

Transitions under Energy Crisis: How Are Oil & Gas-Producing Countries and Energy Companies About to Live through Energy Transitions? Energy Markets in Transition and CBAM¹,

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This paper outlines the current situation of Oil & Gas company's Energy Transition at first, and finally discusses challenges regarding methodologies for monitoring GHG (Green House Gases) emissions from Oil & Gas products with the viewpoint of Carbon Border Adjustment Mechanisms based on my earlier study.

1. Overview: How to strike a balance between stable energy supply and decarbonization becoming new challenges

At present, Oil & Gas operators routinely work to secure a stable energy supply through value-chain. How to strike a balance between a stable energy supply and decarbonization has become a new challenge after the Ukraine war as a de-risked approach.

Responses to ESG Investment

As a response to the Task Force on Climate-related Financial Disclosures (TCFD) settled by the requests of G20 and FSB (Financial Stability Board) financial institutions, energy companies introduced quantifiable indicator as Key Performance Indicators (KPIs) including its future expansion of KPIs toward Net Zero emission. However, specific selection of KPIs such as, GHG emissions, the share of upstream GHG intensity, product's carbon footprint, and renewable energy installed capacity, etc., which differ widely from each other, as noted in a later discussion on transitions.

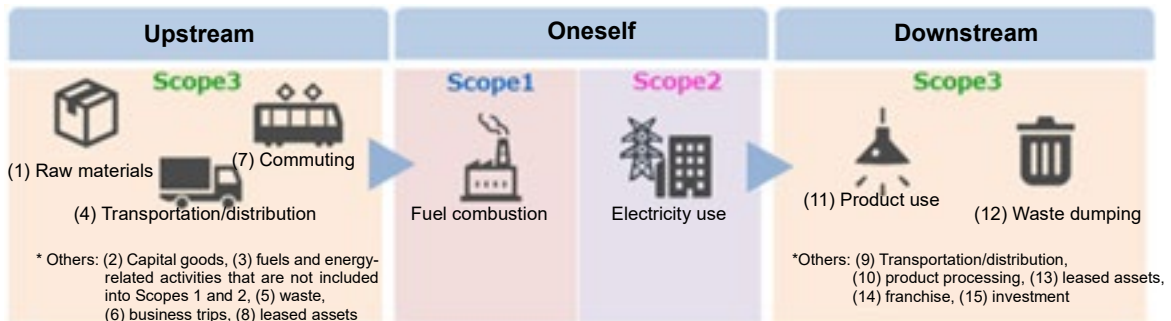
Many companies also prioritized stakeholder involvement, dialogue, and it seems that transparency and prompt decision-making have become more important than ever.

¹ Acknowledgement : The writing of this paper was inspired by an Oxford Energy Seminar (OES) held September 2022. I very much appreciate the opportunity to attend. However, the content of this paper is based on the author's analysis and other interviews.

Addressing Scope 3 reports

The author had some opportunities to witness a good-faith, discussion on how to invest in decarbonizing technologies and disclose information on GHG emissions, by oil-producing companies.

For instance, whether emission disclosure reports should cover Scope 3 emissions in the products use stage (end-use)², and whether Scope 3 should be subjected to decarbonization goals may become one of significant issues for those board members.



Scope 1: Direct GHG emissions by the reporting company itself. (fuel combustion, industrial processes)
 Scope 2: Indirect emissions from use of electricity, heat, or steam supplied by others
 Scope 3: Indirect emissions other than Scopes 1 and 2 (emissions by others related to the company's activities)

Figure: Image of Scope 1, 2, 3 GHG emissions

Source: Ministry of the Environment, Japan

Market Dynamics in Decarbonization

There is a hypothesis that Saudi Arabia, the most cost-competitive oil producing country, could play a key role in such a situation. It seems to me that Saudi Arabia may send messages to the market that it may take advantage of its affordable energy

² Case of ExxonMobil: Seeking net-zero emissions in Scopes 1 and 2 by 2050. Scope 3 emissions estimated numbers are published with the specific citation.

Case of Royal Dutch Shell case: Setting a target is to become a net-zero emissions energy business by 2050 covering Scope 3.

As for Scope 3, GHG Protocol, for which a guideline has been given by the World Resource Institute and the World Business Council for Sustainable Development (WRI/WBCSD), classifies Scope 3 emissions into 15 categories. WRI/WBCSD, "Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Standard."

resources to launch investment in and supply of green products (hydrogen,³ plastics and other chemicals made from renewable energy) whenever there are market needs. Green market differentiation among resource-rich countries may start to begin. Saudi Arabia may exploit green and other decarbonized fuels for its survival. As discussed later, there was concern that the harmonized methodologies to monitor GHG emissions are failing to make progress for oil and gas producers.

