Chapter 5

Suggestions for the ASEAN NOCs

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Chapter 5

Suggestions for the ASEAN NOCs

We have analysed the low carbonisation and decarbonisation efforts of the ASEAN NOCs and the Western Majors. Based on these analyses, we will provide recommendations on energy transition strategies and approaches to the ASEAN governments and NOCs.

1. Determination of Direction and the Scope of Efforts

1.1. Importance of CN declarations by governments

For the NOCs, CN declarations by national governments, which are also their major shareholders, mean significantly. A CN declaration by a government is a major milestone towards the country's CN, and the declaration clarifies the direction towards decarbonisation and the time required to achieve it.

Since COP26, ASEAN countries have also declared CN. Malaysia, Thailand, and Viet Nam have expressed their 2050 CN goal, and Indonesia, its 2060 CN goal. If the government has declared CN, the NOC of the country will eventually have to declare CN.

1.2. Importance of CN declaration for companies

Some companies, such as PETRONAS (Figure 5.1), have declared CN, even when the government has not done so. In the future, more ASEAN NOCs are expected to declare CN. Whether a company has announced CN or not will have a significant bearing on its overall business. Since converting a business portfolio takes time, and each NOC has its speed and priorities in its efforts towards achieving CN, it is important for each NOC to develop a road map that suits itself.

Figure 5.1. PETRONAS's CN Declaration*

'We are making this commitment to make a positive change – not only to ride the energy transition – but because a fundamental shift is needed and the organization wants to be part of the solution, for the world that yearns for a path towards a more sustainable future.' said Tengku Taufik

* PETRONAS Declares Aspiration: To achieve net-zero carbon emissions by 2050, https://www.petronas.com/sustainability/net-zero-carbon-emissions.

