



Concerted Action supporting transposition and implementation of Directive 2002/91/EC of the European Parliament and of the Council

CA EPBD II

Report of a workshop session on methods and procedural aspects for energy performance characterisation (Procedures and Requirements) – Core Theme 4

Meeting in Lyon, 19-20 May 2008

Technical session May 20, 9:00 – 10:30: **Approaches to market implementation of Art. 5 by SAVE SENTRO**

Chairpersons: Hans Erhorn, Suzanne Joosen
Invited guests: Suzanne Joosen, Hubert Despretz
Additional presenter: Marjana Sijanec Zavrl
Rapporteur: Suzanne Joosen
Reviewer: Hans Erhorn

Objectives of the Core Theme Procedures and Requirements

Core Theme 4 is related to Articles 3 to 6 in the EPBD. This will include the actual chosen procedures in the MS and the way requirements have been set up. The main objective in Core Theme 4 is to provide a convenient forum for discussing practical implementation of the new standards in regulations and certification procedures in MS, particularly for identification of common approaches to simplification and alternatives which pose common difficulties that are best solved together by the MS in frank discussions. Although it will be difficult to find a common solution that will fit all MS, the range of solutions can be narrowed down to a few selected possibilities, allowing a first level of convergence within the EU.

Objectives of the session on SAVE SENTRO

Article 5 of the EPBD states that all Member States are obliged to ensure that the feasibility of alternative energy systems is considered within national building codes for new buildings over 1000 m². The SAVE SENTRO project was invited to the meeting in Lyon to present their work plan and the so far available results on developing and promoting an “optimal” approach in order to effectively incorporate the feasibility studies of alternative energy systems in the common building practice.

SENTRO – Project description

The following project description was kindly provided by Suzanne Joosen from Ecofys, NL, who is the coordinator of the project. For further information please visit the project website at <http://www.sentro.eu>.

The buildings sector accounts for 40% of the EU’s energy requirements. An estimated potential of one-fifth of the present energy consumption could be saved by 2010. To translate this potential into reduced energy consumption, the Energy Performance of Buildings Directive

(EPBD) 2002/91/EC is set to promote the improvement of energy performance of buildings. An important aspect (art. 5) of the EPBD is that all member states are obliged to ensure that the feasibility of alternative energy systems is considered within national building codes for new buildings over 1000 m².

At the moment barriers such as higher cost, lack of knowledge and confidence, are hindering alternative energy systems. For article 5 to have a substantial impact, feasibility studies on alternative energy need to become commonplace.

The SENTRO project aims to develop and promote an “optimal” approach in order to effectively incorporate the feasibility studies of alternative energy systems (art. 5 EPBD) in the common building practice.

The project starts by making an inventory on how European member states comply with the requirements of conducting a feasibility study for alternative energy systems for new buildings. The inventory also encompasses which policy they pursue to actively introduce this requirement. Subsequently, in the seven SENTRO countries (Denmark, France, Lithuania, Poland, Slovenia, Sweden and the Netherlands), an inventory is also made of the building practices as possible barriers of the implementation of alternative energy systems. After this inventory phase, tools are developed to ensure that assessment of alternative energy systems will become an integral part in the common planning process of new buildings. These tools, such as universal checklists for requirements, handbooks and flowcharts, cover technical, financial as well as organizational aspects. Core of the project is the test of these tools in a field trial in the participating countries. Towards the end of the project the experience is disseminated through courses and conferences to policy makers and key actors in the building process.

Expected results (deliverables) from the SENTRO-project are:

- Information concerning the status of the feasibility study part of the EPBD in all EU-27 MS – status March 2007
- Insight in the barriers which are hindering the use of alternative systems and insight in possible solutions to overcome these barriers
- Supporting methods and checklist for imbedding feasibility studies in the common building practice
- Lessons learned from the field trial of these tools and the evaluation of this element of the EPBD

Requirements of conducting a feasibility study for alternative energy systems for new buildings (art. 5 – EPBD)

The part of Article 5 of the EPBD states:

For new buildings with a total useful floor area over 1000 m² Member States shall ensure that the technical, environmental and economic feasibility of alternative systems such as:

- decentralised energy supply systems based on renewable energy
- CHP
- District or block heating or cooling, if available
- Heat pumps, under certain conditions,

is considered and is taken into account before construction starts.

