ELSEVIER

Energy Policy 32 (2004) 2077–2088

ENERGY POLICY

www.elsevier.com/locate/enpol

Will OPEC lose from the Kyoto Protocol?

Jon Barnett[a,*], Suraje Dessai[b,c,d], Michael Webber[a]

[a] School of Anthropology, Geography and Environmental Studies, University of Melbourne, Victoria 3010, Australia
[b] School of Environmental Sciences, University of East Anglia, Norwich NR4 7TJ, UK
[c] Tyndall Centre for Climate Change Research, UK
[d] EURONATURA, Centre for Environmental Law and Sustainable Development, Rua Ramalho Ortigão, 33 CV, 1070-228 Lisboa, Portugal

Abstract

A range of energy-economy models forecast losses to members of the Organisation of Petroleum Exporting Countries (OPEC) should the Kyoto Protocol come into force. These forecasts are a powerful influence in the United Nations Framework Convention on Climate Change negotiations. They are used by OPEC to advance the agenda on the impacts of response measures, covertly arguing for compensation for lost oil revenues arising from implementation of the Protocol. This paper discusses this issue, and explores the key assumptions of these models and their uncertainties. Assumptions about carbon leakage, future availability of oil reserves, substitution, innovation, and capital turnover are considered. The paper suggests that losses will not affect OPEC countries equally, and that these losses are not likely to be as substantial as the models forecast. A range of policy measures are proposed to lessen any impact the Protocol may have on OPEC.

Keywords: Kyoto Protocol; OPEC; Energy-economy models

1. Introduction

The Intergovernmental Panel on Climate Change (IPCC) estimates that by 2100 global mean temperature may have increased by 1.4–5.8°C and sea-level may have risen by between 9 and 88 cm, and that this increase is due to ongoing human activities (IPCC, 2001). Yet, international action on the problem is clouded by many unresolved issues among the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). One of these unresolved issues is the extent to which developed countries' efforts to reduce emissions will impact on the economies of oil exporting countries, and how these impacts can be minimised (Barnett and Dessai, 2002). Negotiations on this issue revolve around Article 4.8 of the UNFCCC and Article 2.3 and 3.14 of its Kyoto Protocol. A key player in these negotiations is the Organisation of Petroleum Exporting Countries (OPEC), a grouping of 11 oil exporting economies including: Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Based on global energy-economy models of the impact of the Kyoto Protocol on energy exporters, the members of OPEC believe that the Protocol's implementation will slow growth in their revenues from oil exports. The models suggest that policies and measures (PAMs) to implement the Kyoto Protocol (such as a carbon tax) will increase oil prices to consumers and reduce demand in developed countries which account for 60% of world oil consumption, thereby driving down global oil demand and prices received by producers. In the climate negotiations, OPEC members argue that developed countries must minimise these impacts on OPEC, thereby implicitly arguing for compensation for their losses. They are opposed by developed countries. This will prove a significant challenge to the implementation of the Kyoto Protocol and the wellbeing of the Convention.

This paper discusses this issue, and explores the key assumptions and uncertainties in the energy-economy models that inform OPEC's policy position. Energy-economy models have been very influential in the political economy of climate change (Henman, 2002). As well as informing OPEC, energy-economy models

*Corresponding author. Tel.: +61-3-8344-3786; fax: +61-3-8344-4972.
E-mail addresses: jbarn@unimelb.edu.au (J. Barnett), s.dessai@uea.ac.uk (S. Dessai), mjwebber@unimelb.edu.au (M. Webber).

0301-4215/03/$ - see front matter © 2003 Elsevier Ltd. All rights reserved.
doi:10.1016/S0301-4215(03)00183-6

have been used by the United States and Australia to justify their recalcitrant stance in the climate regime, leading ultimately to their withdrawal of support for the Kyoto Protocol in 2001 (Christoff, 1998; Hamilton, 2001; Harris, 1999; Harrison, 2001). Despite their powerful influence, the assumptions and uncertainties in these models are poorly understood by policymakers, and there are very few widely available reviews of them. This paper reviews those models that address the impact of the Kyoto Protocol on OPEC.

