



Project Fact Sheet

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Sustainable Energy systems in New buildings - market inTROduction of feasibility studies under the Directive on the Energy Performance of Buildings (SENTRO)

Programme area:	<i>Energy efficiency in Buildings, VKA1 (SAVE, 80%), Renewable energy sources VKA7.1 (ALTENER, 20%)</i>
Status:	finalised
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Website:	<i>http://www.sentro.eu</i>
Objective:	<i>Develop and Promote "Optimal" Approach in order to effectively incorporate the feasibility studies in the common building process</i>
Benefits:	<i>Insight into methods to overcome barriers in the realisation of sustainable energy systems in new buildings</i>
Keywords:	<i>EPBD, feasibility study, renewable energy systems, energy efficient systems, new buildings, apartment blocks, municipal buildings</i>
Duration:	<i>11/2007 – 03/2009</i>
Budget:	<i>€ 784650 (EU contribution: 50%)</i>
Contract number:	<i>EIE/06/102/SI2.445679</i>



Short description

The project starts with making an inventory on how European member states are complying with the requirements of conducting a feasibility study for alternative energy systems for new buildings and 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 barrier of the implementation of alternative energy systems. After this inventory phase, an approach is developed to ensure that assessment of alternative energy systems will become an integral part in the common planning process of new buildings. Supporting tools of the approach (checklist and a handbook) include technical, financial as well as organisational aspects. Core of the project is a field trial in which the developed approach (including the checklist and handbook) will be tested in the seven SENTRO countries. Finally, experiences are disseminated through courses and conferences towards the different target groups (e.g. national and international policy makers and key actors in the national building process).

Expected and/or achieved results

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

Lessons learnt

General findings concerning the status and functioning Art.5 of the EPBD

Most EU-countries have transposed the feasibility study requirement of the EPBD into their national legislation. However to a much lesser extent countries have operational regulation, technical guidelines and support tool in place.

Two main approaches to EPBD art. 5 transposition have been identified:

- 1) Direct approach - i.e. transposition of art.5 at a legal level and subsidiary legislation based on either
 - a) A definition of the protocol for feasibility studies (e.g.: Slovenia, Finland, France) or
 - b) A list of selected alternative energy systems (e.g.: Spain, Portugal).
- 2) Implicit transposition – i.e. based on already existing regulation or through an EPBD calculation methodology, i.e.:
 - a) Art. 5 is integrated in EPBD calculation procedure and tools (e.g.: The Netherlands, Bulgaria, Luxemburg)
 - b) Other legislation concerning heat supply and/or planning predefine the use of renewable energy systems corresponding to the scope of art.5 (e.g.: Denmark, Lithuania).

It can be concluded that as far as the feasibility study obligation according to Art.5 of the EPBD is transposed into the national legislation, this legislation is functioning. Nevertheless, improvements are needed to achieve more impact in practice. This means that adjustments, tuning of legislation and/or support mechanisms are highly recommended.

