



ELENA Completed Project Factsheet

Improving renewable energy and energy efficiency in North Denmark District HEATING (INDDHEAT)

Location of planned investments	North Denmark Region, Denmark
Final Beneficiary	Aalborg Municipality
Final Beneficiary's address	Boulevarden 13 DK-9000 Aalborg Denmark
CoM signatory	Yes
Sector	District Heating (and Cooling)
Total PDS costs	EUR 3,035,032
ELENA contribution	EUR 2,731,528
Project development services financed by ELENA	<p>The overall ELENA TA programme was coordinated by the Green Hub Denmark – located in Aalborg. A Steering Group supervised the ELENA TA programme implementation. It set the overall strategic course of the INDDHEAT project and was responsible for approving budgets, progress reports, and implementation timeframes. The Secretariat managed the project administration, accounting, budgets, communication, and facilitation of networks and supervised the external consultants who performed the TA works for the District Heating companies.</p> <p>The ELENA support enabled a speeding up of processes and ensured that the district heating plants were more likely to select state of the art solutions for their investments. The PDS supported the screenings of the current situation for each DH companies, the planning and the studies for the design and permit approval, and the tendering process to implement the investments.</p>
Description of ELENA operation	<p>The Project Development Services (PDS) financed by ELENA provided support to implement the District Heating (DH) and District Cooling Investment Programme in the North-Denmark Region. This Investment Programme supported DH Companies that utilize fossil fuels - such as gas, coal and oil - production for their DH networks in the transition to renewable resources. The DH companies relying on natural gas were at risk of significant economic burdens, because of national political changes to the district heating subsidy structure. These burdens could be transferred to the consumers by increasing the price of heat. The INDDHEAT project enables actions to address the increased heat prices and kept control over the prices.</p>
Timeframe	July 2018 – December 2021
Investment programme description	<p>The aim of the REFER-CDR project was to ensure acceptable and low consumer prices for energy and to ensure a production capacity that is not vulnerable to changing policies and energy taxation. There have been in total 13 investment projects, the district heating plants have changed their energy mix from gas-based CHP to renewable energy. In term of investment, most of the projects targeted the installation of heat pumps. The development of District Heating networks was the second highest investment, and finally District Cooling and other RES heat production such as biogas represented the rest.</p>

	In addition, innovative projects such as seawater heat pump and heat storage tanks were developed. As a result of the project, companies now base their heat production mainly on renewable energy. The average cost per saving, either as RE or EE, is approximately 300,000 EUR/ GWh.
Investment in implementation phase	EUR 64.5m
Results expected to be achieved	Energy savings of 31.5 GWh/y RES generation of 185 GWh GHG emission reduction of 60,878 tCO ₂ eq/y
Leverage factor achieved	23.62
Lessons learnt	<p>The ELENA facility has been very beneficial for the participating DH utilities, as it has facilitated the green transitions process of phasing out natural gas and coal from the DH in North Denmark. The INDDHEAT project has also speeded up the process for many of the DH utilities involved as it has kick started an investment process, which for many of the DH utilities will continue even after the finalization of INDDHEAT. Some of the DH utilities that have been active in the beginning had to withdraw their participation as their projects were already too mature, or not relevant anymore. Fortunately, it has been possible for new DH utilities to join the project - even after the project start.</p> <p>The evaluation has shown that the utilities have gotten much more benefit from their participation than the obvious financial support for the preparation of investment.</p> <p>One common outcome is the impact of the ETA as most of the projects went through a more thorough analysis and therefore have had a better planning than they would have normally have. Another outcome of the evaluation is that it has provided added value of the knowledge sharing and network facilitated by the INDDHEAT Secretariat: "It has really strengthened the sense of community among the utilities in the North Denmark and demonstrated what we can do together" as one of the participants put it. It is clear that the participants have enjoyed learning from each other and discussing their ideas as to which green transmission projects to enter into.</p>
Further information sources	https://greenhubdenmark.dk/gronne-losninger/inddheat/
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