

IEA HPP Annex 32

Economical heating and cooling systems for low energy houses

Conclusion

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Outline of the presentation

- **Conclusions**
 - Conclusion of buildings and systems
 - Focus of the work in the Annex 32
- **Future schedule**
 - Expected results of Annex 32
 - Information dissemination

Conclusion

• Building sector

- Low energy houses are a major strategy for climate protection targets
- Some countries have already strongly growing markets for new buildings
- Building regulations tend to make low energy buildings the standard

• System Technologies

- Additional functions in the residential sector
 - ventilation, space cooling, humidification, dehumidification (US, JP)
- System integration and simultaneous operation has advantages
- Heat pumps have a pole position in low- and ultra-low energy houses

• Boundary conditions

- Low energy houses provide a better thermal comfort
- Low energy buildings have limited additional cost

IEA HPP Annex 32 – Focus of national projects

- **New system concepts**
 - Redesign of system for low capacity range
 - Efficiency of system components
 - Prototypes of new integrated heat pumps
 - Natural refrigerants (CO₂, propane)
 - Concepts for cold climate conditions, hot and humid climate conditions

IEA HPP Annex 32 – Focus of national projects

- **System integration**

- Robustness of system operation, simplification of hydronic layout
- New functionalities - space cooling, humidification, dehumidification (US, JP)
- Standardised system layouts
- Design recommendations

IEA HPP Annex 32 – Focus of national projects

- **Field experience**
 - Assessment of real world operation
 - Identification of optimisation potentials
 - Information on monitoring techniques
 - Characteristic numbers for operation control

IEA HPP Annex 32 – Focus of national projects

- **Expected results**

- Concepts of new integrated heat pump solutions for low energy houses
- Lab-tested prototypes of new developments
- Field testing of new and existing system solutions
- Optimised Best practice systems
- Design recommendations and information dissemination

Future work IEA HPP Annex 32

- **Time schedule**
 - Interim report
 - Final report scheduled for 2009
- **Information dissemination**
 - Annex 32 website at <http://www.annex32.net>
 - Information on national teams and projects
 - Download of workshop presentations
 - Links to national organisations
 - Contributions to HPC Newsletter
 - Reports

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Economical Heating and Cooling systems for low energy houses



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Welcome to IEA HPP Annex 32

IEA HPP Annex 32 gives the framework for international research on heat pump systems for space heating and cooling in low energy houses in the Heat Pump Program (HPP) of the International Energy Agency (IEA). 9 countries are participating in the IEA HPP Annex 32. Focus of this website is the actual state of the research on the national level within the framework of the IEA HPP Annex 32.

Presentations will be published on the Annex 32 website at

<http://www.annex32.net>

WE HOPE YOU ENJOYED THE FLIGHT

THANK YOU FOR FLYING WITH IEA HPP ANNEX 32

WE HOPE TO SOON WELCOME YOU ON BOARD AGAIN

FOR ANY QUESTIONS PLEASE CONTACT THE CREW