

EUSUSTEL: Kick-off meeting; Brussels, 21/01/2005

Minutes of meeting

Composed by: Leander Cosijns

References:

1. EUSUSTEL, Kick-off meeting at ELIA, Brussels, January 21, 2005, Agenda 08:30-17:15 (1 page).
2. EUSUSTEL Annex I; Description of Work; October 08, 2004 (45 pages).
3. D'HAESELEER, William & COSIJNS, Leander, University of Leuven, Energy Institute: "European Sustainable Electricity; Comprehensive Analysis of Future European Demand and Generation of Electricity and its Security of Supply", [Kickoff 21_01_05 (1)].ppt (95,4 kB).
4. D'HAESELEER, W.: "Agenda Kick off meeting; Planning and timetable for the WP; Graphical presentation and interaction of WP; Distribution of work; Deliverables list", 12 ppt-slides [Kickoff 21_01_05 (2)].ppt (315 kB).
5. ROSSETTI DI VALDALBERO, Domenico, CEU, DG Research, CDMA 5/142, 1049 Brussels: "Overview of contractual obligations, procedures and practical matters for SSAs", 30 ppt-slides, [Kick Off SSA-EUSUSTEL].ppt (0,99 MB). Domenico.Rossetti-di-Valdalbero@cec.eu.int
6. IIIIEE, Copernicus Institute, AIEE and Sydkraft (CEU-project Partnership): "White and Green", [White and Green].ppt (317 kB).
7. FARINELLI, Ugo, AIEE: "Anticipation of future energy demand", [EUSUSTEL WP2].ppt (803 kB).
8. LUND, Peter, HUT: "Analysis of electricity generation technologies and integration into overall generation system, with emphasis on their future potential", [EUSUSTEL – WP 3].ppt (68,7 kB).
9. BELMANS, R. and DRIESEN, J., KULeuven, ESAT: "Regulatory and Market Framework of Energy Markets - WP4", [work package 4 RB&JD].ppt (4,75 MB).
10. VOSS, Alfred, USTUTT: "Most Optimal Solution for Electricity Provision – WP5", [EUSUSTEL_WP5_IER_Stuttgart].ppt (127 kB).
11. D'HAESELEER, William & COSIJNS, Leander, KULeuven: "Analytical breakdown of person effort per WP", [Annex_11 Distri of work_KUL 31_01_05].doc (97 kB).
12. D'HAESELEER, William & COSIJNS, Leander, KULeuven: "Template: Deliverables List", [Annex_12 Deliverables_list_KUL 31_01_05].doc (155 kB).

Participants:

- **KULeuven:** Ronnie Belmans (ronnie.belmans@esat.kuleuven.ac.be),
Leander Cosijns (leander.cosijns@mech.kuleuven.ac.be),
William D'haeseleer (William.dhaeseleer@mech.kuleuven.ac.be),
Johan Driesen (johan.driesen@esat.kuleuven.ac.be),
Bernard Geeraert (Bernard.geeraert@telenet.be),
Guido Pepermans (guido.pepermans@econ.kuleuven.ac.be)
- **USTUTT:** Ingo Ellersdorfer (ie@ier.uni-stuttgart.de), Alfred Voss (av@ier.uni-stuttgart.de)
- **HUT:** Peter Lund (peter.lund@hut.fi), Jukka Paatero (jukka.paatero@hut.fi)
- **ICCS/NTUA:** Pantelis Capros (kapros@central.ntua.gr)
- **UU:** Mats Leijon (mats.leijon@angstrom.uu.se),
Urban Lundin (urban.lundin@angstrom.uu.se)
- **AIEE:** Ugo Farinelli (ugofarinelli@yahoo.it)
- **Imperial:** Adam Hawkes (a.hawkes@imperial.ac.uk)
- **ECRIN:** Christian Ngô (ngo@ecrin.asso.fr and Christian.ngo@cea.fr)
- **CIEMAT:** Helena Cabal (Helena.cabal@ciemat.es), Rosa Saez (rosa.saez@ciemat.es)
- **Risoe:** Hans Larsen (hans.larsen@risoe.dk), Poul Erik Morthorst (p.e.morthorst@risoe.dk)
- **Eurelectric:** Paul Bulteel (p.bulteel@eurelectric.org)
- **Tractebel:** Bart Boesmans (bart.boesmans@tractebel.com)
- **CEU:** Koen Decroos (koenraad.decroos@cec.eu.int),
Michel Poireau (michel.poireau@cec.eu.int),
Domenico Rossetti (domenico.rossetti-di-valdalbero@cec.eu.int)

