

## Minutes from CEESA Meeting II

**Date:** 11 January 2007  
**Place:** Tune Kursuscenter, Greve

### Present:

Henrik Lund, AAU  
Frede Hvelplund, AAU  
Per Christensen, AAU  
Brian Vad Mathiesen, AAU  
Georges Salgi, AAU  
Mette Reiche Sørensen, AAU  
John K. Pedersen, AAU  
Mads Pagh Nielsen, AAU  
Marie Münster, AAU/DTU-Risø  
Poul Erik Morthorst, DTU-Risø  
Frits M. Andersen, DTU-Risø  
Thomas Astrup, DTU  
Henrik Wenzel, DTU  
Johannes Petersen, DTU  
Morten Lind, DTU  
Niclas Scott Bentsen, KU-KVL  
Claus Felby, KU-KVL  
Jesper Munksgaard, AKF  
Peter Karnøe, CBS  
Niels I. Meyer, DTU/AAU  
Kjeld Nørregaard, VE-Net

### Agenda

1. Concluding summary of the meetings
2. Final discussion and conclusions
3. Next meeting
4. Establishment of International Advisory Panel
5. Establishment of Management Board
6. Questions and comments

### 1. Concluding summary

The WPs presented the decisions made at the individual WP meetings.

#### WP2:

- Niclas will begin his Ph.d. by 1 April 2007
- The work of WP2 will begin now:
  - John, Mads and Georges will define transport technologies.
  - Brian and Henrik will convert data into person/km.
  - Information on biomass for LCA will be given to WP4 and WP5
- Next WP2 meeting will be held on 25 April 2007, 10:00 – 15:00

### **WP3:**

- Next WP3 meeting will be held soon.
- The group will explore the possibilities for employing two Ph.d. students through a doctoral school at DTU.
- The synergies which could be achieved by involving an on-going DTU project would also be considered.

### **WP4:**

- The WP4 group decided to meet on a quarterly basis.
- It was concluded that energy savings and the international aspect of regulation should be investigated further
- Each member of the WP will prepare a draft paper including:
  - A regulation catalogue
  - Considerations of driving forces
  - The international aspect
  - Etc.
- The draft papers will be completed before the next consortium meeting in August.

### **WP5:**

- WP5 has two prospective candidates in mind for the Ph.d. positions. Further agreements will be made.
- The approach to this analysis is different from the traditional LCA approach.
- WP5 will conduct an LCA of four scenarios which do not imply fossil fuels.
- These four scenarios will be compared to a reference scenario.
- The WP will focus on the market and regulation aspects.
- The context scenarios will be defined.
- WP5 needs a list from the other WPs of:
  - 1) Technologies
  - 2) Fuels

## **2. Final discussion and conclusions**

The plan of including a reference scenario was discussed.

Henrik Lund stated that if the aim is to achieve a 100% RE scenario, there is no need for a reference scenario. The four scenarios presented in the project application refer to each other. The question of regulation/non-regulation should be investigated within the scope of the 100% RE scenarios, not in relation to a reference scenario. Henrik Lund encouraged the consortium to maintain the four scenario-structure of the project. It is then the job of the individual WPs to make recommendations to each scenario.

Thomas Astrup confirmed that the LCA could be made without a reference scenario. To the question of regulation/non-regulation, Thomas emphasized the importance of knowing the degree of interaction with the surroundings when conducting an LCA of the energy scenarios.

Frede Hvelplund raised the question of which consequences the election of a 100% RE scenario would have compared to the 30% RE vision of the government.

Henrik Lund stated that the election of IDA's vision should be based on the fact that IDA is the only one who has presented a 100% RE vision. If the official plan of the government was chosen instead, we would have to prolong it. We might end up with the same result.

Henrik Wenzel confirmed that the four technology scenarios presented could be compared through the LCA. However, the use of a reference scenario would make it possible to demonstrate the environmental gain achieved by each scenario. The internal differences between the four scenarios are quite small, since no fossil fuels are used for energy production in any of the scenarios.

