I[st] WORKSHOP OF AUSTRIAN ENVIRONMENTAL ECONOMISTS 2012

March 1[st] – 2[nd], 2012

Venue:

University of Innsbruck - SOWI Building

Universitätstrasse, 15, 4th floor; Room Number w-4.24

Program:

1[st] March 2012

15.00- 15.15: Welcome

15.15-16.15: Session 1: Climate Change Targets

CLIMATE POLICY TARGETS IN EMERGING AND INDUSTRIALIZED ECONOMIES: THE INFLUENCE OF TECHNOLOGICAL DIFFERENCES, ENVIRONMENTAL PREFERENCES AND PROPENSITY TO SAVE.

Presenter: **Birgit Bednar-Friedl** (University of Graz).

THE EU EMISSION TRADING SCHEME – ALLOCATION PATTERNS AND TRADING FLOWS

Presenter: **Claudia Kettner** (WIFO). Co-authors: Daniela Kletzan-Slamanig and Angela Köppl.

16.15-16.45: Coffee Break

16.45-17.45: Session 2: Environmental policy and trade barriers

THE RELEVANCE OF PROCESS EMISSIONS FOR GLOBAL CARBON LEAKAGE: A COMPARISON OF UNILATERAL CLIMATE POLICY OPTIONS WITH AND WITHOUT BORDER CARBON ADJUSTMENT.

Presenter: **Karl W. Steininger** (University of Graz). Co-authors: Birgit Bednar-Friedl and Thomas Schinko

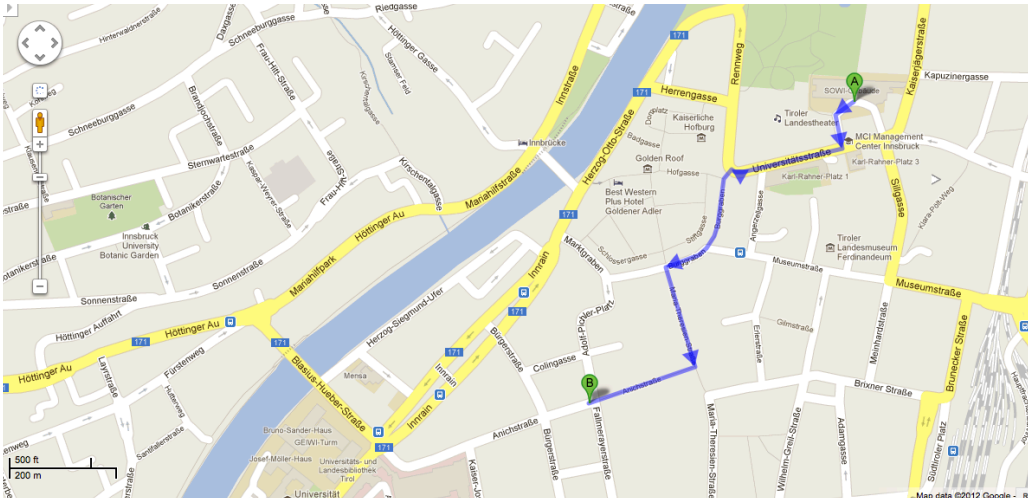
EFFECTS OF TRADE BARRIERS ON BILATERAL TRADE OF POTABLE WATER.

Presenter: **Andrea Leiter** (University of Innsbruck). Co-authors: Elisabeth Christen and Michael Pfaffermayr.

19.00: **Diner at Anich Restaurant**

Anichstrasse 15, Innsbruck

Directions:



10-15 minutes walk from venue.

2nd March 2012

9.00-10.00: Session 3: Political Economy

THE POLITICAL ECONOMY OF ENVIRONMENTAL POLICY WITH OVERLAPPING GENERATIONS.

Presenter: **Armon Rezai** (Vienna University of Economics and Business). Co-author: Larry Karp

FORDLANDIA, A HISTORICAL CASE STUDY OF ENVIRONMENTAL IGNORANCE.

Presenter: **Andreas Exenberger** (University of Innsbruck)

10.0-10.30: Coffee Break

10.30-11.30: Session 4: Forestry and wildlife

ANALYZING THIRD COUNTRY EFFECTS OF AN IEA ON TROPICAL TIMBER TRADE.

Presenter: **Stefan Borsky** (University of Southern Denmark). Co-authors: Andrea Leiter and Michael Pfaffermayr

IS NAMIBIA DIFFERENT? SUCCESS AND FAILURE OF CONSERVANCY PROGRAMS.

Presenter: **Esther Blanco** (University of Innsbruck). Co-authors: Javier Lozano.