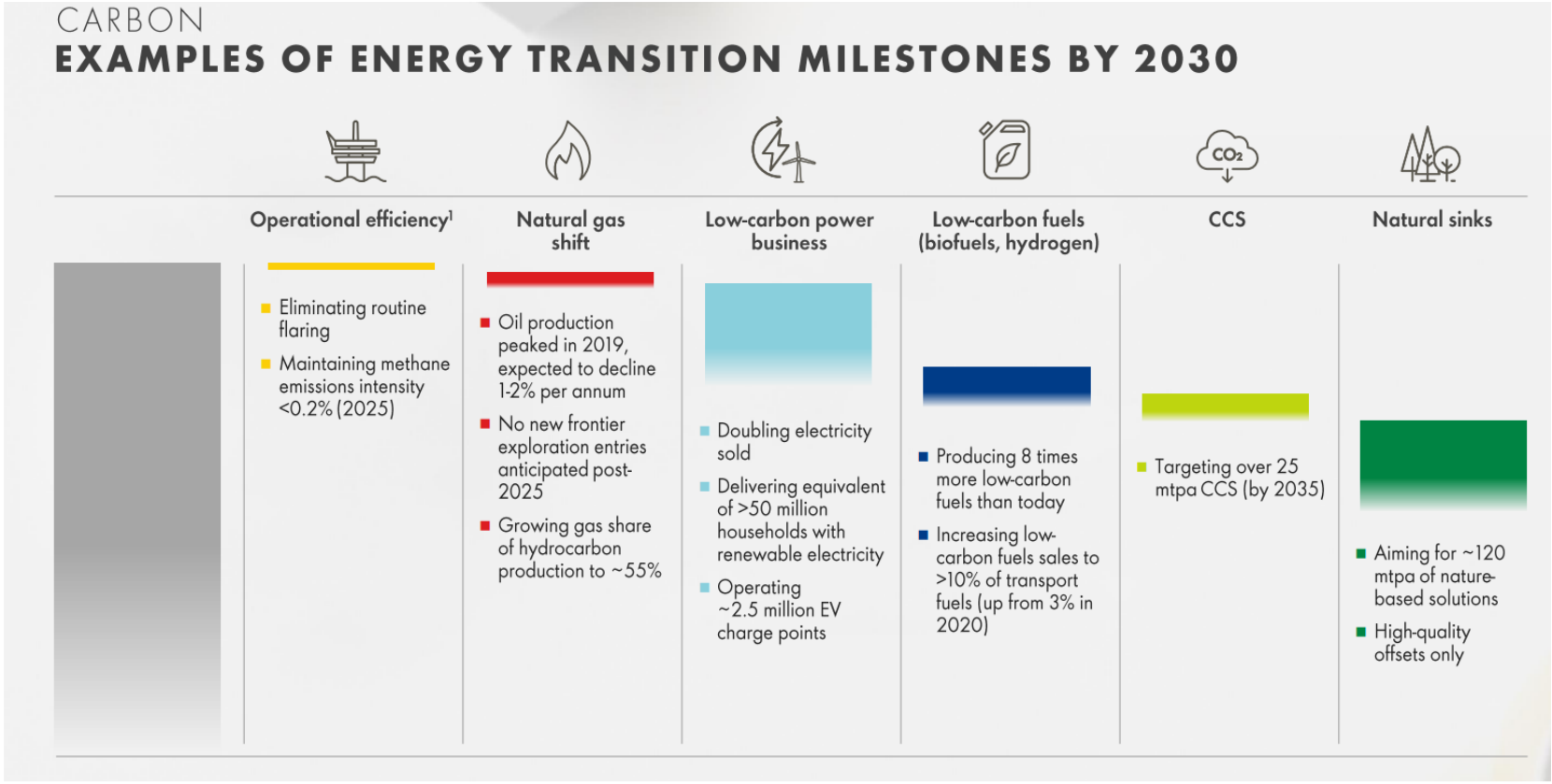
1.3. Development of a road map

In a CN declaration, it is essential to make the declaration and develop a road map that outlines concrete measures to realise CN. However, the situations and management resources of the Western Majors are different from those of the ASEAN NOCs, and the costs for realising CN also are very different. Given the diverse realities of the ASEAN NOCs, each NOC should develop a road map that suits itself. Figures 5.2, and 5.3 are examples of road maps.

Figure 5.2. PTT's Road Map

Source: PTT, Workshop materials, 19 April 2022, p.14.

Figure 5.3. Shell's Road Map to 2030



Source: Shell (2021b).

1.4. Securing the investment budget

It is important to secure an investment budget to ensure that the road map does not turn out to be merely a pipe dream. Since an energy transition strategy is a long road with a medium- to long-term period such as 'realisation by 2050', scales different from usual are necessary for the time required for investment recovery (payout time) and internal rate of return. For reference, Table 5.1 presents Shell's investment criteria.

Table 5.1. Shell Investment Criteria

	Growth		**Transition**		**Upstream**
	Marketing	**Renewable Energy Business**	**Integrated Gas Business**	**Chemicals**	**Upstream Business**
Typical project characteristics	Lower requirements for equity capital (self-owned capital) associated with the growth of sustainable cash flow		Capital intensification with a long-term cash flow profile and limited lower price potential		Risk-associated high volatility
Average project return (IRR)	15%～25%	＞10%	14%～18%	10%～15%	20%～25%
Payout time (time for investment recovery)	4 to 8 years	—	Before 2040	Within 10 years	Before 2035

IRR = internal rate of return.
Source: Shell (2021b).

It is also necessary to reorganise own company's business portfolio. For example, an upstream portfolio can be reduced in the medium to long term. However, investment in LNG and CCS can be increased, or a renewable energy portfolio can be increased. Table 5.2 shows examples of the capital investment policies of Western Majors.

Table 5.2. Example of Capital Investment Policies of Western Majors

Company	Investment Composition
Shell	Reducing the allocation to the upstream sector from 42% to 25%–30% in 2020–2025 and beyond, reducing the allocation to the gas chemical sector from 43% to 30%–40%, and increasing the allocation to the renewable energy and sales sector from 16% to 35%–40%
BP	Increasing the share of investment in two sectors, namely, the low-carbon electricity and energy sector (including gas) and the consumer and mobility sector (including lubricants and hydrogen), from 15% in 2019 to 40% in 2030
TotalEnergies	Maintaining the allocation to LNG at 15%–20% of the overall investment until 2030. The share of renewable energy and electricity will be increased from an average of 10% over the past 5 years to 15% from 2021 to 2025 and to 20% from 2026 to 2030.
ExxonMobil	Investing US$15 billion in decarbonisation through 2027. Cultivating new businesses dealing with methane gas leakage, CCS, hydrogen, and biofuels. Investing an overall annual capital until 2027 of US$20 billion–US$25 billion.

CCS = carbon dioxide capture and storage.
Source: Author.

In ASEAN countries, it is difficult to finance an investment budget for energy transition domestically because the domestic financial markets are not well developed, so NOCs must rely on foreign investment. It is necessary to improve the predictability of long-term investment to attract foreign investment; that is, the transparency (information disclosure) and consistency of policies, such as fossil fuel and renewable energy, should be further enhanced. In addition, it is necessary to establish related laws and guidelines (for example: securing land for CCUS and wind power generation, etc.), formulate technical and safety standards, and make efforts to increase the sense of security for investment.

1.5. Selection of renewable energy according to geographical conditions

Activities in the field of non-fossil energy, especially in new energy such as renewable energy, are challenging for NOCs, having been involved in the fossil fuel business for many years and lacking experience and know-how in the new energy field. In addition, renewable energy has a relatively low energy density, and the amount of renewable energy that can be introduced depends on natural and land conditions. The key point, therefore, is to introduce a program that matches each country's geographical situation and characteristics.

