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CASES
Cost Assessment of Sustainable Energy Systems

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[Final Plan for using and disseminating knowledge]

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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)	



CASES – COST ASSESSMENT OF SUSTAINABLE ENERGY SYSTEM

FINAL PLAN FOR USING AND DISSEMINATING KNOWLEDGE

SUMMARY

1. Introduction to dissemination plan.....	1
2. Section 1 - Exploitable knowledge and its use.....	1
Overview table.....	2
Knowledge management and intellectual property.....	23
Using knowledge.....	4
3. Section 2 – Dissemination of knowledge.....	4
Overview table.....	5
Activities.....	11
Public of the project.....	21
4. Section 3 – Publishable results.....	<u>Errore. Il segnalibro non è definito.</u> 22

1. Introduction to dissemination plan

This plan constitutes the final version of the dissemination plan elaborated at beginning of the project and updated at the end of each reporting period. The plan shows the guideline followed during the whole project to disseminate the results obtained.

The present plan sets out in a detailed manner the terms of use and dissemination of the knowledge arising from the activities of the project, in accordance with the interests of the Consortium and in order to improve the strategic impact of the project. The plan is addressed to all Member States, through the dissemination of the results to the policy community and to stakeholders, including energy producers and distributors, NGO's and academics and to the society at large.

Dissemination represents an integral part of each Work Package of the project. It is carried out at all level by partners individually both within and outside specific project activities, in co-ordination with the coordinator.

2. Section 1 - Exploitable knowledge and its use

This section presents exploitable results, defined as knowledge having a potential for industrial or commercial application in research activities or for developing, creating or marketing a product or process or for creating or providing a service.

The complete and consistent assessment of the full cost of energy sources, provided by CASES, is of paramount importance for energy and environmental policy making. The CASES' Consortium Agreement provided a set of recommendations on the use of different policy instruments for the internalisation of the external costs of energy production. In this way it contributed directly to policy formulation in this area. In addition to the formal recommendations, the project also has indirect benefits; for example, the assessment of the full cost estimates of energy production allows policy-makers to become more aware of the consequences that different fuels and technologies have on human health, the environment and society.

Moreover, CASES supports the cost-effective achievement of major EU Energy Policy goals for 2010 and contributes among the other long term objectives to the major goal of reducing EU imports of its energy needs towards the achievement of higher standards for security and diversity of the EU energy supply. This is integrated into the CASES project through consideration of energy supply security issues within an integrated assessment of future energy systems.

Overview table

The following table summarises the obtained results of the project in terms of exploitable knowledge:

Exploitable Knowledge	Exploitable product or measure	Sector of application	Timetable	Leader & other partners involved
Scenarios of Energy Use	- Matrix of parameters influencing electricity demand. - Report on electricity scenarios by country and primary fuel for 2010-2020-2030.	- Industry, - Research, - Politics.	2007, 2008	OME, FEEM, ECON, COPPETEC, IIMA, ERI, EAP, TUBITAK.
Human health related external costs of different energy sources	- Emissions database. - Report on methodology for for estimating external costs. - Updated version of ECOSENSE tool.	- Research, - Politics.	2007	USTUTT/IER, COPPETEC, IIMA, ERI, EAP, TUBITAK, ISIS, PSI.
Non-Human Health Related Environmental Costs of Different Energy Sources	- Database on studies concerning external cost estimates of land use changes, acidification, eutrophication and climate change. - Report on the monetary valuation of energy-related impacts on land use changes, acidification, eutrophication, visual intrusion and climate change.	- Research, - Politics.	2007	SWECO, UW, VU-IVM
Private Costs of Electricity and Heat Generation	- Report on private costs of electricity and heat generation.	- Industry, - Research, - Politics.	2007	USTUTT/IER, VITO, SWECO, CUEC, SEI, ISIS, PSI
Security and Reliability of Supply	- Report on National and EU level estimates of energy supply externalities. - Report on policy assessment of energy security measures incorporating externality measures.	- Industry, - Research, - Politics.	2007	UBATH, ECN, TUBITAK
National Level Estimates of	- Report on the development of a	- Industry,	2007	FEEM,

Exploitable Knowledge	Exploitable product or measure	Sector of application	Timetable	Leader & other partners involved
Energy Costs in EU Countries	set of full cost estimates of the use of different energy sources and its comparative assessment.	- Research, - Politics.		NTUA, USTUTT/IER, VITO, LEI, CIEMAT, CUEC, SEI, UWARS
National Level Estimates of Energy Costs in Non EU Countries	- Methodological framework on scenario- and model based private and social cost data, - National reports on private and social costs of fuels cycles in the non-EU countries. - Report on the comparative assessment of fuel cycle costs and methodological challenges across the participating countries.	- Industry, - Research, - Politics.	2007	RISOE, COPPETEC, IIMA, ERI, TUBITAK, EAP
Assessment of Policy Instruments to Internalise Environment-Related External Costs in EU Member States, Excluding Renewables	- Policy assessment reports.	- Industry, - Politics.	2008	VITO FEEM, NTUA, PSI
Assessment of Policy Instruments to Internalize Environment-Related External Costs in EU Member States, Via Promotion of Renewables				UFLENS, FEEM, RISOE, NTUA
Assessment of Policy Instruments to Internalize Environment-Related External Costs in non-EU Member States				UBATH, NTUA, SWECO, CUEC, SEI, ISIS, PSI
Methods of Assessment	- Guidelines for implementing CBA, CEA and MCDA in policy assessment. - MCDA tool-generic form. - Report on policy instruments' assessment methods and comparative analysis. - Report on assessment methods' analysis and implementation.	- Research.	2008	NTUA, UBATH, VITO, UFLENS
Treatment of Uncertainty in Estimates of External Costs at the National Level	- Report on uncertainties and their effects.	- Research.	2008	ECN, FEEM

Knowledge management and intellectual property

A considerable amount of “background knowledge” has been brought into the project by the consortium members, thanks to their extensive and active involvement in the relevant areas of investigation over the past decades. More importantly, the project collected abundant and varied information, in terms of methods, tools, and datasets. The general attitude of the Coordination Action Consortium was to widely share such knowledge, with as few limitations as possible in terms of access to the results. In fact, the wide-ranging dissemination activities carried out in this Consortium Agreement aim precisely at ensuring the maximum level of diffusion (publication, workshops, web sites, mailing lists).

