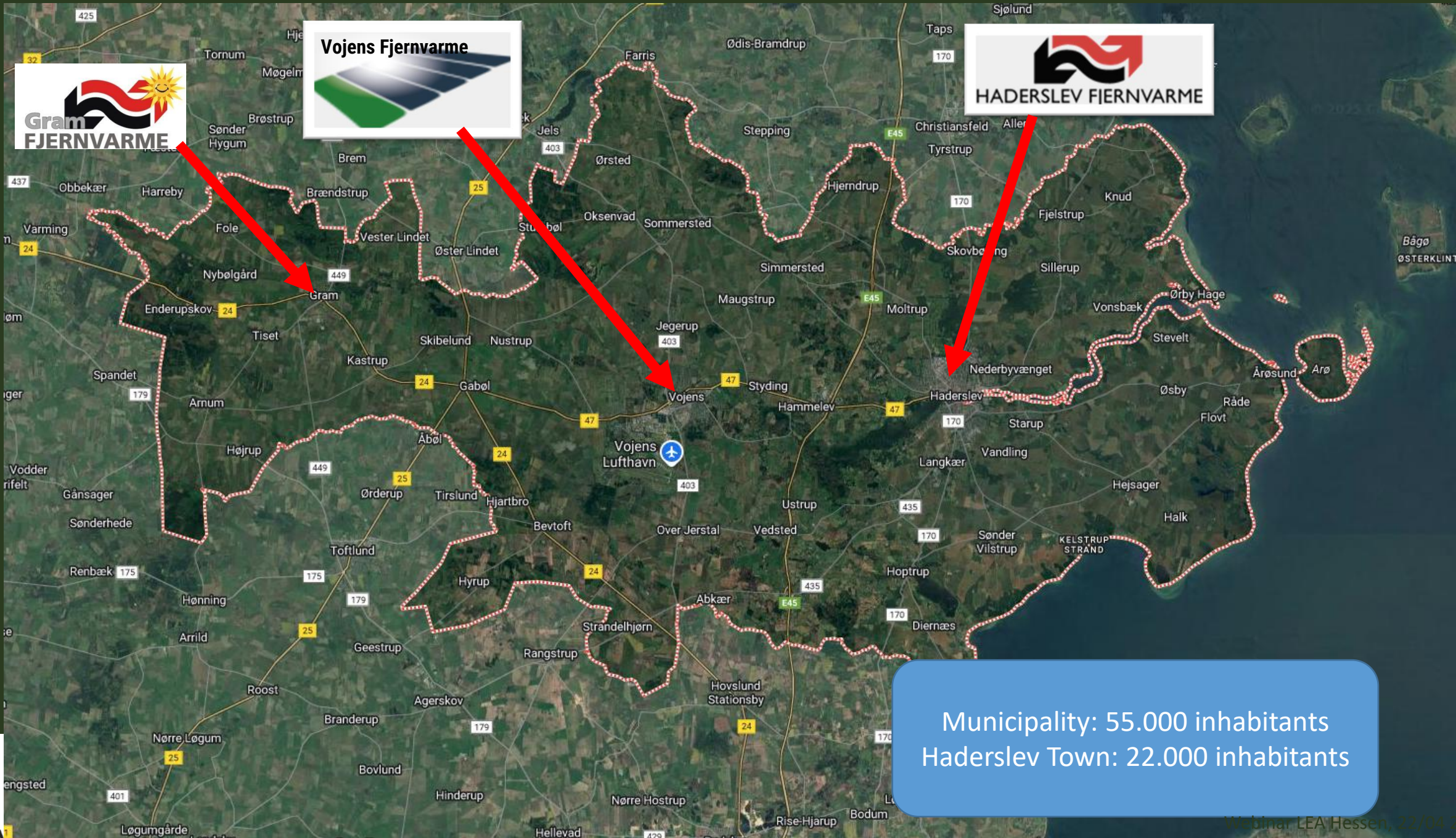
# District heating in Haderslev

Peter Skovsgaard, Haderslev Fjernvarme

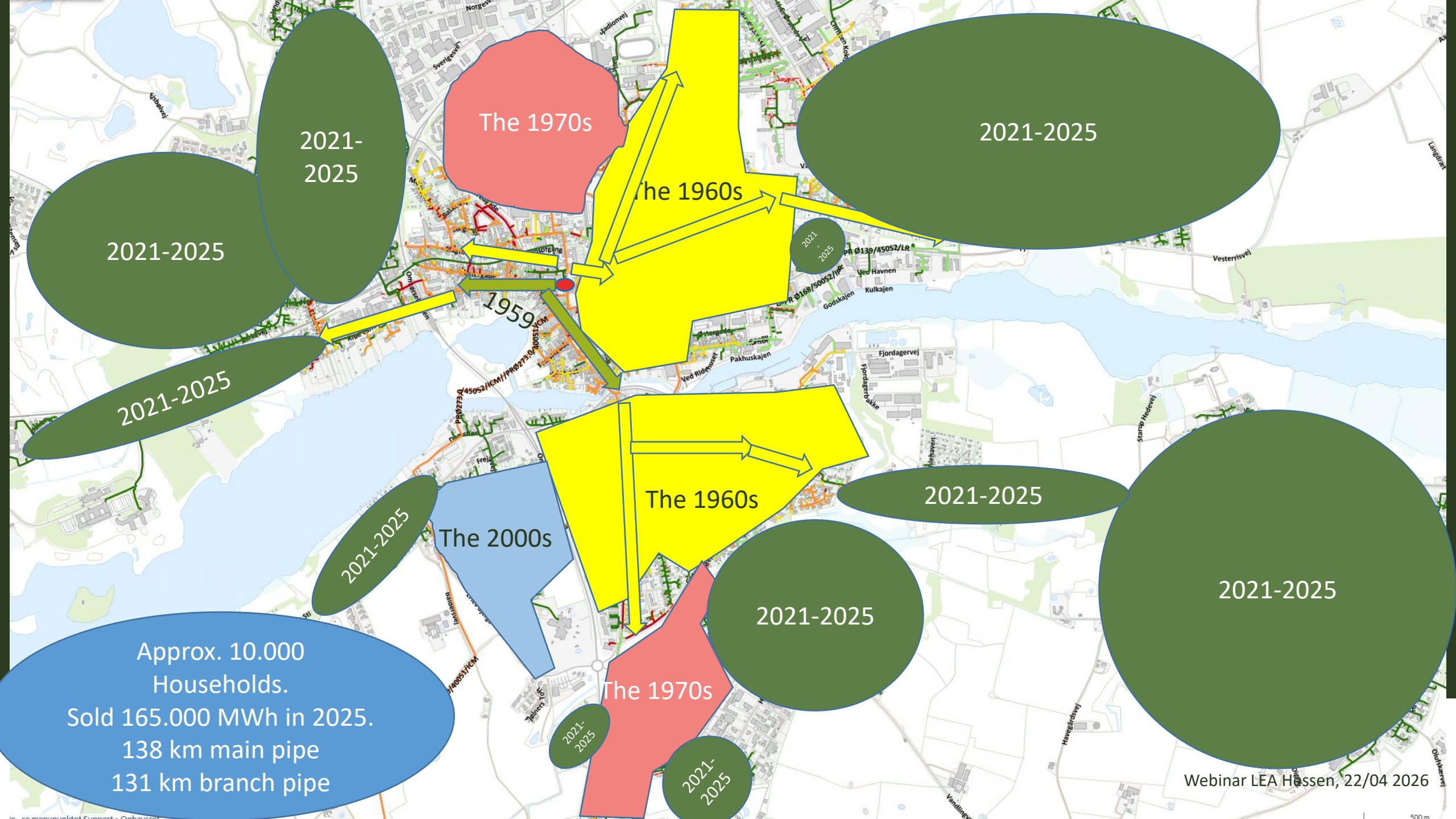




Vojens Fjernvarme



Municipality: 55.000 inhabitants  
Haderslev Town: 22.000 inhabitants



The 1970s

The 1960s

2021-2025

2021-2025

2021-2025

2021-2025

1959

The 1960s

2021-2025

The 2000s

2021-2025

The 1970s

2021-2025

2021-2025

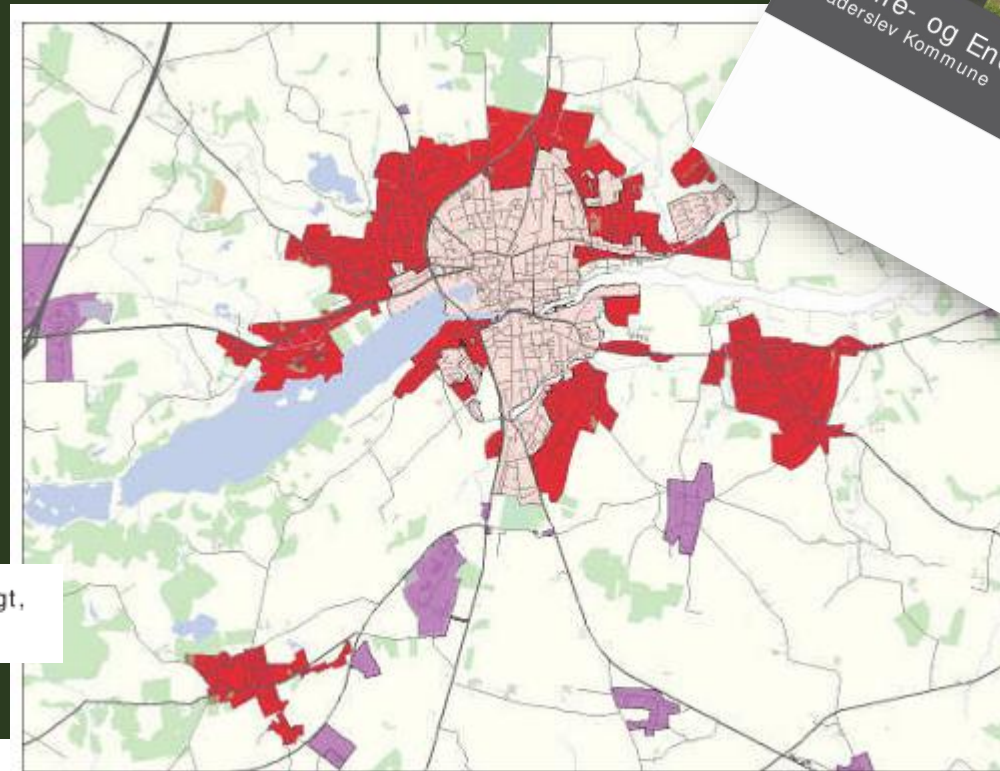
Approx. 10.000  
Households.  
Sold 165.000 MWh in 2025.  
138 km main pipe  
131 km branch pipe

# Heatplan 2014

Conclusion:

*“Haderslev Municipality recommends that Haderslev District Heating, as far as possible, prepare project proposals for the conversion of these areas.”*

Haderslev Kommune anbefaler, at Haderslev Fjernvarme, så vidt det er muligt, udarbejder projektforslag for konvertering af disse områder.



