

Form Part A 1 to be submitted in English language.

## Form Part A 1

Version 1.0 – December 2009

<b>Project title:</b>	<i>Responding to the challenges for international and European climate policy after Copenhagen</i>	
<b>Project acronym:</b>	RESPONSE	
<b>Mandatory registration number at Climate and Energy Fund:</b>	<i>K10ACOK00055</i>	
<b>Applicant:</b>	<i>Wegener Center for Climate and Global Change, University of Graz</i>	
<b>Project partner:</b>	<i>(P1) Department of Philosophy, University of Graz  (P2) Stiftung Wissenschaft und Politik, SWP, Berlin (German Institute for International and Security Affairs)  (P3) Department of Politics and International Relations, University of Oxford  (P4) Barbara K. Buchner, Climate Policy Initiative, CPI, Venice Office</i>	
<b>Thematic field:</b>	<input checked="" type="checkbox"/> Thematic Area 3: European and global climate policy	
<b>Description of costs:</b>	Total costs [EUR]: 239.322	Requested funding [EUR]: 239.322

**SYNOPSIS:** *ten lines description of objectives and content of the project*

The outcome of the Copenhagen Climate Conference may lead to a hybrid climate architecture characterized by more unilateral policies of the EU and other countries. Based on principles of distributive justice, we analyse the scope for policy instruments which align climate and trade objectives (e.g. border tax adjustments), and how such instruments can (and should) be implemented in different forms of hybrid climate architectures. Employing a multi-regional multi-sectoral computable general equilibrium model of the EU, its main trading partners and other world regions we then quantify the economic and carbon emission implications of institutional and policy instrument scenarios. This allows us to evaluate the options the EU has for effective and politically feasible climate policy. In addition to scientific results, policy recommendations will be developed under stakeholder involvement.

**Keywords:** *please name 6 to 8 keywords for your project.*

unilateral climate policy, leakage, normative analysis, principles of justice, hybrid climate regimes, trade and climate policy alignment, EU climate policy design, institutional recommendations

# 1 Aims and Methodology

## 1.1 Technical and Scientific Content, Objectives and applied Methodology of the Project

(10 pages maximum)

*The description has to follow the following structure:*

**1.1.1. Project objectives and their innovation content:** Description of the project objectives, its improvement on existing solutions, degree of novelty, explanation of how the project could gain additional scientific results in comparison to state of the art and description of scientific uncertainties (which are the key scientific uncertainties and how will they be handled)

### Introduction and project context

Climate change mitigation requires a rapid decrease of global emissions of greenhouse gases (GHGs) from their present value of 8.4 GtC/year to – as of current knowledge – about 1 GtC/year by the end of the century if we seek to achieve the 2 degree objective of the EU and the Copenhagen Accord with a realistic probability. This represents a significant challenge.

To that end, after the failure of the Copenhagen Conference, international and European climate policy is in need of a significant redesign. The outcome of the Copenhagen Climate Conference may be leading to more unilateral policies of the EU and other countries, even if it is still unclear how the whole process is going to play out on a global scale. There may be a continuum between a comprehensive single integrated agreement on the one hand, and high fragmentation of international climate policy on the other hand. Between these two extremes there is also likely to be room for efficient hybrid regimes. Such hybrid regimes offer several advantages over *politically feasible* integrated, comprehensive regimes: the UNFCCC and Kyoto process has shown the difficulty in designing effective systems in the context of extreme uncertainty about what measures governments are willing (and able) to implement as well as the shortcomings of an institutional monopoly, whereas hybrid regimes are relatively flexible across issues (e.g. different states could sign different sets of agreements) and provide for greater adaptability over time (change in different issue areas or different states may take place at different rates) (Keohane and Victor, 2010). It is important, in this context, not to compare actual hybrid regimes with hypothetical but unrealistic comprehensive regimes. For example, hybrid regimes may not only rely on UN targets and timetables but directly foster technological innovation and international dissemination. In fact several countries, as well as the EU, have already initiated multi- and bilateral technology agreements. Within a hybrid regime there may be different emission trading schemes with different prices and trading rules, thus leading to losses in economic efficiency as identified e.g. within the EU by Böhringer et al. (2008); common offsets rules, however, could become the arbitrage points that link these schemes. There are also several other policy areas which potentially interfere with international climate policies, one of the most obvious being the link to international trade (Copeland and Taylor, 2005). Hybrid regimes might give rise to different, more flexibly adapted and more quickly achieved new sets of rules to mainstream climate policy into these policy areas, such as into trade policy.

The European Union has been much more committed to the Kyoto process than most other industrialized areas, including notably the US (for a survey see Convery, 2009). The EU has invested heavily in the construction of international regulatory regimes for climate change that are based on legally binding targets and timetables and on international emissions trading. The EU has also attempted to align its own policies at home with those of the international community. For the EU, approaches deviating from that are still difficult to envision and implement—even as other countries, such as the US and Australia, favour other regulatory schemes not anchored only in international targets and timetables.

As the Copenhagen Conference showed, debating a fair division of mitigation costs often complicates the already complex negotiations concerning an international climate protection regime. Developing countries, for example, oppose specific general targets not only out of economic interest but also because they feel disadvantaged vis-à-vis the developed world whose economic and industrial advantage is felt to be based at least partly on decades of unlimited resource usage (as well as on colonial exploitation). In terms of both the perspective of global distributive justice, which gives special consideration to economically disadvantaged regions, and the perspective of historical justice, there

are thus further considerations for internationally coordinated climate policy. Carbon emission accounting based on the Production Based Principle (PBP) as under the current regime, in particular, has normative implications because it places the responsibility for emissions on those who produce a carbon intensive good rather than on those who benefit from it.

Developing countries (and among them most notably China and India) claim their right to development, which is said to be jeopardized by the control of carbon emissions (Agarwala, 2008; Olmstead and Stavins, 2006; Ashton and Wang, 2003). However, unless major global emitters like the United States and China are willing to limit their emissions, a stabilization of the world's climate cannot be achieved: if the current trend in economic growth continues, China will overtake the US as the major cumulative contributor to the stock of CO<sub>2</sub> in the atmosphere by the middle of the century (Botzen et al., 2008). Thus, while from a political view after the Copenhagen conference it appears that neither China nor the USA are willing to change their position over the short or medium term, the need to find some sort of commitment to curbing GHG emissions is greater than ever.

For the time being the EU is the only possible flexible actor in global mitigation currently capable of taking leadership in further mitigation. Even if no comprehensive regime is established there are still several options available. First, the EU is well aware of the fact that a fundamental free-rider problem exists in supplying the global public good of stabilization of GHG emissions. Thus, the EU so far has made it a precondition to move to a higher reduction target only if an international agreement based on binding targets emerges. To foster such an outcome, the establishment of a 'Copenhagen Green Climate Fund' was agreed upon in Copenhagen. Industrialized countries are to contribute to such a fund in order to facilitate climate change mitigation in developing countries.

If, second, other countries, in particular trade partners, do not commit to comparable emissions reduction targets and the EU therefore continues to follow a 'stand-alone' policy, there is a serious danger of carbon leakage (i.e. a rise in carbon emissions in other world regions as a consequence of mitigation policy in one or a group of countries (Babiker, 2005; Van Asselt and Biermann, 2007)). To combat such a shift of emissions to unregulated countries, as well as to address competitiveness issues in the sectors most affected e.g. by EU ETS, trade measures like border tax adjustments have been suggested. It has yet to be resolved, however, how such measures can be designed to comply with international trade regulations (Dröge et al., 2009).

Hybrid regimes could be complemented by bilateral co-operations, such as between the EU and the US, or efforts to mainstream climate change issues within the world trade provisions. It is important to determine which institutional settings are necessary in hybrid regimes in order to allow countries to take efficient mitigation action. As pointed out above, it is likely that parallel regimes will need to accommodate border tax adjustments (BTAs). BTAs could be politically important in areas such as the EU, which are considering establishing and maintaining strict(er) caps in carbon trading systems.

### Project objectives

The proposed project will first analyze options for a future European and international climate policy under the assumption that no comprehensive top down international climate policy architecture emerges. The project then puts special emphasis on possible actions for European policy and assesses how an ambitious European climate policy may be part of different international regimes (with different clubs one of which could be a continuation of Kyoto-like binding targets, others with non binding absolute targets such as the US or voluntary carbon efficiency targets, such as China).

Thus, the suggested global climate policy architecture may be a hybrid of top down and bottom up elements and a movement away from a pure setting of targets towards broader policy approaches (such as the envisioned 'Copenhagen Green Climate Fund'). In addition to analyzing new paradigms for climate policy, a key contribution of the project is that it also takes ethical considerations into account when evaluating policy options of the different countries. As a prerequisite to that evaluation, normative principles, namely principles of global distributive justice, are assessed in terms of their practical-political relevance. Since trade measures have been suggested as a suitable measure for addressing leakage in a stand-alone EU policy, a third focus of the proposed project lies in assessing the compatibility of such compensating measures with international trade regulations. Based on the political, normative and trade analysis, we will identify a varied set of policy options for future European and international policies. The economic and carbon effects of such policies are then analyzed within a multi-region multi-sector CGE model encompassing the EU and its main trading part-

ners, and other world regions. Following this, the different policy options are evaluated by combining economic, environmental and normative criteria. Finally, recommendations for EU action are developed with respect to EU policy and institutional settings at the global level.

**The principal questions of the project are:**

- How can an efficient and politically sustainable international and European climate policy be designed in the absence of a comprehensive international climate agreement? What are the pros and cons compared to a comprehensive regime? What are the institutional challenges?
- What can be learned from mechanism design for climate policy and target setting (eg. small group reciprocity)? What is the role of bi- and multilateral co-operations?
- How can different outcomes be assessed from an ethical point of view? Which principles of distributive justice are suited to guiding policy making when there is no global regime guaranteeing compliance with a fair division of the mitigation burden?
- What are the options for EU climate policies beyond mitigation targets?
- What might adjustment mechanisms for sectors at risk of carbon leakage in the EU look like? What are their quantitative economic and carbon effects? How do adjustment policies relate to the current and/or future development of the WTO?
- Which of these adjustment policies can be justified with reference to values that Western democracies are already committed to?
- How could climate policy be incorporated into trade agreements?

Further Innovation Content:

Apart from the basic innovations required in answering the above questions, the project supports further innovations in terms of methodology and interdisciplinary research. The proposed integrated collaboration of political scientists, philosophers, economists and social scientists will enable a broad-based discussion of the possible climate architectures and their normative evaluation, as well as of the role of the international trade regime and, under the given normative setting, the impact of effective climate policy. Distributive justice is a major consideration here, as is the question of a consumption-based vs. production-based approach in GHG accounting.

From an economic and policy oriented perspective we focus on climate as a global public good and the role of trade policy in achieving its protection. We develop a quantitative world-region economic model to evaluate climate policies under different architectures and respective possible trade adjustment mechanisms necessary to render climate policy effective. The model is applied to a set of policy scenarios in order to enable us to evaluate available options, in particular for the EU. With respect to improvements in actual policies, we discuss new concepts for consumption based carbon accounting and trade (value-added approach for carbon contents) and their role in implementing the normative approach used in this project.

From the perspective of practical philosophy and political theory the project is innovative in that purposeful collaboration with social sciences and economics allows for systematic investigation in several areas: first, the applicability and validity of principles of justice in specified non-ideal conditions, second, the implications of such principles in determining what policies particular actors, especially the EU, should pursue, and third, the complex decisions the EU faces with respect to its future climate policy. We also explore the relations between what in philosophy has been dubbed theoretical reflection under ideal and non-ideal conditions, where the latter emphasises that principles of justice cannot fulfil their action-guiding function unless they prescribe courses of action that are politically feasible for us to do here and now under current circumstances. We test the ability of practical philosophy to inform and guide the choices of particular actors engaged in complex decision-making under specific non-ideal conditions.

