



CLIMATE CHANGE, ENERGY AND THE MEDITERRANEAN

Steering committee meeting of the 22nd of October 2007

Meeting Report

Working document

Plan Bleu
Centre d'Activités Régionales

Sophia Antipolis
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CONTENT

I. CONTEXT, OBJECTIVES, PARTICIPANTS	3
1. Context.....	3
2. Objectives of the meeting	3
3. Participants to the meeting	4
II. GENERAL COMMENTS, REMARKS AND DECISIONS	5
1. General Structure and content of the study	5
2. Executive summary and key messages from the study.....	5
3. Next steps.....	6
III. COMMENTS REMARKS AND DECISIONS ON CHAPTERS AND WORK PACKAGES.....	7
IV. ANNEX - STRUCTURE OF THE STUDY DISCUSSED DURING THE MEETING.....	12

CLIMATE CHANGE, ENERGY AND THE MEDITERRANEAN

I. CONTEXT, OBJECTIVES, PARTICIPANTS

1. CONTEXT

Plan Bleu is currently carrying out a study about energy and climate change in the Mediterranean. This work is supported by the European investment Bank. This topic constitutes also a priority for the biennium 2006-2007 and for the strategic orientation of Plan Bleu.

In this context, Plan Bleu invited a few high level international experts to be part of a steering committee dedicated to “climate change and energy” issue.

The role of the Steering committee is (i) to contribute to and to ensure the relevancy and consistency of the study, (ii) to provide advice and suggestion on the terms of reference and activities, (iii) to provide an input in key messages to be included. One or two meetings will be organised each year. Additionally, the steering committee will be consulted (at least 5 times) by electronic mail throughout the course of the study under process so as to maintain and ensure a regular follow up. Members of the steering committee may also be invited to participate to expert meeting organised in the framework of this study.

On the 22 October meeting was held the first “steering committee meeting” for “Energy and climate change” issues.

2. OBJECTIVES OF THE MEETING

Reviewing the ongoing work for the study “Climate change, energy and the environment” coordinated by Plan Bleu and carried out with the support of the European Investment Bank.

Participants to the steering committee were requested to provide all comments, remarks and suggestion on:

- 1) the general structure of the study
- 2) the content of each chapter and
- 3) the general organization of the work.

3. PARTICIPANTS TO THE MEETING

The Steering Committee was composed of:

- Ms Anca-Diana Barbu, Programme Manager, Energy and environment – *European Environment Agency, Kongens Nytorv 6, 1050 COPENHAGEN K, Denmark, tel. +45 (33) 36 71 74, fax +45 (33) 36 71 75, email AncaDiana.Barbu@eea.europa.eu,*
- Mr Filippo Giorgi, , who has been recently awarded, as Vice-President of IPCC Group I, the 2007 Nobel Peace Prize – *The Abdus Salam International Centre for Theoretical Physics, P.O. Box 586, Strada Costiera 11, 34100 TRIESTE, Italy, tel. +39 (040) 2240 425, fax +39 (040) 2240 449, email giorgi@ictp.it*
- Mr Magdi Ibrahim, Coordinator of Environment and Development Programmes in Maghreb – *ENDA Maghreb, 12 rue Jbel Moussa Appt. 13, Joli Coin, RABAT AGDAL, Morocco, tel. +212 37 67 10 61/62, fax. +212 (37) 67 10 64, email magdi@enda.org.ma*
- Mr Antoine-Tristan Mocilnikar, Expert consultant in the economy of energy industries for the Interministerial Representative on Sustainable Development – *Ministère de l'Environnement, du Développement et de l'Aménagement Durables (MEDAD), Bureau 2308, 20 avenue de Ségur, 75353 Paris 07 SP, France, tel. (01) 42 19 25 93, fax (01) 42 19 10 43, email antoine-tristan.mocilnikar@mines.org*
- Mr Roberto Vigotti, President of OME Committee « Renewable Energies and Sustainable Development » – *INERGLA, Via del Tritone 125, 00187 ROME, Italy, tel. +39 (06) 85 09 70 36, fax +39 06 97 74 63 81, email roberto.vigotti@inergia.it*