Figur 27. Potentielle konverteringsområder (rød) i Haderslev.

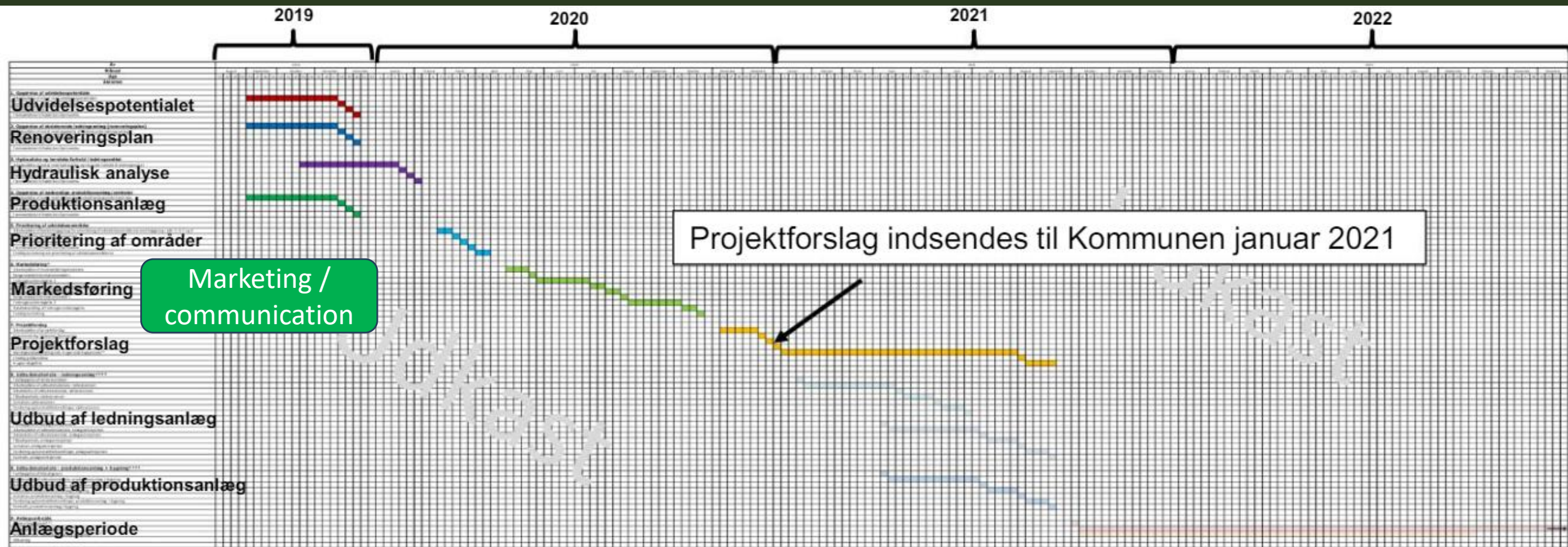


# Other political initiatives (2018-2020)

- Political decision: from 1/1 2021 we don't have to pay compensation to the gascompany
- Subsidy for District Heating or individual heatpumps. (Depending on which area the house is in)
- Still taxes on oil and gas
- Climate debate played a major role in the 2019 election campaign for Parliament