**1.1.2. Methodology:** Description of the questions to be addressed (hypotheses to be tested), the anticipated project results and the methodologies/approaches for achieving these results. Description of the **importance** and **relevance** of the proposed research project in relation to comparable, existing research results

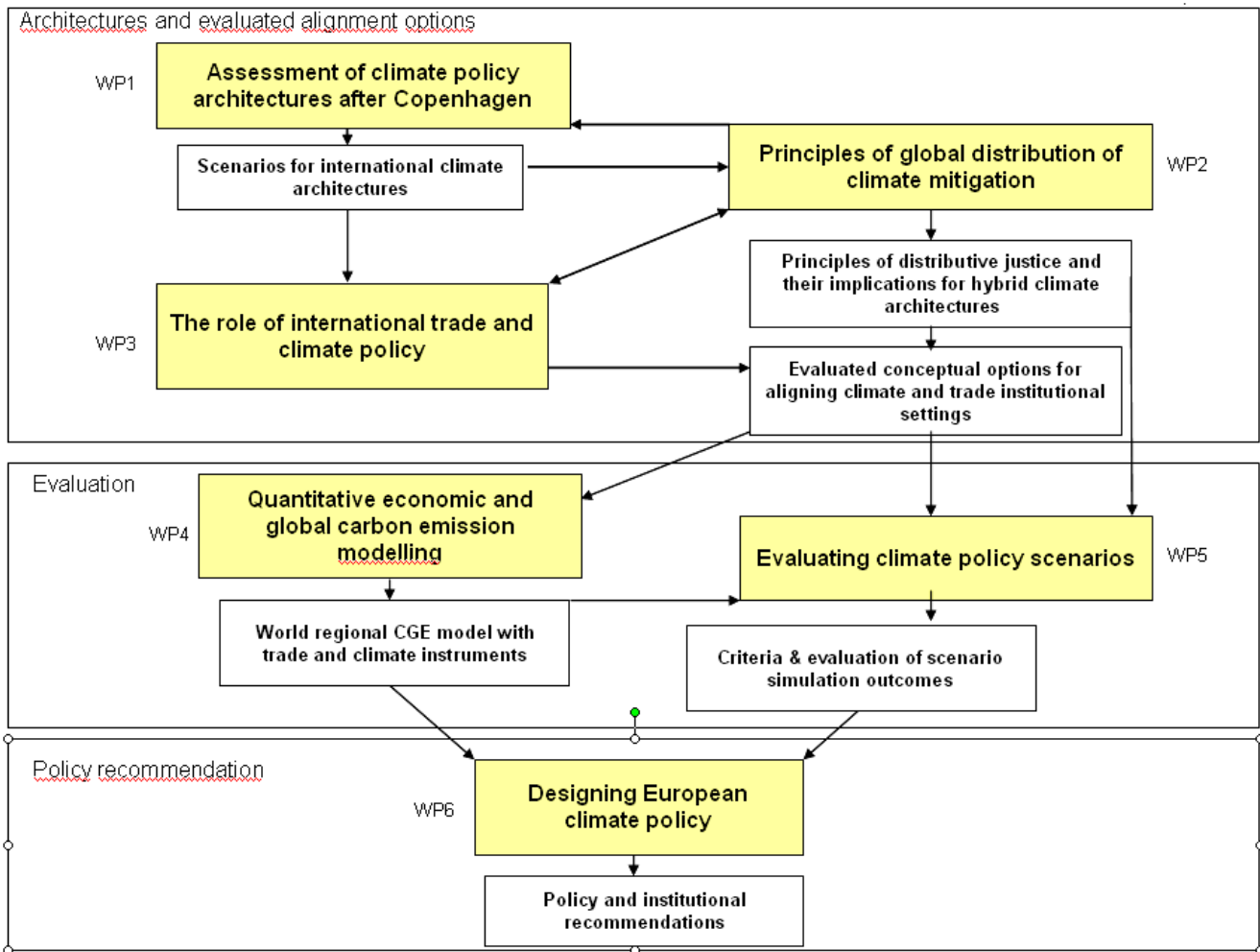


Figure 1: Project work structure

We begin our work against the background of possible climate architectures as identified in WP1. We confront these architectures with principles of global distribution of climate mitigation (WP2), and in particular with the role of international trade (and alignment options with climate policy). The purpose is to allow for identification of a normatively desirable climate architecture and its respective institutional settings and instruments (WP3). By employing the quantitative economic model, developed in WP4, we can evaluate climate architectures and their requisite instrument settings with respect to a specific set of criteria (including normative considerations) (WP5). This provides us with a suitable framework for designing policies and institutional settings which may then be aligned with practical policy recommendations (WP6).

The core methodologies and approaches are the following:

Principles of global distribution of climate mitigation costs

Reflective Equilibrium

The question which climate policies, and in particular which distributions of mitigation efforts, are fair as well as effective and politically feasible contains normative elements. These normative aspects will be discussed within the framework of normative analytical philosophy which aims to defend normative conclusions with reference to principles and premises which are grounded in what John Rawls calls a 'reflective equilibrium.' (Rawls 1971) The method attempts to refine moral intuitions by attempting to create a coherent whole consisting of intuitions, moral principles explaining them, and background theories which relate different intuitions and principles to each other. The relevant intuitions are captured in considered moral judgements concerning particular questions and subsequently generalised to fit entire classes of cases. The principles are formulated as a way to account for these considered moral judgements and are tested with reference to other cases as well as with reference to whether they themselves can be explained by suitable background theories (Daniels 1979 and 1996). The process of testing and readjusting intuitions, principles, and back-

ground theories goes on until a coherent set of principles emerges which accounts for and is able to adequately explain our firmly held intuitions. The emergent set of principles is then well situated to inform our reasoning on previously disputed matters.

The starting point for our considerations on the normative advisability of different EU policy proposals is widely shared moral judgements which reflect basic values that Western democracies are already committed to. The material used as input in this process of refining our judgements and developing logical arguments thus stems from current political debates, existing philosophical literature, as well as from the relevant economic and political findings of our project partners. The arguments are analysed in view of their logical consistency. The moral premises are tested against hypothetical and real life examples which provide insights concerning the matter at stake. The moral principles and background theories which explain the relevant judgements are once again those found in the existing debates and will be amended (where necessary) in view of the findings. This approach will also allow us to balance different normative considerations against each other (weighing goods) but also against other relevant factors like concern for environmental efficiency, political feasibility, adaptability and flexibility (multi criteria analysis). The result will be a set of logically consistent arguments based on moral premises which are well justified with regard to refined (re-) considered moral judgements and principles explaining them.

### Ideal and non-ideal theorizing

In terms of the normative-philosophical distinction between ideal and non-ideal situations the situation of the EU with regard to climate policies after Copenhagen is a non-ideal situation: on the one hand, EU policies have to be approved by a group of states which are not exclusively motivated by moral considerations but have to take into account the interests of their different electorates as well as pre-existing other commitments reflecting, e.g., international trade agreements and internal social policies. On the other hand, given that other global players might not be equally committed any EU policy on climate mitigation has to ensure that their mitigation efforts do not put them into an economically disadvantaged position vis-à-vis their competitors. In identifying and evaluating possible policy options from a normative standpoint we therefore have to consider political constraints such as considerations for economic growth and advantage as well as the fact that not all global actors are willing to shoulder their fair share of mitigation costs.

How normative principles can guide relevant actors in non-ideal situations has become the focus of much research in political philosophy (see, e.g., Rawls 1971, 1999, 2001; Murphy 2000; Buchanan 2004; Mason 2004; Brennan and Pettit 2005; Sen 2006; Farelly 2007; Swift 2008). Non-ideal theorizing emphasises that principles of justice cannot fulfil their action-guiding function unless they prescribe courses of action that are politically feasible for us to do here and now. That is, when developing a theory of justice, it is essential to consider the circumstances under which we act. Non-ideal theorising not only takes into account considerations of human psychology and political feasibility but also less than ideal circumstances, for example, when we cannot be sure that others will comply with their duties and unilateral compliance would lead to additional burdens which seem beyond the call of duty.

### The role of international trade

Given a normative framework for a fair distribution of mitigation efforts, the role of international trade in achieving a normative desirable distribution can be crucial. The international trade regime applies the concept of international efficiency improvement and wealth creation (guided by neoclassical trade theory). Global inequalities are the basis for the benefits from international trade. Comparative advantages should be exploited in order to find the best places for production and exchange of goods and services to the benefit of all parties involved. The inequalities and comparative advantages, however, also relate to carbon emissions and thus to the contribution by countries to a global public good. The institutional challenge derives from the lack of a benevolent dictator willing to direct the allocation of global public goods. While the trade regime has no mandate to implement climate protection, it could still be used to this end as a second-best tool, e.g. in the form of trade sanctions against polluting countries or via the levelling of carbon costs at the border. A major issue here is, whether a normative basis for climate protection could be arranged or supported via the trade regime, and more fundamentally, whether trade policy can be successfully incorporated into climate protection at all. Depending on the accounting principle for GHG emissions, the role of trade flows and their adjustments at the border differ considerably. Accounting based on the consumption in a territory would need information on all traded goods' carbon content, while production-based ac-

counting would need the trade measures that create a level playing field amongst competitors relating to their production methods. The investigations in this part of the project are made in the light of the normative findings in WP 2 and cover the contribution of trade rules to achieving the normative sets.

Moreover, the application and acceptability of border adjustments is a major issue. Both will be discussed checking the basic concepts against real world developments in climate and trade negotiations.

### Quantitative economic and global carbon emission modelling

International negotiations and agreements (such as the UNFCCC Kyoto Protocol) on greenhouse gas emission reduction have established respective emission accounting systems for countries (or groups of countries). This accounting framework is based on the so-called 'Production-Based Principle' (PBP) in which environmental responsibilities are restricted to geographical borders. This means that indicators only capture the environmental impacts linked to the production of national goods and exports. Actual emission responsibility by consumption and investment by individual countries may deviate from the picture drawn by the accounting systems. Accounting for emissions on the basis of the 'Consumption-based Principle' (CBP) implies reattributing embodied environmental impacts associated with exports to foreign countries, and adding to domestic environmental responsibilities those impacts which take place abroad. For more details about PBP and CBP, see Lenzen et al. (2007), Munksgaard et al. (2001), Wiedmann et al. (2007), and Wiedmann et al. (2010). To differentiate carbon accounting according to the PBP and CBP widens our options of analysis, at both the normative and practical policy instrument levels. Even if for pragmatic reasons the PBP might prevail, the CBP could advise us on necessary trade adjustment instruments.

Deviations between PBP and CBP measures can result from international trade and the grey energy and emissions it involves. For countries with very strict domestic objectives and high incentives to meet them, outsourcing of energy and emission intensive production can cause significant deviations, which render the initial policy effort questionable, as we are dealing here with a global pollutant. Evidence on recent decarbonization has been queried for some countries (see Helm et al., 2007, for UK's case). Thus the question arises, whether the emissions records really represent a change towards more sustainable societies or whether countries are creating clean and natural environments within their borders, by merely displacing degrading production across their boundaries towards other countries with lower environmental standards. Due to the global character of the climate change phenomenon, the countries' environmental responsibilities have therefore to be reconsidered beyond their geographical borders.

In our quantitative modelling we thus account for the carbon content in international trade flows with a focus on EU member states and major world trade blocks. In our methodological approach we go beyond statistical analysis only (as done for the Austrian context by Munoz and Steininger, 2010, for example), by developing an evaluation tool for climate policies incorporating trade instruments under different climate architectures.

Concerning data, the Global Trade Analysis Project (GTAP) of the University of Purdue (US) provides Input-Output data and foreign trade data for 113 countries (and regions) and 57 commodities. This data base also supplies energy data consistent with the IEA data base.

We start with the 19 world-region computable general equilibrium (CGE) model that we developed at Wegener Center (Bednar-Friedl et al., 2009) and used for first simulations of post-Kyoto policies as they were expected prior to the Copenhagen Conference.

The CGE approach is the economic approach used most broadly in evaluating global climate architectures in terms of quantitative economic implications. While we follow this tradition, we seek to enhance the quality of analysis by the following aspects:

- inclusion of adequate data and modelling of process emissions across the world as this concerns both sectors of particular competitiveness issues and significant GHG emission shares
- incorporate policies beyond domestic targets (such as the 'Copenhagen Green Climate Fund')
- account for and model instruments to align trade and climate institutional settings in order to evaluate the regional economic and global carbon emission impacts of the introduction of such instruments under different climate architectures

**1.1.3. Links** to research groups with high competence and relevance to Austrian research and policy needs and existing co-operations relevant for the research project;

The proposed project links not only the Philosophy research group and the Economics of Climate and Environmental Change research group of the Wegener Center, both at the University of Graz within a coherent research project, but includes the following international partners:

(a) Barbara K. Buchner, director of the Climate Policy Initiative (CPI) Venice office

Climate Policy Initiative (CPI) is a nonprofit institution that examines the effectiveness of energy and climate policies around the globe. The objective is to help nations achieve low-carbon development by evaluating their efforts to promote the new energy economy. Previously, Barbara served as a Senior Energy and Environment Analyst at the International Energy Agency (IEA). She works on the qualitative and quantitative analysis of market-based mechanisms and of other policy approaches to GHG mitigation; one of her main areas of work concerns the EU ETS. Including her into our project will not only make her available in a personal capacity (and thus ensure cutting edge EU ETS instrument development within the project), but also ensure access to the CPI network and its global information and research.

