Low Carbon Societies Network

Dear reader,

This newsletter is dedicated to the activities of the Low Carbon Societies Network Project, where we had an active spring with two public events in Brussels, experts meetings, and a lot of work behind the scene on scenarios, preparations of stakeholder forums in the fall, and much more.

In addition to the work "behind the scene", the network is now opening its own Facebook page with discussions, links and more. If you are on the network and project mailing list, you will receive the link soon. Otherwise you can use the upcoming link at www.lowcarbon-societies.eu.

The final project conference will be in January 2012 in Paris. We hope to see many of you there.

The project team

New !

ENCI-LowCarb on Facebook

Discussions Open from August

Support: 100% Sustainable Energy on Facebook

Join Contact online Database
E-mail List on Scenarios
www.lowcarbon-societies.eu

See Reviews: EU Sustainable Energy Week, GREEN WEEK

Illustration from a new publication on local and regional scenarios. See review on the next page

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-LowCarb* or *"European Network Engaging Civil Society in Low-Carbon Scenarios"*. The project period is 2009-12.

The project's aims include the creation of a European network on energy scenarios 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 builds ambitious energy scenarios for 2050 for Germany and France. In the process we meet with stakeholders to build support for the scenarios and to identify measures that might counter negative social and economical impacts.

Project Team:
Project Coordinator: RAC-France, Climate Action Network - France, att. Meike Fink, E: meike@rac-f.org, W: www.rac-f.org

INFORSE-Europe, att. Gunnar Boye Olesen (editor) and Judit Szoleczky, E: ove@inforse.org

Germanwatch, att. Jan Burck E: burck@germanwatch.org

CIRED, Centre for International Research on Environment and Development, att. Sandrine Mathy, E: mathy@centre-cired.fr

PIK, Potsdam Institute for Climate Impact Research, att. Brigitte Knopf E: knopf@pik-potsdam.de

www.lowcarbon-societies.eu

Stakeholders' Workshop in Germany for Transportation and Electricity Sectors, March-June, 2011

By Jan Burck, Germanwatch

In order to develop a Low-Emission Scenario that includes the opinions of crucial actors, Germanwatch and the Potsdam Institute for Climate Impact Research (PIK) recently held two workshops for stakeholders of respectively the transport and the electricity sector.

They were designed to encourage potentially influential actors to contribute their views, estimations, and ideas to the creation of scenarios that would meet with a high degree of social acceptance. To achieve this goal, the workshops were divided into thematic sections and, after the moderated debate, the stakeholders were asked their opinions of certain points in a questionnaire.

Electricity Sector Workshop

This workshop was held on June 30, 2011 at the Germanwatch office in Berlin. Fifteen stakeholders took part, such as RWE, one of the four big German energy companies; two German grid companies (50Hertz, TenneT); a trade union of the mining and energy sector (IG BCE); the German association for renewable energies (BEE); a renewable energy company (Lichtblick); the German consumer association and environmental groups (WWF, NaBu, Klima-Allianz). The discussion focused on the topics of grid construction and social acceptance, changes in landscape due to new forms of electricity production, and energy efficiency as well as on the types and structure of energy supply that are needed along the way to a renewable energy system. The results of the workshop are being evaluated by Germanwatch and PIK.

The transport sector workshop is described on the next page.

New Publication:

Local and Regional Low Carbon Scenarios - Methodology, Challenges and Opportunities

By Meike Fink, Climate Action Network - France and Low Carbon Societies Network, ENCI-LowCarb Project Coordinator

This new publication from the Low Carbon Societies Network is giving a methodological and practical overview of what can and should be done for local and regional low carbon scenarios. It also gives an overview of what is happening concerning the development of energy visions on the smaller scales.

Methodological Considerations

The publication concludes that the methodology chosen for the development of scenarios immediately shapes the results.

The decision on the scope or perimeter of the emissions analysed has a methodological as well as a political impact. If for instance the scope of emissions goes beyond the analyzed area by including indirect emissions, changes in consumption patterns and imports can be valued as solutions.

Another example is that setting scenario emission reduction objectives can lead to the creation of a carbon or emissions gap, i.e., a gap between the fixed objective and the reduction that is realistically achievable with political measures. To avoid this gap, analysing the potential of emission reductions would be preferable.

Modeling Energy Sufficiency

Reductions in energy consumption due to behavioral changes represent a complex, variable, and very conditional element of energy strategies. On one hand, NGOs, politicians, etc. stress the importance of value changes, but on the other hand, it is often not clear how these changes can be implemented. This explains why many scenarios exclude behavioral changes from their assumptions. Nevertheless, scenarios often include assumptions such as, a reduction of individual mobility without labeling it "sufficiency" but sometimes also without explaining the measures for this reduction.