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II. GENERAL COMMENTS, REMARKS AND DECISIONS

1. GENERAL STRUCTURE AND CONTENT OF THE STUDY¹

- 1) All participants agreed that the work and the content of the study are promising and of a high interest.
- 2) Results from recent climate change simulations are about to be available soon (beginning 2008) and should provide more detailed results for the region (geographically and differentiated by period of time); Among scenarii available from the IPCC, the A1B is now often used by researchers since it describes a middle range scenario.
- 3) The idea of a regional study wherein two country cases are simultaneously and more in-depth analyzed (Egypt and Tunisia) received the general approval of the participants. Besides, it was clearly expressed that by including an Eastern European country, for example Turkey, which has achieved some social and economic progress in order to join the European Union, the picture could be positively completed. Morocco would also be a good case to be in-depth studied to complete the South of the Mediterranean rim situation. Even if including the aforesaid ideas in the report under preparation is not feasible (calendar and budget constraints) Plan Bleu takes good note of it and will study the way to complement the analysis.
- 4) Participants agreed on the relevancy of specifying in the title of the project that only Southern Mediterranean countries are concerned by the analysis, and this even if, (i) in the study comparisons and reference to lessons learned in the Northern rim countries should be made as much as possible and (ii) regional global issue should also be included, in particular the electric interconnection or technology transfer issues.
- 5) Participants expressed concerns about key findings and messages stemming from the study. Emphasize is put on the important number of pages constituting the report; therefore, it is advised to underline key messages to be delivered to decision makers throughout the study. To do so, it was decided that each chapter would include a very short and brief summary of key messages.

2. EXECUTIVE SUMMARY AND KEY MESSAGES FROM THE STUDY

- 6) The last chapter of the study untitled “concluding part” should be an executive summary. It should provide a very synthetic view of the Mediterranean region toward climate change and its impacts (physical and economical ones).

¹ Discussion based on the proposed structure of the study available in annex of this meeting report, for memory.

It should include some key points/topics mentioned during the meeting (to be completed with results and findings of chapters);

Key points identified and mentioned during the meeting are :

- *About climate change itself and physical impacts*: even if the EU objective of 2°C rise in global temperature is achieved, the impact will be stronger and faster in the Mediterranean; water is the key vector through which climate change will affect the region;

- *About energy issues*: coal and mitigation are key topics; role of electric interconnection; need for a framework to develop renewable energy and energy efficiency as an economic strategy; importance of technology transfer; need to integrate the region in climate change and carbon financial mechanism (CDM...);

- *About adaptation in energy*: diversification as an adaptation strategy; Energy efficiency as a priority; be careful with potential adaptation issues and risks to maintain unsustainable patterns (e.g.: bio-fuel...).

The executive summary should also indicate the priorities for Southern Mediterranean countries to ensure a reduction in the cost of climate change and propose some orientations in terms of investments from the public and private sectors.

- 7) Participants agreed to actively participate to the preparation of the aforementioned summary. Plan Bleu will prepare a first proposal of draft at the beginning of/in early 2008 (end of January/beginning of February); the steering committee members will comment and review it. The text will then be completed and discussed during the next steering committee meeting (see last point).
- 8) Partners and organisation: OME expressed its wills to be involved more than in producing the chapter 1 of part II. In particular, OME will provide inputs for chapter 3 of part II including (i) a synthesis on electrical interconnexion issues and its strategical potential for renewable energy (to be included in chapter 3 of Part II and/or in chapter 1 of part II), (ii) a summary of potential centralised renewable energy plants in the countries (to be included as a text box in chapter 3 of Part II) and (iii) a summary on financial mechanism issues for RE and EE (to be included as a text box in chapter 3 of Part II).

3. NEXT STEPS

- 9) Plan Bleu will take into account all general comments and remarks on the ongoing study to settle the final structure of the study. Remarks and comments on each chapter and work package will be integrated as much as possible in draft chapters and terms of references (see next paragraph).
- 10) The next meeting of the steering committee will be organised in April 2008. The exact date will be proposed by the end of January/beginning of February 2008. The main objective of the meeting will be the review and finalisation of the present study's executive summary.