Each ASEAN country has its geographic characteristics. Each country needs to take advantage of its geographical conditions and work on renewable energy in which it can excel. Thailand and Viet Nam can focus on solar power generation by taking advantage of long sunshine hours. In the case of Viet Nam, onshore and offshore wind power generation is promising, taking advantage of abundant wind and shoaling beach conditions. Indonesia is said to have the world's second-largest potential geothermal resource next to the US. Efforts to take advantage of this are already under way, but there is room for further promotion.

NOCs have been involved in the oil and gas business, which generates large-scale sales (profits). On the other hand, the renewable energy business has relatively small sales and large differences in business scale. It remains to be seen whether new businesses such as renewable energy will grow enough to maintain management's bottom line. The Western Majors are also utilising acquisitions, spin-offs, and corporate alliances. Establishing a separate company for each business is helpful to ensure management flexibility and independence and evaluate renewable energy businesses based on an evaluation axis different from the fossil fuel business and a long-term perspective. In the current energy transition period, the way of thinking that new businesses, such as the renewable energy businesses, are complements to, not replacements of, the oil and gas business is also important.

1.6. Importance of collaboration and partnership

In developing a road map, companies will naturally become aware of resources lacking in them. On the financial side, companies may utilise government support (e.g., subsidies) and financing, such as green bonds and transition bonds for the energy transition. On the technological side (hydrogen, CCUS, ammonia, offshore wind power, batteries, etc.), they should collaborate with other companies in the same industry, those in different industries, universities, and other academic circles, and develop their road maps by complementing one another's technologies, funds, and human resources rather than producing everything in-house.

Examples of collaboration:

- Industry–academia–government (foundations, universities)
- Between companies in the same industry (e.g., collaboration between oil companies)
- Across different industries (oil and chemical, oil and information technology, etc.)

The digital field is a major frontier for companies engaged in the traditional oil and gas industry. Great opportunities can arise through the use of digitalisation to combine green transformation with digital transformation. There is much room for digitalisation, such as installing infrared sensors in upstream facilities, pipelines, and refineries and using 5G communications to monitor real-time data on flow rates and GHG leakage to reduce methane emissions.

The following are examples of collaborations and partnerships:

Shell is collaborating with the German chemical company BASF on carbon capture technologies and with the National University of Singapore for joint research. TotalEnergies has strategic alliances with Microsoft and Amazon.com.

A similar movement can be seen regarding the ASEAN NOCs (Figure 5.4). Such movements include a comprehensive strategic alliance between PETRONAS and ADNOC (in the fields of hydrogen, CCUS, research and development, technologies for enhanced oil recovery, etc.); alliances amongst PETRONAS, Pertamina, and Western Majors (ExxonMobil, Shell, etc.) on CCS; and partnership between PTT and Taiwan's Foxconn on EVs.

Figure 5.4. Examples of ASEAN NOCs' Collaboration

Source: Home pages of the respective companies.

Because decarbonisation is a new field even for rival companies, it is where ASEAN NOCs can pursue bilateral strategic dialogues. In addition to cooperation amongst individual companies, it is also effective for the ASEAN NOCs to utilise intra-regional platforms, such as the ASEAN Council on Petroleum, where they can cooperate.

1.7. Support from the government

CN affects each country's economy and the overall lives of the people. No matter how much effort an NOC makes in its field, distortion and the fallacy of composition may result unless its country does not move towards CN in a balanced manner.

Governments' establishment of regulatory frameworks and incentives such as subsidies are key factors that can support the efforts of NOCs. Also, government initiatives in some European countries and the US promote solar and wind power generation and EVs. In particular, the government's role in developing battery electric vehicles (BEVs) is significant. For example, it is important for each government to develop a BEV strategy and present clear policies, such as providing subsidies to expand the BEV market. For example, Norway, where EVs are widely used, imposes carbon and registration taxes on conventional vehicles that use fossil fuels but does not impose such taxes on BEVs, providing substantial incentives to BEV users.

Particularly in new fields such as new energy and BEVs, the balance with other energy policy goals (accessibility, affordability) also needs to be considered. Balancing the overall energy needs of a country without too much focus on post-fossil fuel divestment or renewable energy investment is the role that only its government can play. The role of each government is precisely the creation of an ecosystem for overall energy.

2. Summary

Each ASEAN NOC should develop a realistic road map in coordination with other ASEAN NOCs and NOCs in other regions while considering business structure, available resources, and each country's natural geographical conditions. In addition, partnering with Western Majors or companies in different industries can also be effective. Based on this, it is very important to formulate the most appropriate energy transition strategy for each company by exchanging technologies, financing, and human resource development to realise its road map and implement energy transition and business structure transformation.

The Russian invasion of Ukraine in February 2022 affected all oil and gas companies. The impact of price hikes has been particularly significant on both the positive and negative sides, making a stable energy supply more important than ever. Various energy issues must be resolved simultaneously, including the stable supply of fossil fuels, decarbonisation during the energy transition period, and the introduction of new energy sources, such as renewable energy.