



NEWSLETTER 2 – March 2010

EFONET FINAL CONFERENCE

The Final Conference of the EFONET Project will take place on **7th-8th June 2010 at the European Parliament in Brussels.**

The conference will be the occasion to present the final results of the 2,5 years project. Policy conclusions will be drawn and discussed.

The participation is free but limited, and places will be assigned on a first come-first served basis. Upon explicit request, we can consider the possibility of refunding the cost of participation. Should you wish to attend, please see the EFONET website for more details. www.efonet.org

Evaluation of Energy Foresight in the EU

Within the EFONET Project, an analysis of the state of the art of energy foresight activities in the EU countries has been carried out in order to assess the transferability of the “good practices” learnt from the national foresight experiences towards energy foresight on the European level.

Accordingly, 12 country reports were prepared by national experts. In particular, the countries were selected in order to ensure a good geographical coverage of the EU taking into consideration the heterogeneity of foresight culture and practices across European countries and that current energy systems as well as

future technologies vary considerably from country to country. Moreover, an overview of the different energy foresight studies and processes at the EC level has been carried out. Finally, a dedicated workshop “*Lessons learned from national energy foresight exercises*” was organized in April 2009.

In the last few decades, a strong dynamic in the energy foresight activities across the EU has been noted together with a growing role of energy foresight in strategic national planning. Early national foresight exercises aimed mainly to identify future developments in science and technology while the most recent foresight practices are based on a much wider approach that attempts to integrate a broad range of aspects (i.e. environmental, economic or social).

The EC started supporting research on energy foresight in the early 1970s. In spite of nearly four decades of foresight activities, energy foresight-based policy making has not yet reached the desired state of application at the central EU level.

The main issues highlighted are:

- Process initiation and institutional setting as prerequisite for robust foresight exercises.
- Methodological aspects determine the quality, validity and robustness of the results. Merging qualitative scenarios with



quantitative modelling is likely to be the most effective energy foresight option.

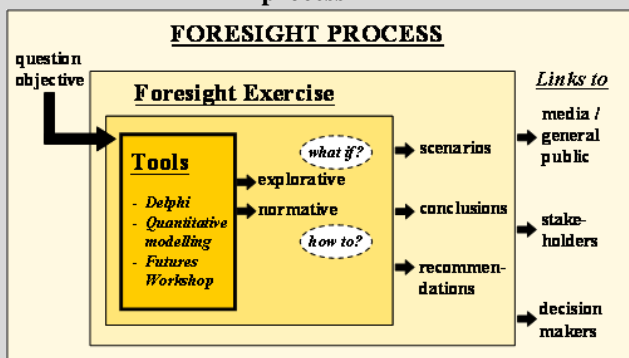
- Foresight activities seem to become increasingly participatory.
- Availability of robust and good quality databases requires further efforts.
- Consensus on conclusions is a key element for a successful implementation of the project findings.

“Foresight and Decision Making” (IZT)

The Work-Package on “**Methodological Approaches to Energy Foresight**” is dedicated to the question: “*How can foresight methodologies be improved to arrive at a European Energy Foresight*”. The first two workshops in this context focussed on the link between energy foresight makers and foresight users, i.e. decision makers, both in policy & law making (Nov 2008, European Parliament) and in industry (Nov 2008, Shell International). The essence of both workshops was condensed in a policy brief “Foresight and Decision Making”. Notably, the paper highlights:

- the difference between foresight tools and processes,
- the clash of expectations between foresight users and makers,
- a large variety of tools for normative and descriptive approaches,
- client involvement and ownership as critical issues for successful foresight.

Figure 1: Process steps of a schematic foresight process



Various tools are combined within the methodology of a foresight exercise. This exercise is embedded in a larger foresight process, which includes the definition of the objectives and the subsequent uptake of the foresight results e.g. for decision making.

Finally, some recommendations for future European energy foresight are come out in particular for:

- setting up energy foresight,
- objective and institutions for European energy foresight,
- research topics.

