

## LIST OF PROJECTS LED OR CO-LED

### ENTRACTE

Title: Economic iNsTRuments to Achieve Climate Targets in Europe

Duration: September 2012 until August 2015

Budget: 344662.0 € funded by EU

Description: Climate policy-making in today's world is complex. Transaction and enforcement costs are significant and affect the effectiveness and efficiency of policy instruments. Developments in related policy fields, such as energy policy, may influence the performance of climate policy instruments, while path dependency could lead to a lock-in on carbon intensive technological paths and hinder the penetration of low carbon technologies. European climate policies may impact upon the competitiveness of European producers, which, in turn, may affect both the policies' environmental effectiveness and economic efficiency. Issues of equity are also likely to affect the political feasibility of a particular policy instrument. A mix of policies (or, in other words, a policy portfolio) can be developed that comprehensively addresses these complexities whilst realising the overarching objectives. Yet, in developing this policy portfolio we must acknowledge the interdependencies between potential policy instruments. The overarching objective of the ENTR'ACTE research project is to assess, understand, and model the EU's current, as well as future, climate policy portfolios in light of the key interdependencies between policy instruments and thereby identify the optimal mix of policies needed to achieve legislated (i.e. 2020) and aspirational (i.e. 2050) targets of GHG emission reductions. The ENTR'ACTE project has four goals: First, to coherently assess the most important climate policy instruments with the full range of economic research methods. Second, to gain a deeper understanding of the interactions between multiple climate policy instruments. Third, to provide an analysis that takes into account the barriers to the implementation of climate policy instruments. Fourth, to identify mixes of climate policy instruments that provide an effective, efficient, and feasible overall climate policy. PIK is the work package leader of WP5, it will act as task leader for WP2 Task 2.3 Assessment of sectorial and regional expansion and contribute research to WP3 and WP1.

### Expansion of Renewable Energy

Title: Cost of expanding Renewable Energy

Duration: February to June 2012

Budget: 44,536 € funded by German Federal Environment Agency (UBA)

Description: Meta-analysis of studies on ambitious deployment of renewable energies on a global, European and German scale. This study provides insights for modeling a 100% renewable energy scenario.

### Green Paradox

Title: Assessing the Green Paradox

Duration: October 2011 until September 2014

Budget: 500.000 € (249.818 € for PIK) funded by German Federal Ministry on Education and Research

Description: Do the fundamental forces of fossil energy markets counteract second-best climate policies such that near-term CO<sub>2</sub> emissions increase and mitigation costs escalate? This project assesses the significance of the Green Paradox argument by a) extending economic theory to clearly identify transmission channels of the Green Paradox and by b) quantifying these effects within a comprehensive numeric modelling framework. It includes an explicit consideration of reactions of resource suppliers to climate policies, the collection and inclusion of data on fossil fuel markets as well as costs of fossil fuel extraction and transportation, and numerical scenarios using the energy-economy-climate model REMIND.

## LIMITS

Title: Low climate IMpact scenarios and the Implications of required Tight emission control Strategies

Duration: October 2011 until September 2014

Budget: 3.5 Mio € (573,000 € for PIK) funded by EU

Description: The LIMITS Project explores policy instruments to implement emission reductions in a set of major economies using large scale integrated assessment models as well as assessments of existing policy instruments and possible enhancements. Within this project, PIK will focus on reviewing climate policy-relevant market failures in major economies and beyond, as well as the available climate and energy policy instruments corresponding to these market failures, and a modeling assessment of selected 2nd best policies.

## CLiPoN

Title: Climate Policy and the Growth Pattern of Nations

Duration: September 2011 until August 2014

Budget: 318,799 € funded by German Federal Ministry on Education and Research

Description: Does climate policy hinder economic growth? The literature on climate economics provides indication that climate stabilization goals can be achieved with moderate GDP losses, but this depends on a number of assumptions, e.g. universal climate policy regimes and world-wide availability of low-cost carbon free technologies. Technological progress and technology diffusion play a crucial role. Still it is unclear whether technological progress and climate policy-induced technology diffusion support convergence or divergence of economic growth in different world regions.

## **CREW**

Title: Climate Policy in a Reluctant World

Duration: September 2011 until August 2014

Budget: 430 000 € funded by German Federal Ministry on Education and Research

Description: Setting out with the observation that a global regime of climate change mitigation seems far away, this project focuses on three major research questions: (1) Why has cooperation failed so far?; (2) How can we address the problem of climate change in a second-best world without global cooperation? and (3) How can we facilitate global cooperation so that one may move from a second-best world without global cooperation to a first-best world with cooperation?