(b) Simon Caney, University of Oxford

Simon is Professor in Political Theory, University Lecturer, and Fellow and Tutor in Politics, Magdalen College at the University of Oxford. He has a special interest in the application of political philosophy to global politics and has written on global distributive justice, climate change, human rights, sovereignty, global governance, self-determination, humanitarian intervention and war. In 2008 Simon was awarded the ESRC (Economic and Social Research Council, UK) Climate Change Leadership Fellowship. This project first discusses anthropogenic climate change as an injustice, identifying the different rights of persons which are violated as well as principles of assigning responsibility for these violations. The project then aims to identify principles based on this analysis which are suitable to guide political decision making. Finally, the project aims to identify what the challenge of anthropogenic climate change requires in terms of reforming the global institutional structure. By including Simon in the project we will gain from his personal expertise and further the co-operation and exchange with the Department of Politics and International Relations at the University of Oxford.

(c) Susanne Dröge, Head of the research division Global Issues at the SWP Berlin

Susanne holds a PhD in economics, formerly at the German Institute of Economic Research, she has developed extensive competences in climate policy and is now one of the international lead scientists in the field of international trade and environment, and is also responsible for this field within Climate Strategies. Collaboration with her is of mutual benefit and will also deepen the collaboration of the Austrian research community with Climate Strategies, a network organisation that brings together established independent experts to help focus their knowledge on particular dimensions of the international climate change problem.

**1.1.4. Description of any pre-projects** (or their differentiation compared to previously submitted projects)

The Carbon Content of International Trade Flows in Austria (Karl Steininger, Birgit Bednar-Friedl, Pablo Munoz, Thomas Schinko, Andreas Türk)

Funded by the Research Centre International Economics, project lead Karl Steininger, the project was completed in December 2009. In this project CO<sub>2</sub> emissions embodied in Austrian international trade have been quantified employing a 66-region input output model of multidirectional trade. It was found that Austria's final demand CO<sub>2</sub> responsibilities on a global scale were 38% higher than conventional statistics report (110 Mt-CO<sub>2</sub> versus 79 Mt-CO<sub>2</sub> in 2004). We then developed a 19-region computable general equilibrium model of Austria and its major trading partners and world regions and found that future Austrian climate policy could achieve the EU 20 - 20 emission reduction targets, but that its carbon trade balance would worsen considerably.

This project did not address hybrid climate architectures and did not consistently model border adjustment mechanisms.

Tackling Leakage in a World of Unequal Carbon Prices, Climate Strategies Project 2008-2009 (Susanne Dröge)

For the future changes of the EU emission trading scheme (ETS) the competitiveness and carbon leakage effects are amongst the most controversial issues in the debate on stricter caps and auctioning of emission rights. In a world of unequal carbon prices, industries with carbon-intensive production need certainty about the policies that address leakage, and remedies should be considered at an early planning stage. Any of such measures, including free allocation, sector-specific agreements on emission standards, and border cost adjustments, need to be coordinated with trade partner countries and in the general negotiation process on a global climate regime under the UNFCCC. The project pays special attention to levelling the carbon cost at the border for different sectors and the institutional and legal dimensions of such an approach under the WTO.

The current project expands these results by adding a normative discussion and by quantitative economic modelling.

Linking of Emissions trading schemes, Climate Strategies Project 2007-2009 (Andreas Tuerk)

A growing number of countries are implementing GHG emissions trading schemes from the regional and national to the local level. However even as the number of different schemes grow, there are still few linkages between them. Major cap-and-trade proposals are undergoing important stages in their development, especially in the United States, Japan and Australia, some of which explicitly emphasize the aim of linking up to other schemes, and one of the strategic goals of European climate policy is linking the EU ETS with other comparable schemes. This project analyzes actual economic, political and institutional constraints and implications that are now essential in examining the role of linking trading schemes for the development of the post-Kyoto climate architecture and for increasing linkage between schemes.

The project does not address the policy options of the EU after Copenhagen.

Climate Justice. The Significance of Historical Emissions (Lukas Meyer)

FWF-project, project lead Lukas Meyer, spring 2010-spring 2013

The project investigates a set of questions concerning the justification and applicability of principles of distributive and corrective justice in responding to the long-term effects of past emissions for climate change.

The project does not address the policy options of the EU after Copenhagen.

Equity and Climate Change (Simon Caney)

Funded by The Economic and Social Research Council (ESRC), United Kingdom, project leader: Simon Caney, 2008-11

The project aims at developing a general normative account of how adequately to respond to climate change.

The project does not address the policy options of the EU after Copenhagen.

**1.1.5. Applicability and use** of the project results (what will be the "user value" for various stakeholder groups like the scientific community (Austrian and international research community), Austrian policy makers, and private companies)

The project result will be of high relevance for international and Austrian policymakers, and the scientific community. The in depth insights into options for the future European climate policy and their quantitative economic implications, as well as normative ethical assessments may influence the policy choices. Getting a better understanding of the options for Europe and aiding adjustment to specific policy scenarios is also of high importance for European and Austrian companies that may be at risk of facing a competitive disadvantage should a more unilateral EU climate policy come about.

Both the normative and quantitative economic arguments resulting from this project will also be important for and inform discussion on WTO further institutional development in the process that was enhanced with the 2009 WTO report "Trade and Climate Change", and may foster politically feasible solutions under current, non-ideal conditions.

**PLEASE NOTE:**

*Please also indicate essential literature.*

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## 1.2 Quality of Planning

### 1.2.1 Description of Work Packages and the Work Plan and Schedule

#### A. Overview

Please fill in Table 1 below:

Table 1

WP no.	Title Work Package (WP)	Duration (months)
1	Assessment of climate policy architectures after Copenhagen: New paradigms for climate policy	6
2	Principles for a just global distribution of climate mitigation costs	8
3	The role of international trade and climate policy	10
4	Quantitative economic and global emission modelling	9
5	Evaluating climate policy scenarios	8
6	Designing European climate policy	9
7	Project Management	21

Please indicate the amounts (in EUR) for the cost categories listed and for the total costs in the table below:

**PLEASE NOTE:** In principle, the value-added tax attributable to the services to be funded is not an expenditure eligible for funding; Unless the funding recipient can prove that she or he is entitled to value-added tax (i.e. input tax) reduction

Table 2

WP no.	Personnel costs incl. overhead rate	RTD investments (depreciation)	Travel costs	Costs of materials	Third party costs	Total costs
1	35.322					35.322
2	29.987		5.390	700		36.078
3	34.067		3.350	2.250		39.667
4	33.074			400		33.474
5	40.088		5.640	550		46.277
6	32.925		1.400			34.325
7	7.230		3.200	3.750		14.180
<b>Total</b>	212.692		18.980	7.650		239.322

**B. Project Workflow Plan (PWP) – Gantt Diagram:**

*Clear and detailed graphic description of the work plan and time schedule (recommended length: 1 page).*

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	
<b>WP1: Assessment of climate policy architectures after Copenhagen</b>																						
Task 1.1			M1.1																			
Task 1.2				M1.2																		
Task 1.3					M1.3																	
Task 1.4						M1.4																
<b>WP2: Principles of global distribution of climate mitigation</b>																						
Task 2.1							M2.1															
Task 2.2								M2.2														
Task 2.3									M2.3													
Task 2.4										M2.4												
<b>WP3: The role of international trade and climate policy</b>																						
Task 3.1						M3.1																
Task 3.2								M3.2														
Task 3.3											M3.3											
Task 3.4												M3.4										
<b>WP4: Quantitative economic and global carbon emission modelling</b>																						
Task 4.1						M4.1																
Task 4.2									M4.2													
Task 4.3												M4.3										
Task 4.4													M4.4									
<b>WP5: Evaluating climate policy scenarios</b>																						
Task 5.1												M5.1										
Task 5.2														M5.2								
Task 5.3															M5.3							
Task 5.4																M5.4						
<b>WP6: Designing European climate policy</b>																						
Task 6.1																	M6.1					
Task 6.2																		M6.2				
Task 6.3																			M6.3			
Task 6.4																				M6.4	M6.4	
<b>WP7: Project Management</b>																						
Task 7.1	M7.1									M7.2										M7.3		
Task 7.2													M7.4									M7.4

Figure 2: Work plan and time schedule

### C. Detailed Description of Individual Work Packages (WPs)

For describing the individual work packages, please use the structure below. For more than one Work Package please copy the table below.

(recommended length: 1 page per work package):

<b>WP no. 1</b>	<b>Climate Policy architectures after Copenhagen: New paradigms for Climate Policy</b>	
<b>Starts:</b> 01/11 <b>Ends:</b> 06/11	<b>Total costs of the WP (EUR): 35.322</b>	
<b>Work Package Leader (organisation's name): Wegener Center</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative description of costs</b>
<b>A</b>	<b>30.255</b>	<i>personnel costs</i>
<b>P1</b>	<b>5.067</b>	<i>personnel costs</i>
<p><b>Objectives of the WP:</b> In this WP different scenarios for an international climate architecture after the Copenhagen conference are developed. The WP focuses in particular on possible hybrid approaches between a multilateral agreement and a full fragmentation and gives a first assessment of incentive structures, institutional challenges and ethical/normative considerations.</p>		
<p><b>Content and description:</b></p> <p>Task 1.1: Survey of proposed climate architectures including a top-down climate architecture based on the broad agenda within the UNFCCC; a bottom-up architecture evolving on the basis of bilateral or plurilateral cooperation between national and regions, and hybrid architectures, combining various levels (national, sectoral, regional architectures).</p> <p>Task 1.2: Comparative analysis of elements of these proposed climate architectures and of proposals of how to make them compatible with scenarios regarding their incentive structures and thus solve their institutional challenges</p> <p>Task 1.3: First assessment of the (additional) normative duties arising under these hybrid architectures given that there is no coordinated and binding global effort and thus no guarantee that others will fulfil their duty of sharing the burden of mitigation efforts. Evaluation of reduction objectives and accountability</p> <p>Task 1.4: Analysis of the role of the EU in these architectures, Comparison of the European 2020 targets with other so far proposed targets and actions</p>		
<p><b>Methodology (e.g. interviews, literature research):</b> Literature research Climate policy expert integration in the context of the Kick-Off Workshop</p>		
<p><b>Milestones and results:</b>  <b>M1.1</b> Report on possible climate policy architectures after Copenhagen  <b>M1.2</b> First assessment of climate policy architectures regarding incentive structures and institutional challenges  <b>M1.3</b> First assessment of climate policy architectures regarding ethical/normative considerations  <b>M1.4</b> First assessment of the potential role of the EU in these regimes</p>		

<b>WP no. 2</b>	<b>Principles of global distribution of climate mitigation</b>	
<b>Starts:</b> 02/11 <b>Ends:</b> 09/11	<b>Total costs of the WP (EUR): 35.078</b>	
<b>Work Package Leader (organisation's name): Department of Philosophy</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative description of costs</b>
<b>P1</b>	<b>30.221</b>	<i>mainly personnel costs</i>
<b>P3</b>	<b>5.856</b>	<i>personnel costs and costs of research stays at Graz</i>
<p><b>Objectives of the WP:</b> Identifying a set of principles of distributive justice which is suitable to apply to the global distribution of mitigation efforts under the circumstances that it is not possible to institute a binding global distributive architecture.</p>		
<p><b>Content and description:</b></p> <p>Task 2.1: Comparative assessment of principles of distributive justice according to whether they are justifiable with reference to the basic values Western democracies are already committed to, confirm and explain our considered judgments concerning particular cases, and whether we are able to do justice to the complexity of the climate change problematic.</p> <p>Task 2.2: Analysis of these principles with regard to their applicability and validity in a non-ideal situation which requires unilateral action and offers no safeguard that others will do their share.</p> <p>Task 2.3: Analysis of the implications of the non-ideal principles in terms of their implications for the distribution of climate mitigation burdens.</p>		
<p><b>Methodology (e.g. interviews, literature research):</b> Literature research; Reflective equilibrium (see section 1.1.2) Non-ideal theorizing (as described in section 1.1.2)</p>		
<p><b>Milestones and results:</b>  <b>M2.1</b> Interpretation, critical analysis and assessment of alternative accounts of global distributive justice within the liberal tradition of political philosophy  <b>M2.2</b> Analysis, comparison and evaluation of the implications of these accounts for the distribution of mitigation efforts under ideal conditions  <b>M2.3</b> Analysis, comparison and evaluation of the implications of these accounts for the distribution of mitigation efforts under non-ideal conditions  <b>M2.4</b> First assessment of the implications of the findings for particular actors, especially the EU</p>		

