

# Chapter 17

## Viet Nam Country Report

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# Chapter 17

## Viet Nam Country Report

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### 1. Background

The coronavirus disease (COVID-19) pandemic has had many negative socioeconomic impacts that have affected energy demand and supply in Viet Nam. Official energy statistics for 2020 have not yet been released, however, so this chapter uses the business-as-usual (BAU) scenario in Viet Nam Country Report, 2020<sup>8</sup> as a reference. This chapter examines how the pandemic reduced energy demand in 2020 and how it rebounds after 2020 in the COVID-19 scenario.

### 2. Macro Assumptions of the COVID-19 Scenario

The gross domestic product (GDP) growth rate in 2020 decreases to 1.6% in the COVID-19 scenario (6.8% in BAU) and rebounds to 6.7% in 2021, 7.4% in 2022, and 7.2% in 2023.

In 2023–2030, the growth rate is 6.5% per annum, slightly higher than in BAU, and 5.2% in 2030–2040 and 4.2% in 2040–2050, the same as in BAU (Table 17.1).

**Table 17.1. Assumed Gross Domestic Product Annual Growth Rates, Business-as-Usual vs. COVID-19 Scenarios, 2018–2050**

	2018	2019	2020	2021	2022	2023	2023–2030	2030–2040	2040–2050
<b>COVID-19</b>	7.1%	7.0%	1.6%	6.7%	7.4%	7.2%	6.5%	5.2%	4.2%
<b>BAU</b>	7.1%	7.0%	6.8%	6.5%	6.5%	6.5%	6.2%	5.2%	4.2%

BAU = business as usual, COVID-19 = coronavirus disease.

Source: Author, based on International Monetary Fund (2020).

<sup>8</sup> Viet Nam Country Report in *Energy Outlook and Energy Saving Potential in East Asia 2020*, ERIA, pp.280-298.

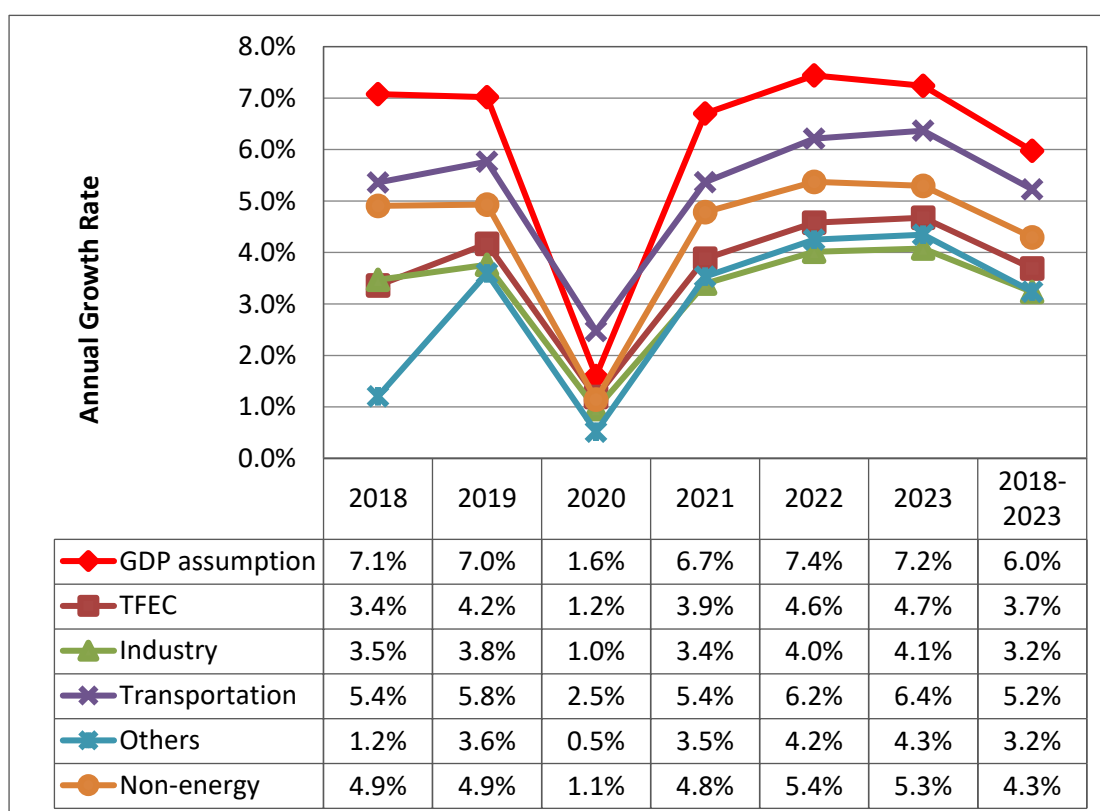
### 3. Short-term Impact (2018–2023)

#### 3.1. Final Energy Consumption

In the COVID-19 scenario, which uses the revised BAU GDP (Table 17.1), total final energy consumption (TFEC) increases by an average of 3.7% per year in 2018–2023 (0.5% less than in BAU). The decrease is the result of the COVID-19 pandemic in 2020, which reduced TFEC growth rate to 1.2% in 2020 (3.1% less than in BAU).