## **Global IQ**

Title: Impact quantification of global changes

Duration: August 2011 until July 2014

Budget: 2.6 million € (397.380 € for PIK) funded by EU

Description: Global-IQ is a project with 10 partners from different European countries. It aims to advance the quantification of socio-economic impacts of global changes at global, European and regional scale. This includes but is not limited to climate change. Other global challenges which will be explored include the infrastructure and transportation sector, migration and international trade. Besides impacts also possible adaptation strategies will be studied and the final goal is to evaluate total costs and the optimal mix of adaptation and mitigation against global changes. This will be achieved utilizing a large set of state-of-the-art modeling tools. PIK contributes the ReMIND-R-MAgPIE system to the project. Key sectors of research will be agriculture, forestry, water, energy, EU competitiveness, labor and international trade. Theoretical innovations concerning discounting, risk and ambiguity will also be developed and tested numerically with models.

## **Klimapolitik**

Title: Promotionsvorhaben: Kooperative Klimapolitik nach Kopenhagen

Duration: June 2011 until May 2014

Budget: 85000.0 € funded by Kurt Lange Stiftung

Description: Quantitative Analyse der ökonomischen Anreize der wichtigen Akteure bei den internationalen Klimaverhandlungen. Besonderes Gewicht soll auf Interessenkonflikten zwischen den Akteuren liegen, die unter anderem in unterschiedlicher Ausstattung mit Ressourcen als auch in der ökonomischen Situation und Entwicklung begründet sind. Eine weitere Frage ist die des Anreiz zum Trittbrettfahrerverhalten. Analyse spieltheoretischer Klimakooperationsmodelle. Promotionsvorhaben am PIK.

## **Scenarios on Nuclear Phase-Out Friedrich-Ebert Stiftung**

Title: Energy scenarios for German nuclear phase-out

Duration: May until June 2011

Budget: 100,000 € in total 35,000 € for PIK funded by Friedrich-Ebert Stiftung

An expertise on German energy scenarios and political options regarding nuclear power phase-out by the Potsdam Institute for Climate Impact Research (PIK) and Leipzig University.

## **Energieeffizienz**

Title: Promotionsvorhaben: Die Rolle nachfrageseitiger Energieeffizienz im Kontext kostenoptimaler Klimaschutzstrategien

Duration: April 2011 until March 2014

Budget: 85000.0 € funded by Kurt Lange Stiftung

Description: Gegenstand dieses Promotionsprojektes ist die Verbesserung der Darstellung von Energienachfrage im integrierten Ökonomie-Klima-Modell REMIND des PIK. Konkret sollen folgende Innovationen in REMIND eingeführt werden: Representation von Altersstruktur und Sanierungspotential im Gebäudebestand, Wechselwirkung zwischen Infrastrukturentwicklung und Energieeffizienz, systematische Unterscheidung zwischen produktionsbasiertem Energieverbrauch und konsumbasierter Energienachfrage, Einführung von Energiedienstleistungen (z.B. Tonnenkilometer als maßgebliche Größe für die makroökonomische Nachfrage nach Frachttransport).

## **AMPERE**

Title: Assessment of Climate Change Mitigation Pathways and Evaluation of the Robustness of Mitigation Cost Estimates

Duration: February 2011 until January 2014

Budget: 4.25 Mio. € (706,680 € for PIK) funded by EU

Description: The project AMPERE is aiming for a broad exploration of mitigation pathways and associated mitigation costs under various real world limitations, while at the same time generating a better understanding about the differences across models, and the relation to historical trends. Uncertainties about the costs of mitigation originate from the entire causal chain ranging from economic activity, to emissions and related technologies, and the response of the carbon cycle and climate system to greenhouse gas emissions. AMPERE will use a sizable ensemble of state-of-the-art energy-economy and integrated assessment models to analyse mitigation pathways and associated mitigation costs in a series of multi-model intercomparisons. A consortium of 21 international partners works on AMPERE.