<b>WP no. 3</b>	<b>The role of International Trade and Climate Policy</b>	
<b>Starts:</b> 02/11 <b>Ends:</b> 11/11	<b>Total costs of the WP (EUR): 39.667</b>	
<b>Work Package Leader (organisation's name): Wegener Center</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative description of costs</b>
<b>A</b>	<b>20.047</b>	<i>mainly personnel costs</i>
<b>P2</b>	<b>4.645</b>	<i>personnel costs</i>
<b>P1</b>	<b>14.975</b>	<i>mainly personnel costs</i>
<p><b>Objectives of the WP:</b></p> <p>The WP assesses how climate policy can be integrated with international trade agreements on an international or – as for the EU - regional level. This includes for example how adjustment policies (such as border tax adjustments) or other policies that rely on the Consumption Based Principle relate to the current and/or future developments of the WTO.</p>		
<p><b>Content and description:</b></p> <p>Task 3.1: Structuring and analysis of the trade and climate issues (production based accounting principle versus consumption based; environmental industries)</p> <p>Task 3.2: Identification of conceptual options available for ensuring compatibility of trade and climate policy regimes (carbon added value chain – similar to value added chain, etc.)</p> <p>Task 3.3 Normative evaluation of the conceptual options identified in 3.2</p> <p>Task 3.4 Identification of the implications of those concepts suggested in 3.3 for the World Trade and Climate Policy institutional settings</p>		
<p><b>Methodology (e.g. interviews, literature research):</b></p> <p>Literature research International stakeholder workshop (Berlin) Reflective equilibrium (see section 1.1.2)</p>		
<p><b>Milestones and results:</b></p> <p><b>M 3.1</b> Overview of competing concepts and the major principles underlying the trade regime and the carbon leakage channels</p> <p><b>M 3.2</b> Description and exploration of options to incorporate carbon content in the trade regime</p> <p><b>M 3.3</b> Comparative normative assessment of policy options that aim at ensuring compatibility of trade and climate policies</p> <p><b>M 3.4</b> Assessment of trade-offs between achieving normative ideals (Task 3.3) and concepts identified in 3.1 and 3.2</p>		

<b>WP no. 4</b>	<b>Quantitative economic and global carbon emission modelling</b>	
<b>Starts:</b> 03/11 <b>Ends:</b> 11/11	<b>Total costs of the WP (EUR): 33.474</b>	
<b>Work Package Leader (organisation's name): Wegener Center</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative description of costs</b>
<b>A</b>	<b>33.474</b>	<i>mainly personnel costs</i>
<p><b>Objectives of the WP:</b></p> <p>A quantitative economic and carbon emission model of EU, its main trading partners and other world regions distinguished according to their role in climate policy is developed (multi-regional, multi-sectoral CGE, using data bases of GTAP-E v7 and/or the European IO time series data basis currently developed) to depict the relevant economic and carbon impacts up to 2030.</p>		
<p><b>Content and description:</b></p> <p><b>Task 4.1.: Investigation of economic and carbon development 2010-2030:</b> sectoral breakdown of long term growth rates based on labor and capital productivity and energy efficiency improvements, development of fuel prices and other key economic variables</p> <p><b>Task 4.2.: Model refinement:</b> Based on a multi-region multi-sector CGE model of Austria, its main trading partners and other important world regions set up of a model for the EU and the major world regions according to international trade and climate policy. Moreover, modeling of carbon emissions will be improved upon the GTAP database to better reflect emission responsibilities according to UNFCCC guidelines</p> <p><b>Task 4.3: Modeling of policy instruments:</b> Refinement of CGE model to include various types of climate policy, reaching from emissions trading to efficiency targets to financing mechanisms like the Copenhagen Green Climate Fund.</p> <p><b>Task 4.4.: Reporting of economic and carbon impacts of policy options:</b> Analysis of baseline/reference scenario; preparation of model to provide results of different policies on GDP, sectoral output, trade balance, carbon prices, carbon emissions, carbon trade balance / carbon leakage</p>		
<p><b>Methodology (e.g. interviews, literature research):</b></p> <p>Multi-regional multi-sectoral CGE modelling exogenous technological progress modelled by factor productivity and energy efficiency improvements</p>		
<p><b>Milestones and results:</b></p> <p><b>M 4.1</b> Report on the framework (external parameters) for the policy scenarios  <b>M 4.2</b> Refined Multiregional CGE model (improved emission modelling)  <b>M 4.3</b> Report on instrument modelling for trade and climate integration  <b>M 4.4</b> Comprehensive carbon and economic output modelling completed</p>		

<b>WP no. 5</b>	<b>Evaluating climate policy sceanrios</b>	
<b>Starts:</b> <i>08/11</i> <b>Ends:</b> <i>03/12</i>	<b>Total costs of the WP (EUR): 46.277</b>	
<b>Work Package Leader (organisation's name): Department of Philosophy</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative de- scription of costs</b>
<b>A</b>	<b>18.590</b>	<i>mainly personnel costs</i>
<b>P1</b>	<b>18.120</b>	<i>mainly personnel costs</i>
<b>P2</b>	<b>3.543</b>	<i>mainly personnel costs</i>
<b>P3</b>	<b>1.700</b>	<i>Travel costs (research stay at University of Graz)</i>
<b>P4</b>	<b>4.325</b>	<i>mainly personnel costs</i>
<p><b>Objectives of the WP:</b></p> <p>Based on the previous WPs this WP will evaluate the scenarios with the use of different criteria (eg. environmental effectiveness, economic, distributional, normative). The evaluation will give insights on coherence (e.g. compatability among different regimes), effectiveness, political feasibility, adaptability over time, flexibility in design, but also normative and ethical considerations.</p>		
<p><b>Content and description:</b></p> <p>Task 5.1 Development of criteria to evaluate different climate policy scenarios</p> <p>Task 5.2 Development of scenarios of different climate policy architectures and respective climate and trade instruments (based on results from WP1-WP3)</p> <p>Task 5.3 Quantification of economic and carbon effects of instruments under different climate policy architectures (scenario analysis with CGE model)</p> <p>Task 5.4 Evaluation of scenario simulation outcomes in relation to normative concepts</p>		
<p><b>Methodology (e.g. interviews, literature research):</b></p> <p>Multi-criteria analysis</p> <p>Scenario analysis with multi-regional multi-sectoral CGE model</p> <p>Reflective equilibrium (see section 1.1.2)</p>		
<p><b>Milestones and results:</b></p> <p><b>M5.1</b> Set of evaluation criteria</p> <p><b>M5.2</b> Set of scenarios (architectures and climate and trade instruments)</p> <p><b>M5.3</b> Report on economic and carbon effects under different scenarios</p> <p><b>M5.4</b> Comparative normative assessment of climate policy options with respect to their implications under the specified non-ideal conditions and in terms of distributive and transitional justice as well as criteria of political legitimacy</p>		

<b>WP no. 6</b>	<b>Designing European climate policy</b>	
<b>Starts:</b> 01/12 <b>Ends:</b> 09/12	<b>Total costs of the WP (EUR): 34.325</b>	
<b>Work Package Leader (organisation's name): Wegener Center</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative description of costs</b>
<b>A</b>	<b>20.671</b>	<i>personnel costs</i>
<b>P2</b>	<b>5.485</b>	<i>mainly personnel costs</i>
<b>P3</b>	<b>2.489</b>	<i>personnel costs</i>
<b>P4</b>	<b>4.680</b>	<i>mainly personnel costs</i>
<p><b>Objectives of the WP:</b></p> <p>Design a coherent approach for the EU given the slow progress in international climate negotiations. The approach will depart from the EUs ambitions for global climate protection, and draw from the findings of WP 1 to 5. In order to incorporate different potential developments in other major economies, the WP builds upon the scenarios for international climate architecture as developed in WP1, the normative evaluation of them in WP2, the trade policy options as developed in WP3, and the evaluations of specific options from WP5 to conclude on policy recommendations for EU climate policy.</p>		
<p><b>Content and description:</b></p> <p>Task 6.1: Identification of scope for negotiation by the EU (based on winners and losers of different policy scenarios)</p> <p>Task 6.2 Options for the EU within different international scenarios</p> <p>Task 6.3: Overall synthesis of economic, distributional and emission impact after evaluation of respective EU options against different international scenarios</p> <p>Task 6.4: Institutional and policy recommendations</p>		
<p><b>Methodology (e.g. interviews, literature research):</b></p> <p>Preparation of a Synthesis Report for stakeholder discussion (for COPs)</p> <p>International Stakeholder Workshop</p> <p>Discussion with international advisory board and other expert networks</p> <p>Preparation of dissemination products for both scientific and non-scientific audience</p>		
<p><b>Milestones and results:</b></p> <p><b>M6.1</b> Summary paper of EU negotiation space</p> <p><b>M6.2</b> Summary paper of EU options</p> <p><b>M6.3</b> Synthesis report and delivery to stakeholders</p> <p><b>M6.4</b> Dissemination products for scientific and non-scientific audience</p>		

<b>WP no. 7</b>	<b>Project Management</b>	
<b>Starts:</b> 01/11 <b>Ends:</b> 09/12	<b>Total costs of the WP (EUR): 14.180</b>	
<b>Work Package Leader (organisation's name): Wegener Center</b>		
<b>Name of participating institute or enterprise</b>	<b>Share of total costs of the WP (euro)</b>	<b>Brief qualitative description of costs</b>
<b>A</b>	<b>8.157</b>	<i>personnel costs and workshop costs (dissemination)</i>
<b>P1</b>	<b>5.023</b>	<i>mainly personnel costs</i>
<b>P4</b>	<b>1.000</b>	<i>Travel costs (participation in Kick-Off Workshop and Berlin Stakeholder Workshop)</i>
<p><b>Objectives of the WP:</b></p> <p>Project management and coordination, information management, coordination of contacts to stakeholders and Scientific Advisory Board, dissemination of project results.</p> <p>Relevance of the project results is ensured by both the Scientific Advisory Board interaction and stakeholder involvement at two international stakeholder workshops. Both enhances also dissemination of project results.</p>		
<p><b>Content and description:</b></p> <p>Scientific Advisory Board Meetings (months Y1M1, Y1M9, Y2M6)  International Workshop 1 (after Mexico Conference)  International Workshop 2 (discussing draft final results)  Project management  – general project management and structural planning  – publications and dissemination</p>		
<p><b>Methodology (e.g. interviews, literature research):</b></p> <p>Project Management  Workshop Management and Organisation  Concurrent project controlling with respect to objectives, costs and timeline  Report and paper generation</p>		
<p><b>Milestones and results:</b></p> <p><b>M 7.1</b> Kick-off Workshop  <b>M 7.2</b> International Stakeholder Workshop before the end of WP3 (Berlin)  <b>M 7.3</b> Result Stakeholder Workshop (Graz)  <b>M 7.4</b> Papers submitted</p>		

## 2 Suitability of Funding Applicants /Project Partners

### 2.1 Overview

Please note that this data has to be matched with Form B (Sheet "9 Total Costs and Funding")!

**Table 3**

Applicant (A) / Partner no. (P x)	Type of organisation*	Federal state**	Share of costs in total costs [EUR]	[%]	Funding applied for [EUR]	[%]
A	RI-U	ST	131.194	54.8	131.194*)	100*)
P1	RI-U	ST	63.076	26.4	63.067*)	100*)
P2	RI-N	A	25.003	10.4	25.003	100
P3	RI-U	A	10.045	4.2	10.045	100
P4	RI-I	A	10.004	4.2	10.004	100
<b>Sum of total costs</b>			<b>239.322</b>	<b>100%</b>	<b>239.322*)</b>	<b>100%</b>

\*) Note: All Austrian university partners (A, P1) provide labour input of public funded staff as in kind support. The corresponding labour hours are included in Form B but multiplied by a unit cost of 0.