Rules concerning knowledge management and intellectual property rights are designed on the basis of the principle of full compliance with the EC FP6 rules, which imply the following:

- (a) Pre-Existing-Know-How (PEKH) brought into the project remains the property of the partner that has generated it;
- (b) The partners provide access to all PEKH that they introduce to the Project. However, given the possibility of a partner to exclude any of its specific PEKH from access of the other partners, a list of excluded PEKH is annexed to the Consortium Agreement;
- (c) Knowledge generated under the project is owned by the partner who carried out the work leading to that knowledge. In the most common case where several partners have jointly carried out the work and their respective share of work can not be ascertained, they shall have joint ownership of such knowledge, for which a co-ownership agreement will be set up.

Using knowledge

The general principle of CASES is to make the outputs of the Consortium Agreement freely accessible to the public, in particular to all Member States. Research reports and papers as well as databases are disseminated without delay using the instruments described below. However, the initiatives concerning databases have a real impact on the European research potential if and only if they are regularly updated/repeated. In these cases, the long-term financial viability of the initiatives shall be considered and an access fee should not be excluded. The objective of the access shall be limited to the recovery of costs.

3. Section 2 – Dissemination of knowledge

Within the project, dissemination activities took place primarily in three steps.

1. The first step concerned the results of the cost estimates. After cost estimates have been assessed in a consistent and comparable way for all countries considered, the energy community was invited to the first workshop, to participate in a dialogue with the project team in order to validate with key stakeholders the estimates.
2. Then a second consultation (second workshop) took place to present and discuss the findings of the assessment of the full costs of energy for EU Countries and for non-EU Countries with the stakeholder community.
3. The third step has been the Final Conference, presenting the outcome of the whole activity to the energy community. Results discussed in that occasion included both cost estimates, and the policy recommendations prompted by the comparison of the different policy instruments for the internalisation of the costs of energy production and for the promotion of renewables. This event addressed also the scientific/academic community.

Thus, the results presented at the end of the CASES project, collected in a book which will be submitted for publication in the first months of 2009, represent the broad consensus of the opinion of scientists, economists and stakeholders on the private and external costs of energy including energy security issues. The involvement of leading European (and non-European) scientists and economists with a clear expertise in the field have been sought. Coupled with the broad consultation

of stakeholders at all phases of the project, this ensures the widespread use of the methodology and estimates derived from this project in policy making at EU and nation-state level.

Overview table

The following table summarises the main dissemination activities carried out by the project:

Date	Type	Audience	Countries	Size of audience	Partner
May-06	Short Article	Public at large	All	2000	FEEM
Jun-06	Project presentation	All	All		FEEM
Jun-06	Project synopsis	All	All		FEEM
Jun-06	Flyer	All	All	500	FEEM
Jun-06	Short Article	All	All	500	FEEM
Jun-06	Short Article	Stakeholders and energy-environment related companies	Bulgaria	75	EAP
Jun-06	Short Article	Euro-Mediterranean energy community	Euro-Mediterranean countries	1500	OME
Jun-06	Short Article	Euro-Mediterranean energy community	Euro-Mediterranean countries	1500	OME
Jul-06	Short Article	Council of the Bulgarian Presidency	Bulgaria	30	EAP
Aug-06	Website	All	All	1000	FEEM
Oct-06	Seminar	Post doctoral fellows	Balkan countries, Turkey, Belarus, Russia, Tunisia	70	EAP
Dec-06	Book	Academic	Global		VU/IVM
Dec-06	Report	Ministries	Spain		CIEMAT
Dec-06	Working Paper	Academic	Italy		FEEM
Dec-06	Working Paper	Academic	Italy		FEEM
Dec-06	Conference	National, regional, local authorities, energy agencies	Bulgaria	83	EAP
23-Jan-07	Presentation	Stakeholders electricity sector	Netherlands	20	VU/IVM
Jan-07	Conference	Members of the Platform are stakeholders from government, businesses and ngos.	Netherlands	20	VU/IVM
Feb-07	Short Article	Public			TÜBİTAK
Mar-07	Seminar	NGO/firms	Norway	10	Sweco Grøner

Date	Type	Audience	Countries	Size of audience	Partner
Mar-07	Seminar	Ministry of Energy	20 person		TÜBİTAK
Apr-07	Project newsletter	Stakeholders and interested public	25EU countries and other selected countries		FEEM
May-07	Lecture	Postgraduate students in Environment & Development (NTUA)	Greece	25	NTUA
May-07	Lecture	Postgraduate students in Renewable Energies (EUREC)	EU	8-12	NTUA
May-07	Working paper	Expert community	Czech Republic	50	CUEC
May-07	Conference	Stakeholders electricity sector	Netherlands	20	VU/IVM
May-07	Seminar	Academic	Padova, Italy	10-20	FEEM
May-07	Seminar	Academic	Padova, Italy	10-20	FEEM
May-07	Meeting	Ministries, research institutions	Bulgaria		EAP
19-Jun-07	Presentation	Stakeholders electricity sector	Netherlands	20	VU/IVM
29-Jun-07	Lecture	Engineers, managers, policy makers	EU	50	FEEM (A. Rabl)
Jun-07	Meeting	Staff of: - Public Power Corporation S.A., - Regulatory Authority of Energy, Hellenic Transmission System Operator S.A.	Greece	10	NTUA
Jun-07	Meeting	Academic and Government	Sweden, Denmark and Finland	10-15	SEI
Jul-07	Meeting	Expert community (NEEDS partners)	Poland, Krakow	50	CUEC
17-Oct-07	Lecture	Engineering students	EU	15	FEEM (A. Rabl)
Oct-07	Working paper	Scientific	Global and EU	100	ECN / FEEM
Oct-07	Workshop	Officials, Expert community	Czech Republic	40	CUEC