## **UBA 2?**

Title: Szenarien zur Darstellung der Machbarkeit von 2 Grad-Emissionsminderungsszenarien - Technologien, Kosten, Potenziale - international/regional

Duration: January 2011 until March 2013

Budget: 157388.0 € funded by UBA - Umweltbundesamt

Description: Innerhalb dieses Projekts werden ambitionierte globale sozioökonomische und technische Klimaschutzszenarien entwickelt und modelliert, die mit dem 2°C-Ziel kompatibel sind. Zusätzlich werden bestehende Szenariendatenbanken ausgewertet, um das Verständnis von maßgeblichen Einflussfaktoren für die Erreichbarkeit des 2°-Ziels zu erweitern. Die Ergebnisse dieses Projekts sollen dem Umweltbundesamt ermöglichen, Implikationen der Modellergebnisse für die internationale Klimapolitik abzuleiten. Kernfragen des Projekts sind: Welche Mindestanforderungen an Technologieverfügbarkeit und globaler Kooperation sind zur Einhaltung des 2°C-Ziels erforderlich? Wie unterscheiden sich die Kosten der Zielerreichung im Idealfall (volle Technologieverfügbarkeit und frühe Einführung ambitionierter globaler Klimaschutzpolitik) von den Kosten in Situationen mit eingeschränkter Technologieverfügbarkeit und / oder fragmentierter Klimaschutzpolitik? Wie sieht der Zuschnitt der regionalen Vermeidungskosten aus und welchen Einfluss hat der Verteilungsschlüssel von Emissionsrechten auf die regionale Kostenverteilung? Mit welchen Klimaschutzanforderungen und Kosten sind insbesondere Schlüsselregionen für den Klimaschutz (USA, EU27, China, Indien) konfrontiert?

## **ERMITAGE RD3**

Title: Enhancing Robustness and Model Integration for The Assessment of Global Environmental Change

Duration: December 2010 until November 2013

Budget: 413101.0 € funded by EU - European Union

Description: This international project aims to advance the integration of existing models representing the global economy and climate change mitigation strategies, models representing climate change impacts, and models representing agriculture, hydrology and land use. The resultant integrated modelling systems will be used to produce consistent future world scenarios that respect common sustainability goals.

## **EntDekEn**

Title: Klimaschutz, Entwicklung und Gerechtigkeit: Dekarbonisierung in Entwicklungs- und Schwellenländern

Duration: August 2010 until July 2013

Budget: 500,000 € funded by BMBF

Description: Climate change and the fight against global poverty are two challenges for this century that cannot be seen separately. The challenge is to find solutions between promoting economic growth (and thus burdening the climate) on the one hand, and forgoing economic growth (and thus burdening the poor) on the other. To meet this challenge new pathways for low carbon development will be identified.

### **VOLANTE - RD3**

Title: Visions of land use transitions in Europe

Duration: January 2010 until April 2015

Budget: 170463.0 € funded by EU

Description: VOLANTE will provide an interdisciplinary scientific basis to inform land use and natural resource management policies and decision-making. The overarching aims of the project are to design new methodologies and integrated models to analyse human-environment interactions, feedbacks in land use systems, hotspots of land use transitions and identify critical thresholds in land system dynamics. Coupling of MagPIE and REMIND, analysis of bioenergy, PIK is co-leader of Module A (assessment of tools to evaluate land use change across scales), coordinates WP A-3 (Integrated top-down assessment) and contributes to WP A-1, A-4, V-1 and V-3.

### **GLUES- RD3**

Title: Globale Abschätzung der Auswirkungen von Landnutzungsänderungen auf Treibhausgasemissionen und Ökosystemare Dienstleistungen - Klima- und Landnutzungsszenarien

Duration: January 2010 until December 2014

Budget: 2759522.0 € funded by BMBF

Description: Together with colleagues from Research Domain I and II we are working on part 2 of the GLUES project: climate and landuse scenarios.

### **Economy of an integrated and long-term climate and energy policy**

Title: WGL Initiative for Research and Innovation, "ZEW Pakt"

Duration: January 2010 until December 2012

Budget: 325 000 €

Description: Within this project, aspects of an integrated and long-term energy policy are examined from the economic point of view, i. e. considering their macroeconomic costs and benefits. The work focuses on three topics: (i) Assessment questions on benefits and costs of climate policy; (ii) Interdependencies between climate and energy policy and (iii) Further development of international agreements on climate policy.