\* **Add type of organisation:** Please use the following acronyms

<i>Large enterprises</i>	<i>LE</i>
<i>Medium-sized enterprises</i>	<i>ME</i>
<i>Small enterprises</i>	<i>SE</i>
<i>Research institutions – universities, universities of applied sciences</i>	<i>RI-U</i>
<i>Research institutions – non-university research institutions</i>	<i>RI-N</i>
<i>Research institutions – individual researchers</i>	<i>RI-I</i>
<i>Research institutions – others</i>	<i>RI-O</i>

\*\* **Add Federal state:** Please use the following acronyms

*B: Burgenland, K: Carinthia, NÖ: Lower Austria, OÖ: Upper Austria, S: Salzburg, ST: Styria, T: Tyrol, V: Vorarlberg, W: Vienna, A: Abroad*

**Table 4**

Applicant (A) / Partner no. (P x)	Main task in the project
A	Policy scenario analysis, quantitative economic and emission modelling, quantitative evaluation of policies and institutional settings, policy recommendations
P1	Normative analysis and evaluation
P2	Trade and climate interlinkage analysis; analysis of trade instruments for climate policy
P3	Scientific Advisory Board, Normative analysis and evaluation
P4	Scientific Advisory Board, International climate policies and architectures; EU options (also with respect to ETS)

## 2.2 Applicant and Partners (1 page maximum per partner)

### Applicant

a) Name of institution or enterprise, or name of scientist

#### **Wegener Center for Climate and Global Change, University of Graz**

b) Information on the scientific competence of the organisation and of the persons participating in the project. Focus on know-how relevant to the project

The Wegener Center is an interdisciplinary, internationally oriented research center which combines the competences of the University of Graz in the research areas "Climate, Environmental, and Global Change". The center brings together about 40 scientists from fields such as geophysics and climate physics, meteorology, economics, geography, and regional sciences. The research interests extend from monitoring, analysis, modeling and prediction of climate and environmental change, via climate impact research to the analysis of adaptation to and mitigation of climate change.

The Wegener Center has extensive experience in quantitative economic and GHG emission modeling, in GHG mitigation policy analysis both at the international and national level, and in trade and environment interaction analysis. In particular the involved researchers have cooperated in linking international climate policy scenarios to a quantitative emission and economic analysis in the project 'The Carbon Content of International Trade Flows in Austria'. Extensive experience in research project management for both small and large consortia for the European Union (up to FP7), the OECD and national research funding organisations (FWF, FFG) and ministries.

**K. Steininger**, Univ. of Graz, Department of Economics, Head of the Economics of Climate and Global Change research group (EconClim) at the Wegener Center, has long-lasting research experience in inter- and transdisciplinary climate and energy research, in particular in empirical macroeconomic and GHG emission quantitative modelling. Starting with his book on "International Trade and the Environment" in 1994, he has published numerous articles and book chapters since. He will lead the overall project (and thus WP7) and in particular WP3 and WP6.

**B. Bednar-Friedl**, Department of Economics, and Vice Head of the EconClim Research Group, has ten years research experience in dynamic general equilibrium modelling, in the fields of natural resource and environmental economics, international economics, and environmental science. Her both theoretical and applied quantitative modelling background will facilitate model development and trade and climate policy analysis in WP4 (lead) and WP5.

**P. Munoz**, member of the EconClim research group, PhD student at the University of Barcelona, Spain. His international experience in trade and quantitative modelling will facilitate WP3.

**T. Schinko**, member of the EconClim research group, has project experience in multiregional CGE modelling and managing world energy and GHG data. He will support WP4 and WP5, as well as the project management in WP1.

**A. Türk**, EconClim research group. Based on his international experience in climate policy (e.g. guest editor of *Climate Policy* special issue 2009) he will lead WP1 and contribute to WP5 and WP6.

c) Description of existing project-relevant infrastructure and other aspects of capacity for carrying out the project.

The Wegener Center supplies an excellent research infrastructure in a building close to the University central campus, including the necessary server and computer capacity, software and data access.

## Partner 1

a) Name of institution or enterprise, or name of scientist

### Department of Philosophy, University of Graz

b) Information on the scientific competence of the organisation and of the persons participating in the project. Focus on know-how relevant to the project

*(CVs are to be enclosed in the annex)*

The Practical Philosophy section of the Department of Philosophy plays an active role in the inter-university research center (Forschungsschwerpunkt) "Environmental and Global Change". This nationwide research center aims to bring scholars from different fields of the natural sciences, social sciences and humanities together to cooperate in transdisciplinary research groups. The Department of Philosophy also is a Base Institute (Stamminstitut) of the Wegener Center for Climate and Global Change at the University of Graz, directed by Profs. Gottfried Kirchengast and Karl Steininger. The Practical Philosophy section contributes to interdisciplinary research within this Center on the questions of how to operationalize the normative principles and considerations and how to take them into account in terms of an international agreement on how to respond to climate change in a just way.

**L. Meyer**, Univ. of Graz, Institute for Philosophy, Head of Department of Philosophy, has long-standing interests in intergenerational and international justice issues with a particular focus on climate change and its consequences.

**A. Zellentin**, Univ. of Graz, Institute for Philosophy, University Assistent, She has research experience in normative political philosophy and is currently working on different problems of justice associated with climate change (esp. global distributive justice and migration).

c) Description of existing project-relevant infrastructure and other aspects of capacity for carrying out the project.

The proposed project is part of an effort to establish a research cluster on practical philosophy within a center for philosophical and interdisciplinary basic research at the University of Graz. The research cluster will concentrate on questions regarding justice and responsibility in space and time, with a focus on issues of climate change and justice. The project will also contribute to the planned Swiss-Austrian collaborative project "The Importance of Concepts of Justice for Sustainable Environmental Policy: Theoretical and Empirical Analyses" with research groups in Graz, Basel, Zürich and St. Gallen. Alexa Zellentin and Lukas Meyer plan research stays at the University of Oxford for four months to cooperate with Prof. Simon Caney as well as other leading scholars working on aspects of the project as submitted, namely with Profs. David Miller, Henry Shue and Adam Swift.

## Partner 2

a) Name of institution or enterprise, or name of scientist

**Stiftung Wissenschaft und Politik (SWP), Berlin, Germany; Global Issues Division, Dr. Susanne Dröge**

b) Information on the scientific competence of the organisation and of the persons participating in the project (if international partners, please indicate how they will contribute to building Austrian research competence). Focus on know-how relevant to the project

*(CVs are to be enclosed in the annex)*

The German Institute for International and Security Affairs of the Stiftung Wissenschaft und Politik (SWP) is an independent scientific research institute based in Berlin, Germany, that conducts applied policy research. It advises the German Bundestag (the German parliament) and the federal government on foreign and security policy issues. The Global Issues Division in particular works on international economics, climate and energy policy, while the European Integration Division focuses on the EU's role as a climate policy frontrunner. Detailed information is available at: <http://www.swp-berlin.org/en/index.php>.

**S. Dröge**, Head of the Global Issues Research Division, is an expert in international trade and climate policy. She cooperates in international networks on modelling trade policy and climate protection and participates in experts meetings of the World Bank, the WTO, or the IEA.

The cooperation with Susanne Dröge and SWP will ensure that the Austrian wide university research center "Environmental and Global Change", that the University of Graz Wegener Center plays a pivotal role in, will be linked to the Climate Strategies network in climate trade policy issues, to the mutual benefit of both, will supply modelling competences to this network and benefit from policy debate and stakeholder (policy maker) interaction within this network.

c) Description of existing project-relevant infrastructure and other aspects of capacity for carrying out the project.

SWP works on the climate negotiation priorities of major emitters (US, China, India, Russia, EU, Brazil, South Africa). Susanne Droege coordinates this work. Moreover, she is project leader for the international reaseach network Climate Strategies ([www.climatestrategies.org](http://www.climatestrategies.org)), and latest work focusses on the role of border adjustments for the EU ETS in a world of unequal carbon prices.

### Partner 3

a) Name of institution or enterprise, or name of scientist

**University of Oxford, Department of Politics and International Relations, Prof. Simon Caney**

b) Information on the scientific competence of the organisation and of the persons participating in the project (if international partners, please indicate how they will contribute to building Austrian research competence). Focus on know-how relevant to the project  
*(CVs are to be enclosed in the annex)*

The department for politics and international relations at the University of Oxford hosts one of the world's largest communities of political philosophers with several experts working on topics relevant to this project such as ideal- and non-ideal theorizing (A. Swift), international and global justice (S. Caney, D. Miller), climate change (S. Caney, H. Shue, D. Miller).

**S. Caney**, Univ. of Oxford, Dept. for Politics and International Relations, Prof. in Political Theory has extensive expertise in applying political philosophy to global politics and has written on global distributive justice, climate change, human rights, sovereignty, global governance, self-determination, humanitarian intervention and war. In 2008 Simon Caney was awarded the ESRC (Economic and Social Research Council, UK) Climate Change Leadership Fellowship.

By including Simon in the project we will gain from his personal expertise and further the co-operation and exchange with the Department of Politics and International Relations at the University of Oxford. Simon plans research stays at the University of Graz for two months to cooperate with the Graz partners of the project.

c) Description of existing project-relevant infrastructure and other aspects of capacity for carrying out the project.

The Fellowship allows Prof. Caney to pursue the project "Equity and Climate Change" (2008-11). This project first discusses anthropogenic climate change as an injustice, identifying the different rights of persons which are violated as well as principles of assigning responsibility for these violations. The project then aims to identify principles based on this analysis which are suitable to guide political decision making. Finally, the project aims to identify what the challenge of anthropogenic climate change requires in terms of reforming the global institutional structure.

## Partner 4

a) Name of institution or enterprise, or name of scientist

**Barbara K. Buchner, Climate Policy Initiative (CPI), Venice Office**

b) Information on the scientific competence of the organisation and of the persons participating in the project (if international partners, please indicate how they will contribute to building Austrian research competence). Focus on know-how relevant to the project

*(CVs are to be enclosed in the annex)*

Climate Policy Initiative (CPI) is a new non-profit institution organized to assess and diagnose the effectiveness of energy and climate policies around the globe, and to support the efforts of key governments across the world to achieve low carbon growth. As a leading independent centre for comparative policy analysis, CPI measures and explains the gaps between: (1) nations' ambitions for low-carbon growth and their actual performance; (2) nations' potential for low carbon growth and their policy ambitions.

Established in 2009 through a long-term grant from the Fund for Policy Research, a non-profit organization funded by George Soros, CPI also works closely with the finance and business communities to understand how emerging climate policies create and affect markets that allocate investment capital. The initiative maintains offices in key countries to ensure its insights are rooted in the domestic landscape and readily accessible to national policymakers. CPI is objective and nonpartisan. Its analysis is free from political pressure applied by governments, financial institutions, and other influential actors. At the same time, CPI meets the needs of decision makers by providing customized research that is tailored to the concerns of individual nations.

B. Buchner, CPI, Director of Venice Office, has long-lasting research and policy experience related to climate and energy policy, in particular in the qualitative and quantitative analysis of market-based mechanisms and other policy approaches to GHG mitigation and in the international negotiations. She has published a number of articles in peer-reviewed journals as well as in books, and is contributing author of a recent book on 'Pricing Carbon. The European Emissions Trading System' and co-editor of a recent book on 'Allocation in the European Emissions Trading Scheme'. She will contribute to the EU policy evaluation and design WPs (5 and 6) and also will serve on the Scientific Advisory Board of the project.

c) Description of existing project-relevant infrastructure and other aspects of capacity for carrying out the project.

The Venice office of CPI supplies an excellent research infrastructure being collocated on the premises of the Fondazione Eni Enrico Mattei, a well-respected international research centre, and the International Center for Climate Governance, a joint project between FEEM and Fondazione Giorgio Cini, and having close contacts to the Ca' Foscari University Venice.

## 2.3 Subcontractors

Please list the following information for all subcontractors with subcontracts > EUR 2,000.

1) Basic information

Relevant WP(s)		Subcontractor to A/Px	
Name of subcontractor			
Subcontractor's address			
Costs of the subcontract [EUR]			
Types of costs (stated in %)	<i>e.g.: 50% personnel costs and 50% investments</i>		

2) Description of the subcontracted activity

3) Offer (if available)

## 2.4 Consortium and Management (2 pages maximum)

Please describe the items listed below:

- Potential of the consortium for implementing the project objectives, Coverage of all addressed topics by experts - if one topic is not covered please specific how the lack of expertise will be dealt with. Management structure for reaching these project objectives

The consortium has the full potential to meet the project's objectives. The additional external expertise of stakeholders (policy makers) is integrated by the two core stakeholder workshops (one in Berlin, one in Graz) and the interaction triggered thereby.