2. The UNFCCC, the Kyoto Protocol and the Marrakech Accords

International action to tackle to problem of climate change was formalised with the adoption of the UNFCCC in May 1992. The UNFCCC entered into force on 21 March 1994, and has now been ratified by 184 countries. The UNFCCC does not set binding emission targets on Parties. Its ultimate objective is the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system' in a time frame 'sufficient to allow ecosystems to adapt naturally... and to enable economic development to proceed in a sustainable manner' (Article 2).

Since the UNFCCC entered into force there have been eight meetings of its supreme body—the Conference of Parties (COP). At the third Conference of Parties (COP-3) in 1997, the Kyoto Protocol was adopted. The Kyoto Protocol is a supplement to the UNFCCC. It sets legally binding targets for greenhouse gas emissions on 38 developed and 'economies-in-transition' countries listed in its Annex B. In aggregate these emissions reductions equal a 5% reduction of the main greenhouse gases below 1990 levels, to be achieved in the first commitment period 2008–2012. The Kyoto Protocol will enter into force 90 days after 55 Parties to the Convention, including Parties accounting for 55% of Annex B reductions, have ratified it. At the time of writing (November 2002) ratification by Russia would make the Protocol international law, even though the US and Australia have rejected it.

> Article 4.8 of the UNFCCC commits Parties to give:
> full consideration to what actions are necessary … including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures, especially on: ….. countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels….

The inclusion of Article 4.8 in the UNFCCC was required by OPEC countries in exchange for their support for the Convention, which reveals the 'true' global nature of this multilateral agreement. The issues of adverse effects and impacts of response measures are intrinsically linked in the Convention though they relate to quite different concerns (Barnett and Dessai, 2002).

Article 3.14 of the Kyoto Protocol contains a number of articles pertaining to this issue of the impacts of response measures (Yamin, 1998). In the long-term perhaps the most problematic of these is Article 2.3, which refers to the obligation of Parties to minimise the impacts of any PAMs on 'international trade... on other Parties, especially developing country Parties and in particular those identified in Article 4.8 and 4.9, of the Convention'. This linking of the impacts of implementing the Protocol to international trade 'has the potential to become the most heavily litigated of the Protocol's provisions' under the World Trade Organization's dispute settlement procedures (Yamin, 1998, p. 117). In fact, such efforts are already under way, with Saudi Arabia having recently challenged OECD climate policies at the WTO's Committees on Trade and Environment and the Non-Agricultural Market Access Negotiating Group (WTO, 2002).

The principal difference between Article 4.8 and 3.14 is that the latter refers to the obligation only of *developed* countries to 'strive to implement' their commitments 'in such a way so as to minimize adverse social, environmental and economic impacts on developing country Parties', particularly those identified in Article 4.8 of the Convention. The particular identification of developed countries as the source of minimising activities in Article 3.14 makes it more important to members of OPEC because it is these countries that are required by the Protocol to reduce emissions, and these countries are the largest consumers of OPEC oil.

Progress on a number of these bottlenecks was reached with the adoption of the Bonn Agreement and the subsequent Marrakech Accords to the UNFCCC at COP-7 (Barnett and Dessai, 2002; Dessai, 2001). A Special Climate Change fund was established under the Convention to finance climate change activities relating to adaptation, technology transfer and activities to assist OPEC countries in diversifying their economies (Dessai, 2003). With respect to Article 3.14, the Marrakech Accords require developed countries to provide annual information on how they are striving to minimise adverse social, environmental and economic impacts on developing countries as they implement their Kyoto commitments. This was a major achievement for OPEC, which also insisted that this information should be considered by the enforcement branch of the compliance committee, but which ended up in the facilitative branch due to developed country insistence. Some have argued that a decision on the legally binding nature of the