

*Coping with Complexity in the Evolving International
Climate Policy Institutional Architecture*

SYNOPSIS: *The overall objective of the project is to develop innovative analytic and policy approaches to a wide range of issues concerning the evolving international climate policy institutional architecture. The project will aim to achieve this objective on the basis of the following work packages: 1. conceptual and empirical foundations concerning effort sharing; 2. sectoral dimensions and trade issues in energy-intensive sectors such as steel, cement, electricity and paper and pulp; 3. regional dimensions and inequality issues including between old and new members of the EU; 4. institutional dimensions and incentive issues including questions about policy coherence and instrument interactions; and 5. the search for a credible and stable global architecture.*

1 Quality of the Project

1.1 Technical and Scientific Quality of the Project

1.1.1. Project objectives and their innovation content: Description of the project objectives, improvement on existing solutions, degree of novelty, comparison to state of the art ("state of knowledge")

There is increasing evidence that the post-2012 international climate policy architecture will be more complex than the current commitment under the Kyoto Protocol. Given this expectation, the European Union and its Member States need to adapt to a more complex and more diversified political framework for fighting climate change. Although this is already indicated in the recent Communication of 28 January 2009 by the European Commission (*European Commission, 2009*), the consequences of such a reframing of global climate policy for the European Union and its Member States, like Austria, have been hardly investigated so far.

Any effective approach to combat climate change needs global effort. However, countries like the United States, China and India, are for different reasons looking for structures other than the current Kyoto-type agreement, and the problem clearly cannot be solved without greater differentiation of developing country actions. This will become apparent by the Conference of Parties in Copenhagen in December 2009, which is most likely to reach a partial solution with a set of follow-on negotiation processes. Therefore, a post-2012 international climate framework could rather consist of a basket of differentiated commitments, ranging from unilateral national commitments to international agreements for specific sectors and Kyoto-type emission caps. Required are binding but flexible commitments both from all industrialised countries as well as the major emerging economies and developing countries.

This project proposal intends to deliver a contribution by analysing the following issues related to the implementation and effects of such a complex climate policy framework (See also Graph 1):

- Collecting comparable data sets for Annex-1 and Non-Annex-1 countries – as far as these data are available – and build a consistent global data base for assessing countries' potentials and effort to curb greenhouse gas emissions by a set of model-based structural indicators.
- Exploring the sectoral and trade dimensions of diverse climate policy agreements by a detailed analysis of energy-intensive sectors such as steel, cement, paper and pulp, and electricity.
- Evaluating the regional dimensions of climate change agreements with particular attention to the future of Eastern Europe (including Russia, Ukraine and the "Stans" in a new climate regime).
- Analysing the institutional dimensions of differentiated carbon markets, fragmented (national) agreements and sectoral commitments. Discussing potential interactions of various policy instruments (e.g. climate policy and renewable energy regulations).

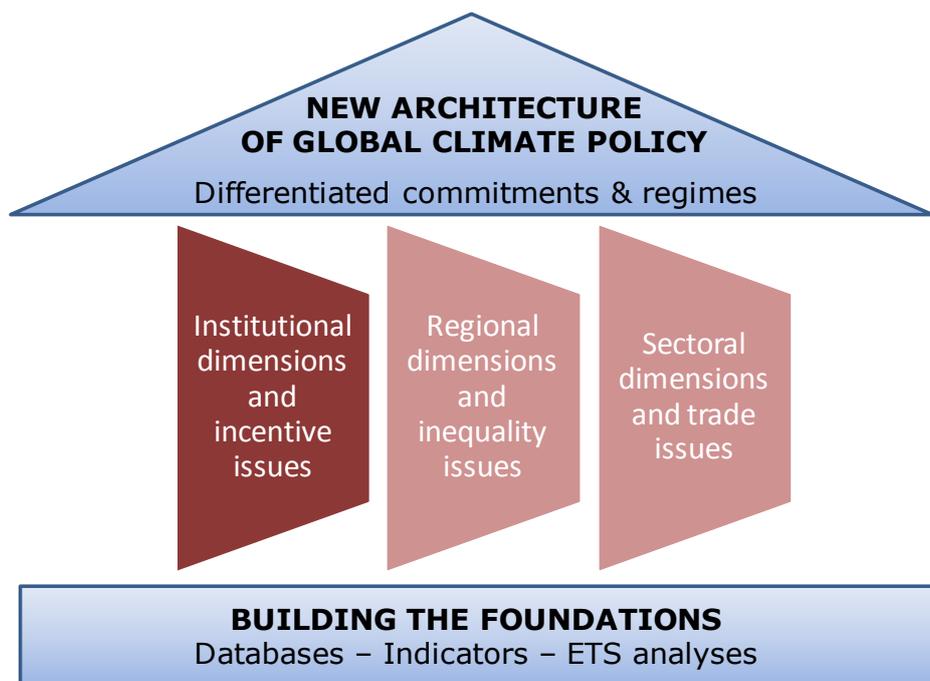
- Searching for an overall architecture of a post-2012 package that integrates multilateral and unilateral approaches and looks ahead to 2050.