III. COMMENTS REMARKS AND DECISIONS ON CHAPTERS AND WORK PACKAGES

	STRUCTURE OF THE STUDY	Partners and Work package leader
PART I	Part I - Climate change in the Mediterranean: scientific knowledge's and impacts	
WORK PACKAGE 1	<p>Chap. 1/ <u>An overview of the last results of observations and modelling for the Mediterranean climate and its impacts on the natural environment.</u></p> <p>Discussion based on document "final terms of reference - annex 3" included in the meeting document.</p> <p>Discussions confirmed that climate models results from models set for the Mediterranean region are strong and consistent; it means that a lot can be said about the Mediterranean future climate. Several new simulations models displaying better results are now available. Among others, PRUDENCE includes 10 regional project (one is probably covering the South of the Mediterranean – to be confirmed); a lot of results concerning the region are also available in IPCC reports. The most precise model about the situation of European and Mediterranean countries should come from the ENSEMBLE project. It can provide information at a detailed geographical level, and differentiate results in time (e.g.: for 2050 and for 2100). The main results of this new study will be available at the beginning of 2008.</p> <p>In any case, it is very difficult to anticipate the future climatic trends, particularly extreme events. The realisation of scenarii depends on different probabilities. Hence, scenarii cannot be defined but a scenario among others is to be selected/chosen. Usually, researchers prefer to compare several situations; they were used to study A2 and B2 scenario; they now (2007) often use the A1B. in GIECC analysis, the part III (adaptation) comes in general before the part II (mitigation).</p> <p>A 2°C increase in global temperature scenario is important because it corresponds to the objective of the EU. Another scenario (a warmer one) could complete the picture. A key message could be: even if the 2°C scenario is achieved, the impact on the Mediterranean will be stronger and faster. The insertion of maps as illustrations is important.</p> <p>This chapter should be exhaustive and it is essential that the climatic scenarii include extremes events. The coastal zones and infrastructure issue is also to be included in relation with extreme events.</p> <p>The impact of the energy sector could be included in the part dealing with the physical impact of climate change (see also comments on work package 8).</p> <p>Decisions:</p> <ul style="list-style-type: none"> - The work package 1 should be ready by the end of December. The results of Ensamble will not be available before; Plan Bleu will try to integrate it afterwards; - Mr Georgy and Plan Bleu will cooperate to include in the Plan Bleu water prospective results of rainfall climate projection; collaboration on other type of data is offered; Mr Georgy will also cooperate to proof read and comment the final draft of the chapter - The impact and vulnerability part of this work package will include a dedicated part on energy (instead of keeping work package 8 (see also comments in work package 8) 	MEDIAS

	STRUCTURE OF THE STUDY	Partners and Work package leader
WORK PACKAGE 2	<p>Chap. 2/ <u>An overview of the economic impacts of climate change in the Mediterranean</u></p> <p>Discussion based on the " first draft - annex 4" included in the meeting document.</p> <p>The general remarks on the first draft of this chapter are very positive. The water issue is considered as a key/central factor when talking about economic damage done by climate change in the region since it has negative consequences on all the sectors of the economy. Yet, in the standard economic literature "water" is not considered as a sector of activity and hence does not appear in itself (it is taken into consideration in each sector: agriculture, ...). Participants stated that it is nevertheless of a very high importance from the "economical" viewpoint. Regarding agriculture, the PESETA study could provide good input to the chapter.</p> <p>Decision:</p> <ul style="list-style-type: none"> - The table and figure page 55 will be used to better insist on the strong link between economics and water in the regions. - Some financial data concerning the cost of adaptation in the field of water (engineer approach) will be included as far as possible in the last part of the chapter. 	Plan Bleu
	<p>PART II</p> <p>II- Mitigation of climate change: toward a low carbon energy sector</p>	
	<p>Chap. 0/ <u>Green house gas emissions from energy in the Mediterranean economies: facts and figures</u></p> <p>Comments and recommendations made on the basis of "Terms of reference- annex 5" included in the meeting document.</p> <p>Sources of data identified (WRI, EEA, National IPCC questionnaire) are well chosen. Complementary information could be found at IEA, in particular in the low carbon economy scenario. The GEMIS database can also provide information about the life cycle assessment. The chapter should well explain the data calculation and estimates done. It should also well remind the information not captured by the missing data or information (e.g.: GHG incorporated into goods traded internationally). Emissions for certain type of activities such as cementeries will be included as far as possible.</p>	Plan Bleu
WORK PACKAGE 3	<p>Chap. 1/ <u>How do the leading energy companies of the Mediterranean region anticipate the increase in the demand and the decrease in the CO₂ intensity of the primary energy production from fossil?</u></p> <p>Discussions based on "terms of references - annex 6" included in the meeting document.</p> <p>OME confirmed its leadership to carry out the work corresponding to that package. The chapter aims at providing a picture of the situation and of different possible options for the future. In that context, the coal is most certainly an important issue. It should also show what to learn from demonstration projects and existing experiences. Apart from energy efficiency (industry, building), renewable and transport, the main key point to be treated in this chapter is the power generation; it includes the possible switch of coal to gas and it could be of high interest to get scenarios showing differences in CO₂ abatement. Regarding carbon capture and storage (CCS), Algeria</p>	OME

