Project No 518294 SES6
CASES
Cost Assessment of Sustainable Energy Systems

Instrument: Co-ordination Action

Thematic Priority: Sustainable Energy Systems

D.13.6
[Final Conference Proceedings]

Due date of deliverable: 30th September 2008
Actual submission date: 31st October 2008

Start date of project: 1st April 2006

Duration: 30 months

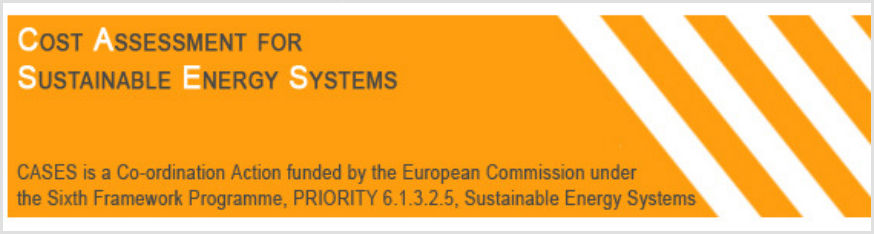
Organisation name of lead contractor for this deliverable:
FEEM – Fondazione Eni Enrico Mattei

Revision: Anil Markandya

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	







Proceedings of the final conference of the CASES Project "**Social Costs of Electricity Generation and Policy Design**"

September 29-30, 2008
Milan, Italy

http://www.feem-project.net/cases/

CONFERENCE OVERVIEW

Welcome address and presentation of CASES Project: Final Conference of the CASES Project "Social Costs of Electricity Generation and Policy Design" 4
Session I – The assessment of social costs of electricity generation 4
1 Life cycle inventories and private costs of electricity generation technologies 4
2 Assessment of impacts of GHG emissions and of changes of biodiversity 5
3 Assessment of externalities of energy supply insecurity 5
4 External costs of electricity generation technologies 6
5 Social costs of electricity generation in selected non EU countries 6
6 Social costs of electricity generation technologies in Europe 7
7 Uncertainty in the cost estimations 8
Session II – social costs of electricity generation and policy design 8
8 Policy instruments to internalise externalities in the EU by promoting renewables 8
9 Additional policy instruments to internalise externalities in the EU 9
10 Policy assessment methodology and results 10
11 Policy instruments to internalise externalities in Brazil, China, India and Turkey 11
12 Policy options to reduce the electricity insecurity 11
Session III – electricity scenarios 12
13 Electricity scenarios up to 2030 12
14 Electricity scenarios: the ECON model 12
List of participants 13

Welcome address and presentation of CASES Project: Final Conference of the CASES Project "Social Costs of Electricity Generation and Policy Design"

Anil Markandya, Project Coordinator

Fondazione Eni Enrico Mattei

OUTLINE OF THE PRESENTATION

- What is CASES.
- Overview of project objectives and results obtained.
- Introduction to the conference.
- Conclusions.

Session I – The assessment of social costs of electricity generation

---

1 Life cycle inventories and private costs of electricity generation technologies

Markus Blesl, Steffen Wissel, Oliver Mayer-Spohn

University of Stuttgart, Institute of Energy Economics and Rational use of Energy (IER)

OUTLINE OF THE PRESENTATION

- Investigated technologies.
- Net Electrical Efficiency.
- Methodology of LCI - Life Cycle Inventory data calculation.
- Specific CO2, SO2, NOx –emissions: LCI data for 2007 and 2030.
- Cumulated energy demand - CED for 2030.
- Sensitivity analysis by using the Monte Carlo simulation approach.
- Conclusions.

2 Assessment of impacts of GHG emissions and of changes of biodiversity

Onno Kuik

IVM – Vrije Universiteit Amsterdam

OUTLINE OF THE PRESENTATION

Presentation of "Non-human health related environmental costs" with a review and update work on energy-related externalities related to:

- land use change,
- acidification and eutrophication,
- visual intrusion and aquatic ecosystems,
- climate change.

