

Emerging Markets Queries in Finance and Business

Social cost of carbon: opportunities and environmental solutions

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Abstract

Global challenges stress out the impact of climate change on development and the linkage between energy security, demography and sustainable development. The emergence of climate change and climate change adaptation is a political and financial issue for development stressed in the Kyoto Protocol United Nations Framework Convention on Climate Change and European Union Emissions Trading System EU ETS. In this study I examine the use of wood products as a source to reduce CO₂ and increase carbon sinks. Wood and wood products can be seen as potential solutions to gain added „green” value. The opportunities and challenges that Romania currently faces in terms of environmental improvement and poverty alleviation must be understood against the background of crisis.

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1. Introduction

Wood has long been a primary source of energy and material for human society. Mankind had seen wood as a source of agriculture, raw material for construction, crafts, fuel etc. Over the last century, however, we switched from many previously uses of wood to non-renewable materials such fossil fuels, metals, coal, concrete, oil, plastics etc.

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Climate change is one of the biggest challenges that we face today. In the last few years average temperature around the world have been rising. The world population is growing larger with stresses out even more the need for resources, land and products. The fourth assessment report of the Intergovernmental Panel on Climate Change underlines an irrefutable change in our climate, most likely to be caused by the effects of human activities. Therefore in order to maintain our survival as a species on the long run we need to take action now.

The protocol to the United Nations Framework Convention on Climate Change UNFCCC or FCCC is an international and legally binding agreement to reduce greenhouse gases GHGs emissions world wide. The Kyoto Protocol came into force in February 2005 and since then quantified targets for reductions in emissions of GHGs have been set for each of the developed nations.

The opportunities and challenges that this country currently faces in terms of environmental challenges, poverty alleviation and economic development must be understood against the background of crisis and structural reforms.

2. Social cost of carbon

In a review of the economics of climate change, Stern underlines the importance of the social cost of carbon and estimated the cost of unabated climate change over the next two centuries to be equivalent to at least 5%, and possible as much as 20%, of the value of global per-capita consumption. If the current trend is continued in human population increase, consumption and climate change humanity could be facing alarming scenarios in the future.

The social cost of carbon is the marginal damage cost of carbon emission, estimated as the net present value of climate change impacts over an extended time period caused by an additional unit of carbon emitted into the atmosphere today. This cost is an externality, meaning that it is not paid by the people who cause it but will be borne by future generations and by people around the world who will be affected by climate change impacts.

The estimations for the social cost of carbon are uncertain mainly because the cost of future climate change impacts depends not only on the quantity of carbon emitted today but also the cumulative effects of future emissions.

Stern in 2006 estimates the social cost of carbon emitted under “business as usual” BAU trajectory at about 260€/t C, 85\$/t CO₂. A scenario in which society collectively acts to limit total greenhouse gas emission so that the atmospheric concentration stabilizes at 550 ppm CO₂e, the total climate change impact would be less and the social cost would be reduced to an estimated 92€/t C, 30\$/t CO₂.

3. Kyoto protocol

The United Nations Framework Convention on Climate Change is an international environmental treaty with the goal of achieving the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” Article 2 - The United Nations Framework Convention on Climate Change. The Protocol was adopted by the United Nations Framework Convention on Climate Change on 11 December 1997 in Kyoto, Japan. It was opened on 16 March 1998 for signature by parties to the United Nations Framework Convention on Climate Change.

Under the Protocol, 37 countries, included in annex Annex I, Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America commit themselves to a reduction of four greenhouse gases carbon dioxide, methane, nitrous oxide, sulphur hexafluoride and two groups of gases, hydrofluorocarbons and perfluorocarbons produced by

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