Proposal for a new IEA-Annex
Fuel driven heat pumps

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International Energy Agency (IEA)

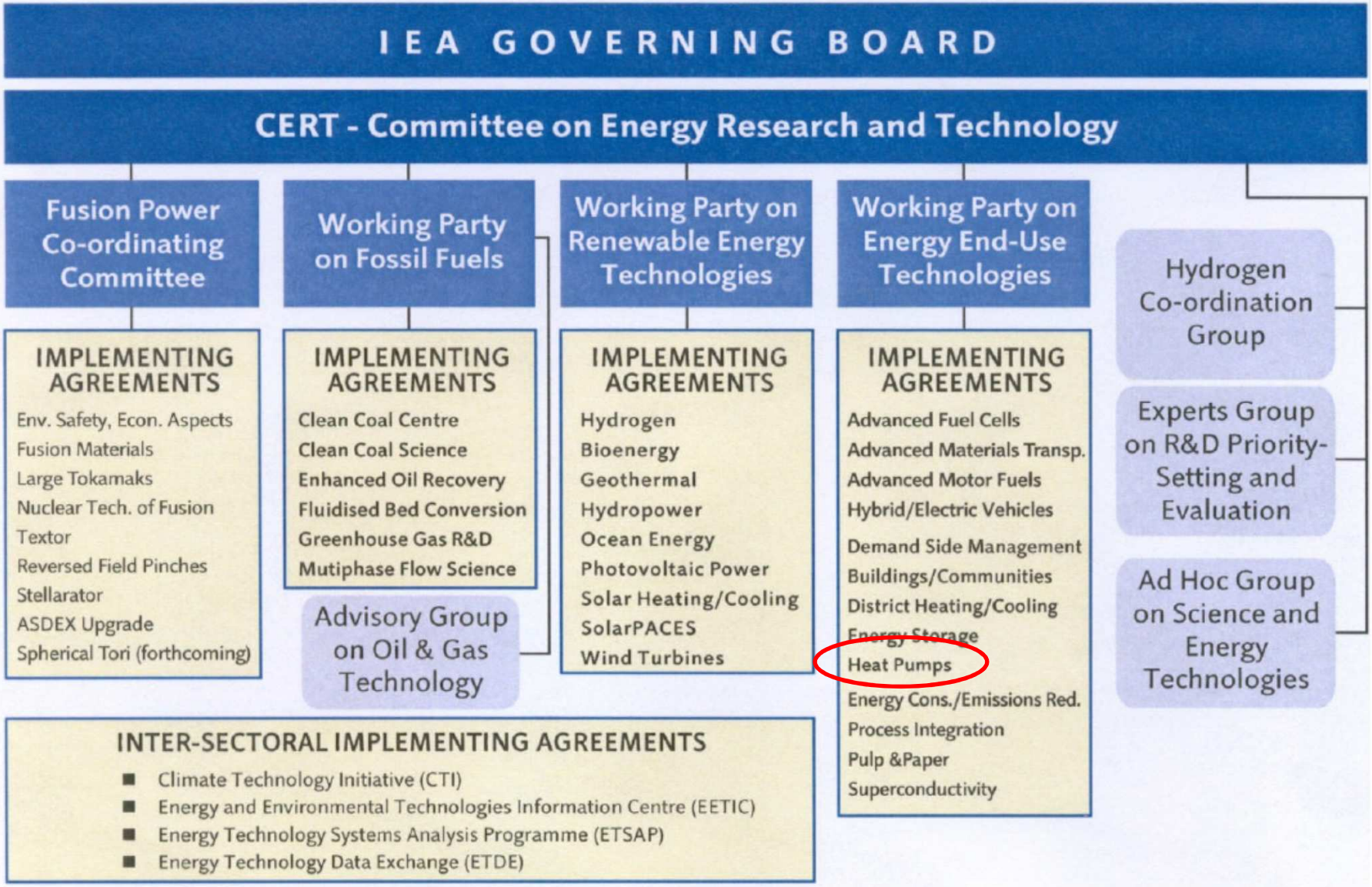
- Goals:
  - energy security
  - environmental protection
  - economic growth
- Activities
  - Co-ordinates efforts to ensure Members' continuing energy security
  - Conducts policy analysis
  - Compiles energy statistics
  - Convenes, mobilizes experts
  - Reviews Member countries' policies & programs

