

District heating in new buildings in Aarhus

Challenges and opportunities





AffaldVarme Aarhus Teknik og Miljø Aarhus Kommune 3th annual conference and consortium meeting



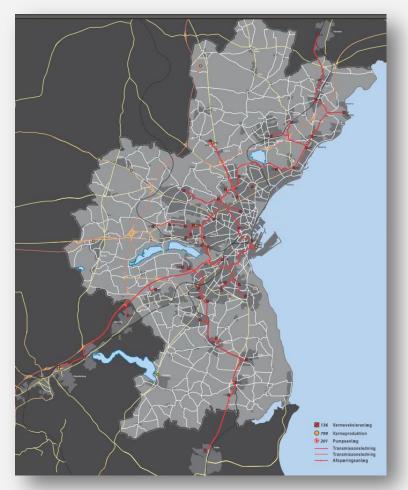
Elsebeth Arendt (<u>elar@aarhus.dk</u>)

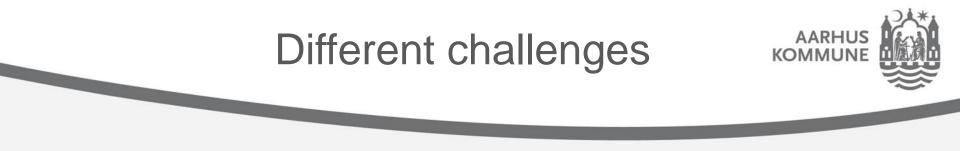
10 years at AffaldVarme Aarhus

- 2 years as manager
- 8 years as director of district heating

AffaldVarme Aarhus

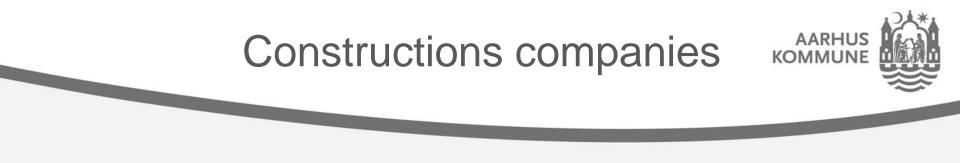
- 2,000 GWh annual sales
- 53,000 customers
- Supply 95% of the citizens in Aarhus with district heating.





Different customers - different challenges

- The private estate marked (Construction companies)
 Mainly families, building a standard house
- The professional estate marked
 - Mainly Cooperative Associations, building apartments
- The developer/investor
 - Preparing the property for resale



Our experience at the beginning

- Statement: "You can't build a low-energy house using district heating as energy source"
- We did not agree, so we called for a meeting with the companies
- Advertise the company, who can provide a low-energy house using district heating
- Today we have 15 construction companies on our homepage

