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Sectoral approaches establishment for climate change mitigation in Thailand upstream oil and gas industry

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HIGHLIGHTS

- Examining the possibility of establishing a sectoral approach Thailand's upstream O&G industry.
- Analytical framework was constructed to ascertain most influential factors.
- Questionnaires and interviews were employed with companies, government, NGOs and academic.
- Domestic politics is the most determining factor, but other factors have strong interrelation.
- Sectoral agreement between government and industry is the most likely scheme to be established.

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ABSTRACT

Understanding the upstream oil and gas (O&G) industry's responses to climate change and what factors can be influential to trigger their mitigation strategies is crucial for policy-makers to harness the huge resources that this industry can mobilize towards environmental protection. Considering that individual climate change efforts are unlikely to affect global mitigation paths, the study investigates the possibility that sectoral approaches can help in the reduction of greenhouse gas emissions, using Thailand as a case study. It conducted online questionnaire surveys and semi-structured interviews to acquire primary data from companies and key informants from the government, NGOs, NPOs and academics. The results suggested that, among three possible groups of factors that could affect company decisions on whether to promote sectoral approaches, domestic politics (particularly the Thai government) is the most important, though other factors also play important and interrelated roles. The most welcomed type of scheme that could be envisaged would appear to be a sectoral agreement between government and industry. Finally, the authors provide two main policy recommendations, namely the establishment of an industrial association of O&G companies and for it to target how to start looking at measures to reduce greenhouse gas emissions amongst large companies in the sector.

1. Introduction

Climate change mitigation, an effort to reduce man-made greenhouse gases emissions (GHG) mainly originating from fossil fuel combustion, has caused controversy in industries that rely upon or produce such fuels. Among them is the oil and gas (O&G) industry, which is allegedly "one of the most powerful and global business sectors today and its activities and products are directly linked with rising greenhouse gas emissions" (Hove et al., 2002). Since the beginning of the GHG abatement efforts, hostile responses from this industry to mitigation efforts are not far from what could be expected. The formation of the Global Climate Coalition (GCC) in 1989 and its strong opposition to an international agreement to cut down GHG emissions and the Kyoto Protocol is a well-known example of the reactionary nature of the industry (Kolk and Levy, 2001; Kolk and Levy, 2002). However, as the issue of climate change mitigation has matured, recent trends in literature have reflected an increase in proactive corporate responses (Kolk and Levy, 2003; Kolk, 2008).

The upstream O&G industry, or in other words companies which explore and produce crude oil and natural gas, releases

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huge amounts of GHG through extraction processes. This is mostly in the form of methane (CH_4), which has 25 times the global warming potential of CO_2 over a 100 year period (IPCC, 2007). Although there are a number of companies which have initiated GHG emissions reduction projects regarding their upstream operations on a voluntary and individual basis, the impacts of such activities is unlikely to significantly affect global climate change mitigation efforts, which requires collective and ambitious actions by all entities involved.

The present study thus aims to investigate sectoral approaches, one type of mitigation option for energy-intensive and trade-exposed industries such as the cement, aluminum and upstream O&G industries. The main idea in this sectoral approach to climate change mitigation is to seek opportunities to reduce GHG emissions by companies, and in particular one given industrial sector, rather than through the country-wide emission targets set out in Kyoto Protocol (Wooders, 2011). It was designed to address the shortcomings of Kyoto Protocol's economy-wide greenhouse gas reduction commitments, which fails to include all of the world's major emitters as well as a number of emerging economies. After implementing the Kyoto Protocol on a common but differentiated responsibility basis, urgent calls have been made to address the detrimental consequences of climate policy. Trade-exposed and emission intensive industries have appealed against the competitive distortions arising from the introduction of CO_2 policy mitigation costs in some parts of the world and not in others (Baron et al., 2007). In addition, carbon leakage or leakage of emissions, which comes about by the relocation of the production base of carbon-intensive industries away from countries with emission commitments to non-Annex I parties, has been increasingly observed, resulting in a steady increase in the emissions of developing countries (Hamasaki and Saijo, 2011). A sectoral approach can also be a reliable option for developing countries which are not yet prepared to take on economy-wide emission reduction targets, especially in the pre-2020 period. By focusing on potential sectors where emission trends are well understood and can be forecasted, developing countries can contribute to global climate change mitigation without trading off their economic development (Baron et al., 2007; Bradley et al., 2007; Egenhofer et al., 2008).

