



FEEM research

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Introduction to FEEM

The Fondazione Eni Enrico Mattei (FEEM) is a nonprofit, nonpartisan research institution devoted to the study of sustainable development and global governance. Officially recognized by the President of the Italian Republic in 1989 and in full operation since 1990, FEEM has grown to become a leading research centre, providing timely and objective analysis on a wide range of environmental, energy and global economic issues.

FEEM's mission is to improve – through research – the rigor, credibility and quality of decision making in public and private spheres. This goal is achieved by creating an international and multidisciplinary network of researchers working on innovative research, by the provision and promotion of training in specialized areas of research, by the dissemination of results through wide range of outreach activities, and by direct delivery to policy makers via participation in various institutional fora.

FEEM research is structured around three broad research programmes:
Sustainable Development, Institutions and Markets, Global Challenges

FEEM LCS-related research

The Sustainable Development Research programme addresses the following research topics, most of which directly relevant to LCS research:

Climate change modelling and policy

Coalitions and networks for international environmental agreements

Economics of biodiversity

Environmental evaluation

Forestry, land-use and land cover change

International carbon markets and the financing of climate policy

Sustainable energy

Sustainability indicators

Water management

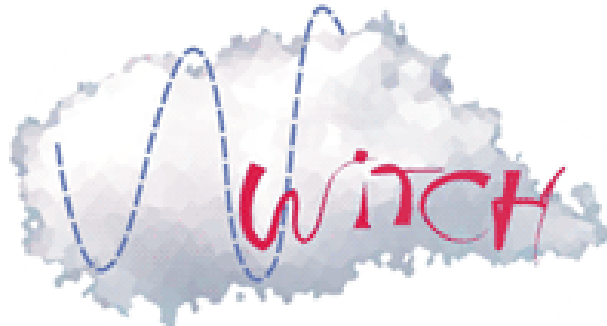
FEEM research topics key to LCS research (1)

Climate change modelling & policies : FEEM researchers have developed novel modelling tools for the economic analysis of policies aimed at climate change control, addressing world-wide vulnerability, mitigation, impacts and adaptation to climate change. Within the Euro-Mediterranean Centre for Climate Change (CMCC), FEEM furthermore contributes to the development of a fully integrated analytical framework for climate control policies coupling economic and environmental models

Mitigation → FEEM is positioned at the forefront of international research through the use of the in-house developed energy-economy-climate model **WITCH, a dynamic integrated model of the world economy that provides normative information on the optimal response of the economic system to climate change damage and policy.** The model has already been applied to provide an economic assessment of specific mitigation technologies, innovation policies, and environmental externalities. Ongoing work focuses on integrating technological and education policies, and on the role of uncertainty in climate policy.

Impacts & adaptation → On the impact side FEEM is currently investigating the general equilibrium effects of climate change on the world economy, through the use of **ICES, a recursive-dynamic computable general equilibrium (CGE) model** developed by FEEM researchers. FEEM research has been able to assess a wide set of climate change impacts, including sea level rise, impacts on health, tourism, agricultural productivity, intensity and frequency of extreme events and energy demand.

FEEM models



A World Induced Technical Change Hybrid Model

WITCH

World Induced Technical
Change Hybrid model

<http://www.feem-web.it/witch/>



ICES

Intertemporal Computable
Equilibrium System

<http://www.feem-web.it/ices/>

FEEM research topics key to LCS research (2)

Forestry, land-use and land cover change: modeling exercises to investigate the socio- economic and environmental effects of land-use change, development of bio-fuels, and the integration of reducing emissions from deforestation and forest degradation (REDD) in the carbon market, with the aim to provide support to policies on key issues for the design of future climate agreements.

Sustainable energy: economic analysis of externalities in the energy sector, of renewable energy sources (in particular bio-energy) and of the role of innovation in energy technologies. In synergy with climate change research, this research field addresses security of energy supply and innovation, and the relationships between energy use and technological change, including learning by doing and R&D, and international spillovers.

Sustainability indicators: attempts to provide the qualitative and quantitative assessments necessary for linking key well-being and sustainability indicators with mainstream economic indicators, providing much needed insight into the synergies and trade-offs between economic growth and environmental sustainability. Qualitative assessment includes the evaluation of key indicators and indicators efforts, as well as the evaluation of institutional needs and opportunities. Quantitative work indeed focuses on the improvement of quantitative models linking indicators, and on the assessment of costs and benefits of reaching sustainability targets.