## **RoSE**

Title: Roadmaps towards Sustainable Energy Futures

Duration: January 2010 until December 2012

Budget: A total of 1,170,000 € (545,000€ for PIK) funded by Stiftung Mercator

Description: In cooperation with FEEM in Italy, JGCR Institute in the USA, ERI and the Tsinghua University in China PIK scientists set up a model-based analysis of the economy of climate policies targeting at carbon dioxide stabilization at 450 and 550 ppm. The aim of this project is to provide a portfolio of roadmaps for establishing sustainable energy systems that also shows options for ambitious aims in climate policy.

## **EuropeAid**

Title: Climate policy outreach on integrated assessment modeling

Duration: January 2010 - December 2012

Budget: A total of 500,000 € (70,500 € for PIK) funded by the European Commission

Description: The overarching objective of this project is that of improving modeling capacity in developing countries and of advancing the dialogue among modelers and with policy-makers, both in developing and developed countries.

## **PROGRESS**

Title: Potsdamer Forschungs- und Technologieverbund zu Naturgefahren, Klimawandel und Nachhaltigkeit (Progress), Teilprojekt D1: Systemanalytische Ansätze in der Risikoforschung

Duration: November 2009 until October 2014

Budget: 193447.0 € funded by BMBF

Description: The research cluster is part of the "Top Level Research and Innovation Programm" of the Federal Ministry for Education and Research. The project deals with a systematic analysis of city systems, criteria for risk resilient infrastructure, information transfer, and the development of new tools for decision making. NSP will lead the subproject/WP D1 "Systemanalytische Ansätze in der Risikoforschung"



## **GTZ Post-Copenhagen**

Title: Forum on Economics of Climate Change - Post-Copenhagen

Duration: December 2009 - March 2010

Budget: 10,000 € funded by the GTZ

Description: PIK scientists are supporting their Chinese partners to prepare and arrange a conference with European and Chinese scientists and politicians in March 2010 in Beijing. Subject will be the COP15 in Copenhagen and next steps for the international science community.

## **CITIES**

Title: Car Industry, road Transport and an International Emission trading Scheme - policy options

Duration: November 2009 until December 2010

Budget: A total of 107,000 € (80.000 € for PIK) funded by BMW

Description: In cooperation with the TU, PIK scientists investigate the potential that an upstream cap-and-trade mechanism for transport fuels with potentially sectoral and regional linking offers for the decarbonisation of road transport. Emphasis shall be on the potential to provide an international level playing field that is economically efficient in achieving environmental targets, while accounting for social considerations, political feasibility and robustness of the instrument(s). Specifically, a consistent regulatory or market-based approach on greenhouse gas emissions enables fair competition between technologies but also between car manufacturers currently facing varying regulations.

## **Learning Rates**

Title: Learning Rates of Low Carbon Technologies

Duration: November 2009 - March 2010

Budget: A total of 90,000 € (40,000 € for PIK) funded by EU

Description: In cooperation with Ecofys, PIK scientists explore how low carbon technology costs can further decrease over time and what factors contribute to this.

## **GTZ Synthesebericht**

Title: Forum on Economics of Climate Change - Synthesebericht

Duration: November - December 2009



Budget: 30,000 € funded by the GTZ

Description: In this project, PIK researchers teamed up with researchers from the Chinese Economists 50 Forum and the Stockholm Environment Institute to explore barriers and opportunities of a low-carbon development pathway for China. The research also details on key economic instruments, policies and institutions.

## **SOER 2010**

Title: Europäische Vulnerabilitätskartierung für den SOER 2010

Duration: July 2009 until December 2009

Budget: 39,911 € for PIK, 9,300 € for RD III; funded by Umweltbundesamt (UBA)

Description: This project is an analysis of the different concepts and ways of interpreting vulnerability, a review of the various (aggregated) vulnerability indices and methods used to develop them in recent studies such as by PIK (regional climate vulnerability assessment for North-Rhine Westphalia), ESPON (The Spatial Effects and Management of Natural and Technological Hazards in Europe) and the European Commission (DG REGIO 'Regions 2020' study at NUTS2/3 level, if possible a comparison of existing national indices and an analysis of advantages and shortcomings of developing and using aggregated indices.

## **ENCI-LowCarb**

Title: European Network engaging Civil society in Low Carbon scenarios

Duration: April 2009 until October 2011

Budget: 110,000 € funded by EU

Description: The overall aim of ENCI-LowCarb is to engage civil society in research on low carbon scenarios. This will be achieved by creating a European network related to the factor 4 composed by Civil Society Organisations and research institutes and elaborating two national studies (France and Germany) based on the confrontation between climate policies of low carbon scenarios and civil society organisations.