	STRUCTURE OF THE STUDY	Partners and Work package leader
	<p>could be a world leader; Algeria and Libya are serious competitors to enter this market. A short picture of what could be the international trade of carbon (by boat for example) could positively complete the report.</p> <p>As an infrastructure with a major impact on the energy development in the region, the Med ring electricity network could be explained in this chapter.</p> <p>Participants advises to treat this topic with all necessary care; The chapter should not provide a message of full and certain positive economic opportunity regarding CCS. It should not be an incentive participating to an over reaction, as we see it at present time in the EU with bio energy. The chapter should well include environmental concerns and uncertainties related to that activity; it should comprise an analysis of risk for aggravation of other problems when implementing the activity.</p>	
WORK PACKAGE 4	<p>Chap. 2/ <u>The cost of non action in the energy field for a few countries:</u></p> <p>Discussion based on document "first estimate for Morocco - annex 7" included in the meeting document.</p> <p>The first draft for Morocco is recognised as a very interesting one; Participants highlighted that it is a quite technical study; It is necessary to better explain the main conclusion and/or to complete the conclusion to do so; e.g.: putting forward the cost of non action and the emission reduction for each scenario.</p> <p>According to the participants, the possibility of extrapolating the results for Morocco, Tunisia and Egypt to the entire region seems to be risky and might be not advisable ; the main reason stems from the diversity of situation among the countries of the region.</p> <p>The picture for the region would be complete if Turkey was included in the study; Plan Bleu will study the possibility to carry out the same exercise for TR; but owing to calendar and budget reasons it will not be possible to integrate it in the present study .</p> <p>Decision:</p> <ul style="list-style-type: none"> - Plan Bleu will better use and formulate the results of this chapter to identify and communicate the few key messages to include it in the summary of the study. 	Institut de la Méditerranée
WORK PACKAGE 5	<p>Chap. 3/ <u>How to develop renewable energy and energy efficiency: experiences, development and policies in the Mediterranean</u></p> <p>Main advises are the following: Social considerations should make up part of the chapter; social benefit of EE and RE should be mentioned. The potential for employment in particular should be highlighted. The potential industrial dimension is also to be shown.</p> <p>It should also include information on carbon finance development in the region.</p> <p>EE and RE should be presented here as an economic strategy for the region. It should well explain inter linkage between public policy and private market development. The technological transfer issue should also feature.</p> <p>Lessons from experience in the North regarding economic tools and incentives for RE are useful; But one has to take into consideration that the situation is altogether different in the south; in particular fossil energy is highly subsidised.</p> <p>Centralised energy systems are considered as not being a solution for the future in the Mediterranean. Advantages and experiences of decentralised and small energy production systems for local consumption (no need of transportation) should be presented in the chapter.</p> <p>Nevertheless OME emphasizes that RE centralised system might be an opportunity for the region to benefit from a consumption at a national level, to export green electricity and to develop industry; Potential advantages provided by the under construction Med ring inter-connection should be also introduced in this chapter.</p> <p>Indicators and data: when doing benchmarking and rating, the analysis should provide</p>	ADEME Plan Bleu