Thailand has been listed as a non-Annex 1 party to the Kyoto Protocol since February 2nd, 1999. The country heavily relies on fossil fuels for its primary energy sources, and oil and gas dominate its energy mix (in 2012 oil accounted for 37%, and gas for 44% of total primary energy supply according to EPPO, 2013). It is expected that oil and gas will account for over 65% of total primary energy supply by 2035; while renewable energy will contribute only 19% of the 2035 total (APERC, 2013). The upstream O&G industry in Thailand comprises many multinational corporations as well as the Thai national petroleum company. Thailand's second national communication in 2000, the most-up-to-date official GHG emissions data, showed that fugitive emissions from this sector account for 2.9% of emissions from the energy sector. Although its share in national emissions would appear small, only ten upstream O&G companies are responsible for these emissions, with on even smaller number of large companies actually accounting for almost the entire production volume. Having a high concentration of players, this sector could be one potential candidate for collective GHG emissions reduction through sectoral approaches.

The cement, aluminum and iron and steel industry successfully set up transnational industry-led sectoral approaches a decade ago (Baron et al., 2007), though the upstream O&G industry has so far failed to do so. Given this fact, the present study thus aims to investigate the possibility of establishing sectoral approaches in the upstream O&G industry in Thailand by asking (1) what factors can influence the upstream O&G industry to set up sectoral approaches, (2) what are the sectoral approach activities that companies are willing to conduct, (3) what type of sectoral approach is the most likely to take place, and (4) what could be the role of Thai government. The ultimate goal of the study is to examine to what extent sectoral approaches could become a potential mitigation option for the upstream O&G industry in Thailand. The paper outlines the investigation carried out by the authors in four parts. These are (1) background information on sectoral approaches, (2) research methodology explaining the analytical framework, targets of study, and research approaches, (3) results and discussion and (4) conclusion and policy implications.

1.1. Background information on sectoral approaches

Though holding the promise to enhance global climate change mitigation, the field of sectoral approaches is very broad, thus leading to a variety of definitions, scopes and methods. The World Resources Institutes (Bradley et al., 2007) and the Centre for European Policy Studies (Egenhofer et al., 2008) concur that sectoral approaches constitute a second-best solution and complement, not supplement, to a legally binding climate agreement like the Kyoto Protocol. Under the Kyoto Protocol regime, where developing countries do not have to set absolute emission commitments, sectoral approaches are believed to provide an opportunity for developing countries to be part of the global effort to mitigate climate change without hurting their national economic development (Bodansky, 2007; Baron et al., 2007). The underlying idea is that developing countries are unlikely to assume binding economy-wide emission reduction targets. As a result, implementing sectoral approaches could be a compromise solution for both the developing and developed world in mitigating GHG emissions.

The International Energy Agency (IEA) and the Centre for European Policy Studies (CEPS) Task Force, supported by the Cement Sustainability Initiative (CSI) of the World Business Council for Sustainable Development (WBCSD), reviewed existing sectoral approaches and categorized them into three models, which are:

1) Sector-wide transnational approaches, e.g. transnational industry-led approaches that aim to engage companies in the sector across countries. The Cement Sustainability Initiative and the International Aluminum Institute are famous examples.
2) Bottom-up country commitments, e.g. sectoral agreement between a host government and the companies in the sector
3) Top-down sectoral crediting as an incentive mechanism, e.g. a sectoral Clean Development Mechanism (CDM)

Apart from these three schemes, the project on international sectoral approaches and agreements on the steel sector conducted by Climate strategies (Wooders, 2011) divided sectoral approaches by referring to two key variables – the Parties to the Agreement (government in a multilateral agreement, industry in a transnational agreement, or industry within a country) and the Target Type (direct, such as absolute amount of emissions, or indirect, such as technology transferring).

It is worth noting that at present a number of O&G companies have initiated climate change mitigation activities on voluntary basis. Voluntary climate change mitigation efforts partly overlap with possible activities that can be taken as a concerted sectoral approach by all companies in a given industry. Such concerted efforts would typically require as a first step the gathering of GHG emissions data of member companies to establish an industry GHG database. In this sense a common guideline for measuring and reporting GHG emissions is necessary, which can be developed either by an industrial association such as the 'Cement CO_2