## **Wissenschaftlertausch PIK-Beijing**

Title: Wissenschaftlertausch PIK-Beijing

Duration: April 2009 until September 2009

Budget: 25,000 € funded by the Mercator Foundation

Description: This project funds the exchange of scientists from PIK and Tsinghua University in Beijing. In cooperation, the scientists assess how much China is being affected by global warming and climate change, what the consequences are and what can be done to encourage China to enlarge efforts in the mitigation of climate change.

### **Kosten- und Modellvergleich langfristiger Klimaschutzpfade**

Title: Kosten- und Modellvergleich langfristiger Klimaschutzpfade

Duration: March 2009 until December 2010

Budget: 130,000 € funded by Umweltbundesamt (UBA)

Description: In cooperation with the Wuppertal Institut, PIK scientists assess long-term climate policy options - until 2050 - in this project. Different scenarios will show what the results of various options in international climate policy are.

### **China Klimapolitik**

Title: China und die globale Klimapolitik: Perspektiven und Herausforderungen

Duration: February 2009 until September 2009

Budget: 17,000 € funded by Gesellschaft für Technische Zusammenarbeit (GTZ)

Description: PIK scientists support and prepare a high rank discussion event with the topic "China und die globale Klimapolitik: Perspektiven und Herausforderungen" in September 2009 in Beijing and provide consulting in the preparation of new GTZ activities in the area of Economics of Climate Change.

### **Growth and Sustainability**

Title: Growth and Sustainability - Towards a Global Green Recovery - recommendations for immediate G20 action

Duration: February/March 2009

Budget: 55,000 € funded by Auswärtiges Amt

Description: Prepared on behalf of the German Foreign Office as an input for the G20 London Summit 2009, this report analysed the composition of recovery programmes initiated by G20 members. It argued why more funds need to be allocated to projects which further the transition towards a low-carbon world economy and identified seven strategic areas for 'green' fiscal measures.

## **Bio Energy Planet**

Title: Auswirkung weltweit expandierter Biomasse-Nutzung auf Ökonomie, Klima und Biodiversität der Erde

Duration: January 2009 until December 2011

Budget: A total of 950,000 € for PIK

Description: In cooperation with RD I and RD II, we explore the impact of a worldwide extension of bio energy use on economy, climate and biodiversity of the world.

## **China Economics of Climate Change**

Title: China Economics of Climate Change - towards a low carbon economy

Duration: October 2008 until April 2009

Budget: 100,000 € funded by the Stockholm Environment Institute (SEI)

Description: The research in this projects focuses on taxation instruments to reach greenhouse gas (GHG) emissions reductions including a comparison with quantity instruments such as emission allowances, work out key design features for domestic emissions trading systems, summarize the existing experience with the European Union ETS and outline lessons learned for the design of future trading schemes e. g. in China and to explore different options for constructing an environmental effective, economically efficient and equitable global carbon market as part of a global deal on mitigating climate change. Research partners are SEI and Tsinghua University.

## **ECOFYS**

Title: Recent scientific findings on climate change: what is new since the finalisation of the IPCC fourth assessment report

Duration: August/September 2008

Budget: A total of 25,000 € (12,500 € for PIK) funded by the European Commission

Description: Researchers from PIK and Ecofys, who were involved in the 4<sup>th</sup> Assessment Report of the IPCC, agree that the extensive review process of the AR4 did not allow for recent developments in climate science to be taken into account in the AR4. The project team is providing the European Commission with assistance on an update of the scientific knowledge developed since the publication of the 4<sup>th</sup> Assessment Report.

## **IPPC-TSU**

Title: Technical Support Unit (TSU) für den Co-Vorsitzenden der Arbeitsgruppe III des Weltklimarates IPCC

Duration: September 2008 until September 2015

Budget: 5985440.0 € funded by BMBF

Description: As part of the IPCC, Working Group III (WGIII) is charged to assess available information on the science of climate change, in particular that arising from human activities. In performing its assessments the WGIII is concerned with the scientific, technical, environmental, and economic and social aspects of mitigation of climate change. The WG III Bureau consists of three co-chairs and six vice chairs, supported by the Technical Support Unit (TSU). Coordination of WGIII Inputs to IPCC Assessments. PIK is host of the TSU.

