



JAKOB NYMANN RUD

PRESENT POSITION

Head of Section and energy planning expert

KEY QUALIFICATIONS

Jakob Nymann Rud's main area of expertise is implementation of district heating and renewable energy in energy systems both on national and local levels. Jakob has comprehensive experience regarding energy system analysis and feasibility studies in both regional, national and international projects. Jakob has worked on international projects for customers such as the Danish Energy Agency (Turkey), European Union (Poland), Danish Ministry of Foreign Affairs (Belarus), The Nordic Energy Research (Nordic countries), Mälerenergi (Sweden) and City of Seattle (US).

Jakob has worked with national strategies within district heating and development of technology catalogues for the Danish Energy Agency. Jakob has also worked with energy planning and energy strategies for a number of municipalities and district heating companies. These assignments usually covers both the technical and financial aspects of heat planning along with dialogue with the local and national authorities. Heat planning assignments for municipalities covers both district heating and individual heat supply systems. Projects involves feasibility studies, prioritising and choosing relevant heat production technologies and modelling heat production systems.

Jakob has comprehensive experience working with GIS both as a planning tool and a tool to establish an overview of energy systems, resources etc. The tools has been used in most heat planning assignments for Danish municipalities and district heating companies.

EDUCATION

MSc Engineering. Technical University of Denmark. 2003-2009
HD (1st part). Copenhagen Business School. 2010-2012

EMPLOYMENT RECORD

COWI A/S, Denmark. 2009-
VEKS I/S, Denmark. 2007-2009

SELECTED PROJECTS

HALSNÆS, HEAT PRODUCTION STRATEGY. Project manager and specialist

The purpose of the project was to analyse which heat supply solutions that can replace one of the outdated wood chip boilers. The analysis included a new wood-chip boiler both with and without partly use of wood waste in addition to regular wood chips, heat pump and solar heating solutions.

Project management, feasibility study, socio economic study and reporting.

Halsnæs Utility. Denmark. 2018-2019

TVIS, CONNECTION OF NEW CONSUMERS. Project manager and specialist

The purpose of the project was to investigate the possibility of connecting small local district heating companies to TVIS transmission system. The investigation included feasibility studies and socio economic analysis.

Project management, feasibility study, socio economic study and reporting.

TVIS. Denmark. 2018-2019

FUTURE HEAT SUPPLY IN THE CAPITAL REGION OF DENMARK. Project Manager

The purpose of the project is to project the structure of the heat supply system in the 30 municipalities in the Capital Region of Denmark by 2035. Some of the main outputs should be a supply ratio of district heating, possible scenarios for the 30 district heating production systems, possible scenarios for the individual heat consumers and which areas are expected to convert to district heating.

Gate21. Denmark. 2017-2018

DISTRICT COOLING IN SOUTH EAST ODENSE. Project manager and energy planner.

The purpose of the project is to make a pre-feasibility study and technical screening of the possibilities of supplying an area of south east Odense with district cooling supplied by District Heating Funen. The assignment investigates opportunities such as compressor cooling, absorption chillers and ground water cooling with or without ATEs. The project will present technical and economic studies.

District Heating Funen (Fjernvarme Fyn). The Nordic Countries. 2017-2018

CONSEQUENCES FOR THE DECENTRAL NATURAL GAS CHP SYSTEMS WITH THE DISCONTINUATION OF THE CAPACITY SUBSIDY. Project Manager

At the end of 2018 the decentralised natural gas CHP systems loses their significant capacity subsidy with the immediate result that approx. 200 small and medium scale district heating systems in Denmark needs to significantly increase the heat consumption costs. This assignment aims to estimate the consequences for these approx. 200 district heating companies and how different actions could accommodate the heat cost increase.

Danish Energy Agency. Denmark. 2017

FUTURE HEAT SUPPLY. Project Manager

The purpose of the project was to analyse the technical and financial possibilities for implemented new heat generation and storage technologies in the district heating system in the city of Slagelse. The technologies involved were solar heating, biomass boiler, heat pump and a seasonal thermal storage.

SK Varme (SK Heat). Denmark. 2017

RENEWABLE ENERGY SUPPLY AND STORAGE IN SCATTERED SETTLEMENTS. Energy Planner

The purpose of the project is to develop project auxiliary systems for development of local energy supply in scattered settlements. Municipal planners and decision-makers (politicians) should be able to use the systems.

The success criteria are to develop an energy system that allows for conversion of the heat supply to renewable energy and allows for the use of more wind power in the central electricity system. Thus the heat supply solution should balance the electricity system in the short (minute) and medium (day) term.