All five institutions have long term experiences in the area of national and international climate policies. In particular the Wegener Center brings modelling competence into the consortium as well as a profound knowledge on international climate policy. The Department of Philosophy has a team of researchers working on normative issues concerning the consequences of climate change. The SWP offers an international network including experts who work on big emitters' climate policy priorities.

All five partners are strongly integrated in international research networks such as Climate Strategies. While three of the five partners carry the main work load within the project, two international partners (Barbara Buchner, Simon Caney) will contribute primarily within the format of a Science Advisory Board, directing the project at the crucial points of decision making (Kick-off Workshop, draft reading and commenting on papers and interim reports, Stakeholder Workshops). This structure keeps the management streamlined and ensures a common understanding of each partners tasks within the project.

The management structure of the project is as follows: The project is to be lead by the highly qualified Prof. Karl Steininger. The project coordination team moreover includes Prof. Lukas Meyer and Dr. Susanne Dröge as heads of the respective research groups. Quarterly coordination meetings will ensure project controlling and solution of arising issues in one of the work packages or in their interaction. The administrative unit of Wegener Center will support the general management tasks with its well gained experience to that end (administrator Sabine Tschürtz, research manager Mag. Karin Eisner, secretary Bettina Schlager). Further, project administrative support on content matter will be supplied by Thomas Schinko, one of the PhDs in this project.

- Use of tools for comprehensible review of the project objectives (self-evaluation: catalogue of evaluation criteria and concept)

The following tools will be employed:

- project structuring by a detailed project structure plan (PSP) and the according project time

schedule (where critical paths and dependencies are defined)

- continuous management of a open-item-list
- minutes of the relevant meetings, workshops etc. within the team, but also with the KPC and stakeholders in climate policy (interviews, stakeholder workshops)
- a comprehensive evaluation of interim and final results is also carried out by the science advisory board

Science Advisory Board

To evaluate the results and to bring in international expertise in a structured format a science advisory board will be established. The first input of the full science advisory board is in the context of the Kick-Off Workshop to fine tune the climate architectures analysed. The second intervention will take place ahead of the international Workshop reviewing the interim project results before completion of WP3. The third major input will be made within WP6 with the aim to assist the formulation of the final results. In addition, interim reports will be commented by the individual Scientific Advisory Board members upon request.

The Science Advisory Board consists of

- o Dr. Barbara Buchner, a leading international Climate Policy expert at the Climate Policy Initiative (Director of the Venice office)
- o Prof. Simon Caney, a leading expert in the philosophical debates on climate change, is Professor for Political Theory at the Department for Politics and International Relations at the University of Oxford

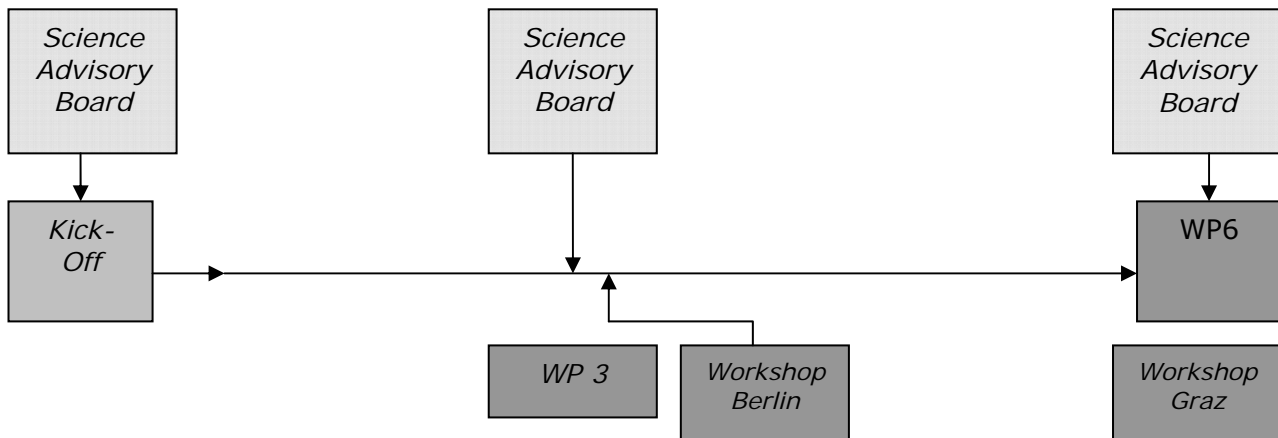


Figure 2: Overview on workflow and intervention by Science Advisory Board

- Building up competence and other medium to long-term advantages provided by the consortium to the individual partners

The project will help the Wegener Center to become an important player regarding international Climate policy and strengthen Austrian research in this area. The collaboration with the SWP improves the know-how transfer regarding climate and trade policy to the Wegener Center, which is in a process of enhancing its modelling competences in this area. The collaboration with the Department of Philosophy, University of Graz will strengthen the collaboration within the University of Graz regarding climate change (within the framework of the University Graz overall Research Center on Environmental and Global Change as established in early 2010). The project will strengthen the philosophy research group in allowing its members to investigate and test the practical and political relevance of their normative research.

The project’s normative focus helps SWP to elaborate further on systematic approaches to reconcile trade and climate policy interests in the medium to long term. Moreover, the interactions with philosophers and modellers will help to further investigate the common international understanding on climate policy priorities under the UN system.

### 3 Dissemination and Economic Potential

*(3 pages maximum)*

#### 3.1 Expected publications

*Please describe planned publications (journals, books, conferences, etc) and other planned dissemination activities*

The result of this project will be of high relevance for policymakers and science.

- The interim and final results will be presented at national and international workshops and conferences (e.g. UNFCCC events) to enable a fast dissemination
- The project results will be exchanged with national (ministries, WIFO...) and international partners (e.g. Climate Strategies, Energy Center Netherlands (ECN))
- The result will lead to academic publications in relevant national as well as international journals (in particular we envisage Climate Policy, Energy Policy, the Journal of Policy Modelling and Journal of Political Philosophy and adequate platforms (e.g. Climate-L, JIQ Newsletter...) as well as international Conferences (in particular we envisage American Philosophical Association – Eastern Division, European Association of Environmental and Resource Economists, an ECOMOD Modelling Conference, the European Economic Association and the Environmental Section of the Verein für Socialpolitik)

#### 3.2 Expected resulting data sets and / or tools

*Please describe which data sets and/or tools (e.g. models, methodologies, checklists,...) are expected to be generated and who will benefit from them (i.e. what is the added value for potential users)*

- The data base on energy and GHG emission data consistent with economic data of GTAP will be supplemented by GHG process emission data. This data base will be available for CGE and Input-Output modellers via one respective publication (and electronic supply). We seek to interact with the current European effort to establish a time series to that end as well.
- A multi-regional multi-sectoral world region computable general equilibrium model for the analysis of climate policy under hybrid architectures and carbon leakage under the implementation of different trade and climate alignment instruments will be available for further research of the partners thereafter, potentially to be built upon also by their respective networks.
- The synthesis report will present a consistent normative and economic evaluation to the benefit of the (not only European) climate policy discussion.
- The normative analyses of relevant principles of justice and evaluations of EU policy options will contribute to the ongoing debate on climate justice as well as strengthen the role of normative theorists in advising shareholders and policy-makers.
- The policy recommendation dissemination papers available at the COPs and their preparatory meetings will enrich the quantitative and – more so – institutional information available at these meetings.

### 3.3 Contribution to the Objectives of the Programme and user value

*Please describe how the project contributes to the objectives of the ACRP programme and how potential stake holders (research community, decision makers, private companies) will benefit from the results of the research activity*

The project contributes to many of the objectives of ACRP research to support climate policy at the micro, meso and macro levels. In addition it is an interdisciplinary and transdisciplinary project proposal, integrating several (mainly non-technological) disciplines. In particular the project contributes to *Thematic area 3: European and global climate policy*. The project will assist Austrian policy makers to design and implement climate and energy policy at the European and international levels, but with high relevance for the Austrian economy

In particular

- ACRP intends to strengthen Austria as a business location in the medium and long term (Call, p.2)

The project RESPONSE is to develop politically and ethically justifiable border adjustment mechanisms to ensure EU (and Austrian) competitiveness in carbon intensive sectors of the economy for the case of unilateral EU climate policy. In such a framework the latter can thereafter trigger economically relevant first mover advantages.

- ACRP seeks to contribute towards building a high level of climate research competence (Call, p.4)

The intensification of collaboration between three research groups already at the cutting edge in their own individual capacities will make Austrian research stronger visible at the international level by generating results of more significant recognition. Advice and the networking options of the two partners within the Scientific Advisory Board will enhance this outreach within the international scientific community.

- ACRP encourages stakeholder involvement (Call, p. 4)

The definition of climate regime scenarios (Kick-Off Workshop), of trade and climate instruments (Berlin Stakeholder Workshop) and discussion of preliminary results (WP6 final Graz Workshop) each are built to strongly draw from stakeholder interaction.

- The central objectives of ACRP are (Call, p.5)

- Integrating existing Austrian climate research into international research networks

We build upon the research networks Climate Strategies and Climate Policy Initiative by integrating them as partners.

- Promoting useful results for Austria's scientific, business and public communities

Results will inform policy (Austria, EU, WTO), business (competitiveness) and science (modelling and interdisciplinary integration between humanities and social sciences).

- Identify research on climate change with a potential for international recognition and leadership

As argued above the linkage of research groups each internationally recognized will undoubtedly improve their status of international recognition

- Strengthening Austria's capacity for advanced (interdisciplinary) analysis

The proposed collaboration between the disciplines is to our knowledge at the current cutting edge of international climate research.

- Research proposals should link up actively with the international research community by, for example, including foreign researchers if they can make a unique contribution, and delegat-

ing Austrian scientists to spend time abroad in the context of international network programmes (Call, p. 6)

In our project the two members of the Scientific Advisory Board, each unique in their international contributions, each will spend two periods of time in Graz. Further, one member of the philosophy research group will spend twice two months each at Oxford to gain from the research capacities there.

- Cooperation with international partners is encouraged (Call, p.9)

Three international partners are involved in the proposed project.

Within thematic area 3 (European and global climate policy), the proposal matches the topics encouraged in the Call (p.9), as specified in the following:

The project will address

- the Copenhagen-agreed outcome and discuss its opportunities, challenges and responsibilities;
- global Governance and new forms of decision and governance processes;
- burden/effort sharing from a normative view (including implications of 2°C in terms of burden sharing);
- Mainstreaming climate change into trade policy;
- Policy beyond 2°C stabilisation;

## 4 Annex

1. **CVs:** *please insert 2 pages per partner, including a maximum of 10 publications relevant*

### Wegener Center for Climate and Global Change

**Karl Steininger**, Ao.Univ.Prof. Mag. Dr.

University of Graz, Department of Economics and Wegener Center for Climate and Global Change, Leechgasse 25, A-8010 Graz, Austria, <http://www.uni-graz.at/karl.steininger>

**Academic Education and Professional Development:** Master in social sciences (combined programme Computer Science and Economics), Univ. of Vienna and Technical University of Vienna, Austria, Graduate studies at UC Berkeley (Resource Economics), Fulbright Scholar, Ph.D. Social Sciences, Univ. of Vienna, Austria (1994), Venia docendi Economics (habilitation), University of Graz (1999), Consultant, Environment Dept., World Bank, Washington, D.C. (1990, 1992), Assist. Professor UniGraz (1994), Guest Professor Univ. of Trieste (1997), Assoc. Professor UniGraz (1999), Social Science Delegate National Global Change Committee, Austrian Academy of Sciences (2000-present), Head of the Human Dimensions Programme (HDP) and WegCenter Deputy Director (2005-present).

**Main research areas:** Quantitative economic analysis. Focus on modelling of climate change and climate policy, and spatial economic models.

**Further project specific qualifications:** Research management of projects on behalf of the OECD, World Bank and various national research funding agencies. Leading national and international inter- and transdisciplinary research projects on climate change.