Agenda of the meeting [1]:

- Welcome and presentation of the Consortium + introduction of all participants by William D'haeseleer
- Contractual obligations, procedures and practical matters by Domenico Rossetti
- Overall overview of the project "description of work" by William D'haeseleer:
 - o Line of thought
 - o Delineation of the work packages (WP's)
- Distribution of work, responsibilities for deliverables, Consortium Agreement by William D'haeseleer
- Role of the Consultative Committee / Eurelectric by William D'haeseleer
- Structured discussion on the WP's (2, 3, 4, 5) implementation by WP-leaders
- Fixing of date next meeting

Introduction:

- EUSUSTEL project [2] was prepared, for budget reasons, by web exchange.
- Kick-off meeting is first visible human contact between representatives of the 10 participants, for this project.
- Two members of the Consultative Committee have been invited for the kick-off meeting (i.e., Eurelectric as Special Focus Industrial Advisor and Tractebel Engineering as observer).
- Project starts on January 1, 2005 and ends on December 31, 2006.
- Project is financed by the CEU DG Research.

Contractual obligations, procedures and practical matters:

- See slide show in annex [5].
- Project fits in policy framework of:
 - o Lisbon-strategy
 - o Barcelona-strategy
 - o Security of supply
 - o Post-Kyoto
- Project is paid by RTD-department of CEU: do not forget the Technology-part during the project.
- The project can be seen as scientific support to the policy: use diplomatic language, but support the message with clear arguments.
- Reports must be submitted within 45 days after the end of the defined periods in the contract:
 - o Before 16 February 2006: annual (= mid term) report + annual cost statements
 - o Before 16 February 2007: annual report + annual cost statement + audit certificate
 - o Before 16 February 2007: final document
 - o Payment will follow within 45 days after reception of all documents
- The CEU already prepaid roughly one year of activities.
- Participants: number is fixed, but with the permission of all the parties, participants can be changed.
- Contractual documents and info can be found on the internet:
<http://www.cordis.lu/fp6/find-doc.htm>
- An audit certificate for the whole project must be delivered after the second year.
- All communication between the participants and the Commission has to pass through the Coordinator.
- Question & answers:
 - o Q (Lund): 1. Are the audit costs included? 2. Are external audits necessary for public universities and public entities?
A1: Audit costs are coordination costs (costs are in the order of 1-1,5 k€/audit).
A2: The answer on the second question depends on the availability within the public body of an “audit certification”. In order to accept audits by internal auditors of public bodies, you have to answer positively to the following three questions: 1. Are we a public body? 2. Do we have an audit-certification office? 3. Can the internal auditor make independent audit reports?
Normally public universities do not use external auditors. ECRIN, AIEE, Imperial College and KULeuven need an external audit report.
 - o Q (Lund): Do we need to keep track of all spending? Do we have to keep book of the true imputations and spending?
A: The Commission will pay the number of person*months, that means that maximum 0,75 M€ will be paid for the whole project.
 - o Q (Ngô): What if permanent staff works on the project?
A: ECRIN and AIEE will be paid on basis of the full cost. On the other hand, university professors will not be paid.
 - o Remark (Capros): In the past, only internal audit wasn't sufficient.

