




## Wednesday 3 May 2017

Site:	Day 1 Content:	Focus:
08.30 Departure from hotel via metro (30 min)		
<p>09.00</p>  <p>Hannemanns Allé 53, 2300 København S</p>	<p><b>Introduction to programme DE (District Energy)</b> / Jakob Bjerregaard, District Energy Alliance <a href="http://usa.um.dk">usa.um.dk</a></p>	<ul style="list-style-type: none"> <li>• General introduction of the initiative</li> </ul>
	<p><b>District Energy in Denmark</b> / Lars Hummelose, DBDH <a href="http://dbdh.dk">dbdh.dk</a></p>	<ul style="list-style-type: none"> <li>• Overview of Danish district heating</li> </ul>
	<p><b>Regulation, ownership and organization of DE in DK /</b> Ole Odgaard, Danish Energy Agency <a href="http://ens.dk">ens.dk</a></p>	<ul style="list-style-type: none"> <li>• Danish district heating regulation and laws</li> <li>• How is ownership distributed &amp; governed?</li> </ul>



Wednesday 3 May 2017 continued

	<p><b>Energy Mix in DK</b> / Brian Vad Mathiesen, Aalborg University <a href="http://aau.dk">aau.dk</a></p>	<ul style="list-style-type: none"> <li>• The Energy Mix in DK today and the future</li> </ul>
	<p><b>DE Greater Copenhagen, (production, transmission, distribution and end users)</b> / Magnus Foged, HOFOR <a href="http://hofer.dk">hofer.dk</a></p>	<ul style="list-style-type: none"> <li>• Organization of DE in Greater Copenhagen</li> </ul>
	<p><b>Hot water DH: Flow, velocity, delta T relation and the difference between US and EU standards</b> / Jens Ole Hansen, Ramboll <a href="http://ramboll.com">ramboll.com</a></p>	<ul style="list-style-type: none"> <li>• What are the important indicators of an efficient DE system</li> <li>• EU vs. US standards</li> </ul>
	<p><b>Conversion from steam to hot water DH – WHY? ECONOMICS?</b> / Magnus Foged, HOFOR <a href="http://hofer.dk">hofer.dk</a></p>	<ul style="list-style-type: none"> <li>• Why conversion from steam to hot water? What are the economic benefits?</li> </ul>
<p><b>12:45</b> Lunch Break</p>		
<p><b>13.30</b> Departure by bus</p>		

## Wednesday 3 May 2017 continued

<p><b>13.45</b></p>  <p><b>HOFOR</b> Ørestads Boulevard 35 2300 København S.</p>	<p><b>Visit to District Cooling Plant Adelgade and Copenhagen DH tunnel / HOFOR</b></p> <p><a href="http://hofor.dk/district_heating_in_cph">hofor.dk/district_heating_in_cph</a> <a href="http://www.cowi.com">www.cowi.com</a></p>	<ul style="list-style-type: none"> <li>• Visit a district cooling facility designed after Scandinavian standards with focus on utilizing free cooling/seawater as baseload</li> <li>• Visit a major tunnel designed for DE (steam/hot water and district cooling)</li> </ul>
<p><b>15.15</b> Departure by bus</p>		
<p><b>15.45</b></p>  <p><b>VESTFORBRÆNDING</b> Lyngby Central Area 2800 Kgs. Lyngby</p>	<p><b>Site visit at Vestforbrænding</b></p> <p>Vestforbrænding, Denmark's largest waste management company, is building a new DH network in the municipality of Lyngby (north of Copenhagen), utilizing transformation to green and sustainable DE as part of the municipalities knowledge-city-strategy in close cooperation with private companies and the technical university (DTU). <a href="http://vestfor.dk">vestfor.dk</a></p>	<ul style="list-style-type: none"> <li>• How to build a sustainable future proof DH system</li> <li>• Pipes are welded together and laid down into the soil</li> <li>• Large pump station</li> <li>• New user installations with direct heat delivery without heat exchanges.</li> </ul>
<p><b>17.15</b> Departure by bus <span style="float: right;"><b>End of today's program</b></span></p>		

