2-DAY COURSE WITH SITE VISIT
COPENHAGEN DENMARK
- your access to world class knowledge and experience

ROAD MAP FOR RENOVATION AND EXTENSION OF DISTRICT HEATING SYSTEMS

PROJECT PLAN: WHY, WHEN AND HOW

ENERGY AND CLIMATE ACADEMY

IN COOPERATION WITH

DBDH

Foto: hofor

ROAD MAP FOR RENOVATION AND EXTENSION OF DISTRICT HEATING SYSTEMS - PROJECT PLAN FOR WHY AND HOW

2-day course with site visit to a District Heating System that is undergoing renovation and expansion.

Purpose
To give the participants a road map of how to renovate and / or expand an existing District Heating System.
After the course the participants will be able to have a better dialogue with external consultants and various stakeholders and thus make better decisions.

Background
Heating of buildings is the single largest consumer of energy in the world. District Heating has proven its value for many years, in relation to improving energy efficiency. Since the first Danish system was built in 1903 in Copenhagen, the Danish society and Danish companies have gained knowledge and experience in operating and renovating District Heating systems in all scales.

Less CO2 and better economy
Many countries today have a great deal of focus on bringing down their CO2 emissions by reducing their use of fossil fuels. On a global scale the heating of buildings is the largest consumer of fossil fuels and if this is to be lowered we have to increase efficiency in the existing systems. The energy efficiency in older district heating networks that haven't been properly maintained, is often poor due to the fact that both the energy distribution and the energy production are inefficient. Combine this with the fact that newer energy sources can be used in district heating and you'll find that great savings can be achieved by renovating and optimizing existing district Heating Systems.

Description
In this course we will focus on the core elements of renovating District Heating Systems. Experienced lecturers from the industry and leading universities will take the participants through the process when renovating a District Heating System.

Site visits
As a part of the course we will visit a site where renovation is taking place and where the participants will meet managers and employees that work daily in the District Heating.

”In my position as a Director for Vertical business development in Danfoss District Energy division, it is important to stay on the top of modern district heating trends and technologies. When visiting different countries across Europe, one can see a strong pull to learn about Danish District Heating systems and models. I found the course at Energy and Climate academy useful because of excellent organization, combination of lectures and examples from practices. Above all I found very useful site visits and discussions with experts from Danish District Heating Utilities. Great learnings and impressive cases from top experts in District Heating industry!”

Saša Kojić, Director
Global Vertical Business Development Danfoss

Participants

This course is designed for participants from public and private companies, organizations, cities and regions that want insight in renovating and/or expanding District Heating Systems.

- Planners
- Advisers
- Engineers
- Economists
- Technicians
- Managers

This course requires an open mind and curiosity towards technical systems and processes. Knowledge about District Heating Systems is an advantage.

Content

- History focusing on ongoing renovation and expansion of District Heating in Denmark and Europe
- Planning and development of renovation and expansions
- Modern efficient pipe systems
- Network operation and optimization
- Fuel sources of the future
- Why and how to get there
- Site visit
- End users – the customers
- District Heating in the future

PROGRAM: DAY 1

09.00: History and development of District Heating in Denmark and Europe
- Historic background - From 1st generation to modern 4th generation
- The role of cities and national government
- The Danish business / ownership model
- Economy, prices, surplus
- Rules and regulations

Planning and development of renovation and expansions
- Stakeholders involved
- Requirements
- Economics of expansions and renovations
- Hot water analysis
- Updating system to modern District Heating
- Optimizing production

Fuel sources of the future
- Sustainability
- Integration of electricity – heat pumps and boilers
- Integration of low quality heat
- Flexibility and economy
- Optimization of fuel mix
- Storage of surplus heat

From today to low temperature District Heating
- Why and how to get there
- Planning of LTDH
- Multiple fuel sources
- Energy efficiency of buildings and LTDH
- Case study

Modern, efficient pipe systems
- Today's district heating pipes and other equipment
- Heat loss and how to avoid it
- Static design
- Low temperature
- Dimensioning of pipes

Planning for the right pipe system
- Laying of the network

DH substation going towards the 4 generation DH
- DH substations trends towards 4GDH
- Case story: Effects of increased thermal length of heat exchanger
- Case story: The heat booster substation installed in EnergyLabNordhavn

Networking dinner

DAY 2

00: Site visits

Network operation and optimization
- Temperature optimization flow/return
- Control and regulation
- Software systems to optimize planning and operation
- Peak load optimization
- Long term investments and contracts
- Renovation planning
- Economy

End users – the customers
- Metering and billing
- End user installations
- Optimization of installations
- Saving money for the customer
- District Heating in low energy buildings

District Heating in the future
- Integration with electricity and other fluctuating renewables
- Sustainability targets
- Energy efficiency

16.00 End of Course

Changes to the program may occur, Please see our webpage for further information

The lecturers
The lecturers are all experienced specialists from leading universities, organizations and companies from the District Heating Industry. They have an extensive international knowledge from projects all over the world. At the site-visit you will meet highly skilled personnel that works with District Heating on a daily basis.

Social event
There will be a networking dinner where you will have the opportunity to meet colleagues and exchange experience and expand your network.

Registration and information

Venue: Please see our webpage for specific dates for the course.
Price: 1,475 €, excl. VAT. The price includes: Tuition, materials, all meals during the course, transportation to site and networking dinner. Accommodation and transport to the venue are not included.
Registration: www.energyandclimateacademy.com

Energy and Climate Academy is an independent, private academy offering post graduate education in cooperation with leading universities, companies and organizations.

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