11.30-12.30: General Discussion on Research Networking

(A snack will be served during discussion time)

15.00-19.00: **Outdoors activity in the surroundings of Innsbruck** (sledging or walking depending on the snow conditions).

List of Abstracts

CLIMATE POLICY TARGETS IN EMERGING AND INDUSTRIALIZED ECONOMIES: THE INFLUENCE OF TECHNOLOGICAL DIFFERENCES, ENVIRONMENTAL PREFERENCES AND PROPENSITY TO SAVE.

Presenter: **Birgit Bednar-Friedl** (University of Graz).

Although emerging economies claim that industrialized countries need to reduce their carbon emissions first, stabilization of the future global climate system requires immediate action by all countries. In a stylized two--country intertemporal general equilibrium model, we derive welfare maximizing emission caps in emerging and industrialized countries, taking account of country differences in technology, environmental preferences and propensity to save. Simultaneous target setting is compared to a sequential one in which the industrialized country commits itself to binding targets first. In the latter case, the emerging economy can increase its joint economic and environmental welfare by setting a stricter target, in particular when its environmental preferences are strong and/or its savings rate is high. On the other hand, when the industrialized country has considerably higher environmental preferences and lower emission intensity than the emerging economy, our results suggest that it will choose a more restrictive target in a sequential setting than in a simultaneous one, contrary to first thought that a first mover is always pursuing a `symbolic' policy with a lax target.

THE EU EMISSION TRADING SCHEME – ALLOCATION PATTERNS AND TRADING FLOWS.

Presenter: **Claudia Kettner** (WIFO). Co-authors: Daniela Kletzan-Slamanig and Angela Köppl.

The EU Emission Trading Scheme (EU ETS) that covers emitters from industry and the energy sector representing 40% of the EU's total greenhouse gas emissions is the biggest implementation worldwide of a cap-and-trade scheme. The EU ETS has been the core instrument of European climate policy since its start in 2005. Based on a database comprising more than 10,000 installations in 25 EU Member States, this paper provides a thorough analysis of the performance of the EU ETS in the period 2005 to 2010. In the first part, we analyse allocation patterns – i.e. the stringency of

allocation caps and distribution issues – on Member State and sector level comparing the results of the EU ETS pilot phase and the first three years of the Kyoto phase. In the second part of the paper, we assess trading flows of European Allowance Units (EAUs) between Member States comparing the results for the first and second trading period. Furthermore, we analyse the use of credits from flexible mechanisms – Certified Emission Reductions (CERs) from CDM projects and Emission Reduction Units (ERUs) from JI projects – that installations may surrender since the beginning of the second trading period on country level.

THE RELEVANCE OF PROCESS EMISSIONS FOR GLOBAL CARBON LEAKAGE: A COMPARISON OF UNILATERAL CLIMATE POLICY OPTIONS WITH AND WITHOUT BORDER CARBON ADJUSTMENT.

Presenter: **Karl W. Steininger** (University of Graz). Co-authors: Birgit Bednar-Friedl and Thomas Schinko

Climate policy arrangements of partial compliance, as they seem to emerge from the UNFCCC process, might lead to both carbon leakage and reduced competitiveness of trade exposed, energy intensive sectors. A broad literature has developed to quantify global leakage rates. Most of these analyses, however, are confined to consider combustion emissions only. Yet, some of the most relevant simultaneously energy intensive and internationally trade exposed sectors are also subject to substantial process emissions (i.e. non combustion-related emissions, mitigation of which can only be achieved by switching production process, if low-carbon ones are available, or by reducing activity). In the steel and cement sectors, for example, process emissions amount to about half of GHG emissions in many countries. We develop a multi-sectoral multi-regional Computable General Equilibrium model that accounts for process emissions based on UNFCCC data to quantify both the implications of a unilateral EU 20% GHG reduction policy on leakage rates across world regions and the relevance and effectiveness of border carbon adjustment measures that have been discussed as options to reduce leakage. We find that leakage of climate policy turns out higher when process emissions are correctly accounted for (28% instead of 24% for combustion emissions only). Border carbon adjustment measures are found roughly double as effective to reduce leakage rates, when process emissions are correctly accounted for. This is due to the fact that carbon adjustment rates are more

directly targeted to the relevant sectors when process emissions are also considered in their determination.

EFFECTS OF TRADE BARRIERS ON BILATERAL TRADE OF POTABLE WATER.

Presenter: **Andrea Leiter** (University of Innsbruck). Co-authors: Elisabeth Christen and Michael Pfaffermayr.