Local 100% Renewable Energy Strategies

The concept of 100%-renewable-energy regions is fashionable. More and more local authorities subscribe to this objective, relying on the development of local potential for renewable energy and energy efficiency. Concrete examples have already proven that this aim is achievable.

Scenarios Are Just a Start - Public Involvement Is Key to Success

Decisions on climate and energy strategies that potentially concern all of society's actors in all spheres of daily life (transport, consumption, building, agriculture…) should be based on broad public consultation. The integration of the visions from local citizens' and the management of the consultation processes are important democratic challenges for all local authorities. This leads straight to an important message of the publication: even the most detailed, highly elaborate energy and climate scenario is only a tool. It can foster decision-making but it can never replace political will and commitment. However, robust strategies emerge in all scenarios and give general guidance on necessary climate policies.

The publication is available for download from our website at http://www.lowcarbon-societies.eu .

No Clear Low-carbon Vision Among Transport Experts

From the Expert Workshop about the German Transport Sector, March 17, 2011. *By Brigitte Knopf, PIK, Germany*

As most models show, a complete decarbonization of the electricity sector by 2050 is feasible. The decarbonization of the transport sector, however, is a much more difficult task and most models rely still on diesel and gasoline for passenger transport in 2050 (see, e.g., Luderer et al. 2011).

This was the background for the ENCI – Low Carbon Societies expert workshop on the German transport sector to provide input to the project and in particular to its German scenario, at the Potsdam Institute for Climate Impact Research (PIK, for Potsdam-Institut für Klimafolgenforschung) on 17th March, 2011.

The participants came from research institutions, interest groups, car manufacturing, public transport, and other sectors.

Workshop Part I: Modelling Transport - Technical Issues

The session started with a presentation of the model REMIND-D used by the project's German scenario by Eva Schmid (PIK) with a special focus on the transport sector.

In the following discussions, important points included:

· The drawback of a purely national perspective in REMIND-D. Freight transport, especially, is rarely confined within national boundaries.

· Freight-transport capacity is determined internally in the model and appeared to decline over time. Experts found a positive correlation between freight kilometers with trucks and GDP, so the corresponding relationship in the model has to be adapted to avoid disproportionate GDP losses.

· Many technologies used in the model rely on critical resources including rare earths, e.g., batteries for electric vehicles.

Discussion

In the general discussion, one of the most intensely discussed issues was the future of car engines and which technology will prevail. There was a wide consensus that hybrid engines are supposed to be only a temporary step en route to fully electric vehicles, hydrogen-fuel-cell cars, or second-generation biofuels. Second-generation biofuels are perceived mainly as a long-term option, since neither synthetic biomass nor lignocellulosis is presently cost-effective.

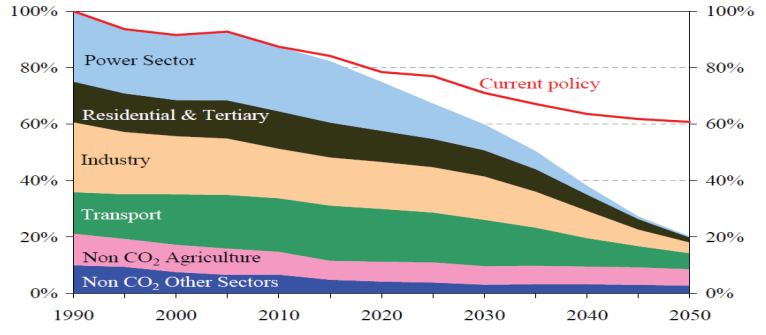
Optimization strategies were analyzed for various means of transport. With respect to trucks, the potential for further efficiency increases is limited. The same is the case for the German rail transport, which already is 90% electrified. Rail capacities allow for a doubling of the current rail traffic; a greater increase requires an expansion of hubs.

Workshop Part II: Visions for the Future of the Transport Sector - '50/50-2050' Scenario

Manfred Treber (Germanwatch) presented a vision for the passenger transportation sector in 2050 with only 50% of motorized individual transport (as opposed to currently 80%) and the remaining 50% being covered by public transport, bike, etc. He emphasized that such a transformation was feasible and required a rise of public transport use by only 2% per year. However, the transition has to be supported politically and depends on public investment.

Also in the EU' Commission's new Roadmap2050 for a low-carbon economy, the transport sector has the lowest CO_2 reduction of the sectors analysed.