Date	Type	Audience	Countries	Size of audience	Partner
Oct-07	Working paper	Academic and Government	Sweden, Denmark and Finland		SEI
Oct-07	Meeting	Ministry of Economy and Energy, Ministry of Environment and Water	Bulgaria	50	EAP
Nov-07	Lecture	Postgraduate students in Energy Management (NTUA, University of Piraeus)	Greece	20	NTUA
Nov-07	Working paper	Expert community	Czech Republic		CUEC
Nov-07	Meeting	Expert community (NEEDS partners)	Egypt, Cairo	50	CUEC
Nov-07	Seminar	Officials, Expert community	Slovakia	30	CUEC
Nov-07	Meeting	Varies	Sweden, Denmark and Finland	10-15	SEI
Dec-07	Publication	Officials, Expert community	Czech Republic		CUEC
Dec-07	Report	Academic and Government (+others)	Sweden, Denmark and Finland		SEI
Dec-07	Article	Researchers	Spain		CIEMAT
2007	Meeting	Ministry of Economy and Energy, Ministry of Environment and Water Resources, Energy Efficiency Agency, National Electricity Company	Bulgaria	14	EAP
2007	Text on CASES in a Brochure Editor: Die sozialdemokratischen Abgeordneten im Europäischen Parlament, Bernhard Rapkay (MdEP), Vorsitzender (Party of European Socialists in the European Parliament, Bernhard Rapkay)	General Public	Germany	unknown	UFLENS
16-Jan-08	Lecture	Researchers	Italy	20	FEEM

Date	Type	Audience	Countries	Size of audience	Partner
Jan-08	Project newsletter	Stakeholders and interested public	25EU countries and other selected countries		FEEM
14-Feb-08	Lecture	Engineers, managers, policy makers	EU	25	FEEM (A. Rabl)
18-Feb-08	Workshop	Stakeholders	Belgium	50	USTUTT/IER
19-Feb-08	Seminar	Stakeholders and interested public	Belgium	30	NTUA
Feb-08	Workshop	Engineers & Energy Managers of PPC	Greece	20-30	NTUA
11-Mar-08	Seminar	Researchers	Italy	20	FEEM
31-Mar-08	Oral & Poster presentation at conference and workshop	Scientists (Geochemistry & Health)	International	100	USTUTT/IER
21-Apr.-08	Lecture	Environmental economists	EU	10	FEEM (A. Rabl)
23-Apr-08	Workshop	Stakeholders	Belgium		VITO WPs 8-11
30-Apr-08	Lecture	Environmental scientists	EU	20	FEEM (A. Rabl)
Apr-08	Project newsletter	Stakeholders and interested public	25EU countries and other selected countries		FEEM
Apr-08	Meeting	Ministry of Economy and Energy, Ministry of Environment and Water	Bulgaria	60	EAP
1-Jul-08	Plenary talk	IEW 2008 Conference, IEA, Paris, France	About 30	100-150	ECN and FEEM: Bob van der Zwaan, Ari Rabl
17-Jul-08	Lecture	engineers	EU	30	FEEM (A. Rabl)
Jul-08	Working paper	Academic	Global	50+	VU/IVM
6/8-Aug-08	Presentation on International conference on Energy Security and Climate Change, Bangkok, Thailand	Scientific and Academic community, policy makers, practitioners in energy field	More than 30 countries all over the world: Denmark, Germany, Sweden, The Netherlands, UK, Finland, Japan, Brazil, China, Australia, Canada, USA etc.	500	LEI

Date	Type	Audience	Countries	Size of audience	Partner
29/30-Aug-08	Workshop Conference	Academic	Switzerland, UK, Canada, Germany, Italy, etc	50	UBATH, FEEM
10-Sep-08	Lecture	managers	EU	15	FEEM (A. Rabl)
17-Sep-08	Poster conference	Academic, Stakeholders	UK	200	UBATH
12-Sep-08	Conference	Energy Companies	Mediterranean countries	50	OME
30-Sep-08	Final Conference	Stakeholders, policy makers and researchers	Italy		FEEM/ISIS
Sep-08	Project newsletter	Stakeholders and interested public	25EU countries and other selected countries		FEEM
Sep-08	Conference	Public	Turkey		TÜBİTAK
Sep-08	Article	Public	Turkey		TÜBİTAK
Sep-08	Short article	Researchers and public at large	Europe		FEEM
8-Oct-08	Workshop	Stakeholders	Belgium		ECN, UBATH
15-Oct-08	Oral presentation at Conference (40. Kraftwerkstechnisches Kolloquium 2008)	Energy industry	International	100	USTUTT/IER
16-Oct-08	Lecture	Engineering students	EU, China	15	FEEM (A. Rabl)
May/Oct-08	Referring to some of the findings under the CASES project when co-authoring Risoe Energy Report 7: What is the fast way to the future's energy system with lower CO ₂ emissions?	colleagues, collaborating partners, customers, funding organisations, the Danish ministries and agencies as well as international organisations such as the EU, the IEA and the UN.	Rapidly growing countries, with special focus on China and India	Over 1000	Risoe-DTU
4-Nov-08	Lecture	engineers	EU	200	FEEM (A. Rabl)