Transitions rather than a single transition pathway:

Even EU energy companies' decarbonization pathways are diverse

Energy transition pathways differ by companies and their assets. Particularly, EU energy companies set forth various decarbonization approaches. EU companies were slightly divided over their attitude of whether priority should be put on hydrogen. Some companies placed hopes on CCS while others brushed off CCS. In an extreme case, one company offered to minimize CCS and offset credit use. Perhaps this is a result of existing assets and value chains.

Positiveness to offset credit uses: EU companies' attitudes are divided

Regarding offset credit uses, some companies pointed out reputation risks. In contrast, some others mentioned REDD credit (Reducing Emissions from Deforestation and forest Degradation), as well as the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+), indicating their environmental integrity to tackle these initiatives. Some companies are also promoting transparency and disclosure, and the cautious selection and verification of REDD projects.

With regard to “carbon-neutral LNG”, Stern (2022)⁴ pointed out that “Owners and operators of assets in the different segments of the supply chain should take responsibility for MRV⁵ of emissions from those assets. For sellers, this would include emissions from the wellhead to the loading arm of the LNG ship (i.e. all upstream segments plus liquefaction)” and “the LNG community must be able to credibly

³ Some companies cited transition toward hydrogen, without discussing development of value chains including the consumption stage and of hydrogen infrastructure.

⁴ Stern, J. (2022), “Greenhouse Gas Emissions from LNG Trade: from carbon neutral to GHG-verified”. The Oxford Energy Institute for energy study, September 2022.

⁵ Measurement, Reporting, and Verification

document its emissions which will become an increasingly critical part of its social license to operate.” **De-risking for decarbonization and economic security:**

Responses to critical minerals

The world may plunge into “stagflation,” or a recession accompanied by energy and other price hikes, and see “progress in de-globalization” with nationalism gaining momentum. Given that renewable energy indispensable for decarbonization has been supported by solar panels, heat pumps, and other products, economic security challenges related to decarbonization were pointed out.

U.S. Inflation Reduction Act of 2022 (IRA) ⁶

The IRA passed by the U.S. Senate on August 7, 2022, has been called the largest climate bill in U.S. history. While the U.S. Nationally Determined Contributions (NDCs) under the Paris Agreement seeks to cut GHG emissions by 50-52% from 2005, the IRA is expected to cut emissions by up to 40%. Much of the financial support is through tax credits. One of the supports for hydrogen production amounts to up to \$3/kg-H₂ as long as CO₂ emissions are limited to 0.45 kgCO₂/kg-H₂. For Carbon dioxide Capture and Storage (CCS), the Section 45Q tax credit expands from \$50/ton-CO₂ under the Trump administration to \$85/ton-CO₂. For Direct Air Capture (DAC), the tax credit increases from \$50/ton-CO₂ to \$180/ton-CO₂. Other support includes \$3.5 billion in additional funding for DAC hubs.

Challenges towards COP27/28 hosted by oil-producing countries

Egypt hosted the 27th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP27) in 2022 before the United Arab Emirates hosts the UNFCCC COP28 in 2023. Usually, host countries have launched their respective initiatives.⁷

Given that an oil-producing country successively hosts a UNFCCC COP meeting, decarbonization initiatives for promoting gas and oil companies’ investment in decarbonization may be proposed.

⁶ For details, see Ueno,T (2022), “Climate Change Investment under the U.S. Inflation Reduction Act” in Japanese. <https://criepi.denken.or.jp/jp/serc/discussion/22007.html>

⁷ The Whitehouse (2022) “Inflation Reduction Act Guidebook”

<https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>

⁷ For instance, the United Kingdom put forward the following initiatives in 2021. The British initiative of “Glasgow Breakthrough” for international cooperation in the acceleration of clean technology development and diffusion over the next decade was joined by all Group of Seven countries including Japan. Among other initiatives was the Glasgow Financial Alliance for Net Zero (GFANZ) launched by Mark Carney and others.

Ahead of COP27, in fact, Saudi Arabia created a \$1.5 billion technology investment fund for promoting investment in “inclusive energy transition” and announced its participation in the first voluntary carbon credit auction sponsored by the Public Investment Fund (PIF).

2. Issues regarding the EU Carbon Border Adjustment Mechanism: May become de facto standards for monitoring GHG emissions from oil and gas

I have conducted earlier studies⁸ on the EU Carbon Border Adjustment Mechanism (CBAM). Building on my earlier studies and the above discussion, I derive the following implications.

Background

The EU’s CBAM is designed to impose carbon tariffs on imports into the EU region. This means that the EU would require importers to report GHG emissions from imported goods and pay CBAM certificates which reflect auction prices under the EU Emissions Trading System according to explicit carbon price payments (carbon tax or emission trading systems) in exported countries. EU decided to impose a tax on chemicals, fertilizers including ammonia, steel and other hard to abate sector imported goods⁹ in proportion to emissions accompanying their production.

