

# Workshop on Assessing The Impacts Of Environmental Regulation By Macroeconomic Models

Focused on assessment of economic and environmental impact involved by  
environmental tax reform in the Czech Republic

## Date & Venue

Charles University Prague - Carolinum (Rectorate Building), Ovocný trh 3-5, Praha 1  
23-24 November 2009

## Summary and Objective

This Workshop aims to evaluate various models including bottom-up approaches, partial equilibrium and supply side models, applied general equilibrium and macro-econometric model being developed to analyze the effects of environmental regulation in the Czech Republic. Specifically, the effects of so called environmental tax reform will be analysed that is based on higher taxation of emissions of SO<sub>2</sub>, NO<sub>x</sub> and particulates. Moreover, the effects of EU ETS and higher energy taxation are discussed. Most of the models have been developed within the MODEDR project, however, also other modellers are invited to present their models and approaches so as to draw a wider picture. While the presentations of Day 1 are more policy relevant, the presentations of the Day 2 might be more technical.

The aim of this workshop is threefold:

- to present several quantitative approaches and to discuss how they can be used to assess the effects due to environmental regulation. More specifically, the workshop focuses on the macroeconomic models that are recently under development and/or have been used in the Czech Republic for the assessment of economic and environmental impacts due to air quality regulation and climate change mitigation;
- to assess the impacts possibly involved most recent regulatory proposals in the Czech Republic, particularly due to an environmental tax reform;
- to learn about advantages and limitations of presented models and draw suggestion for further model demands.

## MODEDR Project

MODEDR is the acronym of research project “Modelling of Environmental Tax Reform Impacts: Second Phase of the ETR” that is funded by the Czech Ministry of the Environment and takes during November 2007 to December 2010. Its research team consists of researchers from four institutions:

- Charles University Environment Center, Prague (led by dr. Milan Ščasný),
- University of Economics Prague, Institute of Environmental and Economic Policy (prof. Jiřina Jílková),
- Metroeconomica, UK (prof. Anil Markandya),
- Cambridge Econometrics, UK (Hector Pollitt)

## Keynote speakers

**Markus Blesl**, Universität Stuttgart, Institute of Energy Economics and Rational Use of Energy, Germany

**Olga Kiulia**, Metroeconomica; ETH Zürich, Swiss Federal Institute of Technology

**Anil Markandya**, Metroeconomica; University of Bath, UK; Basque Centre for Climate Change Bilbao, Spain

**Thomas Sterner**, University of Gothenburg, Sweden; President of the European Association of Environmental and Resource Economists

**Denise Van Regemorter**, Catholic University of Louvain, Belgium; IPTS, EU JRC, Seville

# AGENDA

## Day 1 – Monday, 23<sup>rd</sup> November 2009

8:30 - 8:50 **Registration**

### I. Introduction on Regulatory Framework

*Moderator: Professor Bedřich Moldan, CUEC; Senate of the Czech Parliament*

8:50 - 9:25 **Opening Welcome**

*Professor Bedřich Moldan, head of Charles University Environment Center; Senate of the Czech Parliament*

#### **Goal of the Workshop and MODEDR Project**

*Milan Ščasný, Charles University Environment Center*

9:25 - 9:45 **Policy Context: Proposals on Environmental Tax Reform, Energy and Emission Taxation in the Czech Republic and the role of MODEDR Project**

*Aleš Kuták, Deputy Minister, Czech Ministry of the Environment*

9:45 - 10:30 **Importance of modelling in environmental policy and decision-making**

*Professor Anil Markandya, Director of BC3, University of Bath (MODEDR)*

10:30 - 11:00 **Tea Break**

*Moderator: Professor Jiřina Jílková, University of Economics in Prague*

11:00 - 12:00 **Efficient Environmental Regulation And Its Impacts**

*Professor Thomas Sterner, University of Gothenburg, Sweden; President of EAERE Association*

12:00 - 12:40 **Economic Rationale for Regulation: Environmental Externalities, Abatement Costs And MBI (MODEDR)**

*Vojtěch Máca, Charles University Environment Center*

*Co-authors: Jan Melichar, Milan Ščasný, Charles University Environment Center*

12:40 - 13:40 **Buffet lunch**

## II. Assessing the Impacts at Macro Level

**Moderator:**        *Professor Anil Markandya, BC3, University of Bath*

13:40 - 15:00    **Modelling Impacts of Energy And Environmental Policies for the EU and the Czech Republic by CGE GEM-E3 Model**

*Denise van Regemorter, Catholic University of Louvain; IPTS, EU JRC, Seville*

15:00 - 15:20    **Tea Break**

15:20 - 15:40    **Economic and Environmental Impacts Assessed by CGE Model**

*Olga Kiulia, MetroEconomica, Metroeconomica, ETH Zürich*

*Co-author: Anil Markandya, MetroEconomica, BC3, University of Bath; Milan Ščasný, Jan Melichar, Charles University Environment Center*

15:40 - 16:00    **Economic and Environmental Impacts Assessed by Econometric Model E3ME**

*Milan Ščasný, Charles University Environment Center*

*Co-author: Vítězslav Píša, University of Economics in Prague, Charles University Prague*

16:00 - 17:15    **Round-Table Discussion  
on Efficient Environmental Regulation Under Climate Change**

**Moderator:**        *Professor Bedřich Moldan, CUEC; Senate of the Czech Parliament*

18:00            **Dinner and Wine Tasting**

## Day 2 – Tuesday, 24<sup>th</sup> November 2009

### III. Partial Equilibrium And Input-Output Analysis Modelling

**Moderator:** *Milan Ščasný, Charles University Environment Center*

9:00 - 10:00 **Assessing the Impacts by Pan-European TIMES Model**

*Markus Blesl, University Stuttgart, IER*

10:00 - 10:30 **Energy Supply-Side Optimisation Model MESSAGE**

*Jiří Balajka; Lukáš Rečka, Charles University Environment Center (MODEDR)*

10:30 - 11:00 **Discussion and Tea Break**

**Moderator:** *Jan Melichar, Charles University Environment Center*

11:00 - 11:30 **EFOM/ENV - Energy Flow Optimisation Model for the Czech Republic**

*Jiří Spítz, ENVIROS*

11:30 - 12:00 **Sectoral And Overall Economic Effects of CO<sub>2</sub> Allowance Auction in the CZE**

*Lubomír Lízal, CERGE-EI*

12:00 - 12:30 **Linking Input-Output Model With Material Flow Analysis**

*Jan Weinzettel, Jan Kovanda, Charles University Environment Center*

12:30 - 13:30 **Buffet Lunch**

### IV. Macro Structural Models developed in MODEDR

**Moderator:** *Denise van Regemorter, Catholic University of Louvain; IPTS, EU JRC, Seville*

13:30 - 14:30 **Development of CGE Model of the Czech Economy**

*Olga Kiulia, MetroEconomica, ETH Zürich*

*Co-authors: Anil Markandya, MetroEconomica, BC3, University of Bath; Milan Ščasný & Jan Melichar, Charles University Environment Center*

14:30 - 15:15 **Discussion and Tea break**

15:15 - 16:00 **Ancillary Effects of Carbon Taxation: Czech Application of E3ME Model**

*Vítězslav Piša, University of Economics in Prague, Charles University Prague*

*Co-author: Milan Ščasný, Charles University Environment Center*

16:00 - 16:30 **Final Discussion**