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Editorial

The costs of energy are an important factor for industry, transport, public and private life. In order to permit society to make the right choice of power generation it is important to provide ways to calculate the real cost of the different forms of energy, which take into account the impacts of its generation, distribution and use on human health and the built environment. Only after taking into consideration all these aspects can the right, justified price and the ideal choice be made.

The innovative research of the NEEDS (New Energy Externalities Development for Sustainability) project, financed under the 6th RTD Framework Programme of the European Union, will assess such impacts and translate them into real costs. In so doing, it will feed the political debate and support policy decision making on energy efficiency and fair pricing with concrete scientific findings.

However, only if a permanent dialogue is ensured between the researchers and the "user" of the results, such as legislators, stakeholders, consumers and the general public, change and development can take place.

Through an articulated series of publications, Policy Workshops and Forum, as well as an online Portal on energy externalities (www.needs-project.org), the NEEDS project offers the opportunity for stakeholders to get in-depth information on the currently ongoing development of improved datasets and models for the internalisation of external costs, discuss with the researchers and familiarise themselves with the methods and instruments NEEDS is using and developing beyond what has been achieved in the past.

Whether at the end consumers of energy will consider prices fair, will depend to a great extent on the access to a transparent information. The right to know is a central element of our democratic systems where regulations and legislation are better respected and implemented by informed and involved stakeholders.

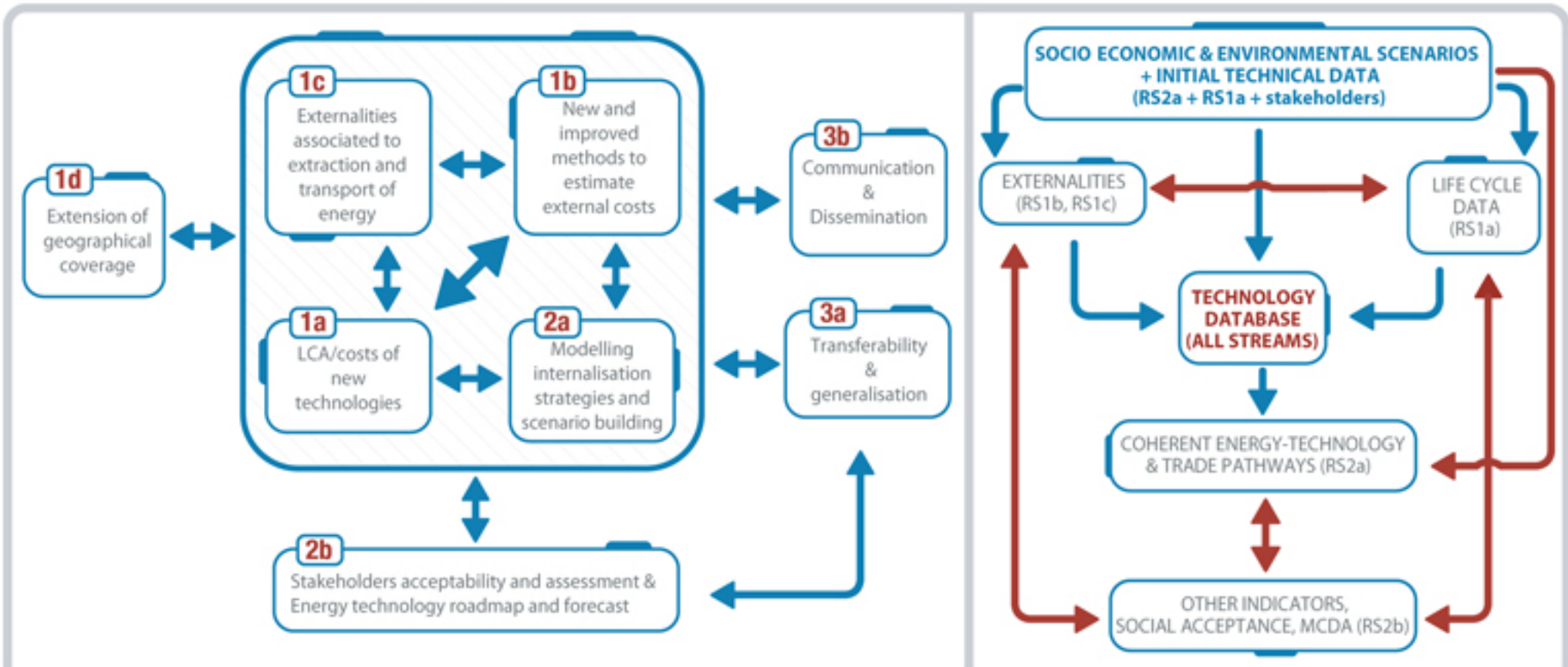
Energy is the basis for economic development but can also be the source for health impairment and environmental degradation. Constant dialogue of stakeholders is the necessary requisite to underpin sustainable energy policies and the upcoming changes.

Enjoy the reading!



