Low Carbon Societies Network

Next Steps in the Low-Carbon Societies Network Project

The coming year will be the time for delivery of results from the project behind this newsletter.

In the next few months, INFORSE-Europe will improve its networking on transitions to low-carbon societies. This will include broadened and accelerated compilation of scenarios and materials on the website (www.lowcarbon-societies.eu) to make it an even better source of planning input for low-carbon transitions. In addition, more people will be invited to join the network and to improve the contact database (contacts can update their own entries via the website).

Coming Months: Stakeholders Meetings in France and Germany

Also in the coming months, the French and the German partners will begin a series of stakeholder meetings to discuss the transition to low-carbon societies. This will be an important test of the project methods, which combine scenario-building with stakeholder dialogues. The project team looks forward to finding out how well this combination will work and which experiences can spring from this new way of working with plans for transition to low-carbon societies.

EU Stakeholder Seminar April 2011 Brussels

In April, 2011 we will organise our EU stakeholder seminar, as we did in April this year.

Reports on German and French Scenarios - From Spring 2011

Starting in late spring 2011 we will publish reports from the French and German scenarios and stakeholder dialogues, including reports from the stakeholder dialogues, summary reports from the French and German work, longer scientific reports on France and Germany, and synthesis reports combining the French and German experiences.

Final Conference September 2011 - Paris

In September, just before the project ends, a last conference will be organised in Paris in order to present the final project results.

Sign Up

If you are not already signed up to the Low-carbon Societies Network, sign up at www.lowcarbon-societies.eu and get news on developments as soon as they occur.

This newsletter is published by the *"Low-Carbon Societies Network"* project, financed by the European Commission's 7th Framework Program for Research (FP7). The project's official name is *ENCI-Low-Carb* or *"European Network Engaging Civil Society in Low-Carbon Scenarios"*. The project period is 2009-11.

The aim of the creation of a European network on energy scenarios is to facilitate information flows between Civil Society Organizations (CSOs) and research institutes in Europe about low-carbon energy scenarios and technologies.
We want to establish a lively exchange concerning existing scenarios and examples of best practices already in place today that will be indispensable in meeting the requirements of a low-carbon society.

If you want to join our network, please contact the Project Team. Alternatively, you can register on the web site, as well as subscribe to this newsletter.

Our Project Team will build ambitious energy scenarios for 2050 for Germany and France. In the process we will meet with stakeholders to build support for the scenarios and to identify measures that might counter negative social and economical impacts.

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Key Issues for Transition to a Low-carbon Society:
A report from a roundtable of CSOs and researchers

By Meike Fink, RAC-France and Gunnar Boye Olesen, INFORSE-Europe.

The Low Carbon Societies Network Seminar, October 5, 2010, in Wales included a roundtable discussion of key issues in a transition to a low-carbon society. Here is a summary of the outcome.

1. Issue: Do we need behavioural changes to achieve a transition? – If yes, what incentives and actions can bring about these changes?

• The general conclusion was that we do need behavioural changes, but that we need to promote them with positive messages.

• If more sustainable practices and technology could be integrated into fashionable future trends, they might become mainstream! People must not be directly forced to change their behaviours. Incremental changes in lifestyles occur all the time; a transition won't start with big decisions. *Solutions have to be promoted in a positive, attractive way.*

• We need to provide good and convenient alternatives if we want people to change behaviour.

• For example, offer clean and frequent public transport instead of cars. There are many bad examples of public transport that virtually force people to buy cars.

• Financial incentives are needed. They are important tools as long as negative social impacts are controlled and counterbalanced. We should distinguish spontaneous value changes from financially initiated behaviour, but value changes can be result of practical changes that are induced by financial incentives.

• We could train "green ambassadors" who are able to spread the messages outside the already convinced circle to a wider public.

2. Issue: How to manage powerful lobbies against the transition?

• CSOs and other stakeholders must form coalitions against powerful lobbies. First, however, they have to agree on some common ground within the coalitions.

• It is important to discover and to communicate success stories of NGOs defeating powerful lobbies. NGOs should also expand their access to and use of legal tools.

• People must be reminded that some technologies are really dangerous and are definitively no option.

• Civil society has to be more informed on the lobbying power of private companies, etc. We need a political framework that regulates lobbies. More transparency is needed.

The seminar was held at the Centre for Alternative Technology (CAT). The event attracted 40+ participants, including Civil Society Organisation (CSOs) as well as researchers from 12 European countries. The program and presentations from the seminar are now available online.

3. Issue: Social acceptability of technologies – "Not in my backyard" Problems

• Local ownership of renewable-energy (RE) production utilities helps to create acceptability; good examples can be found in Denmark. In North Germany, in an area of economic privation, windmills were installed for this reason. It is difficult to create local ownership, however, as the local population is too poor to invest. In any case, some local benefits from RE are needed. In Spain, this is done with local/district taxation.

• Appropriation of the projects by the local population is necessary. They should share the financial benefits, but also early, properly informed consultations on the siting is necessary. Local leaders have to be involved in order that they become supportive leaders.

