

Executive Summary

The coronavirus disease (COVID-19) pandemic started in early 2020 and its negative economic impact can still be felt around the world. However, the situation is improving as vaccination becomes more widespread and as people avoid crowding and shift to 'new normal' lifestyles such as work from home. Energy consumption has decreased because lockdowns have shrunk economic activities. Applying East Asia Summit (EAS) energy outlook models to the 17 EAS countries (EAS17), the report analyses COVID-19's impact on industry, transport, and commercial and residential sectors' final energy consumption, focusing on the relationship between economic growth and energy consumption. The negative impacts of COVID-19—lockdowns, work from home, disruption of industrial supply chains—are reflected in economic growth rates.

The section on the Association of Southeast Asian Nations (ASEAN) covers all countries except Brunei Darussalam and Myanmar. The eight countries' 2020 assumed gross domestic product (GDP) growth rates are diverse; Lao People's Democratic Republic and Viet Nam may maintain positive growth but less than 2%, and the other six countries may show negative growth, from -2.0% in Indonesia to -8.3% in the Philippines. The eight countries' weighted average GDP growth rate is estimated at -3.3% in 2020. Oil and electricity are the main sources of energy in the final energy consumption sectors and are, therefore, highly correlated with GDP as an overall economic activity indicator. Oil and electricity consumption in 2020 started decreasing in 2019 because of the economic recession resulting from the COVID-19 pandemic. Consumption of coal and gas is insignificant and not, therefore, correlated with GDP. Only two countries show negative growth of total final energy consumption. One reason is the structure of EAS energy outlook models' energy demand formulas, which consist of the following variables: GDP and relative energy prices. If the lag coefficient is significant, economic recession mitigates the direct reduction of oil and electricity consumption. Crude oil prices slightly lower than in the business-as-usual (BAU) scenario moderate oil consumption reduction. Another reason for negative growth of total final energy consumption is the application of an econometrics approach, which might not be appropriate for analysing economic shocks such as the COVID-19 pandemic. The ASEAN countries will release their 2020 official energy balance tables in the second half of 2022 allowing a comparison of actual energy consumption with the model results to assess the EAS energy outlook models. The analysis shows that the COVID-19 pandemic has had a negative impact on energy consumption because of the economic recession. After the pandemic, energy consumption will spike because of the economic rebound and gradually catch up with BAU energy consumption trends, and the fossil fuel share in 2050 will be more than 80%. ASEAN countries must, therefore, continuously promote energy efficiency and conservation and deploy affordable renewable energy such as hydropower, geothermal, and solar photovoltaic sources. A policy to decrease coal and increase gas consumption is another option to mitigate CO₂ emissions. An integrated liquid natural gas supply chain in ASEAN, such as the Trans-ASEAN Gas Pipeline, will, therefore, be indispensable.

For EAS+7 countries,¹ assumptions of economic damages are different. In 2020, only China is assumed to maintain positive economic growth (2.3%). India's GDP experiences the largest drop among the +7 economies since the country suffered greatly from COVID-19. In 2021, all +7 economies recover owing to vaccine penetration. In 2020, the COVID-19 pandemic has a huge impact on total final energy consumption and total primary energy supply in the +7 economies. Oil demand drops substantially because of major cities' lockdowns and rapid adoption of work from home in all the countries. In the short term, however, the economy rebounds in 2021, and GDP annual average growth rates in 2020–2025 in the COVID-19 scenario exceed those in BAU. Thus, the difference between both scenarios' energy consumption shrinks after 2021. In the long term, until 2050, the pandemic's impact on the economy, energy demand, and demand breakdown is extremely limited. Both scenarios imply that energy consumption in the +7 countries approaches half the world's total final energy demand in 2050 regardless of the COVID-19 pandemic.

Some may argue that the COVID-19 pandemic will help reduce CO₂ emissions, but although the pandemic might have a huge short-term impact on decreasing CO₂ emissions, it is projected to have little long-term impact. This study shows that the pandemic will not sustainably reduce CO₂ emissions. We must, therefore, act to reduce CO₂ emissions in the long run.

¹ EAS plus the Australia, China, India, Japan, Republic of Korea, New Zealand, and the United States.