Figure 1: EU GHG emissions towards an 80% domestic reduction (100% =1990)



Emissions, including international aviation, were estimated to be 16% below 1990 levels in 2009. With full implementation of current policies, the EU is on track to achieve a 20% domestic reduction in 2020 below 1990 levels, and 30% in 2030. However, with current policies, only half of the 20% energy efficiency target would be met by 2020.

Discussion

When asked for their own visions of the transport sector, the experts revealed a lack of ideas. They argued that the transport sector was much more complex than other sectors such as electricity. Several experts stated that the sustainable restructuring of transport would be significantly difficult and expensive, asserting that changes would not be market-driven but would occur only due to political demands.

Three main drivers of passenger transportation were identified as economic development, demography and structure of the work force, and settlement patterns, the last being the major starting point for political intervention. One expert pointed out that the highest potential for decarbonization is associated with transport in cities, where smart concepts are already being developed.

It was mentioned that cost estimates must play a crucial role in a transition like the one proposed by the speaker, and that as yet no robust estimates are available. It was also noted that investments in infrastructure most likely will account for the largest share of costs.

A general consensus was reached on the fact that the transport sector can only be decarbonized by combining the use of renewable energy sources with further efficiency increases. However, focus on passenger transport, as in the "50/50-2050" scenario, provides only a limited perspective.

Conclusions

The workshop yielded useful insights for the modelers at PIK. A gap between theory and practice as well as between normative and positive scenarios became evident. From the modelers' perspective, an upper bound is set for CO_2 emissions, and then the models evaluate the kinds of transformations within the transport sector that would meet the limit. Most of the experts take the methodologically opposite view, trying to describe observed trends and expected extrapolations into the future. A mismatch between these perspectives became evident.

The workshop also revealed that there is to date no clear vision for decarbonizing the transport sector, as is available, e.g., for the electricity sector, with clear-cut goals for shares of renewable energy sources or emission reduction targets.

"Stakeholders Will Participate if They Have a Say"

- EUSEW'11 Conference, Brussels - ENCI-LowCarb Project Event

By Gunnar Boye Olesen, editor

"100 % Renewables and Low-Carbon Scenarios in Europe by 2050"

110 participants met on April 14th, 2011, near the end of EU Sustainable Energy Week (EUSEW), to review this topic in the EU's Charlemagne building in Bruxelles.

They heard about and discussed the growing number of scenarios leading to sharp reduction of CO_2 emissions and, eventually, to a Europe run on 100% renewable energy.

The nine presentations also included experiences with stakeholder debates and a special presentation of the German energy debate after the nuclear meltdown in Japan.

The Project's event at EUSEW'11 in the EU's Charlemange building. The interest was large. We needed to close the registration, when already 185 people registered for the 120 places in the conference room.

The final plenary focussed on how to involve stakeholders, particularly representatives of the citizens who ultimately will feel the impacts of the transition as well as of inaction and wrong decisions.

Experiences from France, Germany and the UK pointed to a number of obstacles to stakeholder participation, especially citizens' groups; however, these insights also underlined the value of well-organised stakeholder dialogues that are carried out before decisions are taken.

Stakeholder dialogues in various forms, and on different levels from local to national, can build a trust in the society if they are an integral part of the decision-making. If, on the other hand, stakeholders' inputs are neglected or sidelined, for instance in fast decisions, those stakeholders will feel frustrated.

The plenary also included discussion of the reactions to the nuclear meltdown in Japan. Reactions in Germany, both in media and politically, have been very large. Japan's nuclear crisis has led to more openness on nuclear issues in France, but more muted reactions in the UK, and even less reaction in Poland, Germany's neighbour to the east. In this respect energy agendas remain quite national in Europe.

The presentations and a summary of the plenary discussion is now available online at http://www.lowcarbon-societies.org.

Low Carbon Societies Network - ENCI-LowCarb Project at EU Green Week '11 Exhibition, Brussels

The entrance of the Charlemange building with the exhibiting team Judit Szoleczky, Gunnar B. Olesen, Kate Stanley and Jens Hansen.

More than 1000 participants visited the stand of INFORSE-Europe and saw the new posters for the Low Carbon Societies Network. This happened during the EU Green Week, May 24-27, 2011, at the EU's Charlemagne Building in Brussels.

The new posters showing the ENCI-LowCarb Project's stakeholder process and the models used.

The EU Commissioner for Environment, Janez Potocnik, visiting the stand. Judit Szoleczky explains INFORSE-Europe activities including the ENCI-LowCarb FP7 project.."100 % renewables in EU" But we do not need to supply the same amount of energy as we can reduce the energy need by energy efficient measures and then it is possible. "Of course - I know." - answered the Commissioner, who was the main initiator of this year's Green Week theme: "Resource Efficiency".