Andrea Ricci
NEEDS Project Coordinator

NEEDS - work in progress



NEEDS is built as a series of "Research Stream" (RS), each corresponding to a specific research area. The full benefits of the Integrated Project will be achieved only through a dedicated effort of integration of the activities taking place within each stream.

RS 1a

Stream 1a is finalising the technical and economic characterisation of the reference technologies for electricity generation covered in RS1a. The centralised processing of LCA for all reference technologies has started, and first LCA data are available now for current configurations. Based on the specification of future technology development pathways that are derived using technology foresight methods, first LCA data for selected future configuration will be produced until the end of the year.

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RS 1b

Stream 1b is currently advancing the methodology for the assessment of external costs following the impact pathway approach. Main tasks processed are: modelling impacts pathways of substances in air, water and soil,

- updating concentration response relationships for human health impacts,
- valuing morbidity and mortality effects, estimating and valuing biodiversity effects,
- estimating and valuing climate change effects, and
- analysing interlinkages to economic/energy/environmental models and LCA data.
- Additionally, basic data for the geographical extension of tools for impact pathway assessment have been collected.

For further information: rf@ier.uni-stuttgart.de

RS 1c

Stream 1c has finished the future oil and gas export potential assessment of supplier countries for Europe and is presently working on supply-demand equilibration, critical passages, accident risk analysis and risk reduction potential due to technology and regulation (in particular for oil spills), and burden assessment. Concerning electricity and hydrogen, after having worked on the assessment of different transport schemes, the Stream is presently working on the different elements constituting the impact pathway analysis.

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RS 2a

Stream 2a is currently working towards the implementation of the country models that constitute the basis of the Pan European model. The main working steps are concerned with calibration and test runs, aimed to reproduce the energy and emission balances of the base year (2000), and the reference scenario analysis (Business as Usual – BAU). The work in progress deals also with the finalisation of the technology database and the definition of the demand drivers in order to extend the analysis to the overall time horizon (2050).

The main results (in terms of energy prices, domestic production, energy consumption by fuel and by sector, technologies, and emissions) will be presented within the second year of the project.

For further information: cuomo@imaa.cnr.it; cosmi@imaa.cnr.it

RS 2b

Stream 2b is currently working towards the establishment of a full set of criteria and indicators (environmental, economic and social) for the evaluation of sustainability of the candidate technologies. The selected criteria and indicators will be a subject of a survey having as a goal to receive feedback from European stakeholders; the survey will be conducted in the course of 2006

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RS Integration

Stream Integration is currently working on the harmonisation of models and methodologies which will lead to the establishment of the "Needs integrated method". In addition, the third document on the integrated interface management has been finalised. This document progressively contributes to the further specification of the interlinkages between Streams and activities, and concretely ensures that they are adequately implemented.

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NEEDS events

● RS2b Delphi Exercise

RS2b organised an Expert Delphi to ensure that the set of social criteria and indicators defined by the Stream is supported by the relevant stakeholders in the energy field. The exercise was done in two phases. In the first phase, a questionnaire was sent in November 2005 to 52 experts representing the different stakes in the energy sector, including industry and industry associations, political and administrative institutions, environmental groups, associations representing energy consumers, trade unions and scientists. In a second phase, a Delphi workshop was organised on 23-24 January 2006 in Brussels. It was attended by 11 stakeholders who reached a consensus on the proposed structure of criteria and indicators, with some shifts in weight. The preliminary "Report on experience with criteria and indicators of interest for the evaluation of sustainability of energy systems" is available at <http://www.needs-project.org/docs/2bReportExperience.pdf>

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● Workshop "Requirement Analysis for Multicriteria Methods and Tools required for NEEDS RS2b"

The workshop was organised in Vienna on 26-27 January 2006. The goal of the workshop was to discuss the requirements analysis for the Multi-Criteria (MC) methods and tools to be used by Stream 2b, and thus to provide a major input to the final version of the Requirement Analysis (RA). All participants of Stream 2b were invited for the workshop. The presentations covered three types of topics: (1) in depth analysis of the requirements for MC; (2) experience of the related activities; (3) features of pertinent MC methods and tools. There was ample time for discussions which resulted in clarification of both requirements and experience. The results of the workshop are being included in the report on the RA. The report will in turn be the basis for the selection of multi-criteria methods and tools that will be used in further activities of the Stream 2b.

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● RS 2a Workshop 'Assessment of draft country models'

The IV workshop of RS2a was held in Athens (February, 20-22). The two-day technical session was aimed at debugging and calibrating the country models at the base year and at demonstrating how to extend the analysis to the chosen time horizon taking advantage from the VEDA interface features. The Plenary Meeting on "Assessment of draft country models" was aimed at discussing the main problems and open issues regarding the country models and at starting the activities for the Pan European model implementation. The next RS2a meeting will be held in Gothenburg, May 31 – June 2, 2006.

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● Kick off meeting RS 3a "Transferability and Generalisation"

On 9-10 March 2006, RS 3a had a successful kick-off meeting in Lillehammer, Norway. The stream has started its work towards development of a simple way of calculating, transferring, and presenting the uncertainty of default values for average/aggregate external cost. These values will be used for energy modelling, assessing different technologies and energy systems, LCA, cost-benefit analyses, green accounting and other policy advice.



