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Combating Climate Change

International and EU activities relevant for EIA/SEA

Seminar on climate change in environmental impact assessment and strategic environmental assessment
Geneva, 24 November 2010

To combat Climate Change ...

John Holdren (former President of the American Association for the Advancement of Science, now President Obama science adviser):

- 'We basically have three choices:
mitigation, adaptation, and ... suffering.
- We're going to do some of each.
The question is what the mix is going to be.
- The more mitigation we do,
the less adaptation will be required,
and the less suffering there will be.'

IPCC findings

Unequivocal evidence that the Earth's climate is warming

- The average temperature is rising by around 0.2°C every 10 years. The decade 2000-2009 was the warmest since reliable records began in 1880
- Most of the warming is "very likely" to have been caused by anthropogenic increases in GHGs, in particular the burning of fossil fuels (coal, oil and gas) and the destruction of forests

Projections of future climate changes and their impacts

- Earth is likely to warm by a further 1.8°-4°C this century, and in the worst case by as much as 6.4°C, unless the world acts to cut GHG emissions.
- Man-made warming is causing discernible climatic and environmental changes, such as more frequent and intense extreme weather events, rising sea levels, and melting glaciers and polar ice

Responses

Mitigation

- Action to decrease the intensity in the GHG concentrations, either by reducing their sources or by increasing their sinks
- Many technologies are already available or likely to be so by 2030. Still, incentives and research are needed to improve performance and cut cost.

Adaptation

- Adjustments in natural and human systems in response to actual or expected climate change impacts, which moderate harm or exploit beneficial opportunities
- Indispensable complement to CC mitigation
- Some planned adaptation to climate change is occurring, but much more is needed to overall reduce vulnerability



Challenges

Climate data and knowledge

- Limited climate data coverage in some regions
- Coarse resolution of climate models, uncertainty in projections
- Knowledge about adaptation options is still sparse

Cross-cutting issue

Effective responses highly depend on

- institutional and organisational factors (process management, stakeholder participation, cooperative structures between different sectors, communities, regions and policy levels, political will and mandate)
- the people involved (their motivation, interests, knowledge, perceptions, competencies and the availability of leaders and facilitators)

International Climate Change regime

UNFCCC

- United Nations Framework Convention on Climate Change (UNFCCC) was agreed on 9 May 1992 and entered into force on 21 March 1994. It enjoys near universal membership, having been ratified by 192 states
- Overall objective (Article 2):
"to achieve ... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

International Climate Change regime

UNFCCC

Commitments (Article 4):

1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:
 - (f) *Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change;*

International Climate Change regime

Kyoto protocol

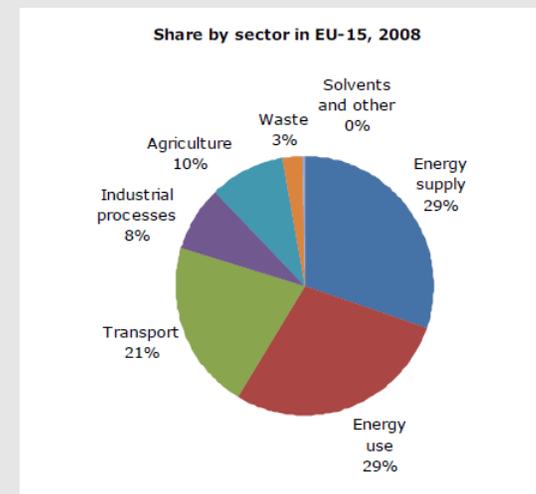
- sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions (on average five per cent against 1990 levels over the five-year period 2008-2012)
- requests countries to meet their targets primarily through national measures
- offers an additional means of meeting targets by way of three market-based mechanisms:
 - Emissions trading – known as “**the carbon market**”
 - **Clean development mechanism** (CDM)
 - **Joint implementation** (JI)
- shall assist countries in adapting to the adverse effects of climate change in facilitating techniques that can help increase resilience to CC impacts

International Climate Change regime

Example: Emission trends in the EU-15 for the main sectors

- Energy supply and use, and transport are the most important sectors, accounting for 79% of total EU-15 emissions in 2008
- Transport is responsible for 21% of total GHG emissions, agriculture for 10%, industrial processes for 8% and waste for 3%
- The decreases in energy, agriculture, industrial processes and waste has been partially offset by significant increases in the transport sector

[COM (2010): Report from the Commission to the European Parliament and the Council: Progress towards achieving the Kyoto objectives]



Climate Change framework EU

The "20-20-20" targets

- Reduction in EU GHG emissions of at least 20% below 1990 levels
- 20% of EU energy consumption to come from renewable resources
- 20% reduction in primary energy use compared with projected levels