Programme for the session on SAVE SENTRO

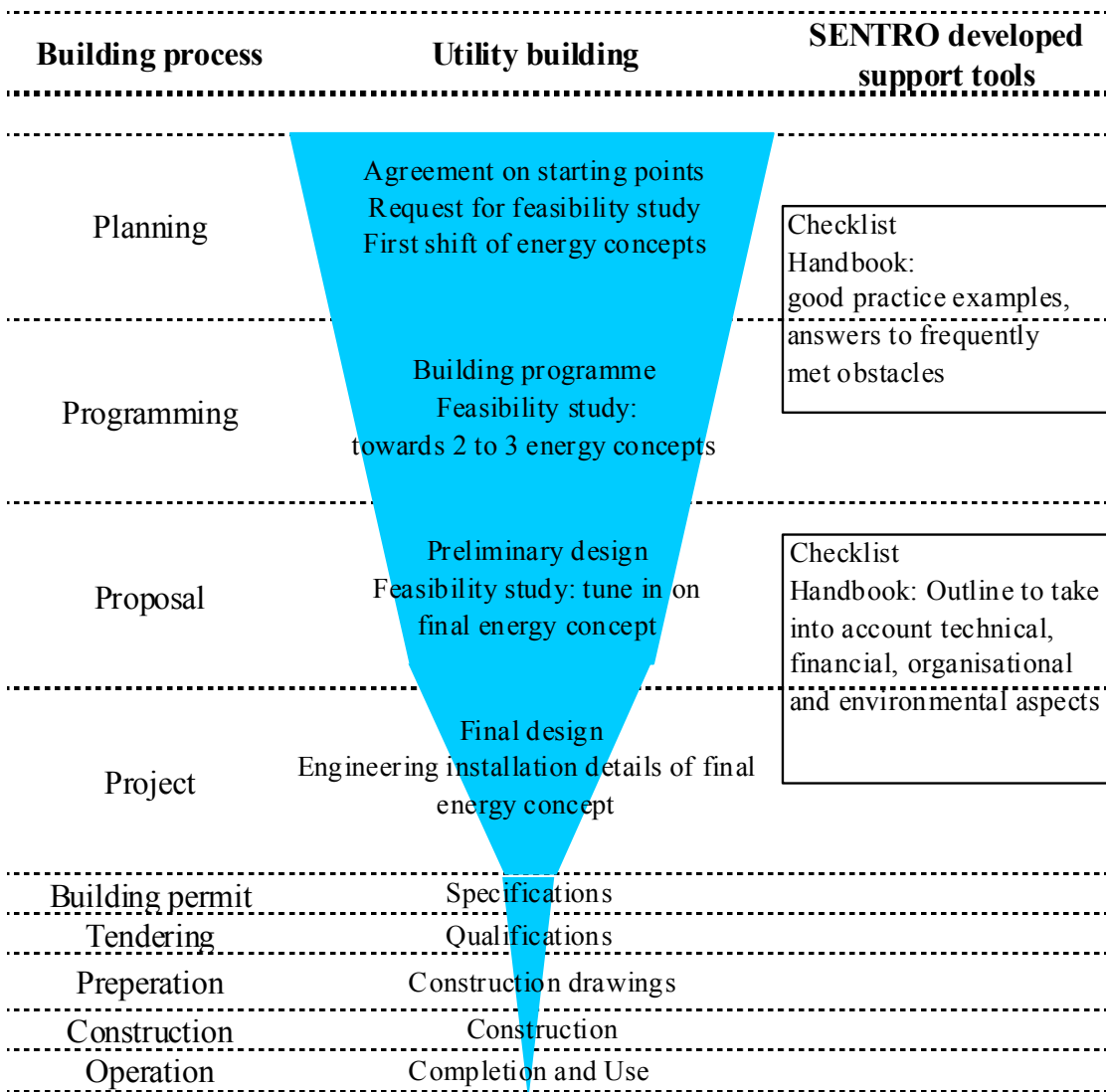
Time	Topic	Who
9.30 - 10.00	Sentro-project Aim, work programme, status and results so far Transposition art 5 EPBD - Status March 2007 Approach to imbed feasibility of AES in the building process Status art 5 EPBD and first experiences (legislation and field trial) – the Netherlands	Suzanne Joosen – Ecofys Netherlands BV
10.00 – 10.10	Status art 5 EPBD and first experiences (legislation and field trial) - Slovenia	Marjana Sijanec Zavrl - Building and Civil Engineering Institute ZRMK-
10.10 - 10.20	Status art 5 EPBD and first experiences (legislation and field trial) - France	Hubert Despretz - Ademe
10.20 - 10.40	Representative from other EU MS	Representatives from other EU MS
10.40 - 10.55	Discussion Several questions or statements, for example <ul style="list-style-type: none"> • Feedback on approach • Update status transposition art 5 <ul style="list-style-type: none"> - AES decisions are made early in the design stage, far before the regulatory check. (note the differences between building permit in France and Slovenia). How to prevent that feasibility studies are not done “just because of the regulation”? - What is a promising policy and/or supporting instrument to get AES beyond market introduction? (Stringent legislation?) - How can be arranged that technical expertise about AES is incorporated in building practice? 	Participants
10.55 - 11.00	Closing the session, summarise main conclusions	Suzanne Joosen