A second set of workshop was dedicated to defined methodological issues as:

- the potentials of participatory foresight approaches on European level (April 2009, Athens)
- the integration of quantitative and qualitative methodologies (Dec 2009, Berlin) and
- the coverage of political risk in energy foresight (Feb 2010, Brussels).

Based on these, a second policy brief will be drafted focussing on methodological perspectives for European energy foresight.

New technologies and approaches for the building systems and EUP (ISIS)

Under the work-package “**End use energy efficiency strategies**” two workshops were organised to discuss on the idea that energy efficiency is an unavoidable tool to fight the climate change but not all the energy efficiency increase translates in equivalent energy consumption decrease. Many factors contribute to counterbalance the energy efficiency improvement benefits, among which life style and behavioural aspects play a big role. The discussion was addressed to the following questions:

- which is the current technical and economic energy efficiency potential of the energy consuming products and systems,
- which are the best suited technologies that can be used to achieve this potential,
- which policy interventions can be recommended to fully exploit this potential and eventually translate it in actual energy savings.

Some key issues have been highlighted:

- The need of coordinated measures aiming at raising the awareness of the final users in order to modify their behaviour and change their consumption patterns;



- the crucial role the ICTs may play to support the development of intelligent integrated system (building – appliances – local energy supply systems) and improve the final users' way of acting.
- a substantial revolution of the production-consumption-disposal chain of the energy consuming products in the long term in order to achieve a more sustainable living context.

“Complementary and substitutable technologies to the ICE for road transport up to 2050” (ENERDATA)

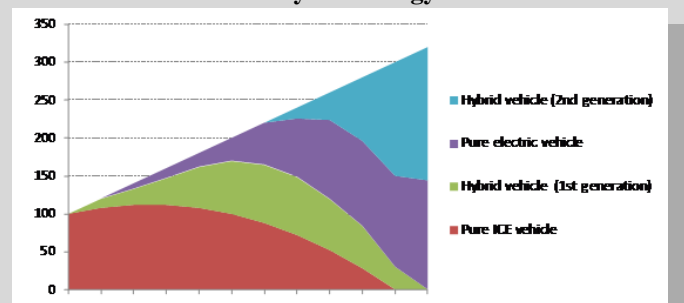
The work-package “**Foresight in the transport and mobility sector**” is mainly related to technologies, specifically where we are today and what can be expected in the future. But it also targets behavior and urban planning issues, like the link between urban form and need of transport for instance.

Four workshops have been organized so far covering the following debates: hybrid and batteries electric cars, hydrogen and fuel cell vehicle, biofuels and synthetic fuels, urban forms and need of mobility. Each workshop has gathered around 20 experts coming from different institutes and different culture.

Several concepts have emerged from the discussion. One of them is for instance to take the best of each technology and to try to make a new vehicle out of this. For instance, the weak point of the electric car is the range of the vehicle due to the difficulty to store a lot of energy on board. The weak point of biofuels and hydrogen is the deployment of those technologies on a large scale, due to the lack of biomass for biofuels, and high cost of the technology for hydrogen.

In reality, users of vehicle need high range only few times a year as most of the trips are below 30 km. Then, we could have a vehicle that relies basically on batteries, and for long trips, an adding motor could be set up in the car (like a range extender) running either with hydrogen or biofuels. Together, these technologies might answer the main problems faced by the road transport sector in the long term.

Figure 2: Likely evolution of the car market by technology



Source : Enerdata. 1st generation hybrid includes oil and electricity energy, 2nd generation hybrid includes electricity and hydrogen or electricity and biofuels.

The last workshop (Paris 15th-16th March 2010) will investigate the issue of individual mobility linked to technologies (GPS, internet, RFID...). The types of questions that will be addressed are for instance:

- Could GPS and internet technology bring a shift growth in car pooling?
- Could car sharing make alternatives technologies more affordable?