Overall overview of the project “description of work”:

- See slideshows in annex [3, 4].
- Background of the project: AMPERE-study in Belgium ('99-'00) → EUSUSTEL = Ampere for EU-25, limited to sustainable electricity-supply and –demand till 2030.
- Project emphasis no new research, but is a critical review of existing documents on national and EU-level (different hypotheses, “colours”, policies...).
- The aim is not to present a global EU-electricity strategy, but to clarify the interactions within the EU-mosaic.
- Every participant is allowed to participate in every WP on a free basis, even if he is not “officially” involved. All participants receive all deliverables, so they can review and comment on every document.
- Description of the different work packages, according to the “Description of work”.
- WP8:
 - o Scope, boundary conditions (!) and hypotheses (will be defined by D’haeseleer)
 - o Definition of “sustainable electricity”
- WP1: horizontal scan of the EU-25 member states:
 - o Less info available on the 10 newcomers
 - o Rossetti: Because of 2030-scope: perhaps expandable with info on Turkey, Bulgaria, Romania and Balkans?
Capros: Some info already available in “European energy and transport trends to 2030.” This can be used as a basis.
D’haeseleer: Aim is not a summary on itself, but a value-added summary. If possible, extra info on the other countries will be mentioned. IEA booklets are a good starting point; the older ones (except last two years) can be downloaded for free.
Belmans: Those extra countries are already involved in a lot of organizations (e.g. UCTE), so they will be involved in the “discussion”.
 - o Questions & answers:
 - Q (Ngô): What should be the length of these country reports?
A: The length should not exceed ~10 pages describing what exists, the peculiarities (e.g. the coast length) and the governmental statements.
 - Q (Morthorst): Need for a standard format for this review part?
A: As WP-leader, KULeuven will provide a template.
- WP2: future electricity demand:
 - o Economic evolution → evolution demand for energy services → influence on electricity demand.
 - o Rational use of energy, energy efficiency, DSM...(cf. “Das Einsparkraftwerk”, Wuppertal Institute; “Factor four”, Von Weizsäcker & Lovins; IEA; etc. on the conservationists side and Joskow, Sutherland, etc. on the ‘classical economists’ side).
 - o Questions & answers:
 - Q (Morthorst): If demand side should focus on 2030-2050, should we already use different scenarios?
A: No, only an objective view on the reduction potential that is technically and economically possible.

- Q (Voss): Can we expect energy conservation for electricity?
A: That should be evaluated top-down and bottom-up.
- WP3: generation technologies and system integration:
 - o This WP will gather the required information on different generation technologies that are necessary to make system simulations.
 - o Particular attention will be given to system integration of centralised and decentralised generation and to the greenhousegas emissions that result from interaction between both.
 - o Questions & answers:
 - Q (Larsen / Morthorst): We have a small budget; we designed people to speak about their old baby, France about nuclear, Denmark about wind energy, etc. Should we not work with teams that master a balance view? Preferably, we need at least two groups for a technology; there is need for a critical review. Do we not need a standard format for these technologies?
A: Compared to the very first proposal, the budget has been reduced. So, the formal reviews have been dropped in certain cases, but everybody has the opportunity to comment on the drafts.
 - Q (Lund): 90% of these technologies are not competitive and need subsidies. How to allocate these? In a liberalised market there are not many opportunities for renewable energy sources (RES).
R (D'haeseleer): Stick the base numbers of these RES technologies.
R (Lund): The interaction between policy and costs of technology is very strong. We do not know the price in 2020-2030.
 - Q (Capros): I am not sure I understand the exercise for the RES. Depending on the volume of diffusion, even the capital cost will change dramatically. There exist technology bases with these data. How will we do? Will we start with an existing data set from other projects? What will be the most likely adoption?
R (Rossetti): Contrary to what is suggested, the budget of this project is a lot of money. You know what already exists in other projects where similar work has been done. Cf. existing reports and simulations → use this info.
R': Costs are power based whereas revenues are set by the yearly yield.
 - Q (Leijon): Should we not distinguish between technology and the physics of the sources? Would it not be better to use the latter as background? Technology can be poor or good.
R (D'haeseleer): You need both, as well the theoretical potential (an upper limit based on physics) as the technical potential and the time to go to technical applications.
 - Q (Voss): We have to include diffusion and technical learning. 1. Do we have to describe country specific issues? 2. Is it important to have indications about the technical potential in the different countries?
R (D'haeseleer): Yes we do and it is important.
 - Q (Voss): What do you expect as general results of the system integration exercise with regard to the CO₂-issue?
R (D'haeseleer): Decentralized generation is gas based and creates gas distribution problems, and if small scale cogeneration would be promoted in Belgium, the CO₂ emissions would increase. If modelling is done properly,

the simulation should reveal this, but the MARKAL simulator cannot show such effects. Do not forget integration effects!