• The situation is different for different renewables. Photovoltaic (PV) often yields benefits directly to households, and thus it creates less resistance than many other renewables. In general, "small is beautiful"; many people like smaller solutions such as smaller windmills, solar, local biomass.

• The situation with regard to social acceptability varies from country to country.

4. Issue: Use and standardization of models and scenarios

• In general, models and scenarios are useful for visualizing possible future developments. You need to know where you're going before starting. We need a basic understanding of what a transition to sustainable society means.

• One interesting concept could be that certain no-regret measures are identified with all scenarios. (This could for instance be types of energy efficiency)

• We do not need standardization of models, as the different models find answers to different questions. The same is the case for assumptions; there is a natural diversity that should be respected, so long as the assumptions are stated clearly. Standardization might be possible and useful in some ways, as there are common features of different models and scenarios, e.g., certain inputs that are needed in all scenario-models.

New Scenarios for Phase-out of Fossil Fuels in Germany

By Gunnar Boye Olesen, INFORSE-Europe.

In recent months, three German studies with scenarios were presented for reducing emissions in the German power sector:

One was released by the **German Advisory Body (SRU)** on Environment in May 2010, in the report "Climate-friendly, reliable, affordable: 100% renewable electricity supply by 2050".

Another study was released by the **German Environment Agency (UBA)** in July 2010: "Energieziel 2050: 100% Strom aus erneuerbaren Quellen".

A third was released at the end of August by the **German Environmental Ministries of Environment (BMU)** and **of Economics and Technology (BMWi)**, "Energieszenarien für ein Energiekonzept der Bundesregierung".

The first two scenarios describe how Germany can phase out fossil fuel from its power production by 2050, while the third includes 85% reduction of the German greenhouse gas emissions by 2050.

SRU: Power Import is the Cheapest Option

The SRU study includes 4 kinds of scenarios with 100% renewable electricity in 2050:

- Germany without grid connections to neighbours,
- Germany combined with Denmark (DK) and Norway (N) with 15% electricity exchanged across the border but no electricity import from DK+N,
- 15% import from DK+N and 15% exchange with DK+N, and
- 15% import from all of Europe + North Africa and 15% exchange with all of Europe + N-Africa

Each of the four variants, suppose a low demand for electricity (500 TWh), and three of them also a scenario with a high electricity demand (700 TWh). The costs of the power system are given in the table below, as average power costs.

The main conclusions are that costs to Germany as a grid island are substantially higher than those of the other options and that the high-consumption scenarios are the most expensive, also per kWh of electricity. The cheapest option is the cooperation with DK+N with imports and low total consumption. Therefore, the recommendation is to work in cooperation with Denmark and Norway.

The recommended scenarios include large expansions of the grid capacity, including a 10 times increase of the grid connection between Germany and Denmark.

The scenarios were made by DLR's Department of Technical Thermodynamics using the REMix energy model.

See the report (statement) at http://www.umweltrat.de/cln_135/SharedDocs/Downloads/EN/04_Statements/2010_05_Statement15_Renewablesby2050.html

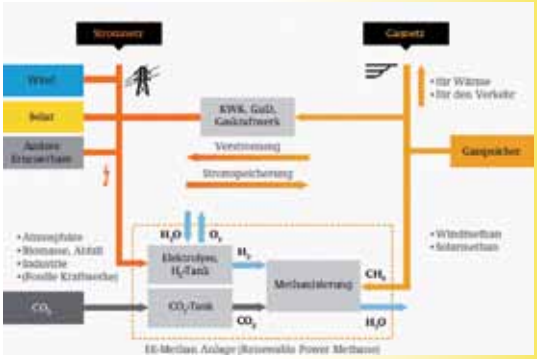
UBA: Stable Grid with 100% Renewables

The UBA study has 3 scenarios for transition to 100% renewable energy in the electricity supply by 2050: regional networks, local autonomy, and international large-scale application.

Only the scenario for regional network is developed in detail. It is probably the most detailed study so far on how to achieve balance in the German power sector with 100% renewable energy.

It concludes that it is possible to achieve the same grid stability as today with as much as 62% windpower and 18% solar power. Only 2% of the power is from biomass, while 5% of the power is imported; the remainder comes from geothermal and hydro sources.

Substantial energy storage is included in the form of a process by which power is converted to hydrogen, which then is converted to methane.



Energy storage with methane gas made from electricity via hydrogene. From "UBA-study".

The methane gas is then transported in the existing gas infrastructure and stored in large underground gas storages. The gas is used for peak-load power. This storage method will incur a power loss of 11% of the total power production.

The scenario includes use of import capacity of 6,900 MW, which is lower than the current power exchange capacities of Germany with neighbouring countries. It is, however, more than the exchange capacity with Scandinavia, the neighbours that best could provide the balance expected in the international power exchange because of their hydropower storages.

The scenario is developed with the SimEE model from the Fraunhofer-Institut für Windenergie und Energiesystemtechnik (IWES) in Kassel. It is does not include economic evaluations.

The study and scenario is made by a large number of researchers from IWES and other institutions.