Thus, this project supports efforts of the European Union for an economically efficient and ecologically effective post-2012 climate strategy based on the realities, by conducting research into those realities and the options for navigating them.

Austria is facing new challenges in such a reframing of international climate policy in particular because of potential competitiveness effects due to the importance of energy intensive sectors in its economy and their exposure in terms of international trade, and its position as a “crossing point” of East and West Europe. Our proposed structure, founded on a collaboration between WIFO and the European research organization Climate Strategies, reflects these dimensions of the challenges.

In addition to combining national and international expertise in climate policy research and environmental economics the proposed project gives special emphasis to communication with policy makers and stakeholders in industry. A series of workshops and conferences with international participation will foster the outreach of the project and dissemination of results together with an interactive website that includes wiki tools. An international Advisory Committee will support the international dimension of this project.

Graph 1: Issues analysed in the proposed project



The innovative content and the improvements compared to existing analyses can be summarised as follows. In a first step a comprehensive and coherent international database will be provided. This includes economic data as well as information on energy and GHG emissions. As far as data gaps exist that constrict the analysis these will be highlighted. Based on the data set structural indicators will be developed that serve to illustrate effort sharing on the level of countries or sectors in different climate policy regimes. The policy frameworks considered go beyond the concept of a further Kyoto-type international agreement but include more fragmented, diversified approaches that include new rules and elements.

In addition, requirements for (climate) policy are discussed that result from current circumstances and developments. This comprises aspects of policy coherence and interactions/interdependencies of climate policy with other policy areas. On the one hand this is relevant regarding for example the coordination with instruments to foster the use of renewable energy. On the other hand this also

covers the area of conflicting policy areas – e.g. public programmes to reduce the effects of the economic crisis and their adverse impact on climate change strategies. Thus, the objective is to identify elements and measures of climate policy that ensure its stability and credibility in the light of unexpected events and crises, e.g. price stabilisation mechanisms and policy coordination.

Given the uncertainty of the future development of global climate policy and its expected complexity the project aims at providing conceptual foundations for decision makers on possible options regarding designs/architectures and their impacts on countries (like Austria) and major industrial sectors, that will face the necessity to restructure.

Effective international action in the era of ‘Copenhagen’, the changed political situation in the USA, and the response to the credit crunch is of unprecedented importance: it must foster long-term and broad-based momentum towards decarbonising the global energy economy, tackling land-use emissions, and also prepare the world for the adaptation required.

The 2009 COP/MOP at Copenhagen can establish some main structural elements for enhanced global solutions, but may deliver relatively little in detail and have many blank spaces. Consequently, objectives need to have a clear view of longer term objectives. The majority of developing countries will not, and indeed could not yet meaningfully take on quantified caps, and industrialised countries still emit far more per-capita and cannot build effective global response from a platform of “do what we say, not what we do”. The 2010s must be a decade of transition towards more unified global action, still significantly dependent upon industrialised country political, economic and technological leadership. The strategy to 2012 needs to create the platform to deliver this, by securing three core international strategic objectives:

- i) Much deeper, more broad-based and long-term industrialised country cutbacks
Industrialised country commitments to deeper national emission cutbacks are required to underpin a tougher and more stable carbon market, and to give a strong platform for additional measures required to drive widespread energy efficiency and largely decarbonise in particular the power sector by the mid 2020s.
- ii) Engage developing countries across a far wider range of instruments
This is required to have any hope of turning the course of their emissions-intensive development. Our research has already pinpointed the lessons from the Mechanisms (particularly the CDM) to date, highlighting some strengths but also serious weaknesses particularly in relation to energy efficiency, forestry-related actions, and innovation. A range of sectoral, regulatory, policy incentives and other measures can help to avoid lock-in.
- iii) Integrate commitments, with cross-cutting measures and adequate financial resources
Integration of industrialised and developing country commitments and finance are key both to providing the political basis for a global deal, and implementing it effectively.

1.1.2. Methodology: Description of the project results aimed at and the approaches

Relevance of the project in relation to comparable, existing solutions
(importance of the problem, relevance to Austria)

Given the expected developments in international climate policy and the research questions described above the proposed project will contain the following work packages:

1. Building the foundations

One objective of this work package is the creation of an internationally-comparable database for analysis of "effort sharing" in a wide range of new climate policy agreements. The database will include economic information (GDP etc.) as well as data on energy and greenhouse gas emissions. One key issue is to assess the availability of data for Non-Annex-1 countries. Based on this data set and using a structural model that relates population, GDP per capita, energy intensities and carbon intensities, indicators for national or sectoral effort sharing will be developed.

The second objective is to complete the data base on the EU Emission Trading Scheme (EU ETS) and use it for quantitative analysis. So far, WIFO collected data from the Community Independent Transaction Log (CITL) on verified emissions and allocations for the installations participating in the EU ETS for the years 2005 to 2007. In the proposed project the data for the years 2008 to 2010 will be added. Based on previous work on this subject analyses can be carried out with respect to the scheme's performance (e.g. stringency of the cap) and the developments of the levels of allocated allowances and emissions that are covered (in general as well as on country and sector level). Conclusions will be drawn on differences between Phase 1 (2005 – 2007) and Phase 2 (2008 – 2010) and the impacts of the economic slowdown on GHG emissions of installations, sectors and countries.

2. Sectoral dimensions and trade issues

Options for sectoral agreements in a multi-country framework will be assessed. In-depth analyses will be presented – depending on data availability – for the main energy/emission intensive sectors, such as steel, cement, electricity, and paper and pulp that are important in the Austrian economy. In addition, sector-specific issues concerning international competitiveness and carbon leakage will be analysed, including in particular border adjustments, which are the subject of widespread discussion in the EU.

3. Regional dimensions and inequality issues

To date, the focus in terms of regional analyses has been placed on North-South comparisons and cooperation as to technology transfer and related funding, for instance through CDM projects. However there are a range of 'effort-sharing' issues in the context of relations between Eastern and Western industrialised countries, both within the European Union between old and new Member States, and externally in terms of the roles of Russia, Ukraine, Belarus and the "Stans", which need to take account of specific factors generated by the intersection of economic transition and energy trade issues. The analysis will evaluate how new climate agreements could take into account these "horizontal" East-West relations, as well as the more familiar "vertical" North-South issues.

4. Institutional dimensions and incentive issues

Climate policy overlaps with various other policy areas like energy, transport or industry. Thus, the achievement of the 2020 climate targets requires a stronger integration of climate change issues in other policy areas. This work package deals with questions of policy coherence, i.e. on the one hand to what extent there are synergies between climate policy and other policy instruments. This regards for example approaches for the support of renewable energies. On the other hand policy areas will be analysed that are in conflict with climate policy. Emphasis in this regard will be put on measures and public programs to stimulate the economy and especially certain industrial sectors (e.g. car manufacturing) as a reaction to the current crisis and their potentially adverse impact on mitigation strategies.

A second research question in this work package will be the institutional settings to ensure the credibility of carbon markets and the incentives for abatement measures. This includes a discussion of measures that can reduce the volatility of carbon prices (upper and lower boundaries) and thus increase security for regulated industries and the stability of carbon markets.

