



ROYAL DANISH EMBASSY
Bucharest



Efficient Production of District Heating

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JPH Energi A/S

- Independent and private owned consulting engineers.
- Based in Skanderborg, Denmark.
- We have more than 37 years of experience in energy projects.
- We works with district heating and power plants.
- Typically in sizes: plants that produce 5.000- 200.000 MWh heat pr. year.



Efficient production of district heating

Normally there are two key focus areas:

1. Distribution of district heating :

- -The best energy!- is the one that's not produced!
- **How is that possible**
- Changing pipes to BAT (Best Available Technology)
- Typical heat-loss-reduction: 37%- >17%
- **Benefits:**
- Saving energy and reducing CO2 emission
- Less downtime and cost for unplanned repairs
- Low flow and return temperature -> new production possibilities with higher efficiency!





Efficient production of district heating

2. Energy production

Previously “single fuel”-fired plants

- N-gas -> power and heat
- Wood- or biomass-fired boilers
- Back-up oil boiler





Efficient production of district heating

We are currently moving towards multi fired plants

- N-gas and biomass
- Thermal solar panels
- Heat pumps – air to water
- Electrical boilers
- Combined with big thermal storage tanks
- Industrial waste heat
- Etc...





Efficient production of district heating

Benefits of multi fired plants:

- Always able to produce cost efficient energy
- Takes advantage of the unstable electrical power grid and the lowest prices!





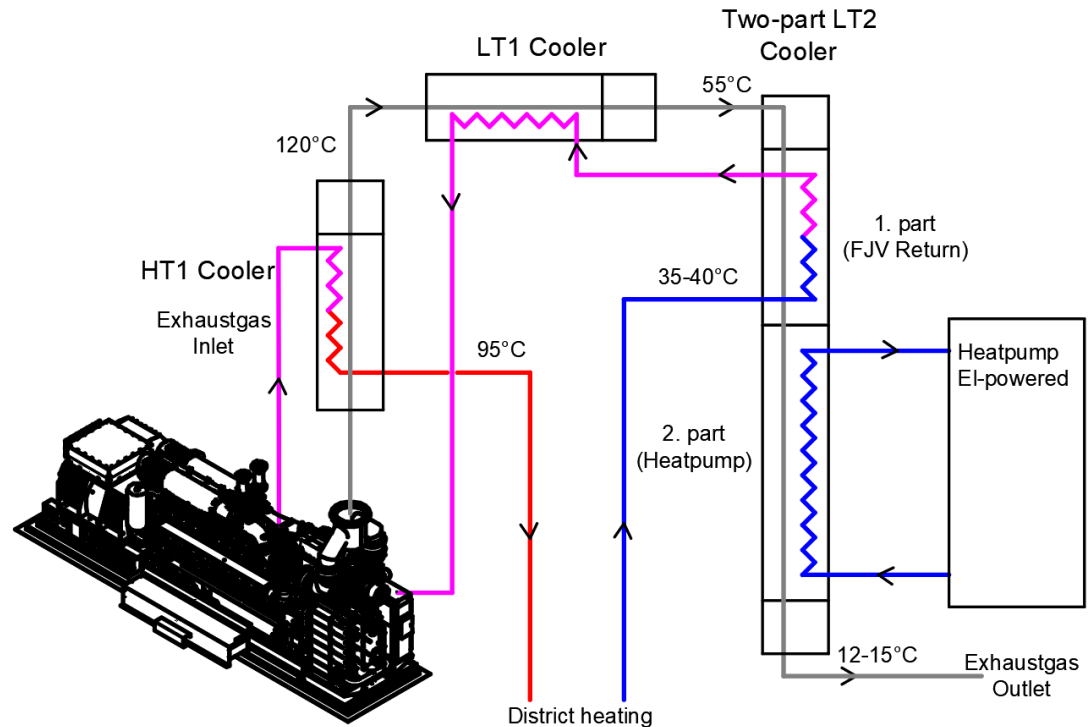
Efficient production of district heating

Efficient optimization on existing gas fired plants

- Exhaust gas cooling in one step (HT)-> total : 80%
- LT1 cooler-> total: 95%
- Add LT2,3 and Heat pump -> 108%

Benefits

- Gas reduction.
- Reduction of service cost
- Lifetime extension





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Thanks for your time.
Hope to talk to some of you later today
Mr. Erik Povlsen

