SEPIA

Sustainable Energy Policy Integrated Assessment - A normative contribution to decision support

DURATION OF THE PROJECT
15/12/2007 – 31/12/2010

BUDGET
599.414 €

KEYWORDS
transition, energy system, governance, long-term energy foresight, back-casting, integrated sustainability assessment, interdisciplinarity, energy policy, Belgium

CONTEXT

Enabling the transition towards a more sustainable energy future represents a huge challenge requiring strategic scientific information. Scientific support of opinion formation and decision making on sustainable development has important different characteristics than the ones of 'traditional' science for policy. Sustainability's normative character, inseparable connection with deep-rooted value patterns, long-term nature of most relevant developments, and necessary inclusion of societal actors, result in specific demands on science for sustainability. SEPIA addresses such needs in the field of long-term energy policy. Although part of the project results will be contingent on specifics of the Belgian context, the project is embedded in the wider context of European and global energy system governance debates.

PROJECT DESCRIPTION

Objectives

The goal of the study is to make accessible and discuss the feasibility of performing an 'integrated sustainability assessment' (ISA) of Belgian long-term energy system development, in order to identify consensus and dissent in the possible ISA design among different stakeholder groups, and thus to provide the basis for an ISA procedure adapted to the context of Belgian energy governance (as embedded in a multi-level governance structure).

Methodology

The SEPIA project is guided by the following methodological principles:

- **Long-term energy foresight** from a normative perspective (using a back-casting approach);
- **Planetary scope** by using the global perspective as the point of departure for defining sustainability criteria;
- **Stakeholder participation** in all project phases (from problem definition to evaluation of policy proposals);
- **Integrated energy system assessment** – from energy services to primary energy demands, covering full life-cycle stages of energy technologies;
- **Interdisciplinary** by integrating expertise in economics, engineering, sociology and ethics;
- **Systematic attention for uncertainties.**

The SEPIA methodology unfolds in four phases:

In a **first phase**, we analyse the methodological 'state of the art' in the domains of (international, European, national or regional) energy foresight (lead author: UA), criteria & indicators of sustainable development (necessary for 'measuring' energy system progress towards a more sustainable state) (lead authors: SCK•CEN and VUB), and participative tools to support scenario development (lead author: ULg) and the development of an integrated 'value tree' of sustainability criteria encompassing arguments stemming from diverse value premises (lead authors: SCK•CEN and VUB).

A **second phase** leads to the (qualitative) definition of a 'manageable' number of representative long-term energy scenarios for a sustainable development of the Belgian energy system by a group of experts (the 'scenario builders group' or SBG). This phase will be supported by a series of in-depth deliberative discussions (workshops) using a range of qualitative research techniques (expert panel, scenario workshop, focus group) involving both the SBG and the SP. The ULg partner is the main responsible for selecting, designing and facilitating the interactive workshops; analysis of the results will be done in close collaboration between all project partners.

In a **third phase**, the scenarios and the integrated value tree

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will be used together in a multi-criteria evaluation by the stakeholder panel. Two transparent, user-friendly and real-time tools will contribute to the project in a participative way: an energy accounting simulation model (LEAP) and a multi-criteria group decision support tool (DECIDER). The UA partner is the main responsible for developing the LEAP model; SCK•CEN is responsible for developing the DECIDER model en performing the multi-criteria evaluations.

In parallel to phase 1-3, a case study will also be elaborated on the past, present and possible future of Belgium's nuclear energy policy (lead author: VUB).

The **fourth phase** is for drafting the final report and for dissemination activities.

EXPECTED RESULTS AND/OR PRODUCTS

Expected project results include a structured value tree to assess the sustainability of energy system development; a set of visions and scenarios for sustainable energy development and a reflection on the policy measures which could be implemented to realise those visions. In addition, the project will deliver methodological insights in the field of sustainability assessment. Also, in the course of the SEPIA project, a LEAP-based model of the Belgian energy system will be built. Project results will be communicated in a very accessible format for policy makers. For the dissemination of the research results towards the different energy policy actors and wider interested audiences, a symposium will be organised where the results will be presented and debated.

PARTNERS - ACTIVITIES

The UA partner (IMDO) is the official coordinator of the project. IMDO is also responsible for the energy system modeling task (using LEAP);

The SCK•CEN partner (PISA) is responsible for developing ISA procedures and will take care of the coordination of different work packages with regard to content;

The VUB partner (MEKO) works on the nuclear case study and contributes to the improved incorporation of integrated assessment methodologies in the policy process, by ensuring compliance of the assessments to a series of quality criteria. The latter task is in close collaboration with SCK•CEN work on ISA methodologies.

The ULg partner (CLEO) is responsible for the participative backing of the SEPIA project.

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Follow-up Committee

For the complete and most up-to-date composition of the Follow-up Committee, please consult our Federal Research Actions Database (FEDRA) by visiting http://www.belspo.be/fedra or http://www.belspo.be/ssd

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