Date	Type	Audience	Countries	Size of audience	Partner
19/ 20-Nov-08	Workshop on Future Energy Systems	researchers industry representatives representatives from government and government agencies representatives from EU international and supranational organisations	Rapidly growing countries	150	Risoe-DTU
2006-08	Meetings	30 leading energy companies in the Euro-Mediterranean	Euro-Mediterranean countries		OME
2006-08	Meetings	High level specialists of the energy industry in the Euro-Mediterranean region	Euro-Mediterranean countries		OME
2008	Scientific article in referred international journal “Environmental research, engineering and management ”	Academic and scientific community, policy makers, practitioners in energy field	International journal published in Lithuania but available on internet to international community	500-1000	LEI
2008	Science popular article in popular journal	All community	Lithuania	5000	LEI
2008-2009	Help distributing the book published under the CASES project	Climate and energy researchers, policy makers	Focus on the UNEP energy experts, the energy policy makers, planners, and their close advisers in major developing countries and Denmark	40	Risoe-DTU, India (IIMA), China (ERI), Brazil (COPPE/UFRJ)
2008-2009	Working paper	Under peer-review for publication	Global	International scientific community	ECN and FEEM: Bob van der Zwaan, Ari Rabl

Date	Type	Audience	Countries	Size of audience	Partner
Spring 2009	Half-day seminar* to be held at CEPS, to disseminate the main findings of CASES	EU policy-makers; major stakeholders from business and industry, NGOs or the research community	All EU member states	30-40	CEPS
Spring 2009	A set of Policy Briefs of 10-15 pages (1.5 line spacing) reporting some of the main findings of CASES	Senior officials from EU institutions; the numerous CEPS web-site visitors; CEPS corporate members; major stakeholders from business and industry, NGOs or the research community	Possibly all	On average 4,000 to 5,000 downloads, with the record number exceeding 48,000	CEPS would be responsible for dissemination, but other (voluntary) CASES partners would have to provide the text of the policy briefs on the basis of their contributions and findings to CASES
Early 2009	The CASES research will be an integral part of the forthcoming CEPS Task Force on "Securing European Energy Supplies - Making the right choices"	Corporate members and senior officials from the EU institutions, member states and the associated countries	Possibly all	More than 100 stakeholders	CEPS
2009	Scientific article in ISI referred International journal "Renewable and Sustainable energy reviews"	Academic and scientific community, policy makers, practitioners in energy field	International journal	1000-2000	LEI

Activities

Dissemination activities are a fundamental component of the whole strategy devised by CASES to serve the wider European research, policy and business community and the public at large. A wide set of activities was used to disseminate the new knowledge created within the network. Management and co-ordination of the knowledge derived from the activities took place during the whole duration of the project. Dissemination activities were implemented through a different range of measures.

Project web site

The **interactive web site** (<http://www.feem-project.net/cases/>) has been established for the dissemination of broad information on the co-ordination activity covering partnership, objectives, time schedules, activities (including workshops, meetings, etc.), results, reports and deliverables. Moreover useful policy documentation, links and references are provided. Efforts in this area are meant to give the largest dissemination to the output of the project. This will also lead to continuing collaboration and an increasingly concerted approach between the partnership, the EU and other interest parties. In this, the web site is also a fundamental source of dissemination. To ease the interaction between CASES and the outer world, an information e-mail service on the web site will be established to help visitors learn more on CASES as such and to submit questions, tips or comments. The information e-mail service may thus help identify other issues that are relevant to the implementation of the project and that have not been raised by the partnership.

Newsletter

The dissemination activities include the establishment of an **electronic newsletter** to ensure prompt, updated and easy communication on project news. The newsletters are sent on a six months basis, to an e-mailing list which includes organisations outside the consortium and interested parties (such as policy makers and stakeholders or individuals) expressing their interest in CASES' activities. Confidential communication remains restricted to the consortium.

The Newsletter updates readers on the progresses of the Coordination Action and contains direct links to the deliverables.

- The first newsletter was sent in April 2007 with first preliminary results concerning energy scenarios, costs and methodology.
- The second newsletter was sent at January 2008 to present the results and the assessment of private, external and full costs for 25-EU and some non-EU countries.
- The third newsletter was sent at the beginning of September 2008 to present the final results.

Project presentation

Particularly useful in order to raise public participation and awareness is a brief project presentation prepared and published on the web site by the Coordinator. The presentation includes a brief synopsis and a more extensive description of the project. It is intended to be accessible to the non-specialists, avoiding technical language, mathematical formulae and acronyms as much as possible. The 2-3 page synopsis of the project is written in English, and where appropriate in other languages to achieve full dialogue and interaction with all actors from a non-technical arena, also in non English-speaking countries.

A Power Point project presentation reflecting the project presentation objectives, methodology and expected results is also produced by the Coordinator at the beginning of the project and is available for public use, downloadable from the project web site. This is the basis of the presentations made by the Consortium partners at the various external events mentioned in Section 3.2.5, which concerns other conferences, workshops and seminars.

Project events

Two stakeholders workshops and a final conference were organised to present main results of the co-ordination activities. The devised meetings represent a clear means towards dissemination to a wide audience of qualified players composed by academic excellence, key stakeholders and end-

users, policy and business communities and civil society organisations. These events allowed to go beyond standard end-of-pipe dissemination activities and to achieve full dialogue and interaction with all actors for the mobilisation of the strategic intelligence currently distributed across a large number of stakeholders. To improve the dissemination of the findings which raised from the events all presentation and documentation of the events were published on the project website. Moreover Conference Proceedings were produced to collect the contents of the final conference.

The **first workshop of the CASES project on “Cost Assessment for Sustainable Energy Markets”** took place in Brussels, 18th February 2008. The event focused on internal (private) and external costs of electricity generation and supply in and outside the European Union. The methodology to estimate internal and external costs, and the results of applying this methodology were presented and discussed. The costs of electricity generation and distribution are the most important criteria shaping decisions within the electricity system. However, the influence on the environment and human health due to climate change, air pollution, emissions to water and soil, and in addition security of energy supply should also be adequately taken into account. This includes impacts from the whole life cycle of electricity supply and not only the operation of a power plant. Thus results from an LCI (Life Cycle Inventory) assessment have to be used. To be able to compare the different impacts of different technologies and systems, the impacts (risks, damage) must be transformed into a common unit. The ‘ExternE’ methodology is used to weight the, mostly site depended, impacts according to the preferences of the society. As result damage costs, which are mostly external costs, are obtained. The sum of the ‘private’ costs and external costs are the so called social costs. For example, the social costs of an innovative renewable technology may be competitive or even smaller than the social costs of a conventional fossil fuelled technology, even if private costs are higher. The technological progress offers solutions for the challenge of a more sustainable energy supply. The comparison of internal and external cost can help to identify the technologies mix to be aspired.