# Timetable – calculated backwards

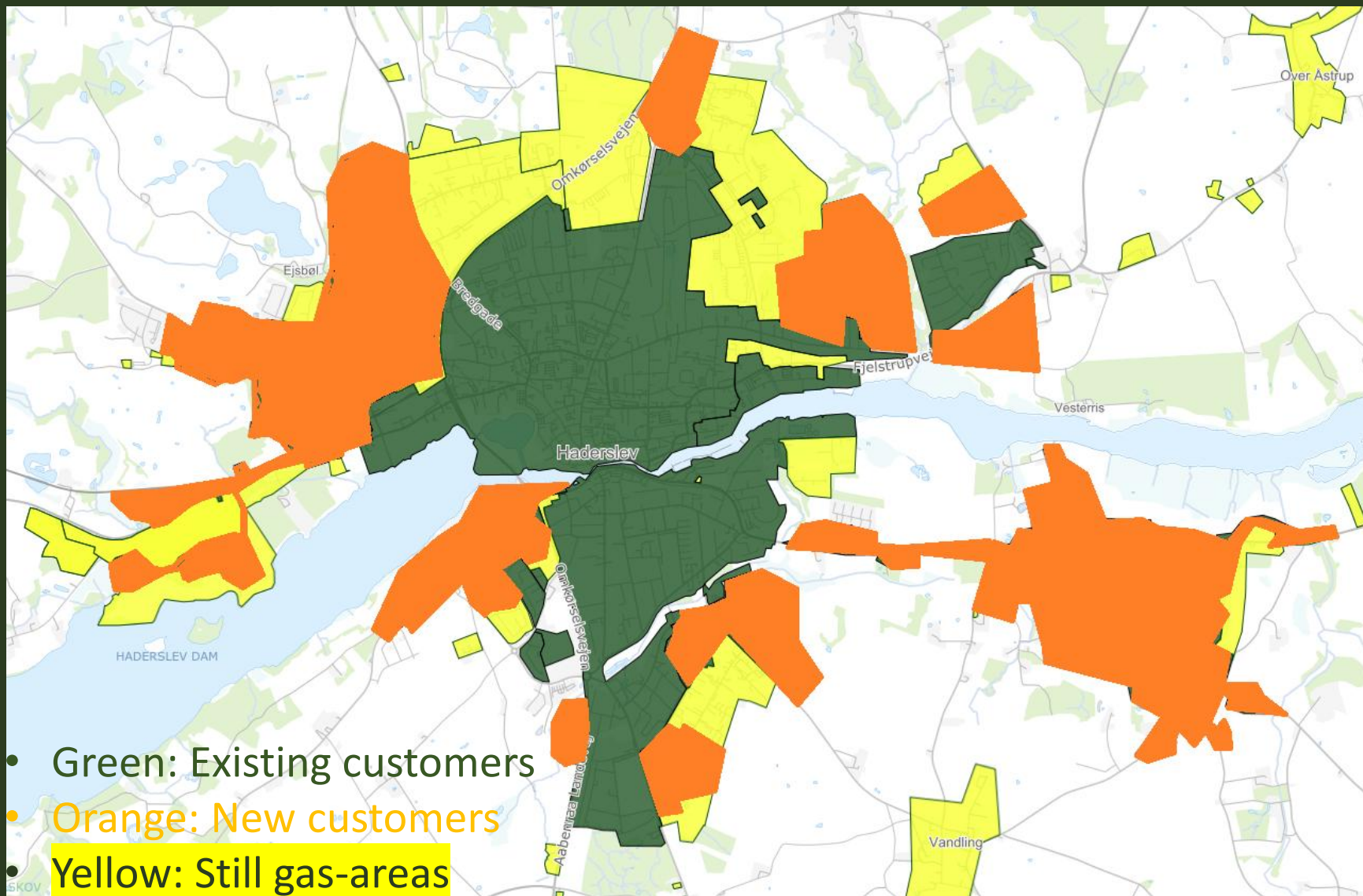


# Phases (planned august 2019)

- 1. Calculate the potential of new customers converted from gas
- 2. Looking at our existing heatingnetwork – age, breaks (renovation plan)
- 3. Hydraulic and thermal conditions in the heatingnetwork
- 4. Calculate necessary productionfacilities
- 5. Prioritization of which areas to go to first
- 6. Marketing
- 7. Projectproposal to the municipality
- 8. Tender material – pipes
- 8. Tender material – production and buildings
- 9. Constructing period

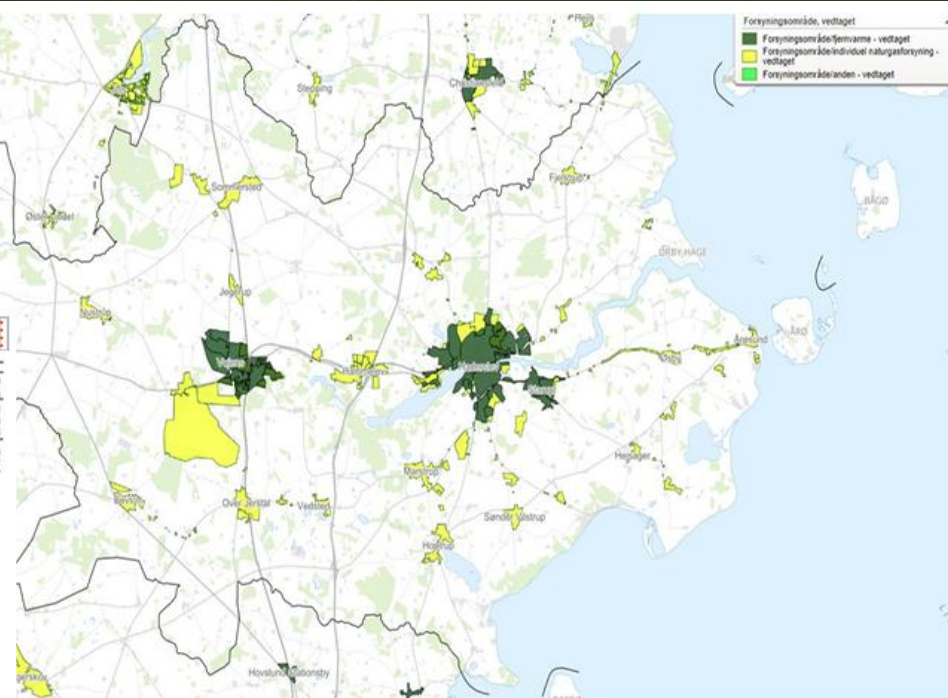


- 3.300 new customers
- 5 years (2021-2025)
- 680 mio. DKK.  
(91.000.000 EUR)  
including production  
(11 MW heatpump and  
15 MW electrical  
boiler)