- D'haeseleer: WP3.4.2. on greenhouse-gas emission is very system/country-specific → this is a qualitative exercise.
- WP4: regulatory framework:
 - Starting from current legislation → specify boundary conditions and guidelines for proper functioning of future energy markets.
 - Questions & answers:
 - Q (Capros): The risk premium in investment is the critical aspect. What to do about this? Will the risk premium reflect reality or the public view?
R (D'haeseleer): Make sure that there is enough capacity available.
R (Voss): Cf. WP5 and the full social cost.
 - Remark (Capros): Knows the “regulator-side” → input can be expected
 - Remark (Rossetti): Be careful that framework does not become outdated too fast, because of all the fluctuations in the regulations → focus on EU-level, not to many details on national / regional level.
- WP5: “most optimal solution”:
 - The optimal system for electricity supply will be simulated on basis of the information gathered and analysed in the aforementioned WP's.
 - D'haeseleer: Total static cost = investment + running + external costs; of technology working in nominal circumstances, without interaction with other technologies.
 - “Shadow” costs (back-up, risk premium...)
 - Remark (Rossetti): Reminds the “Acropolis-project” (WP5.2), for a selection and comparison of simulation codes.
 - D'haeseleer: In the Description of Work, 4 scenarios have been foreseen. One possibility is to select one simulation code and run four scenarios. But if time and budget permit, we could run four scenarios with two or three simulation codes and compare and interpret the results and the differences.
 - Remark (Capros): The major decision of the project will be the option in favour of a market based risk premium or a society based risk premium. This choice is decisive on the results.
 - Questions & answers:
 - Q (Pepermans): External costs for countries or for the EU?
R: Market is the EU, and the external costs of CO₂ emissions are global.
 - Remark (Lund): All physical costs should be captured, including the shadow costs.
 - Recommendation (Rossetti): Focalize on the impact of technology and on technological scenarios for which you have DG Research agreement. On all other scenarios you have opposition. This will be a EU umbrella project (“un fil conducteur”).
 - Q (Lund): We have to be more innovative in the scenarios, but should know if we have to consider it in an open or closed market.
 - Q (Voss): I prefer scenarios related to the objective. Could we consider a scenario based analysis of technology driven innovation?
R: The budget is not available for an ACROPOLIS2.
- WP6: compatibility check and validation:

- Rossetti: CEU is responsible for peer review.
- WP7: dissemination of results
- Rossetti:
 - Importance EUSUSTEL as an umbrella project.
 - If possible: add the impact of an RTD-policy

Distribution of work, responsibilities for deliverables, Consortium Agreement:

- Distribution of work [11]:
 - Is a fictitious work load, based on an “average” researcher.
 - Is a proportional division of the work packages.
 - Will be attached to the “Minutes of meeting.
 - Rossetti: This has nothing to do with the money that will be paid to the participants. The budget is already fixed and the participant can freely move his own allocated “months”.
 - WP3: At least two participants on every description → free reviewer appointed for every technology.

Del. No.	Deliverable name	Lead. participant	Review by
D 3.1.1	Coal fired technologies	2, 10, (9)	
D 3.1.2	Oil & gas fired technologies	1, (9)	8
D 3.1.3	Combined heat & power	1, 10, (9)	
D 3.1.4	CO ₂ capture & sequestration	2, (9)	8
D 3.1	Overview report on fossil-based electricity generation technologies	2	
D 3.2.1	Nuclear fission	8	1
D 3.2.2	Nuclear fusion	1	6, (8)
D 3.2	Overview report on nuclear electricity generation	8	
D 3.3.1	Wind power	10	1 (Electa)
D 3.3.2	Photo-voltaic	3	10
D 3.3.3	Biomass application	3, 7, (9)	
D 3.3.4	Hydro power	5	8
D 3.3.5	Geothermal conversion	5	6, (8)
D 3.3.6	Fuel cells	7,1	10
D 3.3.7	Hydrogen economy	7,1	
D 3.3.8	Electricity storage	5	10
D 3.3.9	Unconventional & speculative renewables	5, 3	
D 3.3	Overview report on renewable flows & ‘alternative’ technologies & carriers	3	

- WP5
 - Q (Capros): Why WP5.1 not as a part of WP3?
 - A (D’haeseleer): WP5.1 as a summary of WP3 by different people, with a more economical background.