	STRUCTURE OF THE STUDY	Partners and Work package leader
	<p>explanations standing behind figures; Decisions: - To complement information included in Plan Bleu national studies, OME will provide input for chapter 3 of part II including (i) a synthesis on electrical interconnexion issues and its potential for renewable energy (to be included in chapter 3 of Part II and/or in chapter 1 of part II), (ii) a summary of potential centralised renewable energy plants in the countries (to be included as a text box in chapter 3 of Part II) and (iii) a summary of financial mechanism issues for RE and EE (to be included as a text box in chapter 3 of Part II).</p>	
WORK PACKAGE 6 and 7	<p>Chap. 4/ <u>How much does the change of scenario toward a low carbon energy sector cost?</u> <i>a- Tunisian experience and estimate</i> <i>b- Egypt case study</i> Discussion based on "terms of reference content - annex 8" included in the meeting document.</p> <p>The idea of having a regional study including some more details about two countries is considered as a good one. Tunisia is a good model to study but it has its own particularity (quite large middle class with income level superior to many other southern Mediterranean countries...). Morocco, as well as Turkey, could also be a good case study, (see comment on work package 4).</p>	<p>ANME and a consultant to be selected</p> <p>Rafik Youssef GEORGY – Adel SOLIMAN Consultants/ NREA</p>
PART III	III- Vulnerability, resilience and adaptation of the energy development	
WORK PACKAGE 8	<p>Chap. 1/ <u>Resilience and adaptation of the energy sector (other than those regarding water and traditional biomass issues)</u></p> <p>It is proposed to dispatch information included in this work packaged into the Part I of the study where the impact of climate change is analysed and in work package 9 and 11. Extreme event impact on the energy sector should be included. A very few information and study are currently available (even for Europe).</p> <p>Decision: - Climate change impacts on the energy sector will be included in the Part I of the study; it will be dispatched between paragraph on economic impact by sector and physical impacts (to be decided/discussed)</p>	
WORK PACKAGE 9	<p>Chap. 2/ <u>Water, energy and climate change</u></p> <p>This work package will be composed of two activities: - A workshop organised in partnership with MEDITEP - A regional study focussing on energy and desalination issue</p> <p>Main advises received are: waste water treatment plant using energy produced with gas emissions of the plant (the plant being energy self-sufficient) could be analysed; the nuclear issue to desalinate is not to be ignored; re-use of water is also a key topic bio-fuel and water is to be studied with care (see also work package 10). The regional study should include a discussion on quality standard for water (the quality required for irrigation being not the same as for drinkable water). The important issue regarding desalination is the drinkable water. The study should analyse desalination coupling desalination/drinkable water/renewable/EE/ development and health issues.</p>	<p>Plan Bleu</p> <p>UMET</p>

	STRUCTURE OF THE STUDY	Partners and Work package leader
	See first draft programme of a workshop in partnership with UMET in annex 9.	
WORK PACKAGE 10	<p><u>Chap.3 /Forest, energy (biomass, bio fuel) and climate change</u></p> <p>Main advises and comments: A better management of forest is a key adaptation issue when dealing with/considering energy/biomass and climate change. Techniques, technology and know how transfer between countries constitute relevant aspects. The international energy agency has produced a report wherein good information should be found.</p> <p>The bio-fuel issue should be very cautiously analysed and dealt with. It should be analysed without forgetting the food security, water need, and land use sides; Lessons learnt from the most recent studies suggest that it probably would not be a good option and an efficient way to use the biomass in the case of the Southern part of the Mediterranean. A lot of uncertainty regarding food security and health are linked with bio-fuel.</p>	Plan Bleu
WORK PACKAGE 11	<p>Chap. 4/ Cross sectors challenges: cities/tourism/energy/building/transport</p> <p>See first draft programme of round tables to be organised in partnership with ENERGAIA in annex 10 included in the meeting document.</p> <p>No specific comments.</p>	Plan Bleu ADEME/ENERGAIA
PART V	IV- Synthesis and conclusion	
WORK PACKAGE 12	See comments included in II- General comments, remarks and decisions/ 2. Executive summary and key messages.	Plan Bleu Steering committee

IV. ANNEX - STRUCTURE OF THE STUDY DISCUSSED DURING THE MEETING

To meet the requirements specified in the terms of reference, it is proposed to structure the study in 4 parts, as follow:

Part I – Climate change in the Mediterranean: scientific knowledge and impacts

Work package 1 - Chap. 1/ The last results of climatology modelling for the Mediterranean and its impact on the natural environment.

Work package 2 - Chap. 2/ An overview of economic impacts of climate change in the Mediterranean

Part II – Mitigation of climate change: toward a low carbon energy sector

Work package 2bis - Chap. 0/ Green house gas emissions from energy in the Mediterranean economies: facts and figures

Work package 3 - Chap. 1/ How the lead energy companies of the Mediterranean region anticipate the increase of the demand and the decrease of the CO2 intensity of the primary energy production from fossil ?

Work package 4 - Chap. 2/ The cost of non action in the energy field for a few countries: how much does the energy business as usual scenario cost?

Work package 5 - Chap. 3/ How to develop renewable energy and energy efficiency: experiences, development and policies in the Mediterranean

Chap. 4/ How much does cost the change of scenario toward a low carbon energy sector?

a) Work package 6 - a. Tunisia

b) Work package 7 - b. Egypt

Part III- Vulnerability, resilience and adaptation of the energy sector

~~Work package 8 – Chap.1 /Resilience and adaptation of the energy sector~~

Work package 9 - Chap.2 /Water, energy and climate change

Work package 10 - Chap.3 /Forest, energy (biomass, bio fuel) and climate change

Work package 11 - Chap.4 /Cross cutting challenges: energy /tourism/cities

Work package 12 - ~~Concluding part~~ Executive Summary