GHG emissions monitoring and enhancing transparency – The key is third-party certification.

In the current situation, oil and gas companies individually acquire third-party certification in response to requirements of the U.S. Sustainability Accounting Standards Board (SASB), etc.¹⁰ Many businesspersons and researchers thought that, in addition to a lack of international common rules for monitoring GHG emissions.

⁸ Yanagi, M. *et al.* (2021), “The Carbon Border Adjustment Mechanism: Collaboration or Confrontation?” https://eneken.ieej.or.jp/en/report_detail.php?article_info_id=9943

Yanagi, M and Morimoto, S (2023) “EU Agreed on World’s First CBAM – Summary Bulletin Phasing out free allowance to steel and other sectors by 2034 in transition to the Carbon Border Adjustment Mechanism (CBAM) Tensions of potential Green Trade War” <https://eneken.ieej.or.jp/data/11118.pdf>

⁹ CBAM regulation defines goods and products differently.

¹⁰ The Value Reporting Foundation (VRF), into which the International Integrated Reporting Council (IIRC) and the SASB merged in June 2021, was integrated into the IFRS (International Financial Reporting Standards) Foundation, which develops international disclosure standards for ESG information on August 1, 2022 (source: Japan Exchange Group “Introduction to ESG information disclosure frameworks”).

According to them, it may be hard to find appropriate an international forum for building consensus to integrate such rules. At present, GHG emissions may be monitored on a project-by-project basis. There were some concerns about the development of common methodologies for monitoring emissions that do not take its spectrum by region or well into account. Supply-side players may have challenges regarding monitoring methodology on green products (which uses renewables) and/or blue products (which use CCS).

Attracting attention recently are methane emissions MRV methods of the Oil & Gas Methane Partnership (OGMP) 2.0¹¹ of oil and gas companies, in partnership with the European Commission, the United Nations Environment Program (UNEP), the Environmental Defense Fund (EDF), Climate and Clean Air Coalition and Clean Air Task Force.¹²

According to the CBAM regulation¹³, the EU CBAM stipulates reporting duties to importers on Scope 1 GHG emissions (steel, aluminum, hydrogen) and Scope 1&2 (cement, fertilizer, electricity) from October 2023. Scope 1 covers emissions from oil and gas combustion. Therefore, oil and gas companies have to support customers on their carbon footprint.

In this sense, the absence of global common rules to monitor GHG emissions may be a matter of concern. As for Scope 2, the European Commission shall present a report on calculation methodology and the possibility of expanding to indirect emissions (Scope 2) of the goods for industries covered only by Scope 1 by the end of 2025. Also,

¹¹ The OGMP was established through a climate summit in 2014. At present, the 2006 IPCC (Intergovernmental Panel on Climate Change) Guidelines for National Greenhouse Gas Inventory stipulates approaches and methodologies for GHG emissions monitoring inventory by country. The OGMP 2.0 addresses the improvement of data use, compatibility with such guidance and the improvement of accuracy. The OGMP says, "The guidelines of IPCC (Rewritten by the author to abbreviation) and the OGMP 2.0 reporting framework are congruent, but the OGMP 2.0 adds a higher level of granularity to the IPCC's Tier 3 reporting by requiring the reconciliation of the source-level and site-level reporting."
<https://ogmpartnership.com/faq/>

¹² Also, the pressure from finance sector for disclosure should not be overlooked. In addition to the TCFD, there is also an attempt toward Net Zero. The Glasgow Financial Alliance for Net Zero (GFANZ) comprising financial institutions requires its members to make commitments to seek Net Zero emissions in all scopes including Scope 3 in 2050, set out intermediate goals for 2030 and realize transparent reporting, information disclosure.

¹³ Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism, Official Journal of the European Union, Volume 66 Legislation 16 May 2023

the possibility of expansion for transport services of goods (a part of Scope 3) will also be considered by European Commission at the same time. It would be a remaining issue for oil & gas sectors, especially for the utilization of blue or green hydrogen products.

While the EU's CBAM regulation may be inconsistent with fundamental WTO (World Trade Organization) rules (Yanagi 2022)¹⁴, the CBAM regulation officially entered into force the day following its publication in the Official Journal of the EU on 16 May 2023. The detailed rules for reporting methodology for GHG emissions from oil and gas which will be stipulated by Implementing Act, and Delegated Act may serve as the framework for future emissions accounting including hydrogen.

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¹⁴ Yanagi summarized previous studies written by international trade lawyers.
Yanagi, M. (2022), "Chapter 9 Carbon Neutrality and Trade Challenges – Focusing on Carbon Border Adjustment Mechanism," in "Recommendations for the Development a Rules-Based International Economic System – International Economy Series 1," edited by Japan Economic Foundation, pp.138-150, December,2022.
<https://eneken.ieej.or.jp/data/11117.pdf>