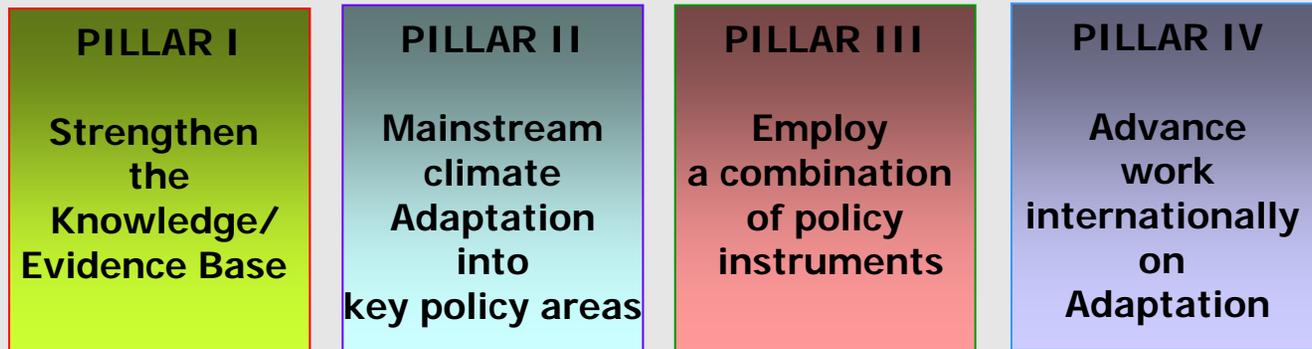
The climate and energy package

- agreed by the EP and Council in December 2008, became law in June 2009
- core of the package comprises four pieces of complementary legislation:
 - Revision and strengthening of the **Emissions Trading System (EU ETS)**
 - An '**Effort Sharing Decision**' governing emissions from sectors not covered by the EU ETS, such as transport, housing, agriculture and waste
 - Binding national **targets for renewable energy**
 - legal framework to promote the development and safe use of **carbon capture and storage (CCS)**

EU adaptation framework

White paper on adaptation to Climate Change

- presents the framework for adaptation measures and policies to reduce the European Union's vulnerability to the impacts of climate change
- adopts a phased approach:
 - Phase 1 (2009-2012) will lay the ground work for preparing a comprehensive EU adaptation strategy focusing on four pillars of action:



- Phase 2 shall implement the strategy, commencing in 2013

“Climate proofing” through EIA

EIA as a tool to facilitate successful “climate proofing”

- EIA is a well consolidated and publicly accepted process, project types subject to EIA are among the largest GHG emitters
- GHG emissions will contribute to climate change; the largest interrelated cumulative environmental effect to be assessed in EIA
- Consequences of a changing climate have the potential to lead to significant environmental effects on all other EIA topics – e.g. Population, Fauna, Soil, etc.
- Consideration of CC issues shall also aim to improve the resilience of the project being assessed, both to the anticipated negative impacts and positive opportunities of climate change

“Climate proofing” through SEA

SEA as a tool to facilitate successful “climate proofing”

- SEA is being adopted in a growing number of countries
- SEA provides an independent framework for assessing and managing a broad range of environmental risks, including climate change
- SEA is capable of addressing adaptation and mitigation as complementary aspects of climate change risk management
- The primary focus so far to evaluate the impact of a PPP on the environment (mitigation) needs to be extended to an estimate of potential impacts of environmental change on a PPP (adaptation), exploring CC scenarios
- The integration of climate change into strategic planning should lead to better informed, evidence-based PPs that are more sustainable in the context of a changing climate (Adaptive management approach)

Overview: Guidance - international

UN

- [OECD Task Team on Climate Change: Incorporating climate change impacts and adaptation in EIA: Opportunities and Challenges \(2010\):](#)
 - identifies potential entry points considering climate change impacts and adaptation in EIA
 - provides an analysis of selected guidance and project examples
- [OECD-DAC SEA TF: Guidance note - SEA and adaptation to climate change \(2008\):](#)
 - focuses on mainstreaming CC adaptation through SEA (mitigation is not addressed!)
 - shows how SEA can be used to assess how PPPs might mediate CC risks
- [CIDA: Climate Change Integration Tool/SEA applicability tool \(in progress\)](#)

Overview: Guidance - international

UN

- UNECE - Convention on the Protection and Use of Transboundary Watercourses and International Lakes: Guidance on Water and adaptation to Climate Change (2009):
 - provides a framework to develop step-by-step an adaptation strategy
 - (1) Establish the policy, legal and institutional framework
 - (2) Understand the vulnerability of society
 - (3) Develop, finance and implement an adaptation strategy
 - (4) Evaluate

- MER: Integrated Water Resources Management and Strategic Environmental Assessment - joining forces for climate proofing:
 - Perspective document for the 5th World Water Forum linking IWRM and SEA

