

Final report

1. Project details

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| Project title | IEA Heat Pump Programme ExCo deltagelse som repræsentant |
| File no. | J.nr. 64018-0614 |
| Name of the funding scheme | EUDP18: Energieffektivitet |
| Project managing company / institution | Teknologisk Institut |
| CVR number (central business register) | 56 97 61 16 |
| Project partners | Johnson Controls |
| Submission date | 23 April 2024 |

2. Summary

Since January 2013, Denmark has participated in the IEA Heat Pump Programme (HPP). The Danish Energy Agency (DEA) has designated Danish Technological Institute to be the Danish representative of the work of the HPP's Executive Committee.

The purpose of the project was as follows;

1: To promote and implement projects in the IEA HPP, which will be of interest to Denmark and Danish business community.

2: To ensure that Danish companies and research institutes can participate in and get the benefits from an international collaboration on heat pump projects.

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

During the project period has Denmark participated in Annex 51 "Acoustic signatures of heat pumps" and Annex 48 "Industrial Heat Pumps, Second phase". Furthermore, has Denmark participated in Annex 47 "Heat Pumps in district heating and cooling systems".

During the project period has Denmark initiated two new Annexes; Annex 57; "Flexibility by implementation of heat pump in multi-vector energy systems and thermal networks", and Annex 58; "High Temperature Heat Pumps"

Furthermore, international experience and knowledge from the IEA Heat Pump Programme shall be disseminated and communicated to both the DEA and relevant Danish stakeholders in order to ensure that the experience of other countries and international organizations and others is disseminated.

2.1.1 Executive summary (dansk):

Danmark har siden januar 2013 deltaget i IEA's varmepumpeprogram (HPP). Energistyrelsen har udpeget Teknologisk Institut til at være repræsentant i HPP's Executive Committee's arbejde. Danmark deltager nu i tre IEA Heat Pump programme projekter, hvoraf det ene er startet op på dansk initiativ, og vi regner med at deltage i yderligere projekter. Herudover har vi bidraget med viden og information til andre af IEA's projekter, dog uden af deltage.

Projektformålet er;

- 1: At fremme og iværksætte 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 varmepumpeprojekter.

Deltagelsen i IEA's HPP giver Danmark og Dansk Erhvervsliv tilgang til alle de projekter, der kører under HPP, og Danmark får hermed tilgang til den samlede viden, der genereres inden for disse projekter og i IEA's HPP.

Danmark har i projektperioden deltaget i samarbejdet i Annex 51 "Acoustic Signatures of Heat Pumps" og Annex 48 Industrial Heat Pumps Second Phase, og vi deltaget i Annex 47 "Heat Pumps in district heating and cooling systems". Herudover har vi deltaget i Annex 50 Vedrørende varmepumper og Multi family houses.

Herudover skal internationale erfaringer og viden fra IEA's varmepumpeprogram udbredes og videreformidles til såvel den danske energiadministration (Energistyrelsen) som til de relevante danske aktører i Danmark med henblik på at sikre at erfaring fra andre lande og internationale organisationer m.v. formidles.

3. Project objectives

Arranging two following teams group meetings pr year:

Two following teams group meeting should be held pr year. Where the project status should be discussed and new projects should be generated, and taken to the ExCo meetings and national teams meetings afterwards.

Participation in the IEA HPT Executive Committee meetings

There should be participation in two ExCo meetings per year and participation in the National Teams meeting one time per year. The participation consists of the following work:

- Coordination of research and development projects
- Information regarding the technology development at the moment
- Organisation of meetings and workshops
- Publication of the IEA Heat Pump Newsletter, status reports and leaflets.
- Coordination with national organisations and institutes within the heat pump area.
- The role as ExCo delegat, is in agreement with the Danish Energy Agency active and necessary and represent Danish interests.
- Preparation before the IEA ExCo meetings.
- Travle activity related to the meeting. Around 10 days pr. Year.
- Information activities regarding the Heat Pump Programme at national level.
- Workshop with information regarding the IEA Activities every year.

4. Project implementation

- The project and participation in the IEA HPT programme ran as expected. There has been Danish participation in all the IEA HPT ExCo meetings as well as the National teams meetings. Denmark has also participated in the IEA HPT conference. And the milestones has been fulfilled.
- The only milestone which hasn't been fulfilled is the arrangement of the annual national information workshop. The reason why this hasn't been fulfilled is because of the COVID restrictions.
- The results has been presented at the IEA HPT magazine which has been distributed by the Danish Heat Pump manufacturers association.

5. Project results

- The original objectives described in chapter 2 are fulfilled and Denmark are still initiating and bringing knowledge into the IEA HPT framework. During this period has two annexes been initiated and started from Danish side; IEA annex 57; and IEA HPT annex 58.

6. Utilisation of project results

- *The projects and the results from the participation in the IEA HPT Programme are getting a lot of political focus, both on national level and at European level.*

The industries and institutes which participate in the IEA HPT Annexes are getting a lot of knowledge and a great international network.

7. Project conclusion and perspective

- *State the conclusions made in the project.*

- *What are the next steps for the developed technology?*
- *Put into perspective how the project results may influence future development*
- The Danish Participation in the IEA HPT programme has given Denmark the possibility to participate in an international network with other experts and share knowledge within the group. Denmark has in the period been very active regarding initiation and start up of new projects.
- It's expected that we still will participate in the IEA HPT programme, and we are at the moment preparing the initiation of another new project.

8. Appendices

All the information regarding the IEA HPT work and the annexes can be found at the following link:

<https://heatpumpingtechnologies.org/>