

Executive Summary

The Paris Agreement took effect at the Conference of the Parties (COP) 21. As of COP26, more than 150 countries have declared carbon neutral (CN) targets with target years. Thus, it is important to further accelerate low-carbonisation and decarbonisation efforts in the future.

Under these circumstances, the national oil companies (NOCs) of the Association of Southeast Asian Nations (ASEAN), mainly engaged in the fossil fuel business, must strengthen their efforts to reduce greenhouse gas (GHG) emissions while ensuring a stable energy supply in their existing businesses and low-carbon fields, such as renewable energy.

Table 1 compares the strategies and activities of the ASEAN NOCs and the Western Majors. Regarding the Net Zero Declaration, six companies except for Pertamina have set 2050 Net Zero targets. Shell, British Petroleum, and TotalEnergies target Scopes 1+2+3, while ExxonMobil, PETRONAS, and PTT target Scopes 1+2.

The strength of the oil majors and NOCs is their abundance of oil and natural gas assets. Thus, focusing on carbon dioxide capture (utilisation) and storage (CCS/CCUS) and hydrogen, for which existing assets can be used, would be effective. The Western Majors have already been operating their CCS projects. On the other hand, the ASEAN NOCs have signed memoranda of understanding (MoUs) with their partners. In the future, the CCS of oil majors' projects should be accelerated. Pertamina and PETRONAS are already moving in that direction, but a further acceleration of CCS is necessary. Moreover, as Thailand is the centre of automobile production in Southeast Asia, it makes sense for Thailand's PTT to enter the electric vehicle (EV) production and battery fields.

Each ASEAN NOC should develop a realistic road map in coordination with the other ASEAN NOCs and those in other regions while considering business structure, resource availability, and each country's natural geographical conditions. In addition, cooperation with Western Majors and other companies in different industries can also be effective. Based on this, it is important to formulate the most appropriate energy transition strategy for each company. Exchanges in technologies, financing, and human resource development can contribute to accelerating ASEAN NOC's energy transition road map 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 in both positive and negative aspects, making a stable energy supply more important than ever. Various energy issues should 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.

Table 1. Comparison of Strategy and Activity between ASEAN NOCs and Western Majors

	Exxon Mobil	Shell	BP	TotalEnergies	PETRONAS	Pertamina	PTT
Net Zero Declaration	2050 *Oil & Gas Production	2050	2050	2050	2050 *Oral Declaration	NA	Net Zero GHG emission by 2050
Scope	1+2	1+2+3	1+2+3	1+2+3	1+2	NA	1+2
Flaring	Eliminate routine flaring by 2030	Eliminate routine flaring by 2030	—	Eliminate routine flaring by 2030	—	—	—
CCS Target	—	25 MtCO ₂ by 2035	—	5 MtCO ₂ by 2035	—	—	—
Major CCS Project & Alliance	Baytown Texas La Barge Wyoming	Northern Lights Quest Teesside	Teesside Humber Tangguh Moomba	Northern Lights Aramis Teesside	ExxonMobil Shell ADNOC Posco	ExxonMobil Masdar SK Group Marubeni Mitsui & Co.	INPEX JGC Holdings
Hydrogen Project & Alliance	Baytown Texas	Double Digit Share by 2035	10% share by 2030 H ₂ Teesside	5-tonne Green H ₂ per day By 2025	JERA ENEOS Masdar	SK Group Mitsubishi Pupuk	
Renewables & Others	Biofuel Mobil EV Lubricants DAC	Biofuel Wind Farm PV EV Charge Link Salary	Biofuel Wind Farm PV EV Charge Link Salary	Biofuel Wind Farm PV EV Charge Battery	Ammonia PV CO ₂ Transport	Biofuel Geothermal Ammonia PV EV Charge	EV Production EV Charge Battery PV

ADNOC = Abu Dhabi National Oil Company, CCS = carbon capture and storage, DAC = direct air capture, EV = electric vehicle, GHG = greenhouse gas, PV = photovoltaic.

Source: Author.

Definition of Scopes 1, 2, and 3

Scope 1: Direct emission of GHG by the operator (examples: fuel combustion, industrial process).

Scope 2: Indirect emissions due to the use of electricity, heat, and steam supplied by other companies.

Scope 3: Indirect emissions other than Scopes 1 and 2 (emissions from other companies related to the activities of the business operator).

Source: ME and METI, Japan (2022).