This paper empirically examines the effects of trade barriers on international transfers of potable water. Potable water is defined as natural water that is neither flavored nor contains added sugar or other sweeteners. Based on a structural gravity model we analyze the determinants of bilateral trade flows in potable water by applying Heckman's selection model to control for a potentially systematic selection of trade participating countries. The output shows that bilateral trade barriers crucially determine the countries' probability of trading potable water as well as the volume of water traded. The subsequent counterfactual analysis allow us to determine how a specific (hypothetical) reduction of trade barriers between the trading partners influence (a) their world market shares and (b) the average demand and supply prices of potable water. We find that water rich exporting countries that ship water to water poor importers benefit most from reduced trade barriers as they experience a considerably increase in their world market shares. The magnitude of the changes in market shares depends on the indirect price effects associated to reduced distance costs. Furthermore, the counterfactual analysis indicates that specific reductions of trade barriers increase (decrease) the average demand (supply) price of water rich importers (exporters) which points at a possible convergence in average prices between water rich and water poor countries.

THE POLITICAL ECONOMY OF ENVIRONMENTAL POLICY WITH OVERLAPPING GENERATIONS.

Presenter: **Armon Rezai** (Vienna University of Economics and Business). Co-author: Larry Karp

A two-sector OLG model illuminates previously unexamined intergenerational effects of a tax that protects an environmental stock. A traded asset capitalizes the economic returns to future tax-induced environmental improvements, benefiting the current

asset owners, the old generation. Absent a transfer, the tax harms the young generation by decreasing their real wage. Future generations benefit from the tax-induced improvement in environmental stock. The principal intergenerational conflict arising from public policy is between generations alive at the time society imposes the policy, not between generations alive at different times. A Pareto-improving policy can be implemented under various political economy settings.

FORDLANDIA, A HISTORICAL CASE STUDY OF ENVIRONMENTAL IGNORANCE.

Presenter: **Andreas Exenberger** (University of Innsbruck)

In the 1920s, Henry Ford expanded his extraordinarily successful car-producing business to also include a rubber plantation in the Amazon jungle. For that purpose, a whole industrial city, within a short time becoming known as "Fordlandia", was transplanted from Michigan to Brazil. Although the site was later relocated to a more favourable place, the venture failed for several reasons (labour problems, organizational failure, shortage of expertise, social unrest, political disturbances, and cultural misconceptions). But the most relevant reasons were and remained several setbacks related to environmental ignorance of various kinds, not the least stemming from the project's character of a man-mastering-nature-type. Interestingly, the focus of arguments to explain problems and finally failure also changed over time, reflecting the relevance of environmental considerations in the overall discourse. Finally, Ford sold the site in 1945, which makes it not only a story of a momentous failure, but also a story of economical, social and environmental miscalculations. By that, it is also bearing resemblance with later overenthusiastic development projects in- and outside the region and maybe even providing lessons for the future.

ANALYZING THIRD COUNTRY EFFECTS OF AN IEA ON TROPICAL TIMBER TRADE.

Presenter: **Stefan Borsky** (University of Southern Denmark). Co-authors: Andrea Leiter and Michael Pfaffermayr

This paper analyzes the magnitude and distribution of trade leakage due to an unilateral environmental conservation policy. In particular, we estimate the impact of the 1994 International Tropical Timber Agreement on the patterns of tropical timber

trade flows. Trade leakage in international environmental agreements increases the ex-ante incentive to free-ride and therefore could lead to an under-provision of the global public good. We use a cross-sectional dataset on bilateral trade flows of tropical timber that additionally contains information on trading partners' economic and geographical characteristics. Our empirical specification is based on a gravity equation, which is estimated using Heckman's selection model to address the potentially systematic selection of trading partners. Overall, we find significant positive effects of the agreement on the propensity and intensity of tropical timber trade. Furthermore, we show that a small share in trade, 0.3\%, shifts from the unregulated to regulated countries. The reason for this could be the dampening impact of the trade-measures, which are linked to the ITTA to reduce the extend of leakage.

IS NAMIBIA DIFFERENT? SUCCESS AND FAILURE OF CONSERVANCY PROGRAMS.

Presenter: **Esther Blanco** (University of Innsbruck). Co-author: Javier Lozano

This paper models the effects on wildlife conservation and income of local communities of the devolution of property rights over the wildlife concurrently to the promotion of alternative economic activities to hunting and agriculture, based on tourism development. The model is inspired in the Conservancy model of Namibia, despite it is of more general applicability to other contexts. Using an evolutionary game theory approach, we explore whether the determinants of the prosperity of conservancies in the long-run. These determinants affect and are affected by public policies or policies developed by NGOs, which we also address. In addition, we explore the welfare implications of conservancies for local communities as well as its compatibility with conservation objectives. We discuss the results of the conservancy model with respect to the benchmark of open access and of compensation policies for agricultural looses out of wildlife.