

Chapter 5

Policy Recommendations

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Chapter 5

Policy Recommendations

Climate change is an important global issue. Therefore, it will undoubtedly be necessary for countries and regions worldwide to make a significant effort to mitigate and resolve it. Criticism against coal-fired power generation has become particularly radical. Coal-fired power generation faces tighter regulations, and coal divestment is increasingly common to restrict coal financing. This study's workshop reveals that coal divestment is already delaying coal power projects in Viet Nam, while Malaysia and Thailand do not have any new coal power projects.

However, this study shows that coal divestment is not a 'silver bullet' for reducing GHG emission and that the negative impacts on the seven EAS countries are by no means small. Without coal in the power mix, CO₂ emissions from the seven EAS countries will slow down. However, even in the NNC, CO₂ emissions in 2050 are higher than in 2018. Therefore, removing coal from the power mix alone cannot decrease CO₂ emissions. It is necessary to adopt other measures, such as energy efficiency, CCUS, and other decarbonisation technologies, to address climate change.

Removing coal from the power mix affects the seven EAS countries' energy security. In the NNC (natural gas substitution), the total net import spending on natural gas and coal in 2050 is about 5.5 times as much as in the REF, and the total net imports account for 2.5% of nominal GDP. Hence, this side effect will squeeze the seven EAS countries' economies. Like natural gas, most LNG imports in the seven EAS countries will skyrocket. The capacity constraints of import infrastructure and liquefaction will make it very difficult for the countries to replace the lost coal-fired power with natural gas-fired power.

On the other hand, in the NNC (renewables substitution), the required investment increases by US\$1.7 trillion (2021–2050) from the REF. This would cause an upward pressure on electricity costs and damage the countries' economy. Also, power supply stability may be reduced as it is difficult to control the electricity output from solar PV and wind artificially.

There is no perfect measure for climate change. Whatever actions are taken will negatively impact the sustainable development of the economy and society. However, the negative impacts on the seven EAS countries, particularly those at relatively low economic development levels and those without alternative energy, are by no means small and should not be easily overlooked.

For example, the net imports of natural gas and coal combined in 2050 in the NNC (natural gas substitution) will account for 2.5% of nominal GDP that year. This number is much higher than Japan's record of 1.9% in 2013, after the sudden jump of LNG imports because of the Fukushima nuclear accident and the lost nuclear capacity. This fact helps us imagine how the 2.5% rate in the NNC will burden the seven EAS countries' economies.

Cumulative power generation investments from 2021 to 2030 in the NNC (renewables substitution) increase by approximately US\$350 billion over the REF. According to International Monetary Fund data, the cumulative total fiscal measures for the COVID-19 pandemic by the seven EAS countries' governments until 11 September 2020 amounted to \$332.6 billion. It is necessary to carefully assess whether this region can additionally spend the amount of such emergency contributions to eliminate coal-fired power generation.

Relatively developed countries like Malaysia and Thailand are on the track of lesser dependency on coal. But India, Indonesia, Myanmar, the Philippines, and Viet Nam still need low-cost electricity like coal-fired power generation to support economic growth. Thus, even if the restriction on financing for the new construction and replacement of CFPPs is introduced, power producers may construct or renew CFPPs with other financing sources. In this case, to minimise construction costs, producers may construct inefficient CFPPs with high CO₂ emissions. As a result, CO₂ emissions might increase more than the REF. Financing efficient USC coal-power plants and clean coal technologies like the integrated coal gasification combined cycle (IGCC) should continue. However, less efficient plants should be excluded from coal financing. While OECD countries have difficulty financing coal power projects, international financial institutions like ADB now have a greater role to continue financing efficient and clean coal power projects.

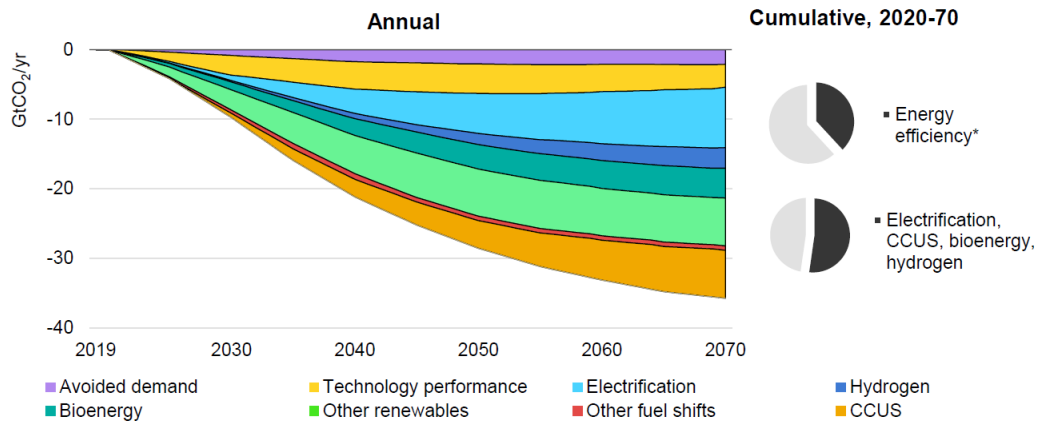
Addressing climate change is just one of the components for achieving sustainable development. The United Nations defines 'sustainable development' as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (UNESCO, 2015). They also point out that 'For sustainable development to be achieved, it is crucial to harmonise three core elements: economic growth, social inclusion, and environmental protection. These elements are interconnected, and all are critical for the well-being of individuals and societies' (UN, 2020).