3 Assessment of externalities of energy supply insecurity

Wan-Jung Chou

University of BATH

OUTLINE OF THE PRESENTATION

- Aim of the analysis on externality of supply.
- Energy security externalities: primary fuels.
- Energy security costs: historical estimation.
- Value of Lost Loads.
- Projections of Value of Lost Loads to 2030.

4 External costs of electricity generation technologies

Philipp Preiss

University of Stuttgart, Institute of Energy Economics and Rational use of Energy (IER)

OUTLINE OF THE PRESENTATION

- What are and How to calculate external costs?
- The Impact Pathway Approach - IPA.
- The EcoSenseWeb computer tool.
- Aggregated damage as Euro per tonne per country.
- External Costs as Euro-Cent per kWh for different technologies.

5 Social costs of electricity generation in selected non EU countries

Xianli Zhu

UNEP Risø Centre, Technical University of Denmark (DTU)

OUTLINE OF THE PRESENTATION

- Cumulative Investment in Energy Infrastructure by Fuel and Region, 2006-2030.
- Description of the research carried out under CASES-WP7.
- Comparison of the case studies by the different countries: Brazil, India, China, and Turkey.
- Results of the case studies as € cent/kWh.
    - Estimated external costs of coal fuel cycles.
    - Coal fuel cycles – external costs quantified and valuation.
    - Natural gas fuel cycles.
    - Brazil hydropower fuel cycle external costs.
- Conclusions.

6 Social costs of electricity generation technologies in Europe

Rainer Friedrich

University of Stuttgart, Institute of Energy Economics and Rational use of Energy (IER)

OUTLINE OF THE PRESENTATION

Presentations on social costs with the objective to help to answer the questions:

- To meet additional current and future electricity demand, which technologies for the generation of electricity should be built, promoted, supported, penalized now and in future?
- Which are the best technologies from the perspective of the society?

Main topics presented:

- Private costs.
- External costs included.
- Effects not included.
- Social Costs 2008 in €-cent2000 per kWh.
- Projection of social costs in 2030.
- Conclusions.

7 Uncertainty in the cost estimations

Ari Rabl

Fondazione Eni Enrico Mattei

OUTLINE OF THE PRESENTATION

- Uncertainty of external cost estimation.
- Confidence intervals.
- Uncertainties.
- Lognormal Distribution.
- Evolution of damage cost estimates.
- Effect of uncertainties.
- Extra social cost due to errors.

Session II – social costs of electricity generation and policy design

8 Policy instruments to internalise externalities in the EU by promoting renewables

Gesine Boekenkamp

University of Flensburg

OUTLINE OF THE PRESENTATION

- EU Policy framework
- Overview on promotion instruments
- Price based instruments
- Quantity based instruments
- Linkages to ETS
- Conclusions

9 Additional policy instruments to internalise externalities in the EU

Wouter Nijs

Flemish Institute for Technological Research

OUTLINE OF THE PRESENTATION

- Goal.
- Results.
- What is full internalisation?
- Criteria for policy assessment “low carbon electricity”.
- Policy instruments for policy assessment “low carbon electricity.
- Most important variants for policy assessment “low carbon electricity.
- Carbon tax and electricity tax.
- EU-ETS.
- Interaction of ETS and REN target.
- Conclusions.

10 Policy assessment methodology and results

Christos Tourkolias

National Technical University of Athens

OUTLINE OF THE PRESENTATION

- The scope of the assessment.
- The policy problems and problem formulation.
- Multi Criteria Decision Analysis (MCDA).
- Description of the Multi-Cases Tool.
- How to increase the penetration of renewable electricity production:
    - Performances;
    - Average weights of criteria;
    - Average ranking of policy instruments;
    - Consensus of stakeholders;
    - Conclusions.
- How to produce low carbon electricity:
    - Performances;
    - Average weights of criteria;
    - Average ranking of policy instruments;
    - Consensus of stakeholders;
    - Conclusions.