International carbon markets and the financing of climate policy: analysis of carbon price dynamics both in the short and long term, with the use of financial modelling techniques. FEEM research addresses in particular the analysis of different carbon market features and their implications in setting up a future global international emissions trading mechanism.

FEEM relevant projects

CIRCE - Climate Change and Impact Research: the Mediterranean Environment, *EC, FP6*

ClimateCost - Full Costs of Climate Change, *EC, FP7*

CMCC - Centro Euro-Mediterraneo per i Cambiamenti Climatici,

ENSEMBLES -ENSEMBLE-based Predictions of Climate Changes and their Impacts, *EC, FP6*

PESETA - Projections of Economic Impacts of Climate Change in Sectors of Europe Based on Bottom-up Analysis, *EC, DG ENV*

TOCSIN - Technology-Oriented Cooperation and Strategies in India and China: Reinforcing the EU dialogue with Developing Countries on Climate Change Mitigation, *EC, FP6*

VECTOR 2 - Vulnerability to Climate Change of Costal Areas and Marine Ecosystems, and their Role in the Mediterranean Carbon Cycle, *MUR, MEF, MATTM*

IFCG - International Forum on Climate Governance, *MATTM*

FEEM relevant events 2009

Milan, 13 March 2009- Workshop on “**Carbon Market and flexible mechanisms: legal, technical and economic issues**”, organized by FEEM in cooperation with Linklaters and Amec

Venice, 2-3 April 2009 - Workshop on “**The Economics of Adaptation to Climate Change**”, organized by ICCG, FEEM in cooperation with OECD, Paris

Venice, 4 April 2009 – International Conference on “**Financial Crisis and Climate Policy. A Science-Policy Debate**”, organized by FEEM, ECF and ECLT

Venice, 15-16 June 2009 – “**Coalitions for Climate Cooperation. A Game-Theoretic Analysis of Post 2012 Climate Policy**”, organized by ICCG, FEEM and ETH Zürich

Venice, 17-19 June 2009 - **2009 International Energy Workshop (IEW)**, organised by ICCG, CMCC and FEEM

Venice, 5-11 July 2009- **2009 Summer School on Economics, Transports and the Environment**, organised by EAERE, FEEM, VIU

Venice, 13-19 July 2009 - **Scoping Meeting 5th AR-IPCC**, organized by FEEM-CMCC in cooperation with IPCC and MATTM

Venice, 19-20 October 2009 - Workshop on “**Fairness and the Commons Socio-economic Strategies and Resource Dynamics**”, organized by FEEM, CMCC and PEI

Venice, 9-10 November 2009 - Workshop on “**The Finance of Climate Change**”, organized by FEEM, RFF and Université of Paris Dauphine

FEEM main expectations from the LCS-RNet

Involvement of international research institutes from key players in the design of future climate and energy agreements

Exchange of knowledge and main scientific findings on research issues key to LCS

Adopt a common definition of LCS, establishing reachable targets

Design a common strategy to increase awareness on LCS among key stakeholders and the public at large. At a later stage get other key stakeholders outside the scientific community involved in the network.

Foster a common vision of the main sectoral issues to be addressed in order to reach the target, and of the necessary policies to be implemented. The common vision will encompass the social, economic and technical changes needed to respond to stricter climate change and energy policies. Both quantitative and qualitative assessments of the envisaged policies on current trends in the social, economic and environmental systems will be considered, to enhance harmonization of future policies. Methodologies and results will be compared. Synergies and trade-offs between policies and across regions, including effects on welfare, competitiveness and the environment, will be identified.

FEEM view on LCS definition and targets

A LCS is aware of the 'carbon-footprint' generated by its socio-economic development path

A LCS must act within a commonly agreed GHGs stabilization target, involving developing regions

Main efforts to achieve that target will encompass an integrated assessment of climate and energy policies on the regional and world societies and economies, addressing current trends and changes in the socio-economic systems, as well as improvements in energy efficiency and technological innovation (including CO₂ absorption and storage).



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