Content of the session on SAVE SENTRO

Three presentations were held, which are downloadable from the CA II Mayetic server as pdf or by e-mail request: S.Joosen@ecofys.nl. Summaries of each presentation are included in this paragraph.

[Approaches to market implementation of Art. 5 feasibility studies of alternative energy systems by SAVE SENTRO – S.Joosen, Ecofys Netherlands BV](#)

This presentation started with general explanation of the SENTRO-project (see project description). Furthermore, the basics of within the SENTRO-project being developed approach, including its supporting tools (checklist and handbook) are clarified. A nutshell impression is shown in Figure 1. For more detailed information is referred to the handbook, which can be downloaded from the project website.



Source: TNO, Van Kervel 2006; additions energy concepts by Ecofys

Space to find suitable solutions to realise a high quality building, including an optimal energy concept within acceptable costs

Figure 1: Solution space to realise a high quality building, including optimal energy concept and the developed support tools taking AES into consideration

A total overview of the status in March 2007 of the transposition of the feasibility study requirement (art 5 EPBD) in all 27 EU MS was given. In addition, *all MS are kindly invited to give an update of the status to project coordinator of the SENTRO-project.*

Three field trials in the Netherlands were presented: a school building of the municipality of Breda, buildings for waste collection in municipality of Den Bosch and a redevelopment area in the municipality of Nijmegen.

Finally, several preliminary conclusions are drawn. Regarding the SENTRO approach for consideration of AES in general:

- Intervening early in the building process is crucial
- Objective comparison is not easy, actors only rely on their own experience, accessibility of expertise new technique has to be improved
- New housing area is more complex and demands more research

Specific for the checklist:

- Useful decision support tool, especially for non-energy experts
- Useful for communication in project/design team, which includes key actors with various backgrounds

Status art. 5 EPBD and first experiences Legislation on FS of AES and SENTRO tools field trial - Slovenia - Marjana Sijanec Zavrl – BCEI ZRMK

In this presentation the latest status of the feasibility study requirement of AES in Slovenia is given. Feasibility study of AES is an obligatory part of detailed design documentation submitted to the local authority for the building permit (according to Building Act). The methodology for preparation of feasibility study and obligatory content of feasibility study shall be prescribed by the minister responsible for environment (and building) – i.e. since 4/2008 technical regulation on AES is in place.