11 Policy instruments to internalise externalities in Brazil, China, India and Turkey

Wan-Jung Chou

University of BATH

OUTLINE OF THE PRESENTATION

- Brief review of policy instruments in Brazil, China, India and Turkey.
- Summary of mandatory purchase prices (€cent/kWh).
- Criteria applied on policy assessment.
- Measurement of externality internalization.
- Social costs of primary fuel sources for power generation .
- Conclusions and suggestions.

12 Policy options to reduce the electricity insecurity

Arianna Checchi

Centre for European Policy Studies

OUTLINE OF THE PRESENTATION

- Risks in the electricity sector.
- Causes of risks.
- Policy options.
- Conclusions.

Session III – electricity scenarios

13 Electricity scenarios up to 2030

Thomas Niesor

Observatoire Mediterraaneen de l'Energie

OUTLINE OF THE PRESENTATION

- Existing Models for EU countries
  - Models descriptions
  - Comparison of the main assumptions
  - Main Results
- Electricity Scenarios for Non-EU countries
  - Brazil
  - China
  - India
  - Turkey

14 Electricity scenarios: the ECON model

Berit Tennbakk

Econ - Poyry

OUTLINE OF THE PRESENTATION

Electricity scenarios up to 2030: Model runs for Europe
- Approach.
- Full costs for different technologies (2005-2010).
- Results on investment.
- Results on total generation.
- Results on wholesale price levels.
- Results on CO2 emissions.

List of participants

Name	Surname	Position/Job title	Company/Institution	Country
Mauro	Formaggio	Officer	AEEG	Italy
Ugo	Farinelli	Secretary General	AIEE	Italy
Nicole	Dellero	VP for Climate Change Strategy	AREVA	France
Marcella	Pavan	Head of Energy Efficiency and Demand Response	Autorità per l'energia elettrica e il gas	Italy
Giulia	Detomati		Avanzi	Italy
Arianna	Checchi	Research Fellow	Centre for European Policy Studies (CEPS)	Belgium
Michele	Benini	Head of the Energy Markets Research Group	CESI RICERCA S.p.A.	Italy
Pierpaolo	Girardi	Researcher	CESI RICERCA S.p.A.	Italy
Alberto	Gelmini	Researcher	CESI Ricerca Spa	Italy
Giuseppe Maurizio	Riva	Researcher	CESI Ricerca Spa	Italy
Jan	Melichar	Researcher	Charles University Environment Center	Czech Republic
Yolanda	Lechón	Researcher	CIEMAT	Spain
Carmelina	Cosmi	Researcher	CNR-IMAA	Italy
Vincenzo	Cuomo	Director	CNR-IMAA	Italy
Antonio	Scotti	G.E.V.	Comune di Milano	Italy
Pete	Roberts	Technical Co-ordinator Air Quality	Concawe	Belgium
Berit	Tennbakk	Director Power market analysis	Econ Pöyry	Norway
Walter	Ott	Scientist	Econcept AG	Switzerland
Till	Bachmann	Project Leader	EIFER	Germany
Philippe	Baudin	Environmental Economics Engineer	Electricité de France	France
Umberto	Ciorba	Researcher	ENEA	Italy
Francesco	Gracceva	Researcher	ENEA	Italy
Plamen	Tzvetanov	Head, Energy Systems Analysis Laboratory	Energy Agency of Plovdiv	Bulgaria
Johannes	Kerner	PhD student	EPFL	Switzerland
Florian	Kienzle	PhD student	ETH Zurich	Switzerland
Antonis	Papaemmanouil	PhD. Candidate / Dipl. El. Ing.	ETH Zurich	Switzerland
Bert	Droste-Franke	Project coordinator/Dr.-Ing.	Europäische Akademie Bad Neuenahr-Ahrweiler GmbH	Germany
Danielle	Devogelaer	Expert in Energy	Federal Planning Bureau	Belgium
Dominique	Gusbin	Expert in Energy	Federal Planning Bureau	Belgium
Daniele	Forni	Consultant	FIRE	Italy
Andrea	Bigano	Researcher	Fondazione Eni Enrico Mattei	Italy
Manfred	Hafner	Researcher	Fondazione Eni Enrico Mattei	Italy
Anil	Markandya	Project Coordinator	Fondazione Eni Enrico Mattei	Italy
Roberto	Porchia	Researcher	Fondazione Eni Enrico Mattei	Italy
Ari	Rabl	Researcher	Fondazione Eni Enrico Mattei	Italy
Aurélie	Balcon	Research engineer	GDF Suez	France