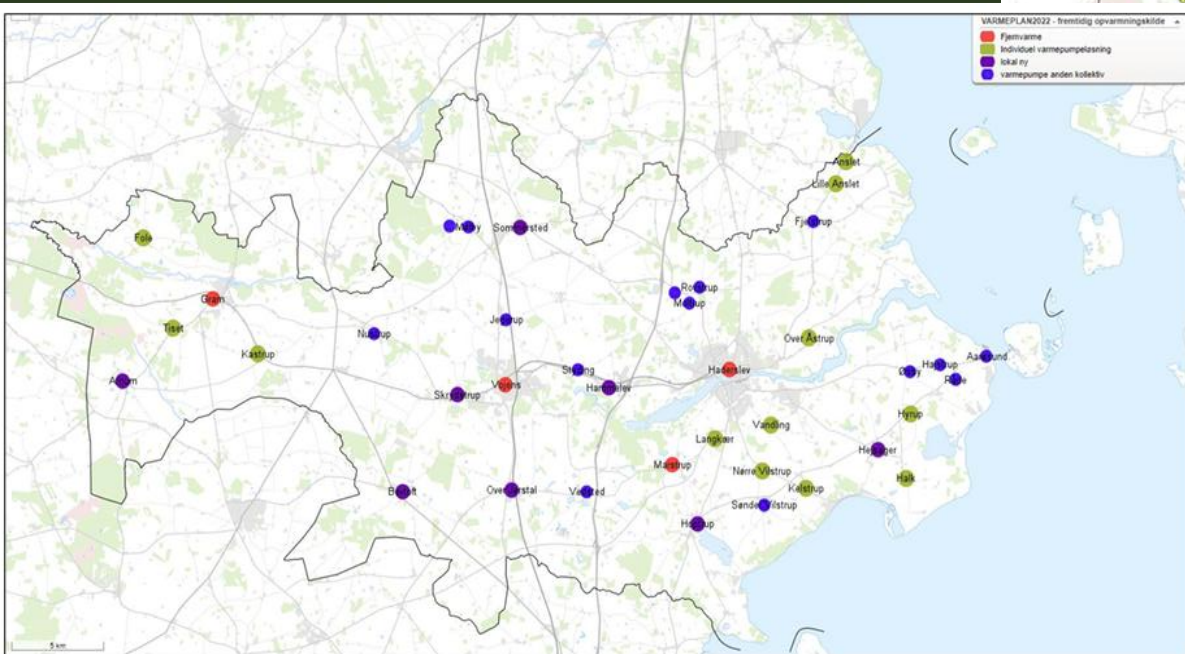


# Latest update of municipal heatplan - 2022

### 1. Nuværende forsyningsområder



### 2. Mulige fremtidige varmeløsninger i de nuværende gasområder

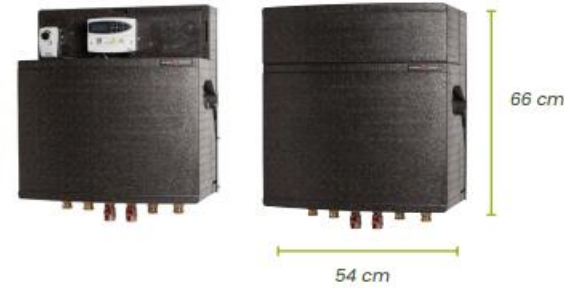


# Communications

- Customer expresses interest on our webpage
- Sending informationpackage
- Signing contract
- Visit from Haderslev Fjernvarme (where to dig and install DH-unit)
- Customer contacts Plumber (list of 7 plumbers)
- Digging starts in an area – good communication from contractor
- Digging in the road finishes
- When pipes are ready – communication to customers (mail/paper)
- Plumber installes DH-unit (In the morning You have gas – in the evening DH)
- Welcomeletter and invoice
- Visit from Haderslev Fjernvarme (is everything all rigth)



Termix VMTD opbl. ISO fjernvarmeunit



Termix VVX fjernvarmeunit



We leave your ground nice!!

# Heatprices in Haderslev (2026)

- Normal house: 13,4 MWh – 125 Square meters – 1 meter
- Haderslev Fjernvarme: 665,75 kr/MWh, 16,5 kr/Squ.M, 992,50 kr/house

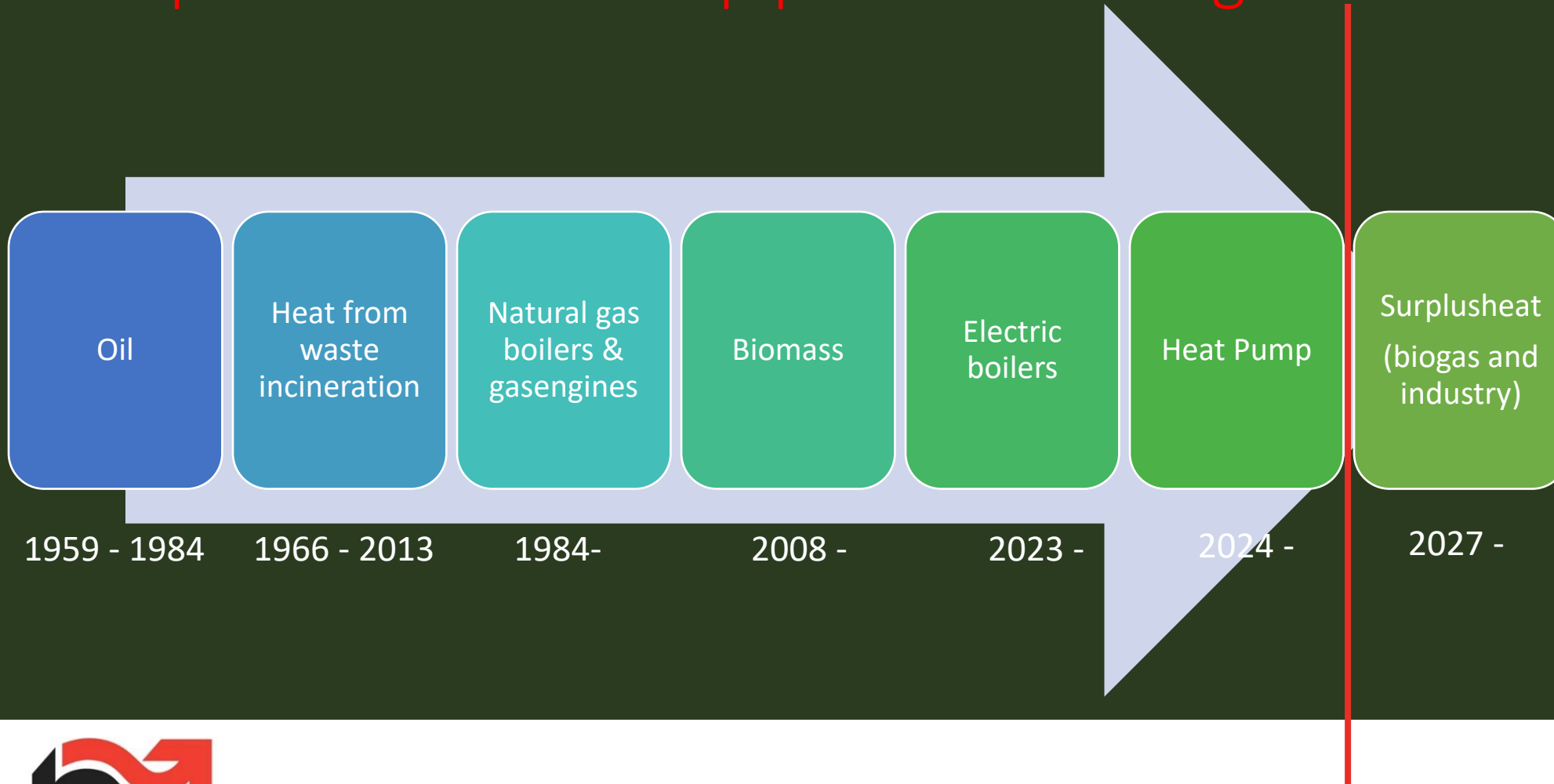
Variable	665,75 kr	13,4 MWh	8.921,05 kr
Fixed	16,5 kr	125 SqM	2.062,50 kr
Fixed	992,50 kr	1 M	992,50 kr
Total			11.976,05 kr (1.608 EUR)