Energy consumption growth decreased the most in transport, by 2.5% in 2020 (3.4% less than in BAU) and by 5.2% per year in 2018–2023 (0.7% less than in BAU). The reason for the steep fall is limited travel because more people worked from home. Industry’s energy consumption grows by 1.0% in 2020 (4.0% in BAU) and 3.2% per year in 2018–2023 (3.7% in BAU). Energy consumption of ‘others’ (residential and commercial sectors) grows by 0.5% in 2020 (3.6% in BAU) and 3.2% per year in 2018–2023 (3.7% in BAU). Non-energy use increases by 4.3% in 2018–2023 (4.8% in BAU) (Figure 17.1).

**Figure 17.1. Annual Growth Rate of Final Energy Consumption, by Sector, COVID-19 Scenario, 2018–2023**

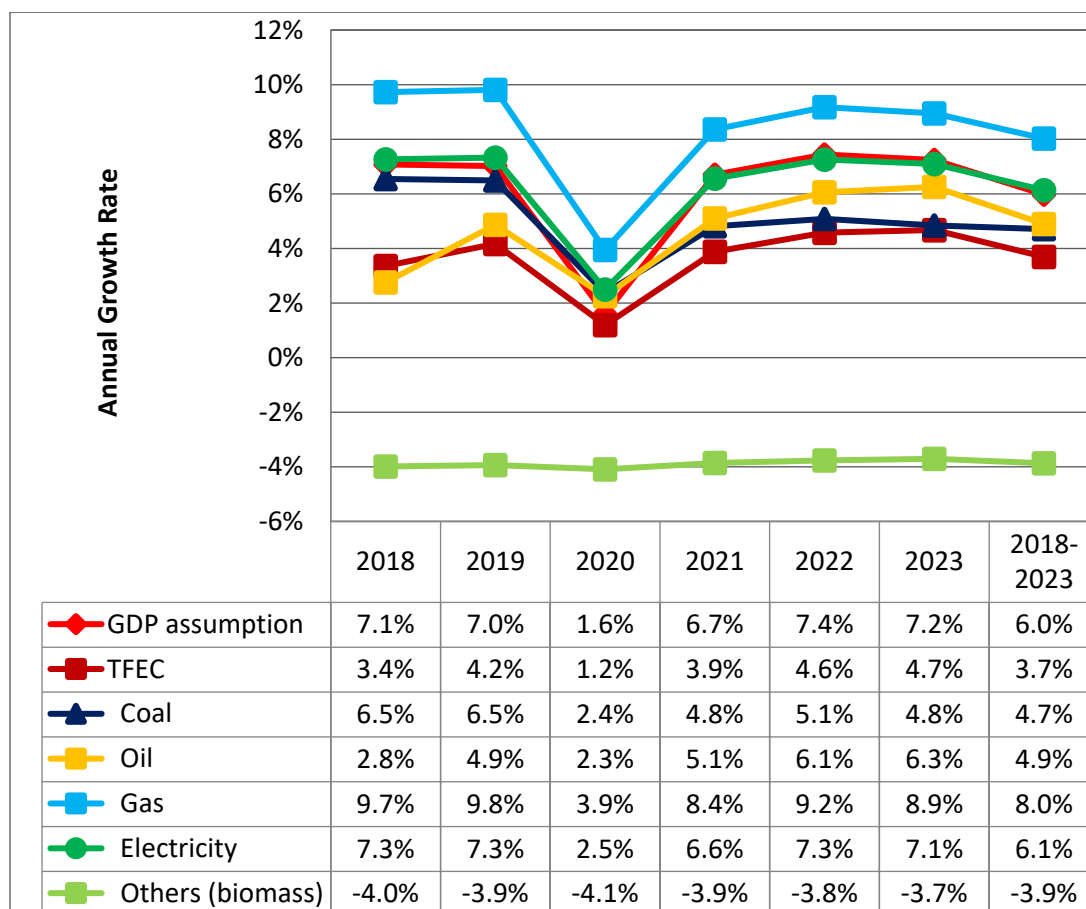


COVID-19 = coronavirus disease, GDP = gross domestic product, TFEC = total final energy consumption.  
Source: Author.

