



Methods and Tools for Integrated Sustainability Assessment

Overview

R&D and fast market diffusion of resource-efficient technologies can be considered as the “engine” on the way towards sustainable development. This case study will analyse the use and suitability of different methods, tools, and indicators for ISA through several examples drawn from different fields of the environmental technology arena.

Objectives

The case study identifies the strengths and weaknesses of tools currently available to undertake prospective sustainability assessments for environmental technologies and the transition of economies in connection with the adoption of technology, and so will contribute to the development of improved tools. It demonstrates the use of the analytical and assessment tools and the integrating approach by applying them to various technologies (at different stages of innovation and adoption).

We consider two separate aspects of technological change: Hydrogen use in the transportation sector with a focus on the enormous thrust in innovation and Europe's international competitiveness. This technical example represents a concise technology (hydrogen driven combustion engine or fuel cell) which is likely to be introduced by 2010 and will have major potentials for structural change in the European car manufacturing industry, their suppliers and plant manufacturers. Transition of national economies when the opportunity to receive technology transfer is increased. Technology transfer, and the associated institutional transfer that often accompanies it, can accelerate the process of underlying structural change in economies initially less developed.

The implication of production adopting current 'best practice' environmental standards (e.g. in terms of energy efficiency, structure of inputs to production) will be assessed using ASTRA and E3ME, two multinational structural economic models. The analysis in the two case studies will consider the impact of the transition of Europe towards more (knowledge-based) economies and the impact that technology transfer could have on the 10 newly acceded countries.

Activities

Theoretical underpinning Reviews on (i) the theoretical understanding of the underlying impact of environmental technologies on sustainability, (ii) the underlying innovation theory and, (iii) actual theory of R&D influence on innovation, and concepts of technology diffusion, (iv) the theoretical understanding of the impact of technology transfer on economic development.

About the MATISSE project

MATISSE aims to achieve a step-wise advance in Integrated Sustainability Assessment (ISA) of EU policies. The core activity of MATISSE is to improve the tools available for conducting Integrated Sustainability Assessments. The case studies provide the real-world contexts within which the ISA methodology and tools can be assessed. Stakeholders have a central role within ISA.

What is ISA?

Integrated Sustainability Assessment (ISA) is a cyclical, participatory process of scoping, en-visioning, experimenting, and learning through which a shared interpretation of sustainability for a specific context is developed and applied in an integrated manner, in order to explore solutions to persistent problems of unsustainable development.

Other Briefing Sheets

- Conceptual framework for ISA
- Current Use of ISA Policies and Tools
- Agriculture, Forestry and Land-Use Case Study
- Dematerialisation Case Study
- Water Case Study
- Using and Improving Existing ISA Tools
- Developing New ISA Tools
- Dissemination

Case study design Review existing and likely policy environment in the EU and leading EU Member countries to define in detail the selected environmental technology example (hydrogen cars), the possible scope of wider technology transfer in economic growth, application fields and country selection (with a stakeholder involvement)

Selection of tools Determine most appropriate methodology (portfolio of ISA tools) for assessing the selected policies given the scope of the study and critically evaluate the existing tools for the purpose and provide feedback to WP8 and WP9

Application of tools Apply and evaluate the chosen methodology, developing a coherent and self-consistent narrative about the sustainability implications of the existing policy and exploring alternative policies for addressing the outcome where appropriate. Discussion of results with stakeholders.

Assessment and synthesis Reevaluate the case study methodologies in light of the new tools and methods that have been developed.

Products

- State-of-the Art report on relevant theories and relevant drivers applied to the technical areas of the case studies and the technology transfer to Accession Countries.
- Design of the case studies
- Selection of tools and methods
- Initial report on the design and results of the case studies. Requirements for tool and method development (feedback to WP8 and WP9)
- Updated report on the design and results of the case studies

Research team for WP 7:
Fraunhofer Institute Systems and Innovation Research (FhG-ISI)
Cambridge Econometrics, Cambridge
Tyndall Centre & CSERGE, University of East Anglia, Norwich
University of Durham
Regional Environmental Center for CEE (REC)
Stockholm Environment Institute (SEI), Stockholm
Sustainable Europe Research Institute
Contact: Martin Wietschel ISI Fraunhofer Martin.Wietschel@isi.fraunhofer.de

MATISSE



MATISSE is an Integrated Project bringing together 21 Partners from all across Europe for three years. MATISSE is supported by the SIXTH FRAMEWORK PROGRAMME of the European Union
Contract number: 004059 (GOCE) - MATISSE
Project duration: April 1st, 2005 - March 31st, 2008

Find more information at www.matisse-project.net



The consortium of MATISSE is led by the Dutch Research Institute for Transitions (DRIFT) at Erasmus University Rotterdam. Project Co-ordinator: Jan Rotmans rotmans@fsw.eur.nl
Imprint: Sustainable Europe Research Institute www.seri.at