

Final report

1.1 Project details

Project title	IEA Heat Pump Program ExCo deltagelse som repræsentant
Project identification (program abbrev. and file)	EUDP j.nr. 64013-0534
Name of the programme which has funded the project	EUDP-13II: Systemintegration
Project managing company/institution (name and address)	Teknologisk Institut Kongsvang Alle 29, 8000 Aarhus C
Project partners	Johnson Controls Industries
CVR (central business register)	56976116
Date for submission	14-06-2017

1.2 Short description of project objective and results

Denmark has the 1. of January 2013 joined the IEA Heat Pump Programme (HPP). DEA has designated Technological Institute to be representative of HPP's Executive Committee's work.

The purpose of the project is following;

- 1: Promote and implement and promote projects in IEA HPP, which will be of interest of Denmark and Danish business.
- 2: To ensure that Danish companies and research Institutes have the opportunity to participate in and get the benefit from international collaboration around heat pump projects.

Denmark has during the project period participated in HPP's Executive Committee's work. The IEA HPP work has been presented for the Danish Industry and an IEA HPP workshop on International level was held in May 2015 with participation from 15 countries.

The startup of 2 new annex's has been proposed from Danish side. In the period has Denmark participated in 4 Annexes.

Kort beskrivelse af project mål og resultater

Danmark har pr. 1. januar 2013 meldt sig ind i IEA's varmepumpeprogram (HPP). Energistyrelsen har udpeget Teknologisk Institut til at være repræsentant i HPP's Executive Committee's arbejde.

Projektformålet er;

- 1: At fremme og iværksætte og fremme projekter i IEA's HPP, som vil have interesse for Danmark og Dansk Erhvervsliv.

2: At sikre, at danske virksomheder og forskningsmiljøer har mulighed for at deltage i og få udbytte af internationale samarbejder omkring varmepumpe-projekter.

Danmark har i projektperioden deltaget i arbejdet i HPP Executive Committee. Arbejdet i IEA's HPP er blevet præsenteret for de Danske Industri og der er blevet afholdt en Workshop på internationalt niveau i Maj 2015 med deltagelse fra 54 deltagere fra 15 forskellige lande.

Der er fra Dansk side blevet taget initiativ til opstart af 2 nye annexer. I projektperioden har Danmark deltaget i 2 Annexer.

1.3 Executive summary

The Heat Pumping Technologies Programme is the foremost worldwide source of independent information and expertise on environmental and energy conservation benefits of heat pumping technologies (including refrigeration and energy conservation benefits of heat pumping technologies (including refrigeration and airconditioning). Research, development, demonstration and dissemination as well as knowledge transfer of efficient and renewable heat pumping technologies form the scope of the programme.

During the project periode has the purpose of project "IEA Heat Pump Programme ExCo participation as representative" been to promote the projects in the IEA HPP, but also to engage Danish Companies to participate in the annexes. Annex 35 "Application of Industrial Heat Pumps", and is participating in Annex 42 Heat Pumps in Smart Grids, Annex 44 Performance indicators for Energy Efficient Supermarket Buildings, and Annex 47 Heat Pumps in District Heating Systems.

The Danish Technological Institute has represented Denmark at the IEA HPP ExCo meetings in Montreal May 2014, in Freiburg November 2014, in Basel in November 2015.

On 5-6 May 2015, the IEA HPP ExCo meeting in Aarhus was held at the Danish Technological Institute by 54 Participants from 15 countries.

The Danish Technological Institute and the Danish Energy Agency have represented Denmark at the IEA HPP ExCo meeting in Aarhus 5-6 of May 2014. In addition, the Danish Technological Institute participated on behalf of Denmark at the National Teams Meeting in October 2014 in Stockholm and in October 2015 in Nurnberg.

An article has been published in Spring 2015 regarding IEA HPP Danish activities. In connection with the IEA workshop a press release was sent to 18 media.

The Danish Companies which is participating are Johnson Controls Energy, Danfoss, Insero Energy, Jardfeingi, Dansk Fjernvarme.

The Participation in the IEA Executive Committee has been extended to the end of 2018.

1.4 Project objectives

The Heat Pumping Technologies Programme is the foremost worldwide source of independent information and expertise on environmental and energy conservation benefits of heat pumping technologies (including refrigeration and energy conservation benefits of heat pumping technologies (including refrigeration and airconditioning). Research, development, demonstration and dissemination as well as knowledge transfer of efficient and renewable heat pumping technologies form the scope of the programme.

The purpose of the project is following;

1: Promote and implement and promote projects in IEA HPP, which will be of interest of Denmark and Danish business.

2: To ensure that Danish companies and research Institutes have the opportunity to participate in and get the benefit from international collaboration around heat pump projects.

Participation in IEA HPP gives Denmark and the Danish business approach to all the projects running under HPP, and Denmark will be given access to the knowledge generated within these projects and in the IEA HPP.

Denmark, has during the project period participated in Annex 35 "Application of Industrial Heat Pumps", and is participating in Annex 42 Heat Pumps in Smart Grids, Annex 44 Performance indicators for Energy Efficient Supermarket Buildings, and Annex 47 Heat Pumps in District Heating Systems.