Putting it in the context of energy policy, when the seven countries, especially India, Indonesia, Myanmar, the Philippines, and Viet Nam, address climate change, they should comprehensively assess the impact of coal divestment and prioritise it vis-à-vis other measures. Energy policy needs to balance various elements in any country. Balancing elements like economic efficiency, energy access, energy security, and environment is no easy task but should be pursued in a sound energy policy. The analysis in Chapter 3 clarifies that removing coal-fired power for the sake of the environmental element of energy will strain other elements (economic efficiency, energy access, and energy security) to a great deal.

Therefore, the sensible decarbonisation pathway for an individual country in this study is worth questioning. IEA analyses a scenario for CO₂ emission reduction measures globally and regards energy efficiency, electrification, CCUS, bioenergy, and hydrogen as major measures (IEA, 2020b). Electrification would involve renewables and/or fossil fuel generation with CCUS, and coal-fired power generation without CCUS would be largely diminished. This scenario envisages the world total, and proportions of each measure

could significantly vary country by country. Nevertheless, coal divestment is not the only way to control CO₂ emissions.

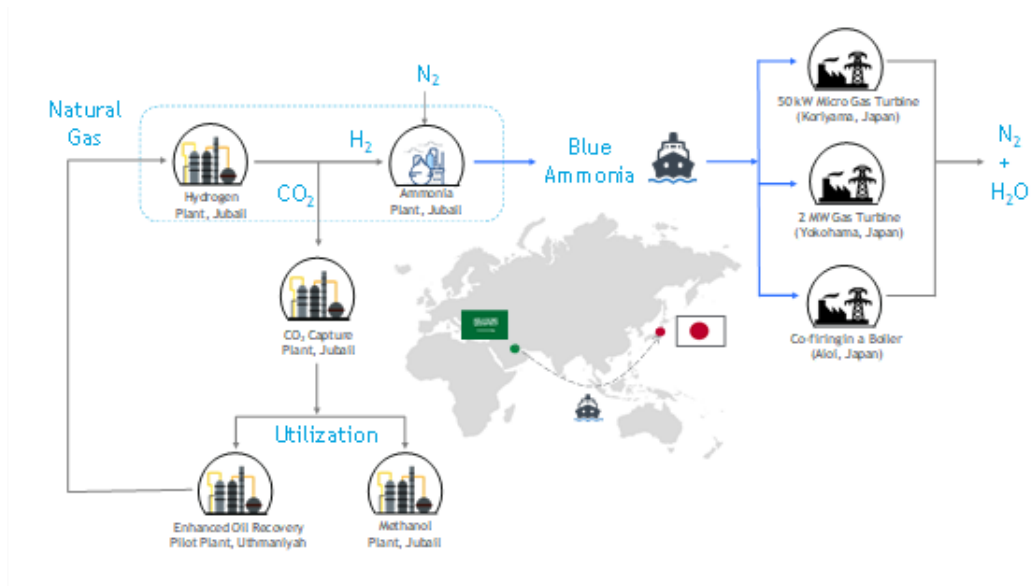
Figure 5.1: Global Energy Sector CO₂ Emission Reductions, by Measure in the SDG Relative to the Stated Policies Scenario, 2019–2070



CCUS = carbon capture, utilisation, and storage; SDG = Sustainable Development Goal.
Source: IEA (2020b).

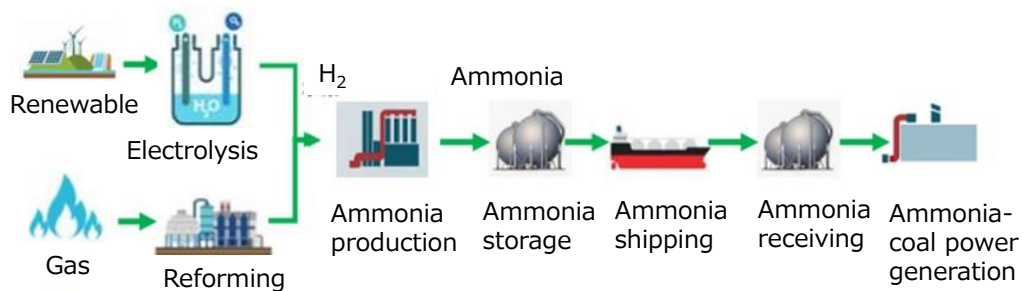
As for CCUS and hydrogen, utilising ammonia for power generation and other carbon-recycling methods has gained attention, especially since 2020. Japan and Saudi Arabia have been working on the so-called ‘blue ammonia’ produced mainly from natural gas with CO₂ used for material use or enhanced oil recovery. Saudi Aramco made the first test shipment of blue ammonia to Japan in 2020. A consortium of Japanese companies is working on ammonia–coal co-firing power at the existing CFPPs in Japan. The government targets utilising 3 million tonnes of ammonia in 2030 and 30 million tonnes in 2050, mainly for power generation. The government also envisages developing global ammonia supply chain of 100 million tonnes, mainly for power generation and bunker fuel. Japan’s effort to develop an ammonia supply chain is certainly in the initial stage. Still, it could provide one of the effective measures to balance lower CO₂ emissions and utilise existing CFPPs in the seven countries in this study.

Figure 5.2: Ammonia Supply Chain Demonstration between Saudi Arabia and Japan



Source: IEEJ (2020).

Figure 5.3: Concept of Ammonia–Coal Blending Power Generation



Source: JERA (2020).

Climate change must be addressed globally, but the principle of common but differentiated responsibilities suggests that all countries are responsible for environmental issues destruction yet not equally responsible. Should this principle hold, OECD countries and now China that share about 80% of the global cumulative CO₂ emissions must take greater responsibility to address climate change. That greater responsibility includes achieving carbon neutrality in their own countries and contributing to developing countries through technical and financial assistance to establish a sound balance of economic efficiency, energy access, energy security, and the environment in their energy policies.