### **Regionale Emissionshandelssysteme**

Title: Voraussetzungen zur Verknüpfung von regionalen Emissionshandelssystemen

Duration: October 2007 until December 2007

Budget: 20,000 € funded by the Federal Foreign Office of Germany

Description: The project investigates the design aspects and institutional features that are crucial for linking the EU ETS to regional emissions trading schemes in California, Australia, New Zealand and the RGGI area. The study also carries out a comparative analysis of regional energy systems in order to gain a qualitative assessment of mitigation costs and potential benefits of linking. Finally, it defines potential duties, responsibilities and a working programme for ICAP, the International Carbon Partnership.

### **Kosteneffizienter Ausbau der Erneuerbaren Energien**

Title: Kosteneffizienter Ausbau der Erneuerbaren Energien

Duration: October 2007 until September 2010

Budget: A total of 380,000 € (180,000 € for PIK) funded by Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU)

Description: Together with the Technische Universität Berlin, PIK investigates how a further implementation of renewable energies might help mitigating climate change and secure the world's energy supply in the future.

### **RECIPE**

Title: Report on Energy and Climate Policies in Europe

Duration: October 2007 until September 2009

Budget: A total of 500,000 € funded by Allianz and WWF

Description: In this project, PIK and its project partners CIRED and CMCC are working on a European Stern Review. RECIPE investigates the energy and climate policies necessary to reach the 2-degree-target. Policy instruments, investment options and necessary steps for the critical industries are being investigated.

### **Klimawandel und weltweite Armut**

Title: Klimawandel und weltweite Armut: Klimapolitik als Baustein einer gerechten Globalisierung und nachhaltigen Armutsbekämpfung

Duration: June 2007 - May 2010

Budget: 520,000 € funded by Misereor and MunichRe Foundation

Description: The main aim of the project is to study connections and interactions between the avoidance of dangerous climate change and global poverty from an interdisciplinary perspective. The basis for the study is an analysis of the consequences of climate change for developing nations and especially for the poor both globally and in particular regions. The analysis will concentrate on certain key problem areas in which climate change and the poverty question are particularly closely interwoven: the security of food resources, energy supply and water availability.

### **ALICE**

Title: Akteurshandeln und langfristige Investitionsentscheidungen im Klimaschutz

Duration: March 2007 - May 2010

Budget: 550,000 € (295,000 € for PIK) funded by BMBF

Description: The project aims at exploring the impact of long-term investment decisions on mitigation costs and mitigation strategies. Within this project, investment decisions are analyzed at three levels. At the first level, stylized facts of investment decisions within the electricity market will be explored and validated. At a second level, an electricity market model will be designed in order to reproduce the stylized facts of the electricity market model. Based insights of behaviour economics, the impact formation of long-term expectations on the choice of technologies will be assessed in this type of a partial equilibrium model. At a third level, these insights of technological choice will be incorporated in the model REMIND comprising an energy system model and a growth model. It will be used to explore the impacts of expectation formation on mitigation costs and mitigation strategies. Within stakeholder dialogues, the model results will be used for checking the plausibility of the results and for further refinements. In cooperation with IIASA and the University Oldenburg.

### **Globaler CO<sub>2</sub> Markt**

Title: Wege zu einem globalen CO<sub>2</sub> Markt (led by Ottmar Edenhofer)

Duration: December 2006 until February 2007

Budget: 20.000 € funded by the Federal Foreign Office of Germany,

Description: The project investigates barriers and opportunities for establishing a global carbon market by linking future emission trading schemes to the European Emission Trading Scheme (EU ETS). Applying an explorative model comprising international trade, it explores the economics of linking emission trading schemes. Crucial design issues and institutional aspects of linkages are analyzed as well as the possibilities of linking the EU ETS to emerging regional emission trading schemes in the USA.

## **CONTRACT**

Title: A Global Contract on Climate Change

Duration: June 2006 until December 2009

Budget: 80,000 € funded by Ökosoziales Forum

Description: Climate change represents an unprecedented challenge to global society. In this project, scientists are working out a Global Contract along the principles of environmental effectiveness, cost-efficiency, equity and justice and develop a Global Carbon Market.

## **WIT**

Title: What poor information can tell

Duration: June 2006 until May 2009

Budget: 210,000 €

Description: Marie-Curie Outgoing International Fellowship supporting Dr. Elmar Kriegler, Pittsburgh, USA, and PIK.

