SEPEMO-Build

SEasonal PErformance factor and MOnitoring for heat pump systems in the building sector

Duration: *06/2009 – 06/2012*

Contract N°: *IEE/08/776/SI2.529222*

SEPEMO-Build *Summary*

What we do (main goals of the project)

•Development of a common methodology for field measurement of heat pump systems and calculation and monitoring of SPF.

•Collection and evaluation of already running field measurements on heat pump systems.

•Evaluation of existing methods for field measurement and calculation of heat pump systems SPF.

•Evaluation of existing field measurement methods

•Setting up new field measurements on heat pump systems using a common methodology.

•Improve and extend existing guidelines, to include all types of heat pumps, for installation of energy efficient and reliable heat pump systems taking into account regional constraints as well as the building standard.

•Information dissemination.

What we expect to achieve

•A definition of systems boundaries that include the devices (pumps, controls, heat pump unit)

•Field measurements in which the energy demand will be measured according to the definition.

•Improve the understanding of *key parameters* influencing the reliability and efficiency of heat pump systems in residential buildings.

•Contribute to overall goal of realising the potential of heat pumps towards energy savings and emissions reduction.

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SEPEMO-Build *Background*

The project aims at overcoming market barriers to a wider application of heat pumps, namely the lack of robust data on the conditions “in real installations” influencing reliability and seasonal efficiency, i.e. the **seasonal performance factor (SPF)** of heat pump systems across Europe.

The key objective is broader acceptance of heat pump systems and improved quality assurance for heat pump systems in the building sector.

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SEPEMO-Build *Objectives*

The project aims at

Overcoming market barriers to a wider application of HPs, namely the lack of robust data on the conditions “in real installations” influencing reliability and seasonal efficiency, i.e. the **SPF** of HP systems in Europe.

Developing a common methodology for field measurement of HP systems SPF. This requires a **systems perspective** including the efficiency of the HP unit and also the respective regional building standards and climate conditions.

Improve the **understanding of key parameters influencing the reliability and efficiency of HP systems** in residential buildings, by improved quality assurance for HP systems in the building sector.

The project focuses on **all types of HPs** (air, water and ground) **in residential buildings**.

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SEPEMO-Build *Main steps*

Main body of work:

- Collection and evaluation of past and present field measurements on HP systems.
- Evaluation of existing methods for field measurement and calculation of HP systems SPF.
- Development of a common methodology for field measurement of HP systems and calculation of SPF.
- New field measurements on HP systems using a common methodology.
- Improve and extend existing guidelines to include all types of HPs, for installation of HP systems, taking into account regional constraints as well as the building standard.
- Information dissemination.

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SEPEMO-Build *Expected Results*

The results from the SEPEMO project will:

- Be a valuable input to estimating SPF in the RES directive, and for EUROSTAT statistics.
- Lead to better insight in concepts and the differences in performance.
- Support the RES-directive in development of guidelines for system quality. Also it supports the possibility for certification of installers based upon system quality.
- Serve as benchmark for the EuP Directive both for the methodology planned in the directive to calculate the primary energy efficiency of heat pumps, as well as for the setting of class boundaries.

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European Heat Pump Association
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Austrian Institute of Technology
www.ait.ac.at

Fraunhofer ISE
www.ise.fraunhofer.de

Electricité de France R&D
www.edf.com

Fachinformationszentrum Karlsruhe
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