Four test cases were presented: school area in Kamnik, Building of former cloakroom for coal-miners (Vašhav) in Zagorje ob Savi, Condominium 11.500 m² useful floor area and 139 flats in Komenda and Apartment buildings POLJE II.

Finally, several preliminary conclusions are drawn. Regarding the feasibility study success factors:

- Most successful if started in programming phase and elaborated during proposal phase
- Timing is important, not too early (planning) and too late (project) Team work is important.
- Software tools for FS AES are helpful

Article 5 - State of progress for France - Hubert Despretz-Ademe

In this presentation the latest status of the feasibility study requirement of AES in France is given. The content of a feasibility study of AES should at least include:

- Short description of the different options, whether fully analysed or not:
 - Baseline solution: the one that is selected by the building owner or developer
 - Option 1: solar thermal
 - Option 2:
- Reasons for not considering certain options
- Reasons for selecting the baseline

Energy calculations: must be done using Th-CE method for compliance checking of building energy regulation in new constructions (complements being elaborated for existing buildings).

However, at the building permit stage, the dimensional information is not fully sufficient to run the appropriate calculations

Financial calculations should use voluntary agreed LCC method.

Discussion

In response to the presentations the following issues came up:

- The various ways how countries transpose art 5 into their national legislation
- Standardisation
- Control/check of feasibility study, qualification of consultants, control/check if selected system is realised and properly functioning in practice
- The cost of a feasibility study
- Feasibility study of AES on building level versus feasibility study of AES on new or redeveloped building area
- The availability of software tools for feasibility study of AES

Update on the status of transposition: Luxembourg has passed a regulation making feasibility studies compulsory. Ireland has implemented legal texts for these studies but that, for the time being, a detailed content for the study is still lacking and work on supporting software is not finished (ready for 80% to 90%). However, currently grants are available for renewable energy use in buildings and this is the main driven force for serious consideration and implementation of AES in buildings.

From the several field trials carried out so far, it appears crucial for making the first selection of promising AES that there are sufficient data of specific building characteristics available. Especially, this is true if it concerns the development of new housing area and redevelopment area. This requires a more complex research as all types of collective alternative energy supply systems have to be seriously taken into consideration.

Main outcomes

Main outcomes from this session are:

- The SENTRO-checklist is most suitable for a feasibility study of AES for an individual building.
- The feasibility study requirement (art 5 EPBD) is transposed in various ways into the national legislation of 27 EU-MS. This brings along that it will be not be easy to have an European wide standardisation of the procedure and the compliance of the requirement.
- The within SENTRO developed approach, including its supporting tools, is an initiative towards standardisation. In particular the handbook is a protocol: it specifies how to perform a high-quality feasibility study of AES in buildings.
- Usually it is not clear yet how the quality of the feasibility study is guaranteed, and who is responsible for the control.
- Without a proper compliance system in place, the feasibility study requirement (art 5 EPDB) holds the risk that calculations/reports are made, but there will not much impact in practice.

Future directions

Main future directions:

- As most countries just have adopted the national legislation, exchange of lessons learned in this early stage is very useful. So, we ask you to share these first experiences with the SENTRO-project team.
- *We kindly invite other EU-MS to update the status of transposition of the feasibility study requirement in their country (latest status March 2007, see table in report SENTRO WP2 – Inventory of implementation of feasibility studies from EPBD art 5 in EU-27)*
- In the autumn of 2008 it is expected that the executive summary for policy makers based on the lessons learned from the field trial of the developed SENTRO approach and the evaluation of the feasibility study requirement of the EPBD will become available (published on SENTRO project website).
- More attention is needed for assurance of the quality of performed feasibility studies of AES, and of compliance once is decided upon promising AES.

written by Suzanne Joosen, ecofys, NL
03/07/2008