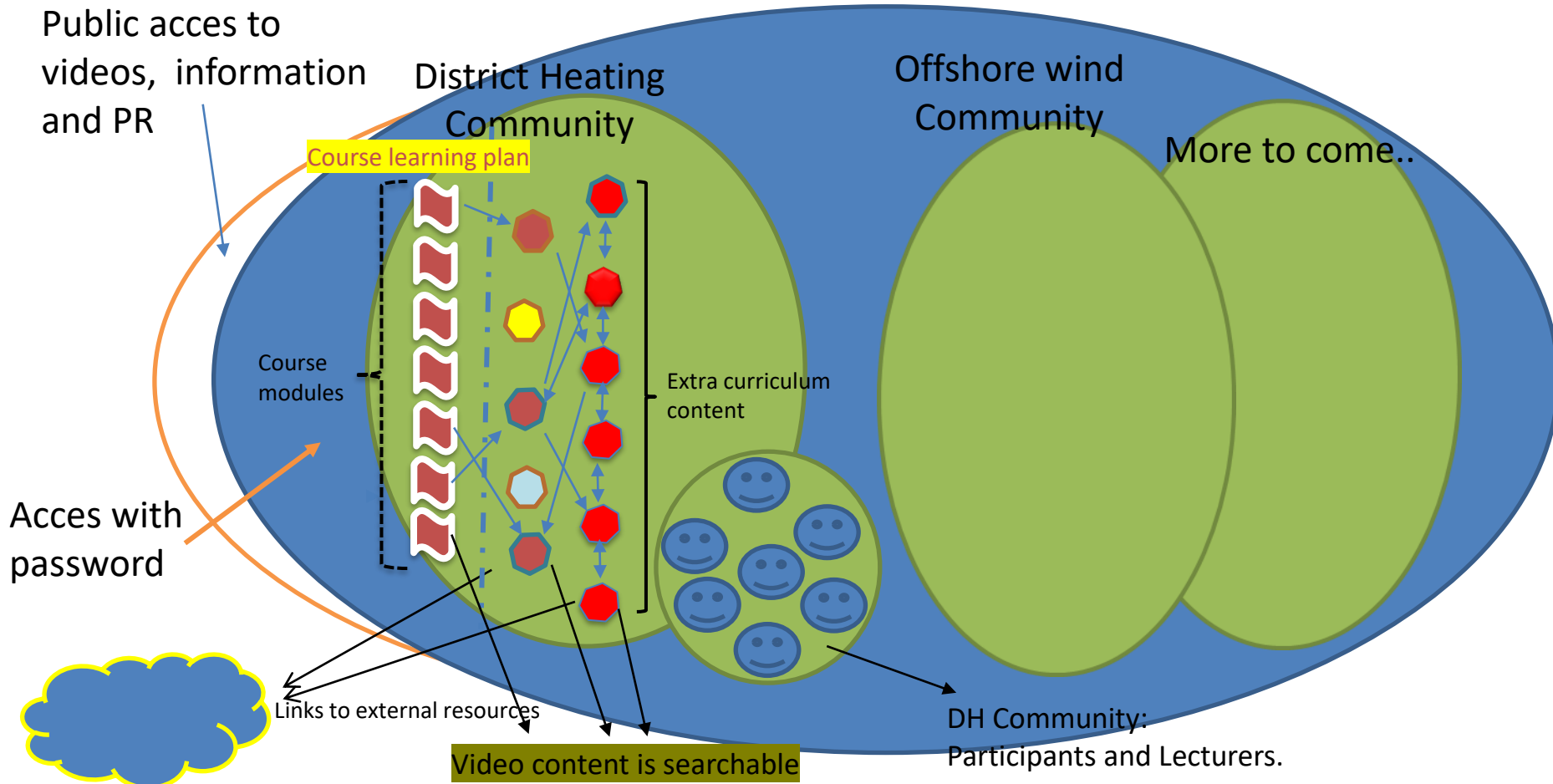




## Learning Platform for self-paced and on-line training courses -





ENERGY AND  
CLIMATE  
ACADEMY

**Self-paced and on-line training course**

## **District Heating – Efficient Energy to Urban Areas**

The purpose of the course is to give participants a thorough insight to the various aspects of the District Heating Business.

The course offer curated, impartial, compressed high-quality content delivered by international specialists with many years of experience.

