IEA HPP Annex 32

Economical heating and cooling systems for low energy houses

France

France is represented by the French Utility **Electricité de France (EDF)**.

National team leader

Catherine Martinlagardette
EDF Research & Development
Departement ENERBAT
Avenue des Renardières
77818 Moret sur Loing Cedex
France
Phone: +33-(0)1-60737191
Fax: +33-(0)316-60736560
catherine.martinlagardette@edf.fr
http://www.edf.fr

French national project

France joined the Annex 32 in September 2008.

EDF R&D finished a study on the comparison of different energy systems for low energy houses. The study was carried for a typical newly built French house of 115 m² according to the requirements of the French low energy building label BBC. The building type is traditional (breeze block + internal insulation with polystyrene or polyurethane). Space heating is provided by a heat pump (variants air-to-water, water-to-water or air-to-air), by Joule effect, by a condensing gas boiler or a wood pellet boiler. Domestic hot water production is done by solar water heaters or heat pump water heater. The system variant have been compared according different criteria: primary energy consumption, CO2 emissions, final energy consumption, energy and investment costs. Result of the study is that under the above boundary conditions heat pumps for heating and domestic hot water production offers the best compromise regarding energy and investment costs as well as CO2 emissions.

Based on this study EDF R&D will investigate the following items within Annex 32:

- French market overview for new houses and new collective buildings and evolution of applicable regulations
- Economical optimization of heat pump solutions for heating and domestic hot water production for low energy buildings
- Low cost solutions of air-to-air heat pumps, including laboratory tests or field monitoring

French links

Centre Scientifique de Technique du Bâtiment (CSTB)
In its quest to improve well-being and safety in buildings, CSTB plies four complementary trades: research, advanced engineering, quality assessment and the dissemination of knowledge. In combination with its fields of expertise, they allow CSTB to adopt a global approach to buildings which includes their urban environment, services and the new information and communication technologies.
Information in English and French at
http://www.cstb.fr/

Effinergie Association
The mission of the Effinergie Association is to promote low energy houses concepts in new constructions and in retrofit applications. This comprises as well the development of a labelling and normative system for French low energy houses in the built environment.
Information in French on the website
http://www.effinergie.org

Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)
ADEME is an industrial and commercial public agency, under the joint supervision of French Ministries for Ecology, Sustainable Development and Spatial Planning (MEDAD) and for Higher Education and Research.
The mission of ADEME is encouraging, supervising, coordinating, facilitating and undertaking operations with the aim of protecting the environment and managing energy.
Information on the building activities within the program at
http://www.ademe.fr/

Centre technique des industries aérauliques et thermiques (CETIAT)
CETIAT is the French national test centre for heating technologies, among others heat pump testing according to the EN standards is performed.
Information in French, English and Italian at
http://www.cetiat.fr

Comité Scientifique et Technique des Industries Climatiques (COSTIC)
Costic assures the symbiose between the research world and the necessities of enterprises of technical equipment.
As an independent association, its mission consists of giving advice and assistance for studies and research, education and dissemination of knowledge.
Information in French at
http://www.costic.asso.fr