**Ongoing or recently completed projects relevant to the current proposal:**

Coordinator ACCIT - The Carbon Content of International Trade Flows in Austria , Research Center International Economics Vienna, 2009

EnergyTransition 2012/2020/2050 - Restructuring strategies for the Austrian energysystem according to the energy and climate policy goals 2012, 2020 and 2050, FFG, 2008-2010

REFLEX – Assessing flexibility mechanisms for achieving the Austrian 2020 renewable energy targets, FFG, 2010-2011

**Birgit Bednar-Friedl**, Ass.-Prof. Mag. Dr.

University of Graz, Department of Economics and Wegener Center for Climate and Global Change, Leechgasse 25, A-8010 Graz, Austria, <http://www.uni-graz.at/birgit.friedl>, <http://www.wegcenter.at>

**Academic Education and Professional Development:** Master in Environmental System Sciences (major economics), UniGraz (1999), Doctoral Programme in Social Sciences/Economics, UniGraz (2003), participation in various international summer schools, PhD workshops and courses. Junior Researcher, Dept. of Economics, UniGraz (1999-2000); Assist.Prof. (Pre-Doc), Univ. Klagenfurt, Austria (2000-2004); Assist. Prof. (Post-Doc), UniGraz (2004-2008), since 2005 Vice Head of the EconClim Research Group at WegCenter (~15 persons), since 2008 tenure track position.

**Main research areas:** natural resource and environmental economics. Focus on dynamic general equilibrium modelling, economics and policy of climate change, and international trade.

**Further project specific qualifications:** Several projects for OECD, EU FP6, Austrian Climate and Energy Fund, Austrian Academy of Sciences, Austrian National Bank, and Austrian Federal Ministries of Environment, of Science, and of Economic Affairs.

**Pablo Jamarilla Muñoz**, MSc.

University of Graz, Wegener Center for Climate and Global Change, Leechgasse 25, A-8010 Graz, Austria

**Academic Education and Professional Development:** Master in Ecological Economics and Environmental Management, Univ. of Barcelona, Spain (2005); Wolrd Bank Scholarship (2005); Visiting Phd. student at Sustainability Research Institute (SRI), Univ. of Leeds, UK (2008); Visiting Phd. student at Univ. of Groningen, NL (2008)

**Main research areas:** environmental impacts of consumption activities along the whole production chain; input-output and material flows analysis

**Ongoing or recently completed projects relevant to the current proposal:**

ACCIT - The Carbon Content of International Trade Flows in Austria, Research Center International Economics Vienna, 2009

**Thomas Schinko**, Bakk. rer.nat.

University of Graz, Wegener Center for Climate and Global Change, Leechgasse 25, A-8010 Graz, Austria

**Academic Education and Professional Development:** Bachelor (Econ and Environmental sciences, Univ of Graz, 2008), Master programme of Economics and Environmental sciences, Univ of Graz (thesis: "Getting Developing Countries on Board of Climate Policy: A CGE analysis of the 'Global Deal' to reconcile Climate Policy, Development and Trade"); Researcher at Joanneum Research (2008), Researcher at the Wegener Center for Climate and Global Change (2009-present)

**Main research areas:** Climate policy, development economics and international trade. Quantitative economic analysis with focus on modelling of climate policy and international trade

**Ongoing or recently completed projects relevant to the current proposal:**

ACCIT - The Carbon Content of International Trade Flows in Austria, 2009

**Andreas Türk**, Mag. rer.soc.oec. MBA

**Academic Education and Professional Development:** Master in Chemistry and Environmental sciences, University of Graz (1996), Master of Business Administration (MBA, Danube University Krems (2001), Researcher at the Wegener Center for Climate and Global Change, University of Graz (2004-present), Researcher at Joanneum Research (2006-present)

**Main research areas:** International and national Climate policy, Design of climate policy instruments, Emissions trading (EU-ETS, linking). East West Climate Policy

**Ongoing or recently completed projects relevant to the current proposal:**

Coping with Complexity in the Evolving International Climate Policy Institutional Architecture (ICPIA), Austrian Climate and Energy Fund, ACRP, 2010-2011

Institutional framework for a Global Carbon Market, 2010-2011, ÖNB, Jubiläumsfonds

Herausforderung europäischer Carbon Market - Emission Trading, Carbon Leakage und Instrumente der CO<sub>2</sub>-Preis-Stabilisierung (ETCLIP) 2010-2011, Kli.En, Neue Energien 2020

Linking of emissions trading schemes, 2007-2009. Climate Strategies research network

#### Selected Publications

**Bednar-Friedl, B.**, Farmer, K. (2009), Internationally Coordinated Emission Permit Policies: An Option for Withdrawers from the Kyoto Protocol?, CESifo Working Paper 2764, CESifo, Munich, Aug. 2009. (under review at Economic Modeling)

**Bednar-Friedl, B., Muñoz Jaramillo, P., Schinko, T., Steininger, K.** (2009), *The Carbon Content of Austrian Trade Flows in the European and International Trade Context*, FIW Research Report 2009/5, Vienna.

Cogoy, M. and **K.W. Steininger** (Eds.) (2007), *The Economics of Global Environmental Change: International Cooperation for Sustainability*, Cheltenham: Edward Elgar.

Farmer, K., and **K.W. Steininger** (1999), Reducing CO<sub>2</sub>-Emissions Under Fiscal Retrenchment: A Multi-Cohort CGE-model for Austria, *Environmental and Resource Economics*, 13, 309-340.

Grossmann, W.D., **Steininger, K.W.**, Grossmann, I., and L. Maggaard, Indicators on Economic Risk from Global Climate Change, *Environmental Science and Technology*, 2009, 43 (16), pp 6421-6426

Neuhoff, K., Rogge, K., Schleich, J., Sato, M., Sijm, J., **Tuerk, A.**, Kettner, C., Walker, N., Åhman, M., Betz, R., Cludius, J., Ferrario, F., Holmgren, K., Pal, G., Grubb, M. and Matthes F., 2006, Implications of announced Phase 2 National Allocation Plans for the EU ETS, *Climate Policy* 6 (4), pp. 411-422.

**Steininger, K.W.**, and H. Voraberger (2003), Exploiting the Medium-term Biomass Energy Potentials in Austria: A Comparison of Costs and Macroeconomic Impact, *Environmental and Resource Economics*, 24, 359-377.

Sterk, W., Mehling, M., **Tuerk, A.** (2009): Prospects of linking EU and US Emission Trading Schemes: Comparing the Western Climate Initiative, the Waxman-Markey and the Lieberman-Warner Proposals - Climate Strategies Working Paper.

**Tuerk A.**, Mehling M., Flachsland Ch., Sterk W. (2009), Linking Carbon Markets: Concepts, Case Studies and Pathways. *Climate Policy* 9 (4): 341-357.

**Tuerk, A.**, Wolfgang Sterk, Erik Haites, Mehling, M., Flachsland, C., Kimura, H., Betz, R., Jotzo F., (2009): Linking of Emissions Trading Schemes, Climate Strategies Report.

## Department of Philosophy, University of Graz

Lukas Meyer, Univ.Prof. Mag. Dipl.Pol. Dr. habil.

University of Graz, Department of Philosophy, Heinrichstraße 26/DG, A-8010 Graz, Austria, <http://www.uni-graz.at/lukas.meyer/>

**Academic Education and Professional Development:** Master in Philosophy, Washington Univ., (1987); Dipl. Pol., Free Univ. Berlin (1990); Wiss. Mitarbeiter, Free Univ. Berlin (1990-95); Doctor of Philosophy, Univ. of Oxford (1996); Wiss. Assistent, University of Bremen (1996-2003); Faculty Fellow in Ethics, Harvard Univ. (2000-01); Humboldt Fellow, Columbia Univ. in NYC (2001-02); Habilitation, Univ. of Bremen (2003); Lecturer, Privatdozent and Project Leader, University of Bremen, University of Keele, Institute of Theology and Peace (2003-05); Honorary Fellow, Research Institute of Philosophy, Hannover (2004-05); Assist. Professor, Universität Bern (2005-09), Univ.-Prof, and Head of Department, Univ. of Graz (since 2009)

**Further project specific qualifications:** normative analytical philosophy, theories of intergenerational and international justice, historical and transitional justice, ideal and non-ideal theorizing

Alexa Zellentin, Univ.Ass. Mag. Dr.

University of Graz, Department of Philosophy, Heinrichstraße 26/DG, A-8010 Graz, Austria, [www.uni-graz.at/alexa.zellentin](http://www.uni-graz.at/alexa.zellentin)

**Academic Education and Professional Development:** Magistra in Philosophy and Protestant Theology, Univ. of Leipzig (2004), MSc in Political Theory, Univ. of Oxford (2006), Doctor of Philosophy, Univ. of Oxford (2009), Univ.Ass. Institute for Philosophy, Univ. of Graz (since 2009)

**Further project specific qualifications:** normative analytical philosophy, theories of global justice

### Selected Publications

Meyer, L. H. (2005): *Historische Gerechtigkeit* (de Gruyter: Berlin und New York),

Meyer, Lukas H. (ed.) (2009): *Legitimacy, Justice and Public International Law* (Cambridge: Cambridge University Press).

Meyer, Lukas H. (ed.) (2009) (with Axel Gosseries): *Intergenerational Justice* (Oxford: Oxford University Press).

Meyer, Lukas H. (ed.) (2009) (with Matthew Matravers): *Justice, Equality and Democracy, Critical Review of International Social and Political Philosophy* (issue 3);

Meyer, Lukas H. (ed.) (2004): *Justice in Time. Responding to Historical Injustice* (Baden-Baden: NOMOS).

Meyer, Lukas H. and Axel Gosseries (2009): „Intergenerational Justice and Its Challenges“, in Meyer and Gosseries (eds.): *Intergenerational Justice* (Oxford: Oxford University Press), 1-21.

Meyer, Lukas H. and Dominic Roser (2009): „Enough for the Future“, in: Meyer and Gosseries (eds.): *Intergenerational Justice* (Oxford: Oxford University Press), 219-248.

Meyer, Lukas H. and Dominic Roser (2009): „Climate Justice and Historical Emissions“, in: Meyer and Matravers (eds.): *Justice, Equality and Democracy. Critical Review of International Social and Political Philosophy*

Meyer, Lukas H. (2009): „Klimawandel und Gerechtigkeit“, in: *Transit* 36, 80-107.

Meyer, Lukas H. (2008): „Intergenerational Justice“, in: *The Stanford Encyclopedia of Philosophy* (Spring 2010 Edition), Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/spr2010/entries/justice-intergenerational/>>.

**Stiftung Wissenschaft und Politik (SWP), Global Issues Research Division**

**Dr. Susanne Droege, Economist; Head of Global Issues Division**

Susanne Droege, Head of the Global Issues Division at the German Institute for International and Security Affairs (SWP) in Berlin since 2009.

**Academic Education and Professional Development:** She studied economics at the Free University Berlin (1990-1995), the University of Warwick (1993/1994) and at the Kiel Institute for World Economics (1995/1996) and received her PhD at the Leipzig Graduate School of Management (2005). She worked as a researcher at the Leipzig Graduate School (1996-1999) and the German Institute for Economics (1999 – 2006) before she joined SWP in 2006.

**Main research areas:** She is an expert in environmental and international economics with a long-standing work experience on trade, climate and energy policy issues, using mainly theoretical modelling.