In traditional LCAs, context scenarios are analysed with the aim of identifying the series of consequences related to these scenarios.

It is important to identify the contact face between our scenarios and the surroundings. The energy systems may have implications on areas beyond our delimitation.

What do we mean by regulation and how do we define the boundary of our energy system?

Henrik Lund suggested that we should conduct an analysis of both a closed system and an open system which interacts with the world around us.

Frits M. Andersen asked how we could include both energy supply and energy demand in the analysis.

Henrik Lund suggested that our point of departure should be the savings which are implied in the presented scenarios.

Frits emphasized the importance of choosing and defining a central projection of consumption. It would be okay to begin with a general description of the savings implied, but a further clarification should be made subsequently.

Henrik Lund agreed that the point of departure taken in the scenarios should be updated through the final phase of the project.

Marie Münster suggested that the government's 30% RE vision should be used as a reference.

Jesper Munksgaard agreed and stated that in this way we could challenge the government's strategy and present an alternative. The reference could be used as a firm measure both in relation to the LCA and the economic analysis.

It was stated that we do not need a reference, but that there would be a political interest in using the reference. Maybe the reference should be developed during the next couple of years?

Poul Erik Morthorst concluded that by August 2007, the four scenarios should be qualified. Furthermore, the international context should be defined in order to demonstrate that we aim at defining scenarios of international trade. The degree of international trade may be defined on a gradual basis through the project, so that one or more international contexts are defined step-by-step.

Poul Erik suggested that by August, 1-2 pages should be written about each scenario in order to define our main point of departure. He asked: how much should the defined scenarios limit us later on in the process?

Niclas Scott Bentsen raised the question of how to define the energy demand. He asked if a projection of work could be made by use of EMMA/ADAM and emphasized that our aim was to satisfy a demand, not just to produce energy.

Frits agreed that the development of the demand should be defined.

Henrik Lund stated that the general distinction between centralised and distributed energy systems was not quite clear. He suggested that the centralised energy system was defined by a large proportion of district heating and natural gas, while the distributed system was characterized by a limited use of district heating. Henrik asked if this would make a difference in relation to electricity grid and regulation.

It was emphasized that bio-refineries are generally large-scale productions and that the use of small-scale refineries would not make a realistic scenario.

Marie asked who would be responsible for the socio-economic calculations.

Frede stated that in WP4, the regulation would be carried out on the basis of the reference we have now, until we reach the aim of 100% RE.

Niels I. Meyer suggested that a projection of the energy consumption should be made, because the consumption makes certain demands on the energy utilities. Maybe a public change of mentality will take place – how do we deal with that in the analysis? Niels asked if this could be predicted by ADAM and suggested that two projections should be made.

Jesper asked if any economic advantages could be defined in relation to large-scale production or small-scale production.

Henrik Lund concluded that a reference is needed for the analysis.

Henrik Lund made the following conclusions:

1. We must define our aim. Our focus is to achieve a 100% RE scenario and we must analyse the various possibilities.
2. Regulation plays a part in the relationship between the four scenarios. At a later stage, we will define one ideal scenario.
3. In the next phase, we make a projection of consumption, we discuss measures and economics and we make a comparison of our scenario and the reference.

Poul Erik suggested that we could consider using a third dimension – maybe we choose not to use the four scenarios, and more relevant parameters can be found?

Thomas emphasized that market and regulation conditions must be discussed, or else it would not be possible to conduct an LCA.

Niels suggested that the projection of consumption could be a third dimension.

Poul Erik emphasized the importance of using the scenarios for making a span in the analysis. If this span is not created, the dimensions used should be replaced by other more relevant ones.

Henrik Lund pointed out the fact that the project runs over a 4-year period and that changes could be implemented along the way.

Henrik Lund concluded that we should agree on the scenarios which form the basis for our discussion, as a point of departure.