The **Second Stakeholders’ Workshop on “Policy Instruments in the Electricity Sector”** focused on the assessment of policy instruments in the electricity sector. In the workshop, results on a comparison of policy instruments were presented and a Multi Criteria Decision Analysis was performed by all participants. The workshop took place at Bruges, Belgium, the 23rd April, 2008.

The **Final Conference on “Social Costs of Electricity Generation and Policy Design”** took place in Milan at the FEEM premises, the 30th September 2008. The programme was divided in three main sessions presenting the results of CASES in terms of social costs of electricity generation, policy design to internalise externalities in the electricity sector and electricity scenarios for different technologies for 2010, 2020 and 2030. The results of the project were presented and discussed with policy community, researchers and stakeholders.

All partners participate to other scientific and policy meetings in order to present the project and its preliminary and final results, both during and after the end of the project. This includes national and international workshops and conferences, events organised by the European Commission DG Research, Environment and other relevant DGs, and internal seminar at university level. Project results are properly presented, discussed and disseminated.

A Power Point project presentation reflecting the project presentation objectives, methodology and expected results was produced by the Coordinator at the beginning of the project and it is available for public use, downloadable from the project web site. This is the basis of the presentations made by the Consortium partners at the various external events mentioned below, which concerns other conferences, workshops and seminars.

The principal **conferences** attended or to be attended by CASES partners to present the project and its results are the following:

- 1 December 2006 – EAP presented CASES at the “II National conference of the Bulgarian energy agencies” to national, regional and local authorities and to energy agencies of Bulgaria.
- 23 January 2007 – Dr. Onno Kuik of VU/IVM presented “The ExternE method for the assessment of external costs of electricity generation” at the Dutch Transition Platform on Sustainable Electricity at SenterNovem in Utrecht to stakeholders from government, businesses and NGOs which are members of the Platform.
- 9 May 2007 – Dr. Onno Kuik of VU/IVM presented the External cost methodology to the Platform on Sustainable Electricity.
- 27 June 2007 – Presentation “Costs of Carbon Dioxide Abatement in the United States” and the invited lecture “Environmental Impacts and Costs of Energy - How Much is Clean Air Worth?” Ari Rabl, at 2007 ASME Energy Sustainability Conference, Long Beach, CA.

The principal **lectures** in which the CASES partners presented or will present the project and its results are the following:

- 10th September 2006 – Invited lecture “External Costs of Air Pollution”. Ari Rabl at Corvinus University of Budapest and the European Energy Institute (EEI), Budapest.
- May 2007 – Presentation of CASES objectives and methodology to 25 postgraduate students in Environment & Development at University of Athens (NTUA)
- May 2007 – Presentation of CASES objectives and methodology to postgraduate students Renewable Energies at EUREC in Greece.
- 17th October 2007 – “External costs of energy, lectures for Master Program ALEF, Ari Rabl at Ecole des Mines.
- November 2007 – Presentation of CASES objectives and methodology to 20 students in Energy Management at University of Athens (NTUA).
- 6th January 2008 – “A primer on...external costs assessment for the energy sector”, Andrea Bigano, Seminar at Fondazione ENI Enrico Mattei, Milan .
- 7th February 2008 – “External costs of energy”, lectures for Master Program STEU, Ari Rabl at Ecole des Mines de Nantes.
- 14th February 2008 – Invited discussant “Monétarisation des impacts environnementaux du recyclage et Étude prospective de la gestion des déchets en France” (monetary valuation of the environmental impacts of recycling and prospective study of waste management in France). Ari Rabl at Ministère de l’Ecologie, du Développement et de l’Aménagement Durable, Paris.
- 16th April 2008 – CIEMAT presented a lecture on “Objectives and expected results of CASES project” at the Delegation of Researchers from public companies of Medellín (Colombia), from CIDET and from the National University of Colombia.
- 27th-29th April, 2008 – Invited lecture “What do Time Series Studies Tell Us About the Health Effects of Air Pollution?”, Ari Rabl at HEI (Health Effects Institute) Annual Conference, Philadelphia.

- 30th April 2008 – CIEMAT presented a lecture on “Environmental impacts of energy: Presentation of results from CASES project” at the Master Course on Gas and Electricity Chain, Madrid – Instituto Superior de la Energía, Fundación Repsol.
- 16th October 2008 – “External costs of energy”, lectures for Master Program ALEF, Ari Rabl, Ecole des Mines de Paris.
- 4th November 2008 – Invited lecture “Environmental Impacts and Costs of Energy - How Much is Clean Air Worth?” Ari Rable on the occasion of being given the Frank Kreith Energy award, 2008 ASME Engineering Conference, Boston, MA.

The principal **meetings** attended by CASES partners to present the project and its results are the following:

- May 2007 – EAP participated to a National Discussions on Energy Policy with ministries and research institutions in Bulgaria.
- June 2007 – NTUA will participate to a meeting with 10 stakeholders of the electricity sector (Public Power Corporation S.A., Regulatory Authority of Energy, Hellenic Transmission System Operator S.A.) in Greece.
- July 2007 – Jan Melichar (CUEC) presents “Valuing the external costs from production of electricity and heat in CEEC” during the “NEEDS Forum 3 - Energy Supply Security – Present and Future Issues” in Poland.
- September 2007 – Personal communications were carried on by SEI with Academic and Government in Sweden about CASES.
- October 2007 – Energy scenarios were presented by EAP to ministry of Economy and Energy and Ministry of Environment and Water in Bulgaria.
- November 2007 – Jan Melichar presented “A critical review of past research efforts on energy externality estimates” during the “NEEDS Forum 3 Externalities and Mediterranean Countries” in Egypt.
- April 2008 – EAP presented “Policy instruments to internalise externalities” in a meeting with the Ministry of Economy and Energy and Ministry of Environment and Water, in Bulgaria.
- From 2006 to 2008 CASES activities are presented twice a year at OME General Assembly meetings to 30 leading energy companies in the Euro-Mediterranean, to OME “electricity” committee and to “renewable energy and sustainable energy” committee.