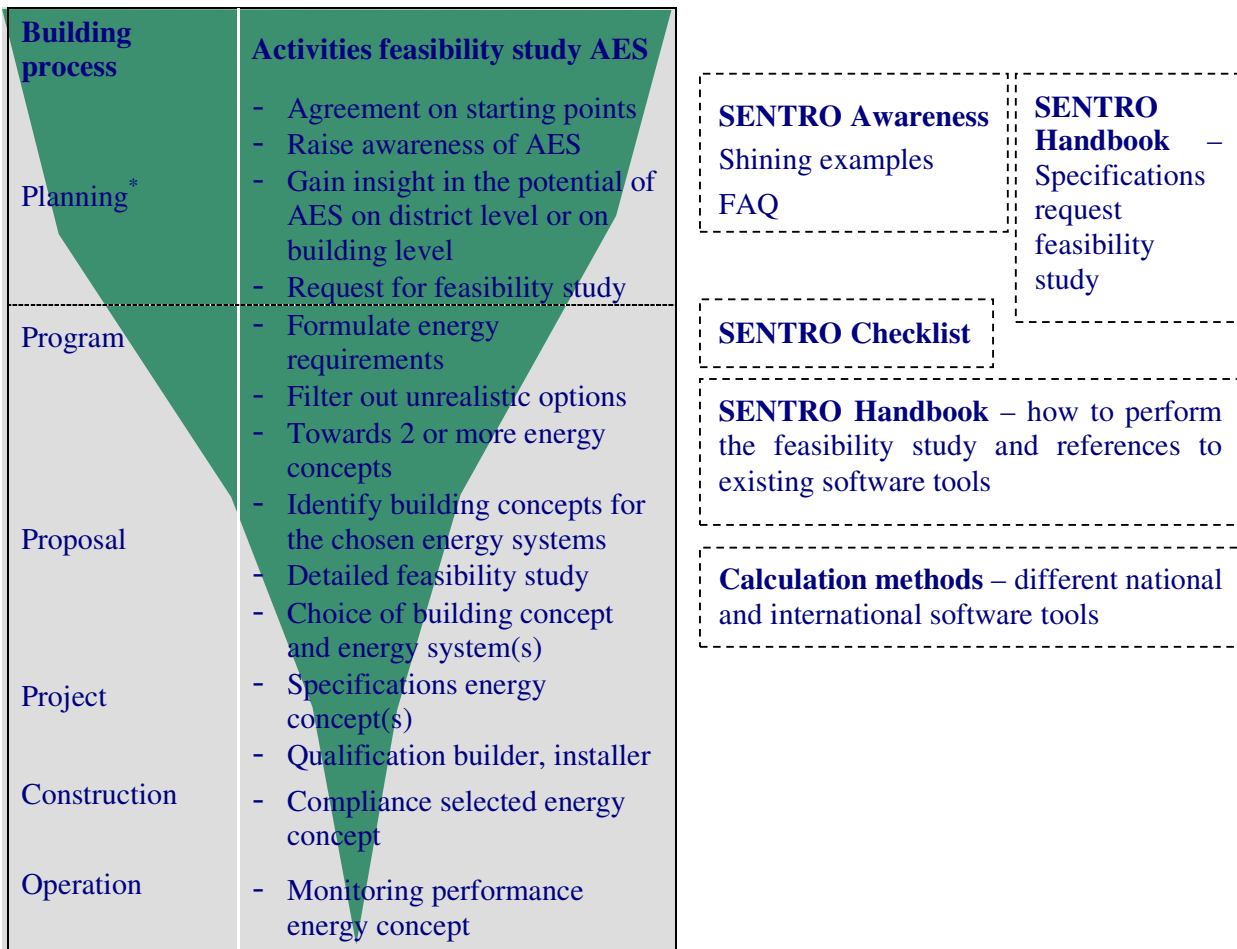
During the SENTRO-project the following **preconditions** towards optimal functioning of the feasibility study requirements of Art.5, are observed:

- **Increase awareness** of the obligation of Art.5 and its national transpositions.
- **Structural embedding** of the consideration of the energy concept (building shell & AES) into the activities of key actors in the building process
- **Guarantee of the quality of a feasibility study**
Currently, it is often not clear yet how the quality of the feasibility study is guaranteed, and who is responsible for the control.
- **Proper compliance systems** (Art.5 EPDB).
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 be much impact in practice.
- Coherent requirements, supported by simplified clarifications and tools. Indication of which **software is reliable and starting points** for the detailed feasibility calculation.
- Extend the feasibility requirement to buildings with a total useful floor area over 1000 m² as it is common that new housing areas exist with large number of small houses.

Developed optimal approach for embedding feasibility studies in the common building practice

The approach, including supporting tools as the checklist and the handbook is visualized by Figure 1.

Figure 1 Activities to incorporate the feasibility study in the building process, including supporting tools.



Space to find suitable solutions to realize a high quality building

Crucial success factors

From the experience during the project, in particular the field trials, the following factors are observed to be essential for a successful implementation of alternative energy systems:

- **Team work!** Commitment all key actors involved for the energy concept throughout the various phases of the building process.
- People in the building team with **sufficient skills and knowledge**
- **Awareness and feasibility study for AES on time.** Most successful if started in programming phase and elaborated during proposal phase.
- **At least two alternatives** of promising energy concepts have to be identified. In this way a better level playing field is created for alternative energy concepts versus conventional energy concepts.