Name	Surname	Position/Job title	Company/Institution	Country
Marine	Gremont	Internship	GDF Suez	France
	Kaddouh	Research engineer	GDF Suez	France
Hélène	Connor	President	Helio International	France
Dolf	Gielen	Senior Analyst	IEA	France
Markus	Blesl		IER Universitaet Stuttgart	Germany
Rainer	Friedrich		IER Universitaet Stuttgart	Germany
Philippe	Preiss	Junior Scientist	IER Universitaet Stuttgart	Germany
Renata	Slabe Erker	Researcher	Institute for Economic Research, Ljubljana	Slovenia
Stefano	Faberi	Senior project manager	ISIS	Italy
Silvia	Gaggi	Project manager	ISIS	Italy
Andrea	Ricci	Coordinator NEEDS	ISIS	Italy
Onno	Kuik	Senior Economist	IVM, VU University Amsterdam	The Netherlands
Martha	Barata Macedo de Lima	Researcher	LIMA/COPPE/UFRJ and FIOCRUZ	Brasil
Jacek	Jaskiewicz	Deputy Director Department of Climate Change	Ministry of the Environment	Poland
Danae	Diakoulaki	Professor	National Technical University of Athens	Greece
Christos	Tourkolias	Chemical Engineer, PhD Candidate	National Technical University of Athens	Greece
Ståle	Navrud	Associate Professor	Norwegian University of Life Sciences	Norway
Thomas	Niesor	Renewable Energy Analyst	OME (Observatoire Méditerranéen de l'Energie)	France
Jacques	Kappauf	Head of Electricity	OME -Office Méditerranéen de l'Energie	France
Giulia	Fiorese	Post Doc	Politecnico di Milano	Italy
Marcello	Magoni	Urbanist	Politecnico di Milano	Italy
Xianli	Zhu	Dr.	Risoe DTU	Denmark
Ugo	Gasparino	Environmental Analyst	RWE npower	UK
Enzo	Di Giulio	Dean	Scuola Enrico Mattei, Eni Corporate University	Italy
Steivan	Defilla	Energy Advisor	State Secretariat for Economic Affairs	Switzerland
Daniele	Gubetta	Architect	Studio Belgiojoso	Italy
Özlem	ATAÇ	Researcher	TUBITAK MRC	Turkey
Selda	SEZGİNGİL	Senior Researcher	TUBITAK MRC	Turkey
Stefano	Pareglio	Associate Professor	Università Cattolica S. Cuore	Italy
Wan-Jung	Chou	Research Officer	University of Bath	UK
Gesine	Boekenkamp	Research Assistant	University of Flensburg	Germany
Davide	Poli	Assistant professor	University of Pisa – Dept of electrical systems and automation	Italy
Antonio Salvatore	Trevisi	Researcher	University of Salento	Italy
Neil	Odam	PHD Student	University of Stirling	UK
Mikołaj	Czajkowski	Assistant professor	University of Warsaw	Poland
Wouter	Nijs	Researcher	VITO	Belgium
Justus	Wesseler	Associate Professor	Wageningen University	The Netherlands

-