In addition, has DEA and Technological Institute discussed the possibility to start a new annex for clarification of policy instruments on national and international level to support and expand the potential for heat pumps.

Furthermore, shall international experience and knowledge from the IEA Heat Pump Programme be disseminated and communicated to both the Danish Energy Administration (DEA) and to the relevant Danish stakeholders to ensuring that the experience of other countries and international organizations, etc. is disseminated.

1.5 Project results and dissemination of results

Expert monitoring group:

The follow-up group has met in connection with the information activities the d. 1/9-2014 and d. 4/5-2015

IEA Heat Pump Programme Executive Committee meeting:

The Danish Technological Institute has represented Denmark at the IEA HPP ExCo meeting in Montreal 16-17 of May 2014 in Freiburg in November 2014, and in Basel 10-11 of November 2015.

On 5-6 May 2015, the IEA HPP ExCo meeting in Aarhus was held at the Danish Technological Institute by 54 Participants from 15 countries.

The Danish Technological Institute and the Danish Energy Agency have represented Denmark at the IEA HPP ExCo meeting in Aarhus 5-6 of May 2014. In addition, the Danish Technological Institute participated on behalf of Denmark at the National Teams Meeting in October 2014 in Stockholm and in October 2015 in Nurnberg.

Information activities.:

An article has been published in Spring 2015 regarding IEA HPP Danish activities. In connection with the IEA workshop a press release was sent to 18 media.

An after-work meeting d 1/9-2014 in the heat pump manufacturer's association at the Danish Technological Institute
Taastrup at this meeting, IEA's projects were presented to the Danish heat pump industry.

In connection with the IEA ExCo meeting, an IEA ExCo workshop was held on 4/5-2015 in Aarhus. There was good participation from the Danish refrigeration and heat pump industry in total, there were 54 participants from 15 countries and the workshop was a big success.

Project participation:

The participation in the IEA Heat Pump Programme has opened the possibility for Denmark to participate in IEA HPT annexes. Denmark has joined three of these annexes; Annex 35 Heat Pumps in Industrial applications, Annex 42 Heat Pumps in Smart Grids, Annex 44 Performance indicators for Energy Efficient Supermarket Buildings, and Annex 47 Heat Pumps in District Heating Systems.

Project Generation:

There have been suggestions from the Danish side for 2 new heat pump annexes. Of which, an Annex 47 "Heat Pumps and District Heating and Remote Cooling" has been started up and Denmark is participating.

Denmark still participates in Annex 42, and Denmark is expected to participate in the follow-up to Annex 35.

1.6 Utilization of project results

The participation in the IEA Heat Pump Programme, opened the possibility to participate in the IEA HPP annexes. This means that it was possible to join both Annex 42 Heat Pumps in Smart Grids, but also Annex 35 Heat Pumps in industrial applications. The participation in the IEA Heat Pump Programme has opened the possibilities for Danish Industry to participate in international project regarding heat pumps and implementation of heat pumps.

Johnson Controls Industries has participated in Annex 35 Heat Pumps in industrial applications, and during the project period has Johnson Controls Industries had the possibility to present their products and view on the implementation of Heat Pumps to a wide range of International Stakeholders.

The Danish Technological Institute has during the project period the possibility to participate in annex 35 Heat Pumps in industrial applications but also in Annex 42 Heat Pumps in Smart Grids, and Annex 44 Performance Indicators for Energy Efficient Supermarket Buildings. The participation in the IEA Heat Pump Programme means that the Danish Technological Institute has the possibility to start new projects under the IEA HPP umbrella but also to take Danish Ideas and views into the IEA HPP work. The IEA Heat Pump Programme is a very important key for the Danish Heat Pump Industry and stakeholders which opens the door to an international understanding of the problems and solutions regarding implementation of heat pumps in different countries. In connection with the workshop held at DTI in Aarhus in May 2015, the Danish Technological Institute had the possibility to show the heat pump testing facilities and a range of Danish research and development projects.

1.7 Project conclusion and perspective

The participation in the IEA Heat Pump Programme Executive Committee since 2013 until 2015 has opened the possibilities for the Danish Heat Pump industry to participate in the IEA HPP annexes. Denmark has joined three projects in the period; annex 35 Heat Pumps in industrial applications, Annex 42 Heat Pumps in Smart Grids, and Annex 44 Performance Indicators for Energy Efficient Supermarket Buildings. The participation in the Executive Committee has also given Denmark the possibility to propose a new Annex regarding Heat Pumps in District Heating Systems, and propose another Annex regarding market barriers and implementation of heat pumps. The Danish Companies which is participating are Johnson Controls Energy, Danfoss, Insero Energy, Jardfeingi, Dansk Fjernvarme.

The Participation in the IEA Executive Committee has been extended to the end of 2018. The IEA Heat Pump Programme gives Danish Industry the access to knowledge regarding barriers and possibilities in other countries where the boundaries and conditions can be totally different compared to Danish, this is a knowledge which it's hard to get elsewhere. The IEA Heat Pump Programme also gives the Danish Industry a possibility to share knowledge and experience from Danish Heat Pump Projects on a international level.

Annex

Relevant links