1608 EUR / 13,4 MWh  
120 EUR / MWh  
12 cents / Kwh



# Change in technology

-its possible when the pipes are ind tre ground!

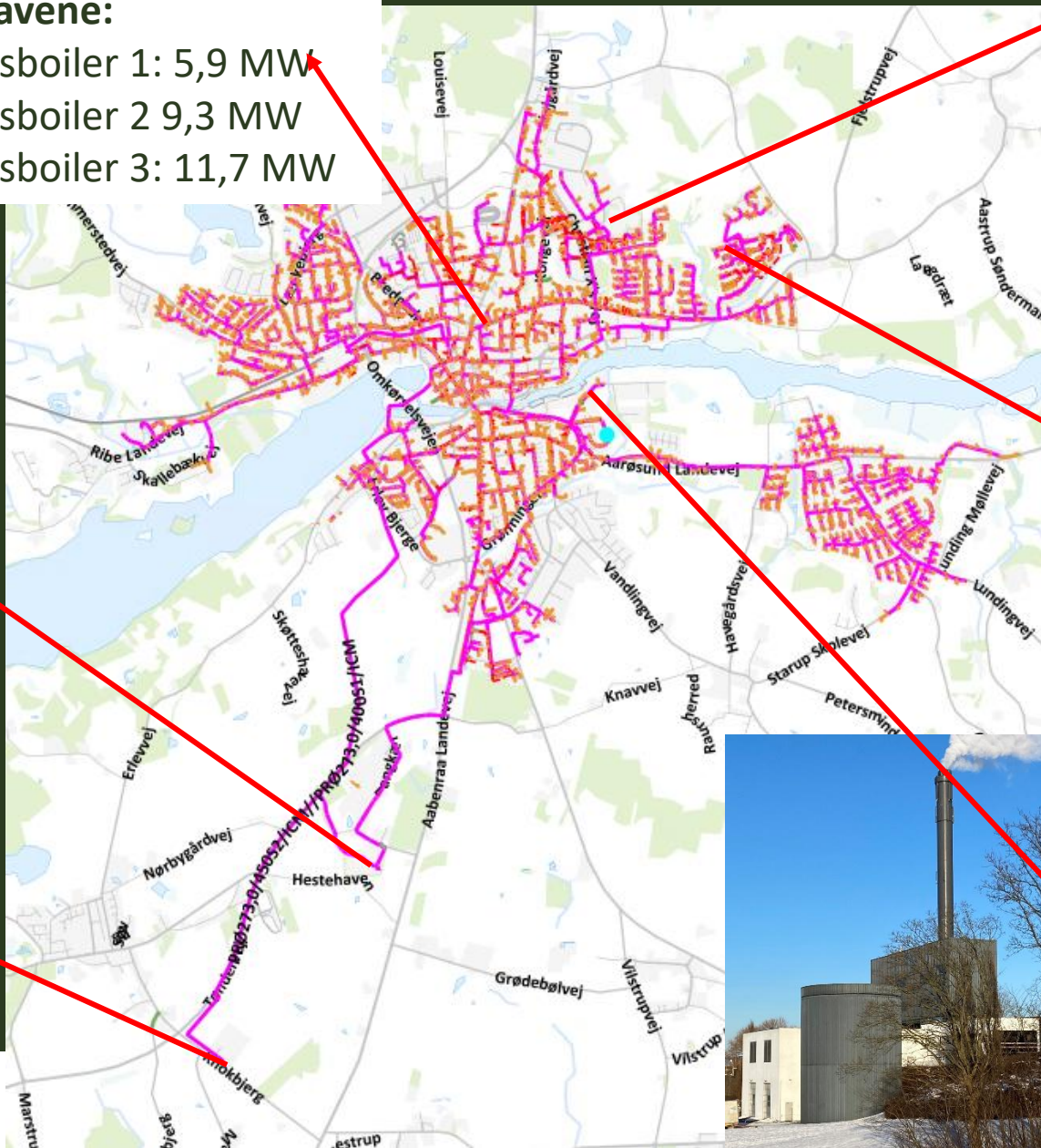




**Gravene:**

Gasboiler 1: 5,9 MW  
Gasboiler 2 9,3 MW  
Gasboiler 3: 11,7 MW

**Niels Finsens Vej:**  
Woodchipboiler: 5,5 MW  
Gasboiler: 5,1 MW



**Nederbyvænget:**  
Gasboiler 1: 1,0 MW  
Gasboiler 2: 1,6 MW



**Fjordagervej:**  
Gasboiler 1: 4,7 MW  
Gasboiler 2: 7,4 MW  
Gasengine 1: 4 MW  
Gasengien 2: 4 MW  
Electric boiler: 8 MW



