WORKSHOP
SUCCESSFUL APPLICATIONS OF INDUSTRIAL HEAT PUMPS

Status presentation

of Annex 48

Industrial Heat Pumps

August 28, 2019 Montreal

IEA INTERNATIONAL ENERGY
TCP TECHNOLOGY COLLABORATION PROGRAMME ON
HTP HEAT PUMPING TECHNOLOGIES

- IEA - HPT TCP has been active since 1978, with a lot of collaborative research, development, demonstration and deployment projects.
  We call these projects "Annexes" and they are conducted on a combination of cost sharing and task-sharing basis by the participating countries.
  (They are the Annexes of an IEA PROGRAMME)

HISTORY ANNEXES IHP

- Annex 09

High Temperature Industrial Heat Pumps

Before 1990

HISTORY ANNEXES IHP

ANNEX

21

START DATE:

1 June 1992

END DATE:

1 December 1996

Global Environmental Benefits of Industrial Heat Pumps

By upgrading heat at a lower temperature, industrial heat pumps use their high-energy efficiency to meet heating needs in industry, therefore helping to reduce the consum...

HISTORY ANNEXES IHP

ANNEX

35

START DATE:

1 May 2010

END DATE:

1 April 2014

Application of Industrial Heat Pumps (IHP)

Objectives The objective of the Annex was to reduce the use of energy and emissions of greenhouse gas emissions by the increased application of heat pumps in industry,...

IEA HPP - IETS ANNEX 35/13: APPLICATION OF INDUSTRIAL HEAT PUMPS

- As a joint venture of the IEA Implementing Agreements Industrial Energy-related Technologies and Systems (IETS) and Heat Pump Programme (HPP)
- 9 IEA countries A CDN D DK F JAP Korea NL S
  15 participating organizations
- Operating agent: IZW e.V. Germany
- Start date: 01st May 2010 End date: 30th April 2014
- Report: 31st October 2014 689 pages
  39 R&D projects 115 applications
  85 publications of the participants
- Report: Download http://www.izw-online.de/annex35/index.php

CURRENT ANNEX IHP

ANNEX

48

START DATE:

1 April 2016

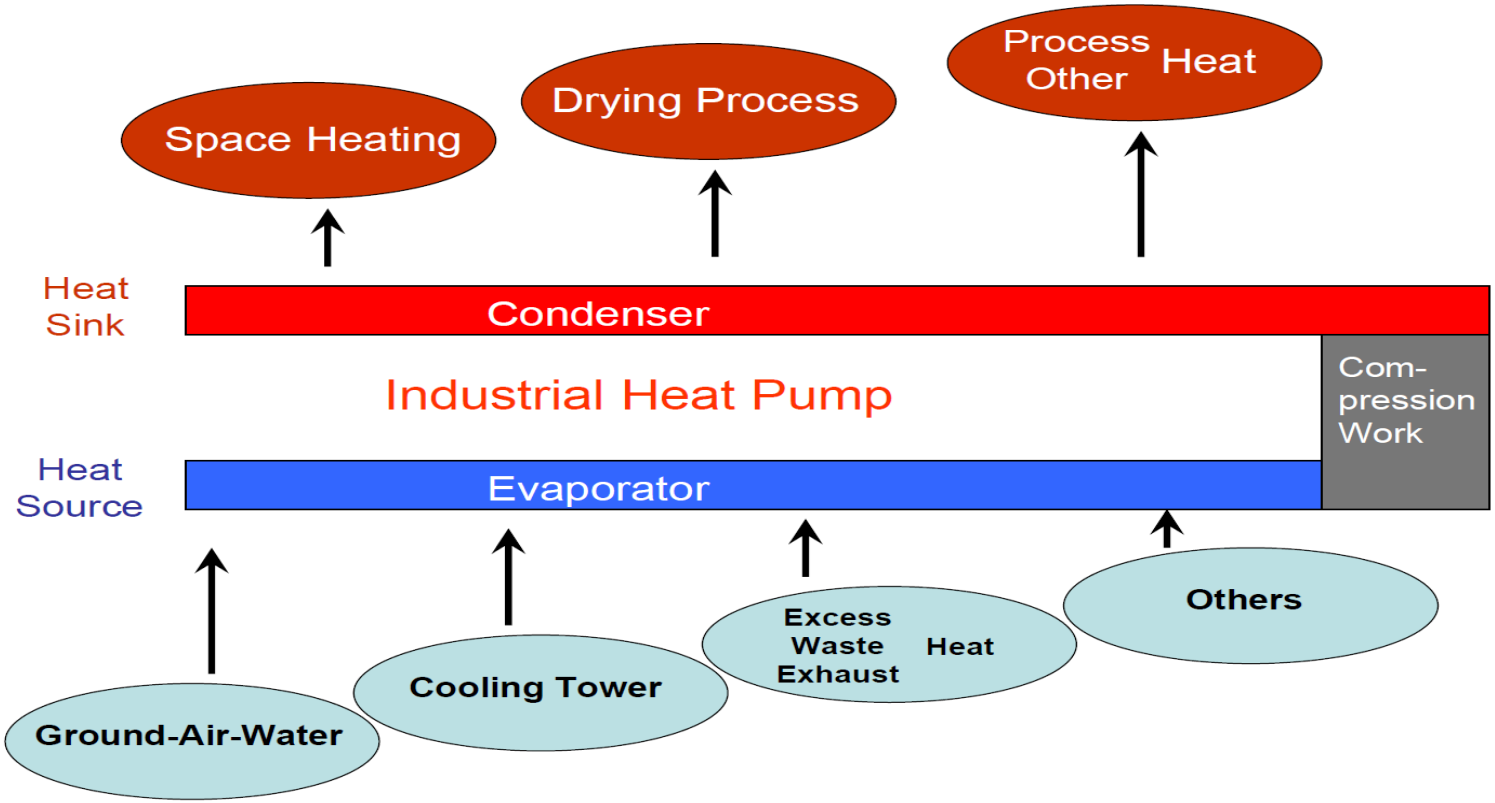
END DATE:

30 November 2019

Industrial Heat Pumps, Second Phase

The official end date of Annex 48 is 31/03/2019. Compilation of the final report is ongoing. Industrial heat pumps (IHP) are active heat-recovery devices that incr...

HEAT SOURCE AND HEAT SINK IN INDUSTRIAL HEAT PUMPS



IEA HPT TCP ANNEX 48:
INDUSTRIAL HEAT PUMPS, SECOND PHASE

- 6 IEA countries A CH DK F JAP UK
- Operating agent: IZW e.V. Germany
- Start date: 01st April 2016
- End date: 31st March 2019
- Final report: October 2019

OUTLOOK

- Main Goal of the HPT TCP-Annex 48 is to **overcome difficulties and barriers** for the market introduction of industrial heat pumps.
- **Collected cases studies** of industrial branches with a large potential, should be analyzed
- **Development of a web based information platform** for heat pumps in industrial and commercial application
- **Creating information material for IHP (training) courses**
- **The IHP potential** for more efficient use of energy and reduction of greenhouse gas emission should be prepared for policy makers

PRESENTATIONS

AUSTRIA VERONIKA WILK 8:40 – 9:00

AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY

INCREASING ENERGY EFFICIENCY IN INDUSTRY: APPLICATION OF INDUSTRIAL HEAT PUMPS IN AUSTRIA

V. Wilk, T. Fleckl, A. Arnitz, R. Rieberer

Dr. Veronika Wilk

TU Graz
Graz University of Technology

UK Neil Hewitt 9:00-9:20

Ulster University

Taking high temperature heat pumps to the next level – Power to heat and heat to power

Professor Neil J Hewitt
Dr Mingjun Huang
Dr Nik Shah
Dr Chris Wilson
Dr Donal Cotter
Centre for Sustainable Technologies
Ulster University

IPESE
Industrial Process and Energy Systems Engineering

EPFL

SWITZERLAND IVAN KANTOR 9:20 – 9:40

Identifying optimal industrial heat pump placement

A. Sophia Wallerand, **Ivan Kantor**, François Maréchal
ICR 2019, Montreal, Canada
EPFL – IPESE

SCCER EFFICIENCY OF INDUSTRIAL PROCESSES

In cooperation with the CTI

Energy funding programme
Swiss Competence Centers for Energy Research

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Commission for Technology and Innovation CTI

DENMARK: BENJAMIN ZÜHLSDORF 9:40 – 10:00

Heat pumps for district heating and industry in Denmark

Status, perspectives and ongoing developments

28.08.2019 – ICR Montreal – Workshop on industrial HPs

B. Zühlsdorf, F. Bühler, W. Meesenburg, P. H. Jørgensen, B. Elmegaard
bez@dti.dk, +45 7220 1258

Japan Yohji Uchiyama 10:40 – 11:00

Evaluation of Good Practices for Industrial Heat Pumps in Japan

Yohji UCHIYAMA

Japan Electro-Heat Center

Takenobu KAIDA, Katsumi HASHIMOTO

Central Research Institute of Electric Power Industry

Choyu WATANABE

Chubu Electric Power Co., Inc.

Montreal, August 28, 2019

SWITZERLAND 11:00 – 11:20

INDUSTRIAL HEAT PUMP APPLICATIONS IN SWITZERLAND – HEAT PUMP INTEGRATION CASE STUDIES

- Dr. Cordin Arpagaus
- NTB University of Applied Sciences
- of Technology Buchs
- Institute for Energy Systems IES
- cordin.arpagaus@ntb.ch
- Tel. +41 81 377 94 34
- www.ntb.ch/en/team/cordin-arpagaus

ICR 2019, The 25th IIR International Congress of Refrigeration
Montréal, Québec, Canada

August 28, 2019

NTB
Interstate University of Applied Sciences of Technology Buchs
University of Applied Sciences of Eastern Switzerland

pingtechnologies.org

IES
INSTITUTE FOR ENERGY SYSTEMS

WRAP UP 11:20 - 12:00

QUESTIONS & DISCUSSION & PANEL DEBATE WITH THE AUTHORS OF THE PRESENRTATIONS

Rainer M. Jakobs
Information Centre on Heat Pumps and Refrigeration IZW e.V.

Many thanks for your kind attention

22-23 OCTOBER 2019
NUREMBERG

www.heatpumpingtechnologies.org