

審査の結果の要旨

氏名 ワラティダ チャイヤパ

The Oil and Gas (O&G) industry, which is part of the energy supply sector, can pursue a wide range of climate change mitigation activities, which are defined by the Fifth Assessment Report of International Panel on Climate Change (IPCC 5AR) (2014) as “a human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHGs)”. However, considering the severe impacts of global climate change and the Paris climate agreement, which put forward a strong global commitment in preventing a 2 degree Celsius increase in global temperature above pre-industrial levels, the long term phase-out of fossil fuels and the substitution by low-GHG alternative energy resources appears imperative. This will contribute to the transformation and greening of the energy sector and, more importantly, pave a path to achieve goals 7 (Affordable and Clean Energy) and 11 (Climate Action) of the Sustainable Development Goals (SDGs).

The study of the investments in renewable energy that are made by O&G companies is vital to the sustainable development of human society as a whole. Nevertheless, it is certainly challenging to convince the O&G industry -whose very products result in GHG emissions (in the form of either carbon dioxide or other gases such as methane) - to take part in efforts to mitigate climate change. Thus, it is critical to comprehensively understand what can influence change in corporate strategies, in order for the right policies or incentives to be implemented in the industry. The present research embarks on an academic journey to examine corporate strategies of O&G companies to climate change mitigation, placing a special focus on business diversification from fossil fuels to renewable energy. Three National Oil Companies (NOCs) from emerging economies in Southeast Asia- PTT from Thailand, PERTAMINA from Indonesia and PETRONAS from Malaysia, were selected as case studies and serve as a starting point for the study of the wider picture on NOCs. The study also included two associates of PTT- Bangchak Petroleum and Thai Oil-, in order to provide a more in-depth picture of the specific case of Thailand.

This research conducted three studies to achieve its objectives. Firstly, a thorough review on actual renewable energy investment projects of the five companies during the first 15 years of 21st century was carried out. The results showed that all five companies have invested in renewable energy, but to various degrees and on a range of different technologies. All of them have produced and commercialized biofuels, mostly due to existence of government mandates in each of the three countries. However, the study also found that such investments appeared to be correlated with the oscillations in global crude oil prices. Solar PV only became the focus of the attention of PTT, Bangchak and PETRONAS in recent years, when the cost of solar cells dramatically dropped and their respective governments initiated attractive Feed-in-Tariff

policies. Lastly, PERTAMINA is the only one company involved in the development and exploitation of geothermal energy, although it aims to invest more in tidal, ocean, wind and solar PV in the coming years.

Following the development in the renewable energy projects of each company, the study then examined the discourses which the companies applied to justify their green investments. Annual reports available in the company websites were collected and a discourse analysis was run through the MAXQDA software. The main focus was to determine which were the most repeated discourses that each company used to explain their investment in particular renewable energy sources. Moreover, the discourses found were categorized into four different types, based on an analytical framework on discursive legitimacy strategies, namely authorization, rationalization, moral evaluation and mythopoesis. The result showed that companies manipulated various discourses to legitimate their low-carbon energy projects and that those discourses reflected the specific socio-cultural context in the home country.

Lastly, as the results pointed out that some companies, in particular those in Thailand, have been relatively more active in investing in renewable energy, the study investigated the factors that influence companies to invest in or divest from low-carbon energy. A novel analytical framework was applied to comparatively analyze all five companies from the three countries studied. The framework comprised three sets of factors; 1) company's specific features i.e. ownership structure and role of the CEOs and shareholders, expectation on short-term and long-term economic advantages, view on climate change, 2) national factors i.e. government's renewable energy and climate change policy, country's resources, social movement on environmental issues, and 3) global factors i.e. world crude oil prices, discovery of shale oil and gas, cost of technology, and peer influences. Secondary data as well as primary data from semi-structure interviews in three countries were used in this analysis. Country specific context and company features were highlighted as important factors for all companies that were analyzed, and which appear to have more influences than global factors.

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