**Langkær:**  
Heatpump: 10,6 MW  
Electric boiler: 15 MW

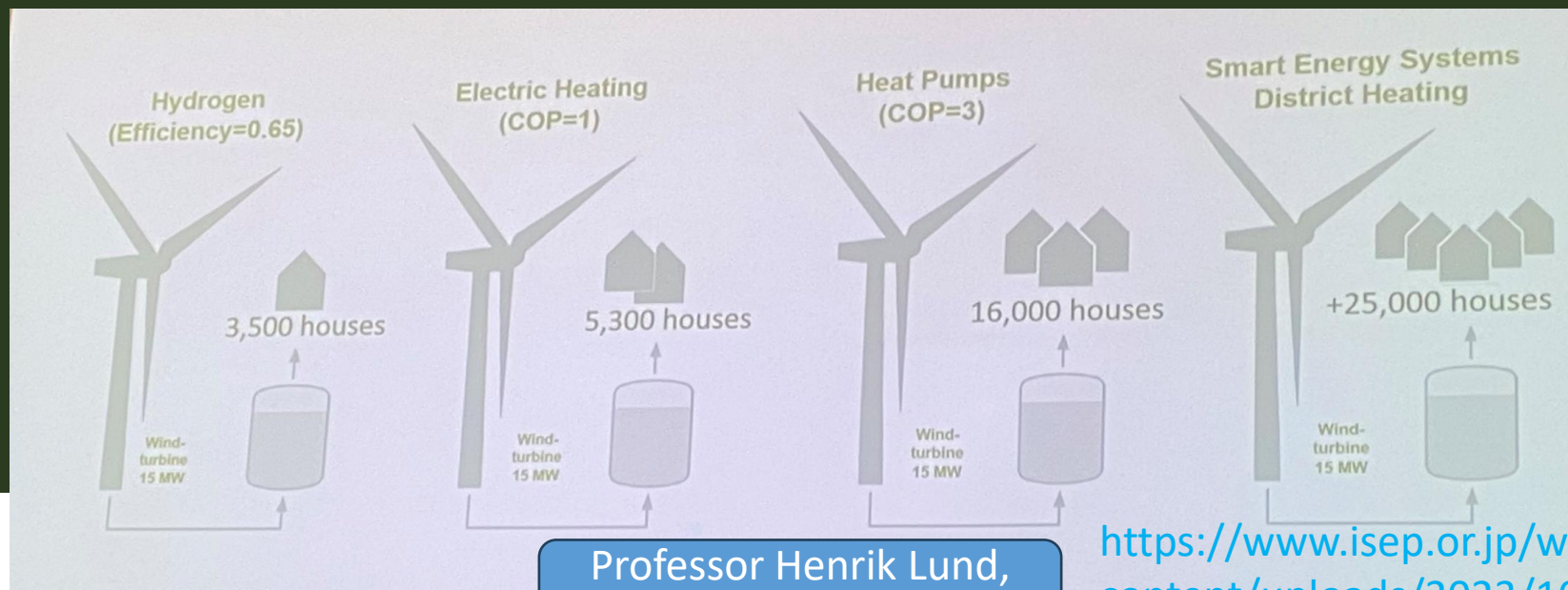


**Knokbjerg:**  
Woodchipboiler 1: 11,5 MW  
Woodchipboiler 2: 11,5 MW



# Production strategy

- Many technologies can heat water – find the best way and also the small potentiels (surplus heat). Then DH is more efficient than individuel heatpumps or other technologies.



Professor Henrik Lund,  
Aalborg University

[https://www.isep.or.jp/wp/wp-content/uploads/2023/10/HenrikLund\\_4DH\\_Conference\\_Tokyo\\_October2023\\_New.pdf](https://www.isep.or.jp/wp/wp-content/uploads/2023/10/HenrikLund_4DH_Conference_Tokyo_October2023_New.pdf)



Bud/planlagt produktion

Beregnete day-ahead bud | 06-03-2025

Udfold	Elkedel Fjorda			Elkedel Langk		
	Bereg	Bereg	Bereg	Bereg	Bereg	Bereg
Day-a head pris (prog) [DKK/MWh]	Blokk ud [MWh]	Mæn gde [MW]	Pris [DKK]	Blokk ud [MWh]	Mæn gde [MW]	Pris [DKK]
00-01	0,00	0,00	0,0	0,00	0,00	0,0
01-02	0,00	0,00	0,0	0,00	0,00	0,0
02-03	0,00	0,00	0,0	0,00	0,00	0,0
03-04	0,00	0,00	0,0	0,00	0,00	0,0
04-05	0,00	0,00	0,0	0,00	0,00	0,0
05-06	0,00	0,00	0,0	0,00	0,00	0,0
06-07	0,00	0,00	0,0	0,00	0,00	0,0
07-08	0,00	0,00	0,0	0,00	0,00	0,0
08-09	0,00	0,00	0,0	0,00	0,00	0,0
09-10	0,00	0,00	0,0	0,00	0,00	0,0
10-11	0,00	0,00	0,0	0,00	0,00	0,0
11-12	0,00	0,00	0,0	0,00	0,00	0,0
12-13	0,00	0,00	0,0	0,00	0,00	0,0
13-14	0,00	0,00	0,0	0,00	0,00	0,0
14-15	0,00	0,00	0,0	0,00	0,00	0,0
15-16	0,00	0,00	0,0	0,00	0,00	0,0
16-17	0,00	0,00	0,0	0,00	0,00	0,0
17-18	0,00	0,00	0,0	0,00	0,00	0,0
Tota	,00	,00	,00	,00	,00	,00