### **The advantages of our on-line courses:**

No travel and accommodation costs

Stay home and be safe

Watch the lessons when and where you want it

Available on all platforms

Direct contact for questions to lecturers during the course

Networking with the lecturers and peers at the platform for 12 months

All slides available during the course

**Booking and information**

**[HERE](#)**

## On-line and on-demand training course

# ***District Heating: Energy Efficiency for Urban Areas***

Theme	Lecturer
<p><b>Introduction and welcome webinar - 60 min live webinar</b></p> <p>Introduction to District heating. Morten will give a presentation on the district heating developments until today with a focus on the situation in Denmark and a look out to other countries. Introduction to: From 1st generation to modern 4th generation, Role of cities and national government, The Danish business &amp; ownership model, Economy. In short it is an introduction to DH in Denmark with a bit of international perspective and how DH plays an imperative role in the green transition.</p> <p>How to benefit most from this course – how to get most value ☺ Questions, comments and guidance</p>	<p><b>Morten Jordt Duedahl</b>, DBDH <a href="#">LinkedIn Profile</a> <i>Morten has worked in promoting district heating internationally for many years. His focus today is primarily Western Europe. He holds a substantial knowledge about economy, business models and general promotion of DH.</i></p> <p><b>Saša Kojić</b>, Senior Director, Business Unit Stations at Danfoss District Energy <a href="#">LinkedIn Profile</a></p> <p><b>Torben Kirkegaard</b>, Founder and CEO of Energy and Climate Academy <a href="#">LinkedIn Profile</a></p>
<p><b>Lesson A - Planning and development</b></p> <p>Proper planning is the key to a well-functioning DH system – no matter if it is large scale, city wide systems or you plan for a smaller community project.</p> <p>Catarina will share her experience on how to involve important stakeholders, what are the requirements for making good planning and give some hints to how to get started. In other words, how to bring the idea from some initial discussion to something doable that can be built.</p>	<p><b>Jacob Sten Petersen</b>, <a href="#">LinkedIn Profile</a></p> <p><i>Business manager Energy &amp; Industry at MOE A/S, Zealand division.</i></p> <p><i>Project manager, mechanical Engineer with responsibility for energy consumption, emission and energy saving projects.</i></p>
<p><b>Lesson B - How to produce District Heating today and in the future</b></p> <p>The fuel for district heating systems has developed a lot over the years – starting with waste incineration, to bunker oil and today modern district heating systems is a vital part of the rush for sustainability.</p> <p>This video will cover areas such as classic fuel sources, sustainability, energy sources of the future, integration of multiple sources and not least demonstrate the importance of flexibility and a strong focus on economy.</p>	<p><b>Lars Gullev</b>, Managing Director at VEKS (Transmission Company) <a href="#">LinkedIn Profile</a></p> <p><i>Extensive experience in management training for managers in the Bulgarian, Hungarian, Estonian, Russian and Chinese district heating sector.</i></p> <p><i>Participated with presentation of papers at district heating conferences, symposiums etc. in more than 20 countries</i></p>

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# ***District Heating: Energy Efficiency for Urban Areas***

<p><b>Lesson C - Modern efficient piping systems</b></p> <p>The core asset in a district heating system is the pipe network. It must last for decades; it must be ready for all future requirements and at the same time it takes up a large portion of the budget. It cannot be stressed how important the right choice of pipe systems is.</p> <p>Here we will focus on modern district heating pipes and what they can do, how to protect the pipe systems from corrosion and leakages with alarm systems. Heat loss is an important part of a pipe system and will be discussed and finally the impact of low temperature system will be highlighted.</p>	<p><b>Bjarne K. Jepsen</b>, Senior Engineer, LOGSTOR. <a href="#">LinkedIn Profile</a></p> <p><i>28 years of experience and teaching in pre-insulated DH pipes.</i></p>
<p><b>Lesson D – Pumps &amp; controls</b></p> <p>Some of the issues + many more in this lesson: Centrifugal pumps – moving water          Why pumps? why they are important? And Basic Pump parameters Matching Design flow and pressure – duty point          Pump performance control - Dealing with variable demand - Variable heat demand Adjusting pump performance          Temp. optimization using pumps – practical use of control mode Why optimising temperatures? Mixing - temp control mode Pressure boosting - pressure control mode</p>	<p><b>Marek Rykiel</b>, Senior Application Engineer, Grundfos <a href="#">LinkedIn Profile</a>  <i>15 years of experience in the pump industry.</i></p>
<p><b>Heat Pumps</b></p> <p>Intro and Background Working Principles Applications Examples Optimisation</p>	<p><b>Bjarke Paaske</b>, Project Manager IESenergy <a href="#">LinkedIn Profile</a></p>
<p><b>Lesson E - End users – the customers</b></p> <p>The end user – the customer – the citizen – many terms for the same. It is the persons and institutions</p>	<p><b>Anders Falkeborg</b>, Product Manager, Kamstrup <a href="#">LinkedIn Profile</a>  <i>Anders has been working as a product manager for heat and</i></p>