Experimenting outdoor meetings to strengthen the spirit: the NEEDS team in Norway

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● Kick off meeting RS 1d "Extension of Geographical Coverage"

On 23 March 2006 the kick off meeting of RS 1d took place in Prague. This Research Stream will work for bringing Newly Associated countries and Mediterranean Partner countries (Bulgaria, Czech Republic, Estonia, Hungary, Poland, Slovak Republic, Egypt, Morocco, and Tunisia) up to par with those (mainly EU) for which the current state of knowledge on energy externalities is more advanced, primarily as the result of the ExternE work.



The RS1d team in Prague

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● RS1d Workshop

Three project workshops will be organised within RS1d. The first one was held in Prague on 24 March 2006 and aimed at training on the ExternE methodology with a direct focus on incorporation of the core methodological body – impact pathway approach – into the EcoSense software tool, and on data requirements for the external costs calculations. Energy policies and appropriate case studies on external costs calculations to be performed in RS 1d partner countries will be discussed in the second workshop that will be held in Bulgaria, in September 2006. Users of updated version of EcoSense software tool will be trained within the third WS that will be held on April 2007 in Tunisia.

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● 1st NEEDS Forum "Accepting the real price for Sustainable Energy"

On 24 May 2005, the first NEEDS Forum has been held in Brussels at the Belgian Parliament. The purpose of NEEDS Forum 1 was to inform stakeholders at European level about the targets of the project and to look into ways instruments can be created to serve legislative and administrative measures that provide a perspective for integrating externalities. The Forum offered a platform for debate between researchers, legislators and "users of legislation", e.g. industry, trade unions, NGOs and paved the way for future and regular interaction.

For further information: needs@isis-it.com
<http://www.needs-project.org/brussels01.asp>

● 1st NEEDS Policy Workshop

To ensure that NEEDS can provide results that are concretely usable by the community of involved stakeholders, a Policy Advisory Group has been established, whose main role will be to discuss the NEEDS policy framework and provide feedback to the project team, so as to increase the policy relevance of the project developments.

The Policy Advisory Group will meet three times during the course of the NEEDS project. The first meeting, which took place in Rome on 7 April 2006, primarily discussed and validated a set of policy scenarios to serve as the reference for future modelling work.

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News from the Externalities World

● MAXIMA Final workshop

The objective of the MAXIMA project was to translate and present the concept of externalities, the quantification approach, based on the Impact Pathway Approach, and results outside the scientific community. A discussion of pros and cons between representatives from energy industry, policy and NGOs has taken place in the course of three workshops held in 2005 with the aim of reaching a consensus on methodology and values. Results of the workshops – both areas where consensus could be reached and issues on which no consensus could be reached – and implications of diverging views on values as well as conclusions and decisions has been presented to policy makers and to the public in the final conference which took place on 9 December 2005 in Brussels.

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● CASES (Cost Assessment for Sustainable Energy Systems)

The EU recently funded the CASES Co-ordination Action, which will kick off in Spring 2006 and will last 3 years. The CASES consortium is composed by twenty-six partners established in twenty States, it covers the whole European area and also involves three institutions in two developing continents (Asia and South America).

The objectives of the project will be:

1. To compile estimates of full costs of the use of different energy sources in EU and selected other countries under energy scenarios to 2030;
2. To use resulting datasets to undertake comparative cost assessments of introducing alternative policy options over the time period;
3. To effectively disseminate research findings to energy sector producers and users and to the policy making community.

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● New Publication in Germany

A review study on external costs of electricity generation from renewable and fossil energy sources has been finalised by DLR (Stuttgart) and Fhg-ISI (Karlsruhe) on behalf of the German Federal Ministry of the Environment in March 2006. The study concludes that the additional costs induced due to the support of renewable electricity sources through the German feed in tariffs is fully compensated by the external costs avoided by substituting electricity from fossil fuels. The report (in German) is available at www.erneuerbare-energien.de.

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Contacts

NEEDS includes 66 partners, representing 26 Countries (12 Member States from the EU-15, 9 new EU Member States, 3 Mediterranean Countries, 2 Countries extra-EU). It presents a balanced mix of Universities, Research Institutions, Industry, NGOs.

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Research Streams Leaders

Integration:	ISIS - Istituto di Studi per l'Integrazione dei Sistemi
RS 1a:	DLR - Deutsches Zentrum fuer Luft- und Raumfahrt e.V.
RS 1b:	IER - University of Stuttgart
RS 1c:	OME - Observatoire Méditerranéen de l'Energie
RS 1d:	CUEC - Charles University in Prague
RS 2a:	CNR - IMAA - Consiglio Nazionale delle Ricerche - Istituto Metodologie per l'Analisi Ambientale
RS 2b:	PSI - Paul Scherrer Institut
RS 3a:	SWECO Grøner AS
RS 3b:	ISIS - Istituto di Studi per l'Integrazione dei Sistemi