| SELVERTJENING A | TALD VAIME CHAT | ALENANNE ANDIUS | AFF | ALDVARME AAF | HUS | |
|--|---|--|---------------|----------------------------------|-----|--|
| Real of the local division of the local divi | internet internet internet | | | | | |
| - URMVerse Leho Parade | | | | Manufacture . | | |
| 1 National & Services | Byggefirmaer L | avenergihuse | | Kontakt os Kunscener Anaroten | | |
| Louissian | Til ris, der eil lygge et besnengligt, der skal opvarrens med | | | | | |
| Takitar | Spenners | | | | | |
| Definite states | Onsker da, at di kommende | Groker its, at di kommende has se gedrandt efter falgeside standarder | | | | |
| Energistening . | (608). Lavarengiklassa 1 aller (601) Lavarengi (205) ² Desker de opså, at dit konsende konsengibus akal opsamma mad (processa) | | | | | |
| Tableting & Serverse 1 | 1941 (a. 14) or det vigtigt at to | aness off using all beggelimms pik, at for | and the state | | | |
| Chesterents og utillager | Why die of how, dae ranking an beggait itt beninsammen, og soon han tils reverdisiterdaetnes gadkendelske ofter de nærerde standarder. | | | | | |
| Laurephogen | I oversisten kan duse bogs | I oversighters hard do as hypogenfermane: der tillty der insoenseglig pelsans result formserveren. Alled Armen Aarben her inversee hypogenfermannen for inversighter mit all die fall as ja dischargende stadt kommenten en | | | | |
| Repairmer Lanneighum | | | | | | |
| No milar | atherginarimetikenspring på et lävennargifsan, der kan löres op 18 die rekental mandender | | | | | |
| Varragián kuttur | | | | | | |
| Grettapetel | On an vediconneer B at karmites AlbidoVaree Aarloss for at th risk og vedietering nen, treventien oft hus han spek großensbilse som favorengibte med (brevenem linnet kardistabiophyndepenie) i kannes. | | | | | |
| Euronementer . | rand foreverse. Despt Kom | anophysiological preserves | | | | |
| | Firma | Hjeremenide | Talafters | E-real | | |
| | Abohm AS | a myr.ebrian.th | 25 81 18 | 16Gabelus & | | |
| | 2 Parcheol MR | W more 2pinet most cfs | 75 98 15 22 | 14002 element di | | |
| | Service Huse AS | W most lenses all | | berongborou dk | | |
| | CMO Bygger A/S | ie mm.mstogget.dt | 76 10 13 40 | #Lingquiters@eets | | |
| | Eaudor-tune A/S | R cost mobiler have it | 702573.88 | silg@wadatase.ik | | |
| | Frydger | # mon.hutkiam.sk | | Independently the | | |
| | Plascompagnial Mid- og Navdysland | # mostinacomegnitum | 75645239 | Vdo@huscompagnist.dk | | |
| | Intel-only Advanta og Duppelloma | # monitolog.th | 88.68 | mail@datag.dk | | |
| | Jpen Heimannien April | A modulation & | 90 54 64 45 | realize-ture dc | | |
| | Application physics where all | In men ankeneraterhening. B | | | | |
| | Lassa Larsan Byggaffres | w monitories and a second seco | | h@hesselarsseltyp.ds | | |
| | Nytana A/5 | the provinging of the second s | | salg@nyhuss.dk | | |
| | Treletorg | an anno todedorg all | | huse@tobolog.dk | | |
| | Utdare Huse A/5 | # meesideetsaa.ch | | dragsAdentese di | | |
| | Villa Kradho | > mm.vfikizets.ik | 32 04 44 84 | # 1622/Bitra21.6 | | |

Constructions companies

We cooperate with the municipality

- They advertise district heating
- With the deed of the property, the new landowner receive our brochure
- Our account managers contact the potential customer

Today more then 90 % of the private estate marked choose district heating



AARHU

KOMMU

Fjernvarme betaler sig Spar CO₂ og penge – også når du bygger i Lavenergiklasse 2015



Another challenge

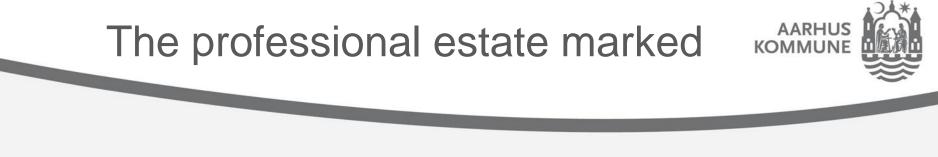
It's not about "common sense", but about politics

Some Cooperative Associations board of directors want a sustainable profile

- Energy without solid or liquid fuel
- Self sufficient
- Controlling the price

Some even prefer electric heat instead of district heating

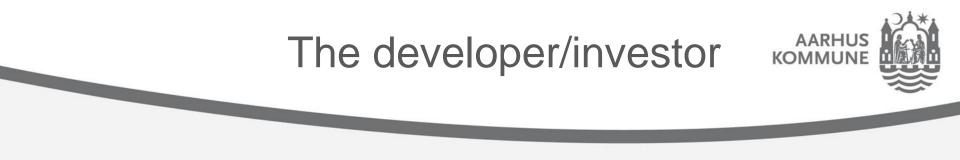
• Save cost to pipes etc.



Our solution

- We have to influence the decision makers
- We have to be better to tell about district heating as a sustainable product
- We have to participate in the public debate





A new challenge

- They want to save the cost to develop the area with district heating (50,000 DKK. per property)
- It is the new property owner's problem, that there is no district heating



The developer/investor

AARHU

KOMMUN

Our solution

- We have to have competitive prices
- All the new builder's primary focus is price