- Deliverable list [12]:
 - o Will be attached to the “Minutes of meeting”.
- Consortium Agreement:
 - o Will be revised completely by KULeuven.
 - o Important remaining issue: details concerning “protection of knowledge”.
 - o Deliverable list and distribution of work: as an attachment to the “Minutes of meeting”, not as an annex of the Consortium Agreement.

Role of the Consultative Committee / Eurelectric:

- See slideshow in annex [3].
- Bulteel: Especially the prospective group of Andy Papageorgi will focus on EUSUSTEL.
- D’haeseleer: No specific representation of the traders in the Consultative Committee, in order to keep it manageable. Traders view will be more or less represented via the regulators.
- Capros: will look for interaction with the regulator side, by reminding Dr. Vasconcelos.
- Rossetti: meetings with CC may be combined with other meetings. Only 3 meetings are obliged: kick-off, mid-term and final.

Structured discussion on the WP's (2, 3, 4, 5) implementation:

- WP5, by Alfred Voss
 - o See slideshow in annex [10].
 - o WP5.1: Total static social cost.
 - Strong relationship between WP3(.4) and WP5.
D'haeseleer: WP3: stress on technologies vs. WP5: stress on costs.
 - Q (Voss): Concerning WP5.1.3 (CO₂-emissions): what is the relevance of this subject in this WP?
A (D'haeseleer): In principle, these CO₂-shadow costs are system dependent. But since most of the simulation codes will not detect those (really existing) effects, they will be qualitatively allocated to the technology. So, this has to be treated in WP5.1.3, where it is now.
 - Lund: Strong dependency of cost on policy framework
 - Voss: External costs: no numbers available till 2030 → results will be rough estimates.
 - D'haeseleer: Importance of correct uncertainty intervals.
 - Q (Pepermans): Does integration costs and LCA-costs not fit in WP5.3? Not only direct costs, emissions, health risks... in WP5.1?
A (D'haeseleer): At that place it will become difficult to see what the contribution of the different technologies is.
 - D'haeseleer: call for sharing of information on the subject (e.g. GreenNet-project, Wilma-project, Vienna-project...).
 - o WP5.2: Comparison and evaluation of simulation models and codes
 - No detailed model/code comparison.
 - Starting point: existing studies and scenario's (e.g. Cascade-Mints-project...)
 - Capros: Part II of "European energy and transport trends to 2030" will be available on a short term. Deals with alternative scenarios.
 - Q (Lund): What will be the system boundaries in 2030? The networks will become integrated as we tend to a Federal State of Europe. How to implement that?
A (Driesen): Transit capacities and restrictions do exist → can not be denied.
 - o WP5.3: Performing and interpretation of four scenarios.
 - Q (Rossetti): Is it not enough to compare and study different runs and scenarios?
A (D'haeseleer): This is too passive. Within existing models (in consortium mainly PRIMES and TIMES (Markal)): running of some variants with updated info from WP3 and WP4.
- WP4, by Johan Driesen
 - o See slideshow in annex [9].
 - o Starting point: existing directives → need for further regulation.
 - o Clearly specifying of existing "margins".
 - o Emphasising on bottlenecks through examples.
 - o No pure legislative approach.
 - o Questions & answers:

- Q (Voss): What will be the input of WP4 in WP5?
A (Driesen): Input for WP5 from WP4: e.g. cross-border capacity limits, extra investments needed to meet the bottlenecks...
- Q (Capros): Can you calculate or predict cross-border capacity?
A (Driesen): Yes, but we do not know what political options will be taken.
- Remark (Rossetti): Correct information on “hanging projects”, concerning cross-border capacities, is often hard to get.
- Q (Lund): What to do with merchant and private lines?
A (Driessen): Impact small → will not be taken into account.
- Q (Pepermans): What will be done on emission trading?
A (Driesen): We will see what the consequence is for the Commission.
- Q (Bulteel): Isn't there a contradiction in the different scope in the project?
E.g.: electric grid will be completely changed by 2030. On the other hand, exercise can be interesting to emphasis on the bottlenecks and on the impact of different policies.
A (D'haeseleer): Sets scope for the project clearly at 2030. Evolutions, predictions... for 2050 will only be added as comment if necessary.
- WP3, by Peter Lund
 - o See slide show in annex [8].
 - o Lund: Interaction concerning all the technologies must be possible for everyone. On every technology, a reviewer is appointed (cfr. supra).
 - o Lund: 'economical parameters' → different policies and subsidy-arrangements have a big influence.
 - o Remarks:
 - Leijon: Subsidies can stop certain evolutions + diffusion of technologies is strongly dependent of the operability.
 - Pepermans / D'haeseleer: Economical lifetime is the only lifetime that counts; a technical lifetime does not make much sense, because every component can be replaced.
 - Larsen: For “new technologies”: How to bring efficiency- and cost-evolution into account?
 - Morthorst: “GreenX project”: focus on different renewable technologies and their learning costs.
 - Voss: What is the outcome? Will you go to describe the evolution of technology as a function of subsidies? Even if you have that intention, how to do it, is another question!
 - Farinelli: It is impossible to extrapolate the learning curve to 2030. Extrapolation is only valid on a short term.
 - Capros: In WP3, a subsidy arrangement or public policy are not to be considered. Only an objective overview of costs and technologies is important. Relationship between capacity and cost must be divided from subsidies.
 - Pepermans: Subsidy is needed as an input in a model; it is not part of the “cost” of a technology itself.

- D'haeseleer: We have to give the work package leader the chance to develop his ideas how to implement and cope with the subsidies. Discussion on this issue is not closed yet.
- o Remark (Morhorst): Importance of a standard format or a list of questions for dealing with the different technologies. + As in the slide "Questions of characterization", something comparable has to be done for the whole project.
- WP2, by Ugo Farinelli
 - o See slideshow in annex [6, 7].
 - o Farinelli: "White and green" project has just been finished → see <http://www.iiiee.lu.se/whiteandgreen>.
 - o 3 ways of forecasting energy demand:
 - extrapolation
 - top-down: using the economical development as input and overall values
 - bottom-up: starting with GDP, the population, the number of households, indices and a link of the energy services to these indices.
 - o Questions & answers:
 - Q (Bulteel): Do you intend to cope as well with the (reduction in) demand of electricity as well as with the shifting of the demand?
A (Farinelli): Yes.
 - Farinelli: Study on demand side has already been done on a EU-15 level, and for some specific countries (e.g. Germany, Italy, Estonia). Extension to EU-25 or EU-30 is not trivial. Indication is needed for the margins in the new members.

Fixing of date next meeting

- D'haeseleer: Next meeting will be held in September; probably it will be a meeting of 2 days:
 - o 1st day: meeting of the consortium
 - o 2nd day: meeting with the Consultative Committee
- Rossetti:
 - o Try to avoid duplication; a good interpretation and critical review is expected.
 - o 10 to 15 other CEU-projects are helpful for the project (from FP5 –with results- and FP6).
 - o Concerning energy-efficiency: from experience with other projects (e.g. Acropolis): seems to be a hard topic to reach consensus.
 - o Other DG-members will participate in mid-term (only if already enough information) or final meeting.

Actions to be taken:

- KULeuven:
 - o Review Consortium Agreement
 - o Prepare standard format for WP1
 - o Define boundary conditions and hypotheses for the project
- HUT:
 - o Prepare standard format for WP3
- To all:
 - o Share information on the different subject (e.g. WP5: Wilma-project, Vienna-project, GreenNet-project...)
- ICCS/NTUA:
 - o Make contact with the regulator-side to check interest of involvement in Consultative Committee.