**Selected Publications**

- Dröge, S. (Ed.) (2010): International Climate Policy, SWP Research Paper, forthcoming, German version at <http://www.swp-berlin.org>
- Edenhofer, O., C. Carraro, J.-C. Hourcade, K. Neuhoff, G. Luderer, C. Flachsland, M. Jakob, A. Popp, J. Steckel, J. Strophsche, N. Bauer, S. Brunner, M. Leimbach, H. Lotze-Campen, V. Bosetti, E. de Cian, M. Tavoni, O. Sassi, H. Waisman, R. Crassous-Doerfler, S. Monjon, S. Dröge, H. van Essen, P. del Río, A. Türk (2009): RECIPE - The Economics of Decarbonization. Synthesis Report
- Dröge, S. et al. (2009): Tackling Leakage in a World of Unequal Carbon Prices; Climate Strategies Project Report, draft online at: [www.climatestrategies.org](http://www.climatestrategies.org)
- Dröge, S. (2009): Climate Policy and Economic Bust: the European Challenges to Create Green Stimulus, in: Carbon and Climate Law Review (CCLR), 02/2009, February 2009, pp. 3-10
- Dröge, S., Geden, O., Perthes, V. (2009): The European Climate and Energy Policy (in German), in: Reiche, K. (ed): Energie- und Klimapolitik: Status Quo und Quo Vadis
- Dröge, S. (2008): Border adjustment to tackle carbon leakage, in: Matthes, F. and Neuhoff, K. (2008): The Role of Auctions for Emissions Trading, Climate Strategies, 6 October 2008.
- Dröge, S. (2008): 'Climate Tariffs' and the Credibility of the EU Climate and Energy Package. International Climate Policy and Carbon Leakage, SWP Comments 2008/C 26, November 2008
- Dröge, S. (2007): Linkages between trade policy and environmental policy. Options for the International Promotion of Environmental Standards on Processes and Production Methods. Books on Demand, Hamburg
- Dröge, S., Kemfert, C. (2005): Trade Policy to Control Climate Change: Does the Stick Beat the Carrot?, Quarterly Journal of Economic Research 74 (2), pp. 235-348

## Department of Politics and International Relations, University of Oxford

**Simon Caney**, Professor in Political Theory, University Lecturer, and Fellow and Tutor in Politics, Magdalen College.

University of Oxford, Department of Politics and International Relations, Manor Road, Oxford, OX1 3UQ, UK, <http://www.politics.ox.ac.uk/about/staff/staff.asp?action=show&person=313&special>

**Academic Education and Professional Development:** BA in Philosophy, Politics and Economics at Oxford Univ.: 1st Class Honours (1988), M.Phil in Politics at Oxford Univ.: 1st Place (1990), D.Phil in Politics (D.Phil Thesis Title: Liberal Perfectionism) (1994), Lecturer at Christ Church, Oxford Univ. (1989-1992), Lecturer at Merton College, Oxford Univ. (1991-1992), Prize Research Fellow, Nuffield College, Oxford Univ. (1991-1992), Lecturer in Politics, Univ. of Newcastle (1993-1999), Senior Lecturer in Politics, School of Geography, Politics and Sociology, Univ. of Newcastle (1999-2004), Reader in Political Theory, Dept. of Political Science and International Studies, Univ. of Birmingham (2004-2005), Professor in Political Theory, Dept. of Political Science and International Studies, Univ. of Birmingham (2005-2006), Professor in Political Theory and University Lecturer, Department for Politics and International Relations, Univ. of Oxford (since 2006), Fellow and Tutor in Politics, Magdalen College, Univ. of Oxford (since 2006)

**Further project specific qualifications:** contemporary political philosophy, in particular, theories of global distributive justice, equality, and intergenerational justice, human rights, sovereignty, global governance

### Selected Publications

- Caney, Simon (2009): „Justice and the Distribution of Greenhouse Gas Emissions”, *Journal of Global Ethics* 5, 125-146.
- Caney, Simon (2009): „Climate Change and the Future: Time, Wealth and Risk”, *Journal of Social Philosophy* 40, 163-186.
- Caney, Simon (2009): „Climate Change, Justice and the Duties of the Advantaged”, *Critical Review of International Social and Political Philosophy* vol.12 no.4 (2009), 693-717. [This is also to be reprinted in *Justice, Democracy, and Equality* (London: Routledge, forthcoming) edited by Matt Matravers and Lukas Meyer.]
- Caney, Simon (2009): „The Responsibilities and Legitimacy of Economic International Institutions” in Lukas Meyer (ed.): *Justice, Legitimacy and Public International Law* (Cambridge: Cambridge University Press), 92-122.
- Caney, Simon (2009): „Human Rights, Responsibilities and Climate Change”, in Charles Beitz and Robert Goodin (eds.): *Global Basic Rights* (Oxford: Oxford University Press), 227-247.
- Caney, Simon (2008): „Global Distributive Justice and the State”, *Political Studies* 56, 487-518.
- Caney, Simon (2008): „Climate Change, Human Rights and Discounting”, *Environmental Politics* 17, 536-555.
- Caney, Simon (2007): „Justice, Borders and the Cosmopolitan Ideal - A Reply to Two Critics”, *Journal of Global Ethics* 3, 269-276.
- Caney, Simon (2007): „Egalitarian Liberalism and Universalism” in Anthony Laden and David Owen (eds.): *Multiculturalism and Political Theory* (Cambridge: Cambridge University Press), 151-172.
- Caney, Simon (2007): „Global Poverty and Human Rights: the Case for Positive Duties” in Thomas Pogge (ed.), *Freedom from Poverty as a Human Right: Who Owes What to the Very Poor?* (Oxford: Oxford University Press), 275-302.

**Barbara K. Buchner, Climate Policy Initiative (CPI), Venice Office**

**Barbara Buchner, Mag. Dr.,** Director of CPI Venice Office and Lecturer at Ca'Foscari University Venice

CPI Venice Office, Island of San Giorgio Maggiore, 30126 Venice, Italy;

[www.climatepolicyinitiative.org](http://www.climatepolicyinitiative.org)

**Academic Education and Professional Development:** Master in Economics (combined programme Economics and Environmental Sciences), University of Graz (1999); Ph.D. Economics, University of Graz (2003); Staff Member of Secretariat, Austrian Council on Climate Change (1997-2000); Researcher, Austrian Institute of Economic Research (1998-2000); Staff Member of Secretariat, Austrian Human Dimensions Programme (HDP-A) (2000); Senior Researcher, Fondazione Eni Enrico Mattei, Venice (2000-2006); Visiting Scholar, Massachusetts Institute of Technology in the Center for Energy and Environmental Policy Research (2006, 2008); Senior Energy and Environment Analyst, International Energy Agency (2007-2009); Council Member, European Association of Environmental and Resource Economists (2008-2011); Research Associate, Centre for Applied Macroeconomic Analysis (CAMA), The Australian National University, College of Business and Economics (2008 – present); Lecturer, Ca'Foscari University Venice (2010-present); Director of Venice Office, Climate Policy Initiative (2010-present).

**Main research areas:** Qualitative and quantitative economic analysis of market-based mechanisms and of other policy approaches to greenhouse gas mitigation, International and national climate and energy policy, Design of climate policy instruments, Emissions trading (EU-ETS), Carbon finance

**Further project specific qualifications:** Long-lasting experience in project management and development, organization and coordination of international workshops, frequent participation in and presentations at international conferences and workshops. Technical support to the Italian Ministry of Environment for the G8 preparations, technical support to the UNFCCC Secretariat for In-Depth Reviews of countries' climate policies

**Ongoing or recently completed projects relevant to the current proposal:**

Climate Change Expert Group (CCXG) on the UNFCCC: Focus on the analysis of key issues for the post-2012 climate policy design, including the evolution of possible sectoral approaches and their relation to the carbon market

[http://www.oecd.org/document/44/0,3343,en\\_2649\\_34361\\_1904108\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/44/0,3343,en_2649_34361_1904108_1_1_1_1,00.html)

The ex-post evaluation of the European CO<sub>2</sub> market, in collaboration with Massachusetts Institute of Technology (MIT), Mission Climat (MC) of the Caisse des Dépôts, and University College Dublin, Université Paris-Dauphine, the International Energy Agency (IEA), the Öko-Institut in Berlin and the Centre International de Recherche sur l'Environnement et le Développement (CIRED) [http://www.aprec.net/uk\\_evaluation.php](http://www.aprec.net/uk_evaluation.php)

**Selected Publications**

Ellerman, A.D., Convery, F., de Perthuis, C., Alberola, E., Buchner, B., Delbosch, A., Hight, C., Matthes, F., 2010, *Pricing Carbon: The European Union Emissions Trading Scheme*. Cambridge University Press.

Ellerman, A.D., Buchner, B.K. and C. Carraro (eds.), 2007. *Allocation in the European Emissions Trading Scheme: Rights, Rents and Fairness*. Cambridge University Press.

Yang, M., Nguyen, F., De T'Serclaes, P., and B. Buchner, 2009. Wind farm investment risks under uncertain CDM benefit in China. *Energy Policy* 38 (2010) 1436–1447.

Bosetti, V. and B. Buchner, 2009. Data Envelopment Analysis of Different Climate Policy Scenarios, *Ecological Economics*, Vol 68, 1340 – 1354.

Ellerman, A.D. and B.K. Buchner, 2008. Over-Allocation Or Abatement? A Preliminary Analysis of the EU ETS Based on the 2005-06 Emissions Data, *Environmental and Resource Economics*, Vol. 41, N° 2, 267-287.

Waide, P. and B. Buchner, 2008. Utility Energy Efficiency Schemes: Savings Obligations and Trading, *Energy Efficiency*, Vol. 1, N° 4, 297-311.

Kuik, O., B. Buchner, M. Catenacci, A. Goria, E. Karakaya, and R.S.J. Tol, 2008. Methodological Aspects of Recent Climate Change Damage Cost Studies, *Integrated Assessment Journal*, Vol. 8, N° 1, 19-40.

- Ellerman, A.D. and B.K. Buchner, 2007. The European Union Emissions Trading Scheme: Origins, Allocation, and Early Results, *Review of Environmental Economics and Policy*, Vol. 1, N° 1, 66-87.
- Buchner, B. and C. Carraro, 2006. US, China and the Economics of Climate Negotiations, *International Environmental Agreements: Politics, Law and Economics*, Vol. 6, N° 1, 63-89.
- Buchner, B. and C. Carraro, 2005. Economic and Environmental Effectiveness of a Technology-based Climate Protocol, *Climate Policy* 4: 229-248.
- Bosello, F., B. Buchner and C. Carraro. 2003. Equity, Development and Climate Change Control. *Journal of the European Economic Association*, Vol. 1, 2-3, 601-611.

**2. Certificates of Registration, annual accounts of the last 3 years (ONLY for enterprises)**

*Please fill in the table below:*

Px / A	Certificate of Registration	Annual accounts		
		Year: 2009	Year: 2008	Year: 2007
	Enclosure no. xy	Enclosure no. xy <i>If no: Will be filed subsequently on:</i>	Enclosure no. xy <i>If no: Will be filed subsequently on:</i>	Enclosure no. xy <i>If no: Will be filed subsequently on:</i>

## 5 Information on Exclusion of Evaluators

*Please indicate here if there are any evaluators/enterprises/organisations that you wish to exclude from evaluating your project („blocking note“). Please indicate the name of the evaluator / the enterprise / the organisation, including a short justification for excluding them.*

**I request evaluator / enterprise / organisation (title, name, first name, address, institution, if applicable) to be excluded for the following reason:**

Enterprise /organisation:	Title	Name	First name	Address

Barbara K. Buchner, PhD  
Director, Venice Office  
Climate Policy Initiative  
Island of San Giorgio Maggiore  
30124 Venice, Italy

Venice, 25 March 2010

To the  
Austria Climate Change Research Programme  
(ACRP) – 2nd Call  
c/o KPC  
Kommunalkredit Public Consulting

**Memorandum of Understanding for cooperation in the project “*Responding to the challenges for international and European climate policy after Copenhagen*” under the lead of the Wegener Center for Climate and Global Change (University of Graz, Austria)**

For the project “*Responding to the challenges for international and European climate policy after Copenhagen*”, as proposed under the coordination of the Wegener Center for Climate and Global Change in response to your call, I would be available and happy to contribute to WP 5 and 6 on the design and evaluation of EU and international climate policy.

Furthermore, I agree and am looking forward to participate in the project advisory board of the overall project.

As a member of the Advisory Board, and in line with our cooperation agreement, I express full support of the proposed research which will also serve to enhance cooperation with the Research Center Global and Environmental Change established at the University of Graz as part of an Austrian-wide initiative and the Austrian research community in this field.



Dr. Barbara K. Buchner  
Director, Venice Office  
Climate Policy Initiative

Magdalen College  
Oxford University  
Oxford  
OX1 4AU  
United Kingdom

22 March 2010

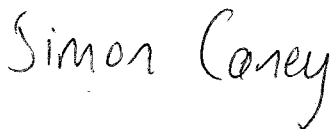
To the  
Austria Climate Change Research Programme  
(ACRP) – 2nd Call  
c/o KPC  
Kommunalkredit Public Consulting

**Memorandum of Understanding for cooperation in the project “Beyond targets: Options for international and European Climate Policy after Copenhagen” under the lead of the Wegener Center for Climate and Global Change (University of Graz, Austria)**

For the project “Beyond targets: Options for international and European Climate Policy after Copenhagen”, as proposed under the coordination of the Wegener Center for Climate and Global Change in response to your call, I would be available and happy to supply advice in WP 2 on principles for a just global distribution of climate mitigation costs as well as to WP 5 on the evaluation of EU and international climate policy.

Furthermore, I agree and am looking forward to participate in the project advisory board of the overall project.

As a member of the University of Oxford, and in line with our cooperation agreement, I express full support for the proposed research which will also serve to enhance cooperation with the Research Area Global and Environmental Change established at the University of Graz as part of an Austrian-wide initiative and the Austrian research community in this field.



Prof. Simon Caney  
Professor in Political Theory  
University of Oxford