Before our meeting in August, energy systems analysis and LCA screenings should be made of the chosen scenarios. Henrik Lund asked which scenarios should be chosen as the point of departure.

Poul Erik suggested the following four scenarios:

- 1) A scenario of low consumption and high regulation
- 2) A scenario of high consumption and low regulation
- 3) One of the present scenarios
- 4) Another of the present scenarios

Jesper warned against eliminating any of the present scenarios at this stage.

John K. Pedersen stated that the needed span could not be found between the present four scenarios. According to John, it would be a waste of time to analyse the degree of regulation between these four scenarios.

John suggested that one scenario could be characterized by the use of electricity as the main source of energy, also for transport. A second scenario could be characterized by the use of liquid biomass as the main source.

Frits suggested that the analysis of the centralised and distributed energy systems should provide us with a stronger basis for changing the scenarios than the one we have at this stage.

Poul Erik stated that the demand should be in focus in the scenarios. He concluded that the scenario group (WP1) should meet to discuss the scenarios and then present a proposal to the consortium.

Henrik Lund suggested that the division between centralised and distributed energy systems should be abandoned. Instead, a division could be made between high and low consumption in the scenarios.

Henrik Wenzel asked if the use of high electricity demand means a high demand in all sectors. How do we make the division?

Frede urged the consortium to maintain the view that a 100% RE system should be achieved. How to achieve it, will be discussed in the project. This means that we may end up with two different paths to go.

Brian Vad Mathiesen urged the consortium to make choices on the basis of the message we wish to send. We cannot analyse all aspects.

Henrik Lund concluded that the project work is a process. This means that we begin by analysing one set of scenarios, but this may change along the way.

Henrik Lund suggested that another relevant dimension would be the issue of whether we wish to save either electricity or heat.

Henrik and Poul Erik concluded that the decision will be made by the scenario group. The group will define the first step to take and will distribute the case to the consortium.

### **3. Next meeting**

Next meeting will be held on 28 – 29 August 2007. The meeting place will be determined later.

### **4. Establishment of International Advisory Panel**

It was emphasized that one of the functions of the Advisory Panel is to serve as a critical evaluator of publications and other documents.

The Panel must also inform the consortium about other projects that they know which relate to CEESA.

The International Advisory Panel will consist of Niels I. Meyer and Thomas B. Johanson, among others. Niels I. Meyer will contact other potential members.

## **5. Establishment of Management Board**

The Management Board was established. It consists of:

Henrik Lund  
Mette R. Sørensen  
Per Christensen  
Niels I. Meyer  
John K. Pedersen  
Poul Erik Morthorst  
Thomas Astrup  
Henrik Wenzel  
Morten Lind *or* Jacob Østergaard?  
Bo J. Thorsen *or* Claus Felby?  
Peter Karnøe  
Jesper Munksgaard

Ørsted-DTU and KVL-KU will determine before the next meeting, who will represent them in the Management Board.

## **6. Questions and comments**

### **Publication**

The question of publication was raised.

It was suggested that the Danish media should be used for disseminating the project.

Publications should be made both at an overall consortium level and at the WP level.

The dissemination of project results at the consortium level should take place at a later stage. Until then, the individual WPs are free to publish what they want along the way. Everybody must remember to acknowledge CEESA in every publication related to the project.

### **Working language**

The working language of the project will be English. The use of Danish will be relevant in some cases and shall then be used.

### **Co-operation with VE-Net**

Kjeld Nørregaard from VE-Net suggested that the project should be presented to a larger group, maybe at the meeting in August or at a later stage.

Kjeld promised to send invitations to the consortium to the events arranged by VE-Net. The consortium was also urged to contribute to these events, also at the WP level.

### **Homepage**

A CEESA homepage will be established. The homepage will consist of both a public and an internal part with access through password. Mette R. Sørensen will inform the

consortium when the homepage has been established. All relevant documents and information concerning the project will be placed on the homepage.

### **Song books**

Henrik Wenzel proposed that CEESA song books should be made and brought to the next meeting 😊