5. Searching for a global architecture

The international negotiations on climate policy agreements need to reinforce, integrate and hugely accelerate an emerging trend towards decarbonisation in industrialised economies, and provide the framework for helping developing countries to avoid carbon lock-in and get on much lower emitting development trajectories. This may include two main stages: Copenhagen must establish a unified structure and interim objectives for an expanded group of industrialised countries, and a set of negotiating Mandates around different streams of global engagement, conclusion of which could trigger a stronger set of ratified commitments by 2012. Successful culmination of these global efforts over the next couple of years will require complementary action not only regionally, but through sectoral agreements, the IPCC, and EU policy internally and in Global Deal formation.

The key objectives for the international climate change community during 2009-2012 are to:

- (i) reunite, deepen and geographically expand industrialised country commitments so as to establish a tougher and more stable carbon market, based on deeper national cutbacks: this will give a strong and credible platform from which to drive widespread energy efficiency and largely decarbonise in particular the power sector by the mid 2020s;
- (ii) engage developing countries across a far wider range of instruments including sectoral targets/ caps, enhanced CDM, and forestry: this will help to avoid lock-in, enable better matching of commitments to capabilities of different countries, and provide a ladder for the evolution of diverse countries towards more broad-based quantified commitments;
- (iii) integrate these strands and provide and govern sufficient financial resources to facilitate the global deal and finance both adaptation, and mitigation actions outside the scope of core commitments, including a new regime for innovation and technology transfer, and the regulation of international bunker fuels.

Our core competence is therefore to clarify how in practice to deliver these ambitious goals, and how to maximise Europe's contribution towards them.

Local and regional actions deliver emission reductions and are essential to provide political foundations. However robust international structures are required to bolster ambitions, globalise the effort, and to silence political concerns about the costs and ineffectiveness of partial responses. The 'global deal' needs to be shaped by clear understanding of what is required to drive real action.

In relation to the kinds of instruments appropriate for developing countries, issues of 'Moni-

toring, Reporting and Verification' will be critical, and this will link with our database work (work package 1). We will investigate the elements that such a portfolio of agreements could include, their incentive structures, and the kinds of interactions between the elements of such a fragmented architecture that could emerge.

Furthermore, in view of the current economic crisis and the potential distortions of carbon markets by influences from the financial sector, we will give special attention to measures and institutional setups which maintain the credibility and stability of the future climate policy regime and its instruments.

1.1.3. Description of any pre-projects (or their differentiation compared to the projects submitted)

Both WIFO and Climate Strategies have conducted recent studies that provide an analytic base on which to develop innovative analytic and policy approaches for this project.

WIFO's projects include analytical work in providing foundations for the National Allocation Plans in Austria, empirical analysis of the EU Emission Trading Scheme, and work on the EU's energy and climate package and its potential impacts on the Austrian economy. In addition, WIFO participated in two EU funded research projects dealing with modelling the transition to sustainable economic structures (TranSust, TranSust.Scan).

Climate Strategies have undertaken a wide range of relevant projects on topics at the national and regional levels within the EU, as well as the global level. These have included research on North-South cooperation, reforming the CDM, EU Emission Trading Scheme "leakage" and "linking" issues, and international networks of low carbon innovation centres.

These projects enable us to understand the broad global, regional and sectoral contexts as well as many of the specialised circumstances of the particular issues of concern in this proposed project. In that respect, they provide a strong platform on which we can build the more data-intensive and integrating analysis of this project.

1.1.4. Applicability and use of the project results

The results of the project will be useful to decision-makers and analysts in the public sector, private sector and civil society. The results will identify and clarify a wide range of issues that will be on the agendas of not only climate policy specialists but also others who will need to understand key issues as discussions about how to address climate change continue to evolve.

Climate Strategies has a demonstrated capacity to engage wide-ranging research networks and inject important research findings into policy debates. It does so through various channels including its own network of supporter governments, its set of business relationships (including through the UK Carbon Trust which is a founding supporter), and its stake in the Climate Policy journal.

WIFO has a long-term experience in carrying out scientific studies on environmental economics and energy issues and in providing foundations for decision-makers in Austria.

The collaboration between WIFO and Climate Strategies that this project would represent would enable Austrian research to gain a high international profile in policy research communities and influence within European and international policy debate.

The relevance of the chosen research questions for national and international climate policy is also illustrated by the literature cited below:

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