The principal **seminars** of CASES partners to present the project and its results are the following:

- 19th October 2006 – EAP presented the project to post doctoral fellows from Balkan Countries, Turkey, Belarus, Russia and Tunisia at the French-Serbian European Summer University.
- 23th January 2007 – Dr. Onno Kuik of VU/IVM gave a presentation on “The ExternE method for the assessment of external costs of electricity generation” for. Members of the Platform are stakeholders from government, businesses and NGOs.
- 15th March 2007 – Sweco Grøner presented a “literature review and state of the art on aesthetic effects of wind and hydro transmission lines” to NGO and firms in Norway.
- 23th March 2007 – TÜBİTAK presented the project to the Ministry of Energy in Turkey.

- 16th May 2007 – Seminar of Dr. Andrea Bigano (FEEM) on “Assessing external costs of the energy sector: theory and methods” in Padova, Italy.
- 16th May 2007 – Seminar of Dr. Andrea Bigano (FEEM) on “Assessing external costs of the energy sector: a case study on oil spills in the Mediterranean” in Padova, Italy.
- November 2007 – Seminar of CUEC on “Valuing the external costs from energy systems in CEEC” in Slovakia.
- 11th March 2008 – “Cases project: private and external costs of electricity production”, Roberto Porchia, IEM Seminar at Fondazione ENI Enrico Mattei, Milan.
- 21th April 2008 – Seminar “How to measure the impacts and costs of air pollution mortality”. University of Colorado, Institute of Behavioral Science.
- 30th April, 2008 – Seminar “How to measure the impacts and costs of air pollution mortality”. Princeton University, Princeton Environment Institute.
- 17th July 2008 – Seminar “Environmental impacts and costs of energy”, National Renewable Energy Laboratory, Golden, CO.

The principal **workshops** where project partners presented or will present the results of CASES are the following:

- 8th March 2007 – Externalities in Decentralised vs. Centralised Energy Services Supply (NEEDS Forum), Ljubljana.
- 18th-20th April 2007 – EcoSense Training Workshop - Project Meeting of NEEDS Stream 1d and 3a, Tunis.
- 5th-6th July 2007 – Energy Supply Security Present and Future Issues (NEEDS Forum), Krakow.
- 18th-20th October 2007 – Annual Global Conference on Environmental Taxation, Green Budget Germany, Munich.
- October 2007 – Workshop on “Valuing the external costs from energy systems in Europe and CEEC” CUEC.
- 26th -30 November 2007 – Bayesian Methods For Non-Market Valuation, Workshop in Las Palmas.
- 2nd-13th December 2007, in “Biofuels and Biofuel Technologies Symposium” held in Ankara a presentation on “Turkey’s R&D perspectives of Biofuels and Bioenergy Studies in TUBITAK” was made. In this presentation detailed information of the CASES Project was presented to nearly 300 people. This symposium has a published book including our presentation as a paper.
- February 2008 – Workshop for Engineers and Energy Managers in Greece, NTUA.
- 12th -13th March 2008 – “Turkey Scenarios Outlook Workshop” which was held in Ankara by European Environment Agency, latest news and results of the CASES Project was given to some of our stakeholders (Turkish Ministry of Energy and Natural Resources, Turkish Ministry of Environment and Forestry, Electricity Generation Co. Inc., Istanbul Technical University- Energy Institute). Nearly 70 people attended to this workshop.
- 6th-8th August 2008 – International Conference on Energy Security and Climate Change: Issues, Strategies, and Options (ESCC 2008). Bangkok. D. Streimikiene presented “External

costs of energy security and climate change”. Published in conference proceedings, p. 1-9. available at: <http://esc.890m.com/esc08cd/cd/index.html>

- 19th -20th Nov 2008 – Workshop on Future Energy Systems. Risoe-DTU will organise an important workshop and release its Risoe Energy Report 7. The workshop deals with the immediate future and the transformation of the energy systems in the long term. The methodology of studying the life-cycle social costs of different energy technologies adopted and findings on non-EU countries under the CASES project will be included in the presentations by the Risoe DTU experts and researchers from our CASES project partner in India, IIMA.

Publications

Publication activities are actively pursued. Preliminary versions of the research papers are disseminated through the working paper series of FEEM and distributed both electronically and in paper copies. The series is currently included in the Economics Research Institutes Paper Series of SSRN, RePEc and in Econlit (and downloadable free-of-charge). Links to the working papers are posted on the public section of the project web site.

Publications in peer-reviewed journals are also actively sought. Updated publication on the project activities are actively sought in specialised journals and newspapers. This includes local, national and international press. This activity is carried on by all partners. Publication of research papers in scientific journals is also sought to inform the scientific audience of the results of the CASES initiative.

In addition, a **book** summarising thirty months of co-ordination efforts will be published. The book is titled “Electricity: Scenarios and Policy Implications – Private and external costs assessment, policy implication and scenarios for the EU and selected non-EU Countries” it is edited by Anil Markandya, Andrea Bigano and Roberto Porchia (Fondazione Eni Enrico Mattei). The book provides the results of the research performed by the CASES project, by combining methodology and results on private and full costs estimation with the assessment and the evaluation of different instruments of energy policy, and the projection of electricity scenarios. The volume combines methodology and data on social costs with the evaluation of different instruments of energy policy, and the projection of electricity scenarios. In the book the contributions of the partners of the project are collected and harmonised. The research activities reported in this book range from databases and technical reports on emissions, to private, external and social costs of electricity generation in Europe and in selected non-EU countries, to studies on electricity insecurity, on uncertainties in external costs estimation, to studies on policy assessment and on policy instruments to internalize external costs in the electricity sector and finally, to electricity scenarios by country and primary fuel for 2010, 2020 and 2030. This volume is divided in three parts: the first part concerns cost assessments, the second part concerns policy evaluation and the third part provides electricity scenarios up to 2030.