Planning a Future Energy System – Creating the Hungarian Sustainable Energy Vision 2050


by Henriett Daróczi, and Fanni Sáfián students at the ELTE University, Budapest, Hungary

About one and a half years ago we founded a work group of university students dedicated to developing the Hungarian Sustainable Energy Vision with the guidance of professor Béla Munkácsy (ELTE University, and Budapest and Environmental Education Network).

The basis for the work was the Danish sustainable energy vision / scenario developed by INFORSE and others.

We essentially attained our goals, so in this paper we will focus on the problems that emerged during the process of data collection and analysis.

Different Conditions

We quickly came to realize that conditions in Hungary are very different from those in Denmark. With that in mind we made some deep modifications in our use of the Danish methodology due to the *lack of information*.

On a positive note, it turned out that in Hungary, due to the *current low level of efficiency*, we have larger potentials and opportunities to decrease the energy consumption than, e.g., Denmark has. Hence, the specific energy consumption of heated floor space can be reduced to 25% by 2050 compared to levels in 2000, based on the recent calculations.

Defining renewable energy sources and the Hungarian potentials was also a challenge as local research centers proposed very diverse estimates of the potentials. Sometimes the different predictive methodologies ended up in conflicting results from which it was hard to choose the most relevant and reliable figures. We also had to consider the effect of the several energy-lobbies, as the result of research on energy potentials seems to be affected by the interests of the research group.

Renewable Energy Potentials

To face these limitations regarding the potentials, we always tried to make our own assumptions, based on the existing information and refined by combining different existing information feeds with each other and with our estimations.

We managed to define the potentials more accurately, for example, in the case of wind power. The existing calculations omit some of the limiting factors that exist in the current regulation of land use. This results in a larger estimated area for wind-turbine installations in the calculations than is actually available. Therefore, we calculated with GIS methods, considering the following limitation factors: protected natural areas (at the national, local, and international levels, e.g., Natura 2000); protected landscapes; Environmentally Sensitive Areas (ESA); forests; hydrographical elements; roads, railways and airports; energy transmission lines, and all the buffer zones around these areas.

According to this calculation, the potential land area is 6,354 km^2, which is 6.83% of the area of Hungary. This is much smaller than the results of other calculations conducted without GIS methods, where the result was 34.7% of the area.

Sustainability Criteria Applied

In our vision, the energy supply should be not only renewable, but also sustainable, which in our case means emphasizing the environmental aspects. This consideration was realized mostly by planning the usage of the biomass potential.

Therefore, we created new categories of biomass. Instead of "solid biomass", we use "sustainable biomass production" in our calculations, with a definition of which kinds of biomass and biomass waste may be used for energy. This is an important question, for example, when deciding upon the utilization of the by-products of crops. It must be known which by-products should be left to compost on the fields to keep the soil fertile.

We also added a new category, "biomass plantation". This means the intensive energy plantations and forests mainly used to produce biomass for the energy sector. These areas do not provide the same biodiversity as more mixed forests do. Therefore we tried to keep the usage of this kind of biomass production as low as possible and to use it mainly during the transition of the energy system, when efficiency is not yet high enough, such that we have to use all the renewable energy sources available.

Due to similar sustainability considerations, while planning for geothermal production, we prefer to use heat pumps. Although Hungary has significant geothermal potentials, the lifetime of geothermal wells is not known, particularly if their heat is used intensively. In addition, heat pumps can make use of smaller temperature differentials, and depletion is less of an issue.

A first version of the Hungarian Sustainable Energy Vision is available at http://www.inforse.org/europe/VisionHU.htm . A more detailed description will be published in August, 2011.

The Hungarian scenario/vision will be one the several visions, which have been developed by INFORSE-Europe members. In Hungary, the member is the Environmental Education Network.
The scenario is calculated with a spreadsheet tool developed by INFORSE.
The calculations and the estimations of the Hungarian renewable energy and energy-efficiency potentials are made in cooperation with the ELTE University's researchers.

INFORSE-Europe is a network of 80 NGOs from 32 countries. The network and is working on a European Vision with a scenario for phase-out of fossil and nuclear energy in the EU-27 by 2040.

The Danish Vision and the ZeroCarbonBritain include a transition of energy systems to 100% renewable energy supplies by 2030, while others include a transition by 2040 or eventually 2050.

From the editors:
We wish to facilitate information flows among researchers and Civil Society Oganisations in the Low Carbon Societies Network created by the EU FP7 ENCI-LowCarb Project.

If you are aware of scenarios, which you would like to share or to discuss you are welcome to send an article or take part of the new discussion forum on the facebook.
Please check also the list of scenarios and contacts on www.lowcarbon-societies.eu