## Thursday 4 May 2017

Site:	Day 2 Content:	Focus:
<b>08.00</b> Departure from hotel by bus (30 min)		
<b>08.30</b>  Vognporten 9 2620 Albertslund	<b>Albertslund District Heating - Visit to energy-renovated home!</b>  Case: Conversion of existing buildings into low temperature district heating in Albertslund where a large renovation programme aims to totally renovate all dwellings and replace the old district heating system.  <a href="http://albertslundforsyning.dk">albertslundforsyning.dk</a>	<ul style="list-style-type: none"> <li>• Focus on low temperature networks</li> <li>• Conversion of existing buildings</li> <li>• Visit to private energy renovated home</li> </ul>
<b>10.00</b> Departure by bus (10 min)		
<b>10.15</b>  Roskildevej 175 2620 Albertslund	<b>Visit to VEKS</b>  Vest-egnens Kraftvarmeselskab I/S, also known as VEKS, is a transmission company supplying heat to 19 local district heating companies at Vestegnen..VEKS also has the Køge CHP plant with its distribution of district heating as well as involvement in the Solrod Biogas Plant.  <a href="http://veks.dk">veks.dk</a> <a href="http://solrodbiogas.dk">solrodbiogas.dk</a>	<ul style="list-style-type: none"> <li>• Introduction to the Greater Copenhagen District Heating Transimission company - VEKS</li> <li>• Introduction to the biomass plant in Køge and it's integration into the Copenhagen system</li> <li>• Introduction to Copenhagen Geothermal Plant</li> <li>• Introduction to Solrod Biogas Plant</li> </ul>

**Thursday 4 May 2017 Continued**

11.45 Departure by bus (30 min)

12.15



Stæhr Johansens Vej 38, 2000  
Frederiksberg

**Exchange seminar**

**Intro Seminar #2**

/ Lars Hummelose, DBDH

Short intro to all participants 29 sec. each

**Networking Lunch (standing)**

**Intro to US District Energy market**

/ Jakob Bjerregaard, District Energy Alliance

**Danish/US government/state/city cooperation on district energy**

/ Danish Energy Agency

**3 x US Universities cases with focus on conversion to hot water  
DH**

/ 3 US Universities (TBC)

**4 x Danish company case stories  
(TBC)**



**Rotating groups (4 stops x 15 min) = 60 min**

**Wrap up of the seminar**

- How can and does DEA support DE development in the US?
- What DE developments in the US are important to be aware of?
- Case stories on DEA cooperative efforts

18.30 – 21.00 Evening dinner

**Friday 5 May 2017**

Site:	Day 3 Content:	Focus:
<b>08:30</b> Departure by bus to Helsinge Fjernvarme		
<p><b>09.00</b></p>  <p><b>Helsinge Fjernvarme A.m.b.a.</b></p> <p>Vognporten 9 2620 Albertslund</p>	<p><b>Site visit at Helsinge Fjernvarme</b></p> <p>Visit to Helsinge Fjernvarme where efforts in solar panel installation is expected to produce approximately 9,400MWh or about 20% of the annual heat production to Helsinge Fjernvarme's 1,600 consumers.</p>	<ul style="list-style-type: none"> <li>• Introduction to the district heating company with special focus on the thermal solar panels and their storage solution.</li> <li>• Discussion based on site economics and technology</li> </ul>
<b>10.15</b> Departure by bus (30 min)		
<p><b>10.45</b></p>  <p><b>Halsnæs FORSYNING</b></p> <p>Havnevej 8 3300 Frederiksværk</p>	<p><b>Site visit at Halsnæs Utility</b></p> <p>Halsnæs Utility supplies district heating to around 14,000 citizens in Frederiksværk produced exclusively on biofuels such as wood chips, wood pellets and rapeseed oil. Furthermore Halsnæs Utility is also running the Danish Test Center for Bioenergy.</p>	<ul style="list-style-type: none"> <li>• How is the use of biomass optimized for use in DE systems?</li> <li>• Presentation of experience with different types of biomass</li> </ul>
<b>12.30</b> Departure by bus (60 min) + Lunch on bus		

## Friday 5 May 2017 Continued

13.30

**RUC**

Universitetsvej 1,  
4000 Roskilde

### Site visit Roskilde University Center (RUC)

In cooperation with the local district energy company the university replaced the old DH system including pipes and substations.

[ipapercms.dk/DanskFjernvarme](http://ipapercms.dk/DanskFjernvarme)

- Understanding the economics of changing to a hot water system
- The costs of building a new system
- Challenges & benefits

15.30 – 16.15 Transport back to CPH

16.15 End of program