The principal **working papers and books**, which have been or will be published by the partners to present the results of CASES project are:

- Bigano, A. “Assessing the Risk of Oil Spills in the Mediterranean: the Case of the Route from the Black Sea to Italy”, FEEM Working Paper, 2006.
- Bigano, A. “The Role of Risk Aversion and Lay Risk in the Probabilistic Externality Assessment for Oil Tanker Routes to Europe”, FEEM Working Paper, 2006.
- Brander, L. (together with Dr. Raymond Florax) “Valuation of Wetlands: Primary versus Meta-Analysis Based Value Transfer.” In: J.I. Carruthers and B. Mundy, “Environmental

- Valuation: Interregional and Intraregional Perspectives”, Aldershot: Ashgate. VU/IVM, 2006.
- Desaignes B, Rabl A, Ami D, Boun My Kene, Masson S, Salomon M-A, and Santoni L. 2007. “Monetary Value of a Life Expectancy Gain due to Reduced Air Pollution: Lessons from a Contingent Valuation in France”. *Revue d’Economie Politique*, Vol.117 (5), 675-698.
 - ESRI, in July 2008, the Paper “Marginal Abatement Costs of Carbon-Dioxide Emissions: A Meta-Analysis” was published at the web as a Working Paper of the Economic and Social Research Institute (): <http://ideas.repec.org/p/esr/wpaper/wp248.html>.
 - Havránek, M., Melichar, J. (2006): “Oceňování externích nákladů z výroby elektřiny v ČR (in Czech: Valuing the external costs from production of electricity in the Czech Republic)”, *Ekologie a právo*, Praha, (5). ISSN: 1211-1139 CUEC, November 2006.
 - Kuik, O. Brander, L., and Tol R., Marginal Abatement Costs of Carbon-Dioxide Emissions: A Meta-Analysis. Submitted by VU/IVM to the journal *Energy Economics*. The paper is currently under revision.
 - Kuik O., “Social and Environmental Cost of Electricity Supply (in Dutch)” Presented to the Dutch Transition Platform on Sustainable Electricity in Utrecht (19-6-2007). See http://www.ivm.falw.vu.nl/images_upload/6B538103-DEBE-E049-0FDAA06A620D65C8.pdf
 - Melichar, J., Havránek, M. “Environmental accounting sustainable development indicators 2007” critical review of past research efforts on energy externality estimates CUEC, May 2007.
 - Rabl A. 2007. “Pollution atmosphérique et bâtiments : estimation du coût des dommages” (Air Pollution and Buildings: Estimation of the Damage Costs). *Pollution Atmosphérique*, Numéro Spécial – Octobre, 101-110.
 - Rabl A, Benoist A, Dron D, Peuportier B, Spadaro JV and Zoughaib A. 2007. “How to account for CO2 emissions from biomass in an LCA”. *Int J LCA* 12 (5) 281.
 - Rabl A and Holland M. 2007. “Environmental Assessment Framework for Policy Applications: Life Cycle Assessment, External Costs and Multicriteria Analysis”. *Journal of Environmental Planning and Management*, Vol. 51, No. 1, 81 – 105, January 2008.
 - Rabl A, Nathwani J, Pandey JM and Hurley F. 2007. “Improving Policy Responses to the Risk of Air Pollution”. *J of Toxicology and Environmental Health, Part A*, 70:3, 316 – 331 (2007).
 - Spadaro JV and Rabl A. 2007. “Environmental impacts and costs of energy”. pp.4.1 to 4.22. *Handbook of Energy Efficiency and Renewable Energy*, F Kreith and Y Goswami, editors. CRC Press, Taylor & Francis Group, Boca Raton, FL 33487-2742.
 - Spadaro JV & A Rabl 2008a. “Estimating the Uncertainty of Damage Costs of Pollution: a Simple Transparent Method and Typical Results”. *Environmental Impact Assessment Review*, vol. 28 (2), 166–183.
 - Spadaro JV and Rabl A. 2008c. “Global Health Impacts and Costs due to Mercury Emissions”. *Risk Analysis*, Vol.28 (3), June 2008, 603-613.
 - Van der Zwaan, B. “Uncertainties on energy cost estimation”, ECN, October 2007.

The principal **articles and reports**, which have been or will be published by the partners to present the results of CASES project are:

- CIEMAT – Report on activities related to CASES project to the CIEMAT director to allow project presentation to the Ministries of Education and Industry in Spain.
- CIEMAT, 2007 – Article in a Scientific Journal (to be decided) “updated results of external costs of Spanish electricity system”.
- OME – In June 2007 a full article “Future Trends and Incidents on CO₂ emissions in the EU and Southern and Eastern Mediterranean countries” based on the work OME has carried out for CASES, has been published by OME in its new GEM journal (“Global Energy for the Mediterranean”). This journal is printed bi-annually with a wide diffusion (1500 copies) targeting the Euro-Mediterranean energy community.
- Rabl A, Benoist A, Dron D, Peuportier B, Spadaro JV and Zoughaib A. 2007. “How to account for CO₂ emissions from biomass in an LCA”. Int J LCA 12 (5) 281.
- Risoe – Report referring to some of the findings under the CASES project when co-authoring on Energy “What is the fast way to the future’s energy system with lower CO₂ emissions?” The Risoe Energy Report series deals with global, regional and national perspectives on current and future energy issues. Individual chapters have been written by Risoe staff members and leading Danish and international experts. Each report is based on internationally-recognised scientific material and is fully referenced. Furthermore it is refereed by an independent panel of international experts. The Risoe-DTU team under the CASES project authors a few sections in this year’s Risoe Energy Report 7 - What is the fast way to the future’s energy system with lower CO₂ emissions? The findings and results of research under the CASES project is used as references in the preparation of the report.
- SEI – Report on national cost estimates for Sweden, SEI, December 2007.
- Spadaro JV & A Rabl 2008a. “Estimating the Uncertainty of Damage Costs of Pollution: a Simple Transparent Method and Typical Results”. Environmental Impact Assessment Review, vol. 28 (2008) 166–183.
- Spadaro JV and Rabl A. 2007. “Environmental impacts and costs of energy”. pp.4.1 to 4.22. Handbook of Energy Efficiency and Renewable Energy, F Kreith and Y Goswami, editors. CRC Press, Taylor & Francis Group, Boca Raton, FL 33487-2742.
- Streimikiene, D., I. Roos, J. Rekis. External cost of electricity generation in Baltic States//Renewable & sustainable energy reviews (accepted and corrected available at Article in press) (www.elsevier.com/locate/rser)
- Streimikiene, D., R. Pusinaite. External cost of electricity generation in Lithuania// Environmental research, engineering and management, 2008, No 2, (44), p. 34-40, published at: <http://www.apini.lt/?section=journal>)
- UFLENS – The University of Flensburg has written the following article on the CASES project which has been published in the German brochure “Forschung in Europa. Das 7. Forschungsrahmenprogramm (Research in Europe. The 7th Framework Programme)” published by die sozialdemokratischen Abgeordneten im Europäischen Parlament, Bernhard Rapkay (MdEP), Vorsitzender (Party of European Socialists in the European Parliament, Bernhard Rapkay)

- UWARS - "Review and analysis of effectiveness of the current Polish system of economic instruments in environmental protection, and proposed changes to ensure achievement of the national environmental policy goals", the report prepared by Warsaw Ecological Economics Centre for the Polish Ministry of Environment, University of Warsaw 2007.
- UWARS – “Economic and ecological conditions for supporting geothermal energy with the public financial resources from the Polish National Fund for Environmental Protection And Water Management”, the report prepared by Warsaw Ecological Economics Centre for the Polish Ministry of Environment, University of Warsaw 2008.

Flyers, short articles and project presentations

Particularly useful in order to raise public participation and awareness is a brief project presentation prepared and published on the web site by the Coordinator. The presentation includes a brief synopsis and a more extensive description of the project. It is intended to be accessible to the non-specialists, avoiding technical language, mathematical formulae and acronyms as much as possible. In addition to the publication via the web site (available in pdf file format) other media may be sought. The European Commission services may publish the project presentation and periodic updates of it will be carried out upon the Commission’s request.

The 2-3 page synopsis of the project is written in English, but electronic flyers of the project are published also in Italian, Portuguese, Bulgarian, Spanish, Norwegian and Lithuanian to achieve full dialogue and interaction with all actors from a non-technical arena, also in non English-speaking countries.

Moreover short articles and flyer are also produced at local level by the partners and distributed in electronic version on-line or in printed version at universities or among research and political institutions.

The principal flyers and short articles published or planned to be published by project partners to present objective and results of the project are the following:

- From April 2006 an article on the CASES project is available on the FEEM web site, www.feem.it
- A brief presentation of the project is published and periodically updated by on the website from 2006 to 2008. A short article, which describes the project have been written by project partners in the following languages:
 - English,
 - Italian,
 - Portuguese,
 - Bulgarian,
 - Spanish,
 - Norwegian
 - Lithuanian
- In June 2006 EAP wrote one page presentation of the project objectives and work-packages tasks to disseminate activities to stakeholders and energy-environment related companies in Bulgaria.
- In June 2006 FEEM wrote a wide project presentation by specifying objectives and context of the project; it is available on the web in .PPT and .PDF format.

- In June 2006 the CASES project synopsis was sent by FEEM to the European Commission to be published.
- In June 2006 and February 2007 OME published short articles about the CASES project and in particular WP1 and its progress into the OME Newsletters, which is disseminated into the Euro-Mediterranean energy community.
- In July 2006 a short annotation of the project was included by EAP in the part "Environmental policy " of the chapter "Energy" in the Country Strategy on Economic Development Council of the Bulgarian Presidency.
- From 2006 to 2008 a short articles about the CASES project is published by ISIS into the NEEDS Newsletters.
- From 2006 to 2008 a short articles about the CASES project is published by FEEM on the FEEM-Newsletters, which is published twice a year.
- In February 2007 brief information about the project was released by TÜBİTAK on its website <http://www.mam.gov.tr/enstituler/ee/index.html>
- In December 2007 a brochure was published by CUEC “Valuing the external costs from electricity production in the Czech Republic”.
- In early 2008 a short article was published by D. Streimikiene “Evaluation of external energy costs in Baltics” (In Lithuanian)/Science and Technology, 2008. N0 3, p. 28-29.

Public of the project

The dissemination of the project is targeted to political institutions, private firms, and consumers at international and at national level. Information about and conclusions of CASES shall be sent to the representatives of the institutions indicated below; they will also be involved as stakeholders in dedicated workshops and in the final conference. A contacts database joint with NEEDS project will be compiled, it contains the contact details of European stakeholders who should be contacted for dissemination.

At local level, at least in each 25-EU country, the dissemination activities are directed to:

- *Policy sphere* includes ministries and national institutions related to energy production, industrial development and environment (The Ministry of Economic Affairs, as well as that of Environmental Affairs).
- *Business*; in this group are included energy producers and distributors, financial and industrial advisors, which operate in the energy industry, and banks involved in project financing for the energy sector.
- *General public*; in this group are included consumers' and environmental organisations and students of technical and environmental faculties. Since it is not possible to focus on the society as a whole, the project will focus on a specific target group which is representative of the society, moreover it is the reservoir of tomorrow's stakeholders and policy makers. These are the students of postgraduate programmes on Energy & Environment through out Europe.

The public reached by the dissemination of the project is widely described in the report on raising public participation and awareness compiled at the end of the project.