See the study (in German) at http://www.umweltdaten.de/publikationen/fpdf-l/3997.pdf

BMU - BMWi: No Fossil Phase-Out

The third study does not include a fossil-phase out study. It includes a substantial proportion of hard-coal with CCS (CO_2 Capture and Storage) by 2050 to reach 85% greenhouse gas reductions. It also includes a series of life-time extensions of the German nuclear power plants.

A short analysis of this study is available at http://lowcarbon.inforse.org/index.php?id=38. The study (in German) is at www.bmu.de/files/pdfs/allgemein/application/pdf/energieszenarien_2010.pdf .

Estimated power costs 2050	Low consumption (500 TWh)	High consumption (700 TWh)
Germany as a grid island	9 €c/kWh	11.5 €c/kWh
Germany, DK+N, no import	7 €c/kWh	9.8 €c/kWh
Germany, DK+N, 15% import	6.5 €c/kWh	7.2 €c/kWh
Germany with Europe, 15% imp.	6.9 €c/kWh	not included

The Needs and Benefits of Networking on Sustainable Energy Scenarios

by Béla Munkácsy, Hungarian Environmental Education Network

I am writing this in my dual capacity as an academic and as an activist. On the one hand I am a university teacher and researcher at the ELTE university in Budapest, on the other hand I am representing an environmental NGO, the Hungarian Environmental Education Network. In both my capacities it is very useful to network on scenarios on possible energy futures.

Access to Various Scenarios Plug the Knowledge Gap Clear Doubts

As a member of the teaching staff and researcher of a Hungarian university, networking through the Low Carbon Societies Network gives me *access to various plausible scenarios* through which 100 % renewable energy might be reached by 2030 or 2050. This has *particular importance* in Hungary, where many s*takeholders are ambiguous* regarding development of sustainable energy.

Such hesitation and doubt come partly from *gaps in their knowledge*, as the idea of large-scale use of renewable energy is fairly new in our country. Due to our cooperation, my students can get acquainted directly not only with recent European methods and research findings, but also with the everyday use of these technologies.

Database of Institutes Collection of Scenarios

It is hugely valuable to us that the Network is developing an online database of institutes and people working on sustainable-energy issues, as well as a collection of different scenarios. This opens the door to a great deal of existing knowledge often unavailable in English.

International Student Cooperation

Involvement in the Network also enables our most competent students to participate in international cooperation.

This April, I and two of my students took part in the EU Stakeholder Seminar of the Low Carbon Societies Network in Brussels. We met and discussed the topic with several researchers. Along with the scientific discussion, we had a great experience seeing many wind farms and enormous working PV systems as we travelled through Germany from Budapest. In many ways, the experiences of that one week were richer than a whole university course at home. In addition, we established an outstanding cooperation with INFORSE-Europe to create 100% renewable-energy scenarios for Hungary. This work represents a great opportunity for our 10-12 students to be involved in international cooperation early in their careers.

Hungarian university students and Béla Munkácsy meeting Gunnar Boye Olesen

Important Input and Ideas to a Publication

As a representative of an environmental NGO, I also have good experiences with international NGO cooperation. The Hungarian Environmental Education Network, a member organization both of INFORSE-Europe and of the Low Carbon Societies Network, is working on a Hungarian publication about the concept of 100%-renewable-energy scenarios.

In this work, we receive important input and ideas from other organizations, such as the Danish Organisation for Sustainable Energy, the Centre for Alternative Technologies/ZeroCarbon Britain, and the Stockholm Environment Institute. Without this direct connection it would be more complicated to access the latest results of their research activity. I believe this will strengthen our coming publication as well as our future activities.

Hard to Find

In Hungary, it is really hard to find people who deal with the challenges of the 100 % sustainable energy future, including trying to mitigate climate change and avoiding the increased risk posed by adding more nuclear power plants.

In Hungary, energy is often handled as a social question instead of as an environmental question because, for many years, energy prices have been subsidised.

Real prices increase the number of people who cannot pay their energy bills.

Positive Inspiration

The Network's scenarios, however, give me positive inspiration that real prices can also mean more efforts to improve energy efficiency and can help renewable energy become more competitive.

Increased energy efficiency can help to cut our energy needs to more than half of the present energy demand by 2050. Research and mass production of renewable-energy technologies can bring the price down so that it will be competitive and will cost even less than the so called „conventional" fuels.

As it was mentioned in the Network's workshop, *we can reach a new way of thinking* if we show people the positive, attractive environmental path.

S*howing technically feasible scenarios is a way doing this, which is badly needed.* Showing that it is possible, we learn that Hungary even has much potential for renewables and that it even has competitive advantages in some renewable-energy fields. In Hungary, the number of sunny hours is higher and the wages are lower than in Germany or Denmark.

With a positive sustainable energy strategy, Hungary could be a good market as well as even the home of manufacturers of solar, wind, biomass, energy-efficient bulbs and other equipment.

Support schemes to insulate houses and to change windows would mean, on the one hand, a good push for the troubled building industry, creating many more jobs, and on the other hand, lower energy consumption in the future.