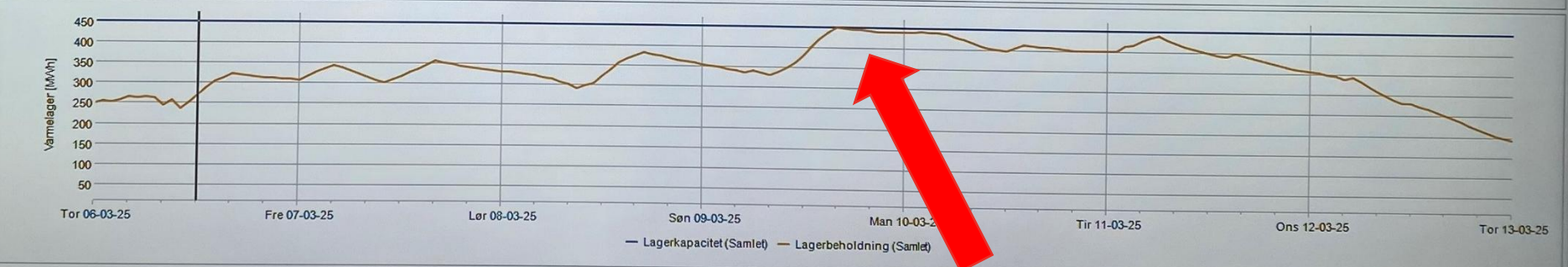
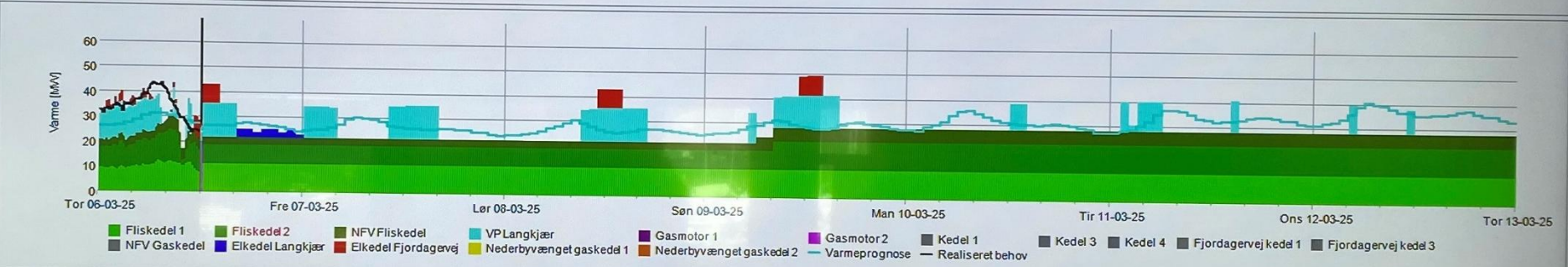
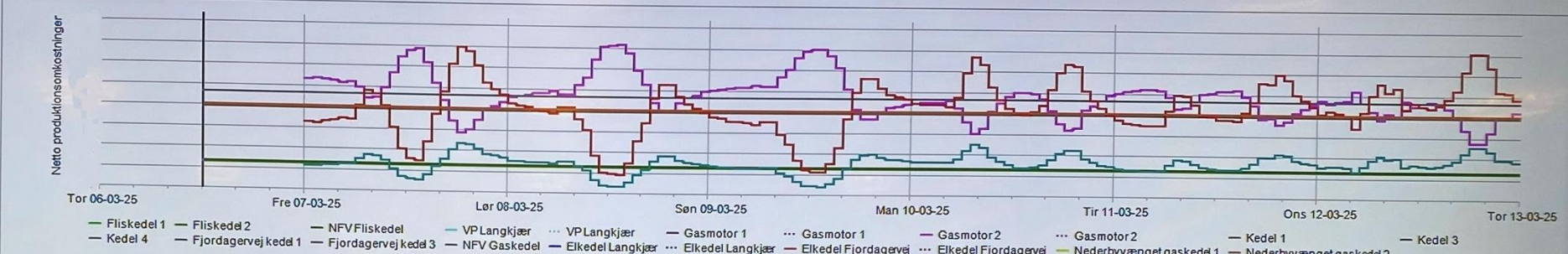
Send day-ahead bud | Brugerdefinerede bud

Notifikationer

Tidstempel	Beskrivelse
06-03-2025 12:06:37	Daglig planlagt produktion afviger fra gennemf...
06-03-2025 12:06:37	Planlagt produktion afviger fra gennemførlig pr...
06-03-2025 10:53:07	Produktionsplanens værdi ændret
06-03-2025 09:00:13	Produktionsplan er ændret
06-03-2025 12:06:38	Regulerkraftbud sendt
06-03-2025 12:06:37	Regulerkraftberegning
06-03-2025 12:06:37	Day-ahead beregning
06-03-2025 12:05:53	Daglig planlagt produktion afviger fra gennemf...

Dage 7 | Print Lokation Samlet

Resultat af ordinær drift: -1.164.510 DKK Gaspris: 4,6 DKK/Nm3



Accumulation is the key