



# The IEA Heat Pumping Technical Collaborative Programme

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## IEA TCPs



- The IEA was set up to manage oil flows during the 1970s crisis
  - Members are governments of energy-importing countries
  - It also operates a number of international Technical Collaboration Programmes
- One of which is the Heat Pumping Technology Collaboration Program
  - Covers heat pumps, air conditioning and refrigeration (but mostly heat pumps)
  - 17 member countries (Europe, North America, Far East)



## How do TCPs work?



- Any IEA member country can join any TCP – for a fee
  - The UK is a member of 20 TCPs
- This entitles any organisation in the country to participate in collaborative projects (annexes)
  - Typically three-year projects with participants from 2 to 8 countries



# How do annexes work?



- The projects are “cost-shared”
  - This means that participants have to find their own funding (sometimes from government but this is rare in the UK)
  - Typically requires minimum of about 0.3 person-year each year (multiple participants possible, sharing effort)
  - Participants typically have plans for relevant work, to which they see international collaboration as added value
- Final reports are in the public domain
  - But workshops and internal project reports are not



# Other HPT activities



- Magazine – usually twice a year
  - Free to download to anyone in a member country (link)
  - Always on the lookout for articles



- International conference - every three years
  - Last year in Rotterdam
  - Next one in Korea



# Annexes with UK participants: Nearly complete



- Annex 42 Heat Pumps in Smart Grids - Operating Agent Netherlands. *UK Participants: BEIS, Delta EE.*
- Annex 43 Fuel Driven Heat Pumps – Operating Agent Germany. *UK Participant: Warwick University.*
- Annex 45 Hybrid Heat Pumps - Operating Agent Netherlands. *UK Participants: BEIS, Glen Dimplex, Passive Systems, Mitsubishi Electric.*



# Annexes with UK participants: Still time to join



- Annex 46 Domestic Hot Water Heat Pumps - Operating Agent Netherlands. *UK Participants: University of Ulster, Cardiff University, Glen Dimplex, BRE, Mitsubishi Electric, BSRIA.*
- Annex 47 Heat Pumps in District Heating - Operating Agent Denmark. *UK Participants: BEIS, Glen Dimplex, Cardiff University, Leeds University.*
- Annex 48 Industrial Heat Pumps (Phase II) - Operating Agent Germany. *UK Participants: University of Ulster, Cardiff University, Mitsubishi Electric*



# Annexes just starting



- Annex 49 Design and integration of heat pumps for nZEB – Operating Agent Switzerland. *No UK participant*
- Annex 50 Heat pump systems in multi-family buildings – Operating Agent Germany. *No UK participant*
- Annex 51 Acoustic Signature of Heat Pumps – Operating Agent Austria. *No UK participant*
- Annex 52 Long term performance monitoring of GSHPs – Operating Agent Sweden. *Expected UK participation: University of Leeds, GSHPA and possibly BGS*





# Proposed Annexes



- How to improve the channel between manufacturer and end-user
  - Might review installer and designer training, guidance and competency issues, codes of practice, monitoring of outcomes
  - Workshop (including Skype links) to be arranged (probably in October 2018)
- Internet of Things for Heat Pumps
  - Active interest but currently lacking in focus
  - Possibly to provide generic guidance or a position paper rather than an Annex
- Refrigeration and (non-comfort) cooling
  - Probable workshop to develop the idea



# Ideas on the table



- **Advanced Cooling/Refrigeration Technologies**
  - Focus on comfort cooling (rather than food chain)
  - Includes VC and less orthodox technologies
- **Heat Pump systems with Low GWP Refrigerant**
  - To keep track on new refrigerant mixtures and knowledge of their properties
  - Probably annual “state of play” reports rather than traditional structure
  - Interest from 9 countries but few with specific contributions to make
  - IIR would like to cooperate



# Links and addresses



- UK Contacts
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  - [Roger.Hitchin@blueyonder.co.uk](mailto:Roger.Hitchin@blueyonder.co.uk)
- IEA Heat Pump Centre
  - TCP generally, including current and past annexes: <https://heatpumpingtechnologies.org>
  - Magazine: <https://heatpumpingtechnologies.org/the-magazine/>