## **ADAM**

(Work package Mitigation 2 (WP M2, P3a, P3c))

Title: ADAM - Adaptation and Mitigation Strategies: Supporting European Climate Policy

Duration: March 2006 until February 2009 (3 years)

Budget: 700,000 € (for Work packages M2, P3a & P3c only) funded by EU, 6<sup>th</sup> Framework Programme

Description: ADAM is an international project with 26 partner institutes involved. It is coordinated by the Tyndall Centre in Norwich, UK, and funded under the 6th Framework Programme of the European Commission. ADAM will lead to a better understanding of the trade-offs and conflicts that exist between adaptation and mitigation policies. It will support EU policy development in the next stage of the development of the Kyoto Protocol and will support the emergence of new adaptation strategies for Europe. Work Package M2 (Mitigation at the Global Level) is one of 7 work packages within ADAM and is led by Dr. Ottmar Edenhofer. It aims at assessing the mitigation options of post-2012 EU and global climate policies.

## **OPTIKS**

Title: Cost-optimised Climate Stabilisation

Duration: July 2005 until May 2007

Budget: 200,000 € funded by the Federal Environmental Agency (UBA)

Description: Based on the resolution of the EU council of Ministers to avoid a warming of the earth's atmosphere by more than 2°C compared to the preindustrial level, it has been the mission of the research project to identify the magnitude of costs to attain such a climate protection target under different designs of the post-2012 climate policy regimes. By means of the newly developed REMIND-R model, regionally disaggregated investment and mitigation costs were specified.

## **RECCS**

Title: Cost-efficient Climate Stabilisation

Duration: July 2005 until April 2007

Budget: 150,000 € funded by the Federal Environmental Agency (UBA)

Description: The project aims at a cost-effectiveness analysis of greenhouse gas emission mitigation options. As a key tool, a model of endogenous economic growth is used that represents the effects of investment decisions on technological change. The results of the analysis shall be robust under parameter uncertainty. Moreover, by semi-qualitative arguments, it will be assessed whether ocean sequestration shall be part of the mitigation portfolio comprising 'improvement of energy efficiency', 'renewable sources' and 'carbon sequestration in geological formations and - contingently - the deep ocean'.

## **IMCP**

Title: Economic and Technological Dimensions of Stabilising the Atmospheric Greenhouse Gas Concentration

Duration: August 2004 until December 2005

Budget: 50,000 € overall (30,000 € for PIK) funded by Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU)



Description: This project represented an international model comparison study. The major target was to demonstrate the impact of endogenous and induced technological change on climate change mitigation costs. Results of this project are fed into the IPCC reporting process. Moreover, a Special Issue of "The Energy Journal" was published.

## **Ocean Sequestration**

Title: Ocean sequestration of CO<sub>2</sub> and the transformation of the energy system

Duration: May 2003 until October 2006

Budget: 661,000 € funded by Volkswagenstiftung

Description: The project aims at a cost-effectiveness analysis of greenhouse gas emission mitigation options. As a key tool, a model of endogenous economic growth is used that represents the effects of investment decisions on technological change. The results of the analysis shall be robust under parameter uncertainty. Moreover, by semi-qualitative arguments, it will be assessed whether ocean sequestration shall be part of the mitigation portfolio comprising 'improvement of energy efficiency', 'renewable sources' and 'carbon sequestration in geological formations and - contingently - the deep ocean'.

## **EUROPA**

Title: Modelling, Reflecting and Communicating Possible Futures of Europe in the Context of Global Change

Duration: October 2000 until September 2005

Budget: 1,970,046 € funded by BMBF

Description: The project aimed at answering the question of what can be learned from Europe in the context of global environmental change with respect to the micro-macro problem. In pursuing this aim, the global dynamics of energy systems, life styles, adaptation capacities as well as insurances and finance markets has been analyzed. The project qualified the long-term goal of keeping the mean global warming below 2°C and presented strategies to achieve this goal. Successful short-term and long-term strategies were identified based on innovative solutions of the micro-macro problem for systems of interdependent markets. Results of the project have been used by European and German climate politicians in order to design realistic policies of successively overcoming the climate change problem. Dr. Edenhofer was responsible for modeling mitigation strategies within this project. He led the research group "Transformation of the Energy System" which comprised three full-time researchers.