“Comparative analysis of past & present energy scenarios” (EEG)

The work-package “**Technology integration and scenario**” provided an overview of selected past and present energy forecast scenarios focusing on their characteristics and the major lessons learned from a comparison of the considered energy scenario selection therein.

During the first two related workshops on respectively “*Identification of success and failure criteria of past projections*” and “*Comparative analysis of present future energy scenarios – storylines and visions up to 2050*”, the political impact of various energy scenarios as far as consistent data was available has been discussed in-depth. This was done in order to establish a competent and concise policy brief for political future scenario developments on the one hand and on the other hand for political decision makers.

Notably, based on discussions with a number of high-level experts within the hold EFONET workshops, it was agreed on the following parameters to be most relevant for a categorisation of the selected past and present energy scenarios:

- purpose



- methodology
- system boundary conditions
- process of the scenario development

Consequently, due to the different purposes and methodological approaches, the selected energy scenarios have a different political impact.

Figure 3: “Categorization of selected scenarios and models with respect to methodology and purpose”

Purpose \ Methodology	Prediction	Exploratory	Normative
Econometric energy models	Energy and econ. growth 1964		
Techno-economic energy models (bottom-up), e.g. MEDEE, MAED, Med-Pro, LEAF		Energy in a finite world, 1980	
Optimization energy models e.g. EFOM, WASP, MARKAL		Global Green-X 2004 -> Energy Perspectives 1996	
Global energy demand / supply models e.g. MIDAS, PRIMES, POLES, AIE, IIASA		PRIMES 1993-> POLES 1997->	Limits to growth 1972 IPCC 1990->
Combining scientific studies and methods	IEA 1977, 1982		IEA 2006

Generally, an important effect of energy scenarios is to help understanding the linkages of key drivers and barriers in the development of the energy sector in order to depict the scope of action of policy makers. Another essential task of energy scenarios is to provide background data and assumptions in a detailed and transparent way to relevant stakeholders. In this context, energy scenarios do have a broad set of missions to fulfil whereas one important of them is to set an impact on energy policy making.

Consequently, the last workshop “*Technology integration*”, held last January, addressed technological learning aspects as well infrastructure needs in the energy sector. Well-versed speakers presented and discussed several relevant scenario approaches and developments in detail.

“Social Acceptance of New Energy Technologies and EE Measure” (INASMET)

This first policy brief elaborated as a result of the first two EFONET workshops on social acceptability of new energy technologies and on energy efficiency describes the changes that are taking place in the energy sector in terms of decentralization. It explains how this transition process is giving a more active role to the final user of energy and thus turns social acceptance

in a crucial element for a quicker deployment of new technologies. The different elements explaining social acceptance (or rejection) are analysed, both for production technologies and energy efficiency measures. With the help of findings from innovation, sociological and behavioural research, a set of preliminary recommendations are formulated, explaining how policy-making can facilitate changes that are primarily driven by social networks.

The following recommendations for implementing energy efficiency measures more successfully can be given at this point:

- From a sociological point, there is a great necessity of the consistency of advice. If an energy user receives contradicting information on a given action, he or she is much less likely to actually undertake a change. This consistency refers to all information sources that are consulted on a given question, including, again, the social networks.
- Energy efficiency campaigns should aim at the “routinisation” of certain actions, which lead to lower energy consumption, integrating them as habit in the daily life
- Wasting energy should not be portrayed as fashionable in the marketing of products, a change which could be achieved through voluntary agreements with the industry and the advertising sector
- In the design of products, much more thought should be given to environmentally friendly “default” options, so that it requires less effort from the user to select the mode of use with the lowest energy consumption.[1]
- Visualizing energy consumption, as is now possible in private cars, will give users the basic information they need to take action, so that such functions should be offered to households with the installation of advanced metering systems, which is now under way in a large number of European countries.

[1] Pichert, D. et al, “Green defaults: Information presentation and pro-environmental behaviour», in Environmental Psychology 2008/28