Overview: Guidance - EU

EU

- DG ENV.: Guidance document No. 24 River Basin Management in a changing Climate (2009):
 - formulates guiding principles
 - includes advise on the role of the SEA process
- Tender procedure: DG ENV.: Practical guidance and recommendations for integrating climate change and biodiversity into EIA/SEA procedures:
 - should be based and designed within the framework given by the EIA and SEA Directives
 - should go beyond legal requirements, where appropriate
 - should draw extensively on good and innovative practices from EU Member States, as well as relevant experience from outside Europe, if applicable

Overview: National guidance

Canada

- [CEAA: Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners \(2003\):](#)
 - key information to address climate change considerations in EIA
 - includes methods to obtain and evaluate project's GHG emissions and impacts of climate change on a project
 - methodology to promote consistent approach
- [Nova Scotia's Climate Change Adaptation Initiative ClimAdapt: Practitioner's Guide to Incorporating Climate Change into the Environmental Impact Assessment Process \(2003\):](#)
 - emphasizes the incorporation of climate change considerations into the EIA process, with its inherent emphasis on the effects of the project on the environment
 - not dealing with GHG mitigation issues

Overview: National guidance

US

- Draft NEPA guidance on consideration of the effects of Climate Change and Greenhouse Gas Emissions (2010, under public review):
 - framework for identifying instances where potential GHG emissions or climate change impacts rise to a level of significance requiring “meaningful” consideration (“reference point” of 25.000 metric tons of direct CO₂-equivalent emissions)
 - NEPA process should incorporate consideration of both the impact of an agency action
 - on the environment and the impact of changing climate on that agency action

Overview: National guidance

UK

- IEMA principles:
 - on Climate Change Mitigation & EIA (2010)
 - on Climate Change Adaptation & EIA (Draft under public consultation)
- Environment Agency: Strategic Environmental Assessment and climate change: Guidance for practitioners (revised 2007):
 - highlights projected CC effects for the UK
 - guides consideration of CC issues for plans and programs in England and Wales
 - addresses the dual approach of mitigation and adaptation
- Countryside Council for Wales: Guidance Note on SEA & Climate Change (2007):
 - breaks down information of the UK guide for Wales, including CC projections, trends and impacts for Wales

Overview: National guidance

Scotland

- [The Scottish Government: Consideration of Climatic Factors within Strategic Environmental Assessment \(2010\):](#)
 - provides background information on CC projections for Scotland, trends and impacts
 - gives guidance on how to integrate CC mitigation and adaptation in the SEA steps
 - outlines further sources of information

NL

- [MER: The NCEA's recommendations on Climate Change in Environmental Assessment \(2009\):](#)
 - addresses both mitigation and adaptation, gives advice on which information NCEA requires
 - provides examples of adaptation measures by type of area

Further tools and guides

- [IUCN, SEI-US, IISD and Inter-cooperation: Community-based Risk Screening Tool \(CRiSTAL\):](#)
 - is a computer-based decision support tool
 - draws on the EIA and Sustainable Livelihoods Framework
 - aims to address the implications of climate change for project design and implementation at the community level
- [UKCIP Adaptation Wizard:](#) Open-source web-based tool
 - aims to help the user to understand CC and to integrate CC into decision-making
 - contains four steps: (1) impacts information, (2) quantification of risks, (3) decision support and planning, and (4) an adaptation strategy
- [URS: Adapting Energy, Transport and Water Infrastructure to the Long-term Impacts of Climate Change \(2010\):](#)
 - focuses on long-term risks (2030 to 2100)
 - sets out the need to consider impacts on design, build and operation
 - provides adaptation options

Further tools and guides

- [ESPACE Climate Change Impacts and Spatial Planning Decision Support Guidance \(2008\):](#)
 - provides series of tools for climate change risk assessment
 - defines what adaptation could mean for spatial planning, and how the impacts of climate change could influence typical planning constraints and opportunities
- [MER: Climate Change in Water Management \(2010\):](#)
 - summarizes an inventory of methods and tools (incl. SEA) for assessing CC impacts, vulnerability assessment and adaptation options focusing on the water sector
 - also supposed be used for SEA practitioners to integrate climate change in SEA for PPPs in the water sector
- [European Topic Centre on Air and Climate Change: Guiding Principles for adaptation to Climate Change in Europe \(2010\):](#)
 - presents a set of guiding principles for good adaptation
 - identifies specific elements to support successful implementation

I AIA special symposium on Climate Change and Impact Assessment

Aalborg, Denmark - 25-26 October 2010

- EIA/SEA community at the beginning of incorporating CC
- EIA/SEA need to address both mitigation and adaptation:
 - mitigation: easy to integrate, PPP impacts on the environment
 - adaptation: requires reverse perception: impact of the environment on the PPP
- Various guidance exist, overlap, do not provide clear advice for practitioners
- Need to share experience and good practice
- Need to link to and exchange with climate change community
- Important to communicate and convince that EIA/SEA as assessment tools are well suited to take CC into account and prevent that new parallel assessments come into play



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