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<p>who are actually benefitting from the system and at the same time must pay the bill for the heat and the heating system – the key person to keep happy.</p> <p>The meter, well-functioning metering and billing systems together with reliable end user installations is key to making the system function year after year and not least to optimize the system on an on-going basis. With the data from meters modern DH companies today ensure optimization of installations and thus help save money for the customer, make the right investment decision and save energy. Today we also talk about heat as a service.</p>	<p><i>cooling meters at the Danish company Kamstrup A/S since 2015. Prior to joining Kamstrup A/S Anders worked as a service technician and has a background as both electrician and electronics engineer.</i></p>
<p><b>Lesson - District Heating in the future</b> <b>F</b></p> <p>District heating has been around for more than 100 years but is still demonstrating its ability to be competitive to alternative solutions and live up to the changed expectation – from low cost heat go an active player in the green transition. Will this continue?</p> <p>In the future we expect an increased integration with the electricity system and other fluctuating renewables. There will be increased demand for energy efficiency. Nis will share how modern, 4th generation District Heating System has proven to be the answer also to today's carbon agenda.</p>	<p><b>Nis Bertelsen</b>, PHD fellow, Aalborg University <a href="#">LinkedIn Profile</a></p> <p><i>His research focus is on the uptake of renewables within European heat markets, analysing and modelling technical potentials, market structures and regulative environments to promote low-carbon energy systems</i></p>
<p><b>Lesson - Business models stake holder engagement</b> <b>G</b></p> <p>Technical solution has been in the forefront for the development of modern district heating solutions and it still is. But what many cities and communities struggle with today is much more how to get their economic model fitted to deliver the many results that are expected e.g. low heat prices, green transition, job creation, low risk.</p> <p>In this video different ownership models will be looked at and it will be shown how they deliver different results. In principle there are two models – the commercial ESCO solutions and a municipal lead district heating company – how do they function and what results will each of them deliver? Here we also take a look at consumer owned systems (Co-Op's) and how to develop city wide systems in contrary to smaller standalone systems.</p>	<p><b>Morten Jordt Duedahl</b>, DBDH</p>
<p><b>Site visit to Aalborg District Heating Company</b></p> <p>Enjoy a guided video tour to Aalborg district heating company where we will visit the control room, a</p>	<p><b>Jesper Møller Larsen</b>, Aalborg DH Company <a href="#">LinkedIn Profile</a> <i>Managing director Aalborg Energy group: Aalborg Heat A/S, Aalborg Gas, Aalborg District Cooling A/S, Aalborg Energycenter</i></p>

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<p>street where pipes are being laid, an industry supplying surplus heat, a family having a district heating installation and learn from the discussions between Morten and Jesper.</p> <p>Our guides today are Jesper, manager of Aalborg District Heating Company (the 4<sup>th</sup> largest city in Denmark with widespread DH) and Morten from DBDH – both equipped with helmet-cams. Jesper will share how he plans for the future, how he includes new heat sources, how new areas will be added and also shed light on the practical daily operation and work in a DH company.</p> <p>Look forward to a free-styling, helmet-cam driven tour of a district heating company 📹</p>	<p>A/S.</p> <p><b>Morten Jordt Duedahl, DBDH</b></p>
<p><b>Wrap up Webinar - 60 Min Live webinar</b></p> <p>Take part in a live Q &amp; A session where questions to all the videos and directly to DH practitioner Jesper from Aalborg can be asked. Jesper, Morten and Torben will be your host today. Here we will also share ideas for further readings invite you to come to Denmark for a real visit to a DH system.</p>	<p><b>Jesper Møller Larsen, Aalborg DH Company</b></p> <p><b>Morten Jordt Duedahl, DBDH</b></p> <p><b>Torben Kirkegaard, ECA</b></p>