IEA Member Countries

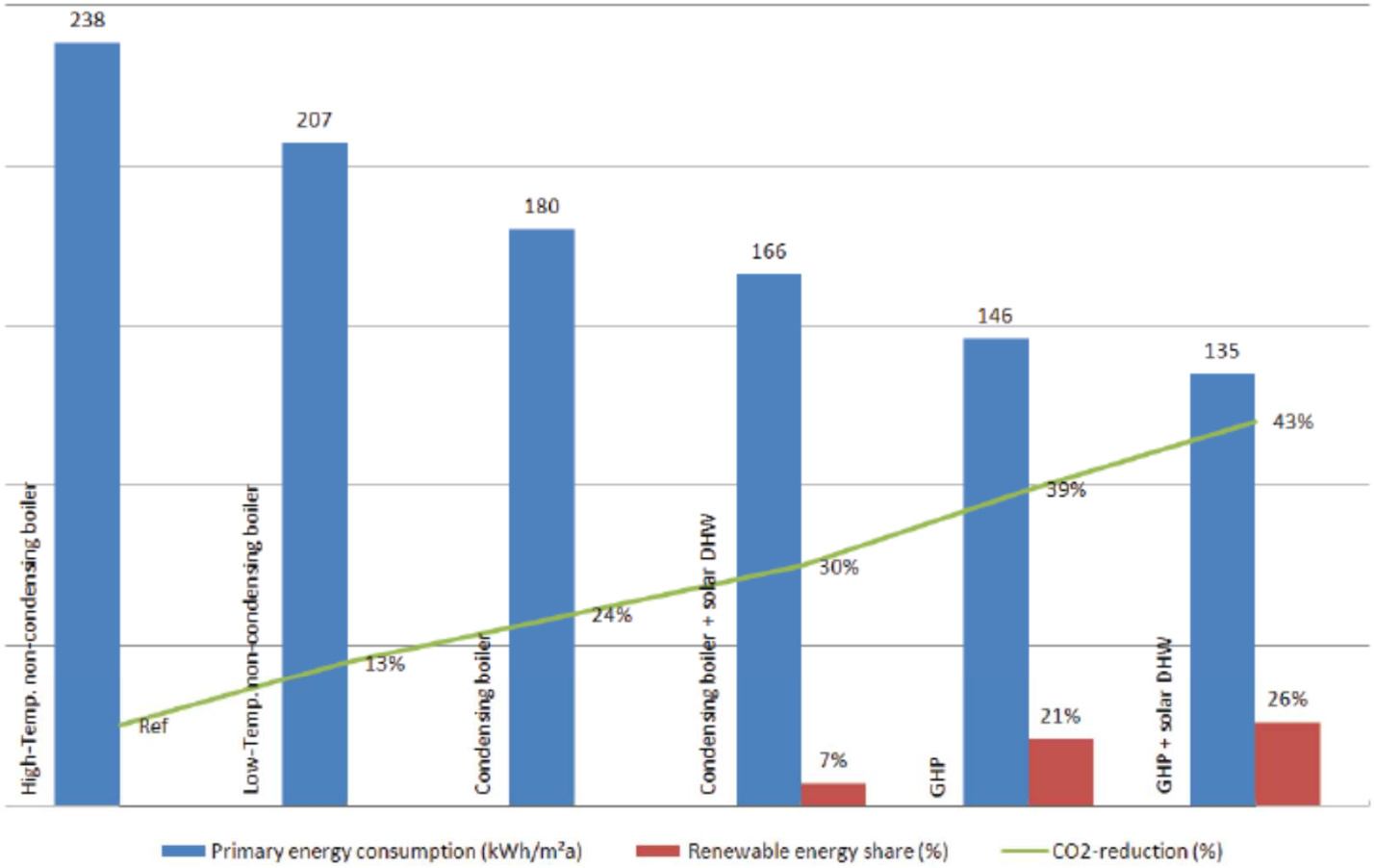
Australia
Austria
Belgium
Canada
Czech Rep.
Denmark
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Japan
Korea
Luxembourg
Netherlands
New Zealand
Norway
Portugal
Spain
Sweden
Switzerland
Turkey
United Kingdom
United States

The EC participates in the work of the IEA

The IEA Energy Technology Network



reasons for fuel/gas driven heat pumps



Source: HPC newsletter 01/2011, Viessmann

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Reasons for a new annex “Fuel driven heat pumps”

- market for fuel driven heat pumps is rising
- emerging technology just starting to enter market
- big need for quality insurance measures
- big need to optimize best system configurations for different applications
- need for standards on test procedures
- need for common understanding of field tests.

focus

- fuel driven heat pumps for *residential and light commercial (e.g. < 50 kW)*
- focus on heating mode, reversible allowed

goals

- easy and sustainable market entrance and deployment
- identify market barriers and opportunities
- identify the potential markets and importance in future energy systems
- identify market supporting measures

means

- Field test of different fuel driven heat pumps
- compare different system configurations e.g. different sources
- evaluate different technologies for different applications
  e.g. retrofit versus new buildings
- classification of system schemes ➔ generic system layout
- potential study, roadmap

Potential work structure

A: Generic systems and system classification

- Available sources and heating systems
- Control strategies
- Evaluate different fuels (oil, gas, wood, no hot water)

B: Technology transfer

- Link research to industrial development for faster market penetration of new technologies
- Novel materials, components and system designs (e.g. facade collector as heat source)

C: Field test and performance evalution

- Measurement/monitoring procedures standardization (e.g. how to cope with different fuel quality, system boundaries, aux. energy etc.)
- Continue work from Annex 34 and Task 44 and extend standards to seasonal performance factors on system level
- Develop quality ensurance procedures

Potential work structure

D: : Market potential study and technology roadmap

- Simulation study to evaluate different technologies in different climate zones, different building types and building standards
- Combine with market data and actual building stock for technology roadmap

E: Policy measures and recommendations, information

- dissemination
- workshops for planners, installers and decision makers
- technology roadshow
- develop recommendations for policies e.g. building codes and funding schemes

Interest expressed from

- Austria
- France
- Germany
- Italy
- Netherlands
- UK

Timeline:

- First discussion at 8th annex 34 meeting in Padova April 2011
- Proposed to the HPP ExCo in Mai 2011, accepted as proposal, definition workshop with last annex 34 meeting planed
- Definition workshop 24.11.2011
- conclude on scope, structure and deliverables by mail till April 2012
- present at the Exco Mai 2012
- possible start June 2012 for XXX Years

Related work:

- Control strategies for gas heat pumps
  - Field and lab test of gas heat pumps in Berlin
- Heat4U EU-FP7 european field test and simulations

- Field test of several companies in several countries
- Several building codes and funding schemes discussing GDHP
- New standards in discussion