The project comprises the following services:

- Guidelines: Preparation of guidelines with the purpose of guiding planners and decision-makers in the process of establishing a local energy supply in scattered settlements. The guidelines include subjects such as financing, barriers and description of advantages and disadvantages of the use of different energy technologies.

- Case: Analysis project for Faroese settlement, Leirvík. This case includes establishment of a local heat supply with the purpose of supporting the reorganisation of the heat supply to renewable energy and supporting the implementation of wind power in the Faroese electricity system.

Responsible for the execution of the case part and input for the guideline part.

Nordic Energy Research. The Nordic Countries. 2016-2017

ANALYSIS OF THE POSSIBILITIES OF CONVERTING AREAS IN HELSINGØR MUNICIPALITY TO DISTRICT HEATING. Energy Planner

Preparation of analysis tool for evaluating the potential of converting individual supply areas in Helsingør Municipality to district heating.

Forsyning Helsingør. Denmark. 2015-2017

ASSESSMENT OF POTENTIAL PRODUCTION INSTALLATIONS FOR HOLTE FJERNVARME – FOLLOW-UP. Project Manager

Holte Fjernvarme requested a partial update of a previous analysis on new, potential production facilities. The facilities to be reanalysed include a conventional wood chips boiler, a biomass oven from Dall Energy and an electric boiler. In addition, a gas-driven heat pump expansion was requested.

Holte Fjernvarme. Denmark. 2016

ANALYSIS OF THE POSSIBILITIES OF CONVERSION OF AREAS IN GENTOFTE MUNICIPALITY TO DISTRICT HEATING. Project Manager

Analysis of the possibilities of converting parts of Gentofte Municipality from individual heat supply to district heating.

Gentofte Fjernvarme. Denmark. 2015-2016

FUTURE SUPPLY. Energy Planner

DIN Forsyning requested an analysis of the possibilities for new capacity. The project included analysis of biomass-based heat and power, heat pumps, biomass boilers and seasonal heating storage.

DIN Forsyning. Denmark. 2015

ASSESSMENT OF POSSIBLE PLANTS FOR HOLTE DISTRICT HEATING. Project Manager.

Holte District Heating requires an analysis of the possibilities of expanding production facilities, seasonal storage and heat storage. The services comprise:

Screening of various production facilities/seasonal storages at Holte District Heating production system.

Preparation of socio-economic calculations.

Assessment of location needed for each plant.

Holte Fjernvarme. Denmark. 2015

FUTURE SCENARIO FOR THE HEAT SUPPLY IN SØNDERBORG. Project Manager.

Sønderborg District Heating wishes to have various scenarios for future heat demand examined including how and where the heat will be produced and future grid structure. COWI's services include technical consultancy regarding analysis and determination of future heat demand as well as analysis of grid structure and possible production scenarios based on waste-to-energy, CHP based on natural gas, solar energy, biomass, biogas, heat pump and geothermal energy.

Sønderborg Fjernvarme. Denmark. 2014-ongoing

STRATEGIC ENERGY PLANNING IN THE CAPITAL REGION OF DENMARK. Energy Planner.

In April 2012, The Capital Region of Denmark and Kommunekontaktområdet KKR (the municipality contact council) agreed on the first common climate strategy for the capital region. One aim of the climate strategy is to strengthen climate initiatives between public authorities in connection with transition to non-fossil energy- and transportation systems including strategic energy planning, utilisation of potentials of energy savings, development of coherent district heating systems and extension of renewable energy plants. The total project is a development project consisting of four work packages.

Consultant assistance is carried out in co-operation with EA Energianalyse for work package (AP2): Energy scenario till 2050 and (AP3): New regulation and organization of the energy planning.

Preparation of energy balance sheets for 29 municipalities in the Capital Region and one collected energy balance sheet for the entire region.

Region Hovedstaden. Denmark. 2014-2015

ANALYSIS OF THE ROLE OF DISTRICT HEATING IN THE FUTURE DANISH ENERGY SYSTEM. Energy Planner.

The project comprises analysis of how district heating is produced in the future and to what extent district heating supply should be extended. The main question is whether the relatively large investments in district heating pipelines can be compensated for by the benefit of receiving surplus heat from combined heat and power plants, waste-to-energy plants and industry. Further, the role of district heating is increasing the use of renewable energy resources as straw, wood chip and biogas on large efficient units, i.e. in changing the energy system towards a fossil-free energy supply system. Reduction of energy consumption in buildings and increased market share of wind power production are basic elements in the energy sector analyses.

Danish Energy Agency. Denmark. 2013-2014