In the COVID-19 scenario, the energy consumption growth of natural gas falls the most, by 3.9% in 2020 to 5.9 (9.8% in BAU) and by 0.8% to 8.0% per year in 2018–2023 (8.8% in BAU).

Natural gas consumption has been increasing but its share is still extremely small. Electricity consumption falls to 2.5% in 2020 (7.3% in BAU) and 6.1% per year in 2017–2023 (6.8% in BAU), oil to 2.3% in 2020 (5.6% in BAU) and 4.9% per year in 2018–2023 (5.5% in BAU), and coal to 2.4% in 2020 (5.7% in BAU) and 4.7% per year in 2018–2023 (5.1% in BAU). However, ‘others’ (mostly biomass) are hardly affected by the pandemic because of the continuous shift from biomass to conventional fuels such as oil and electricity (Figure 17.2).

**Figure 17.2. Annual Growth Rate of Final Energy Consumption, by Fuel, COVID-19 Scenario, 2018–2023**



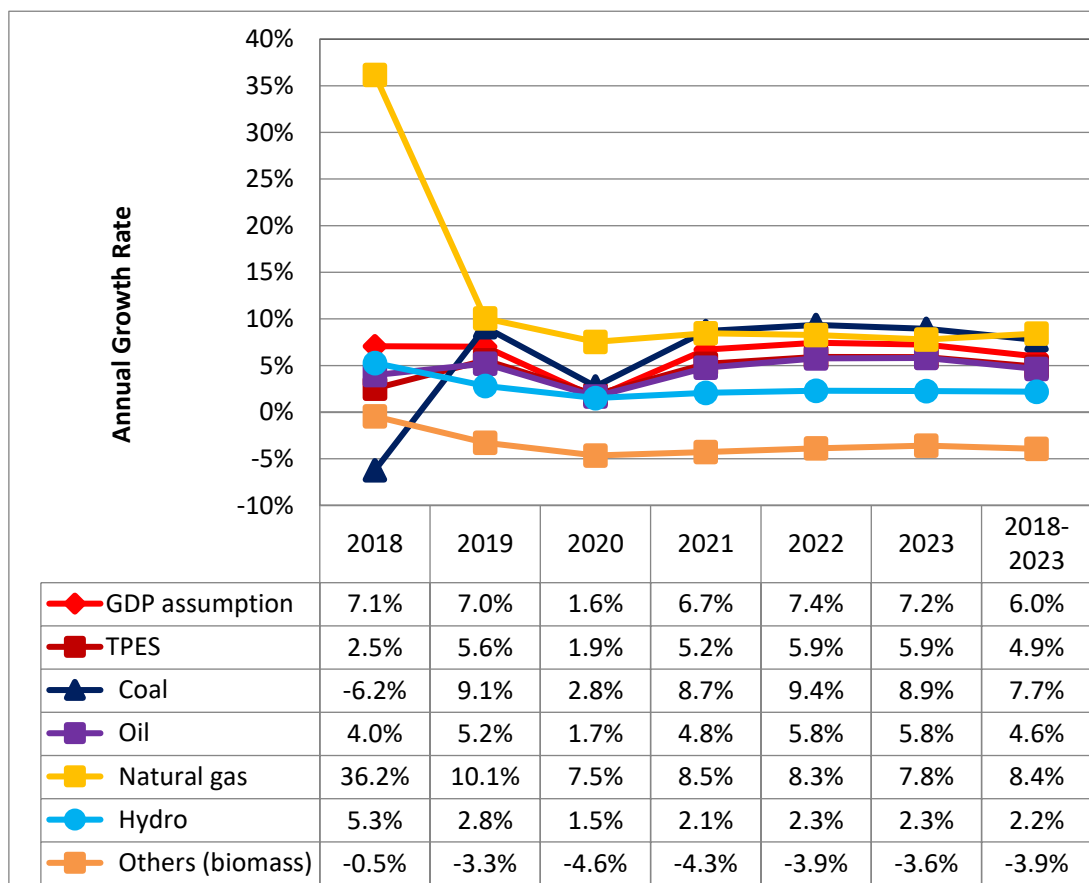
COVID-19 = coronavirus disease, GDP = gross domestic product, TFEC = total final energy consumption.  
Source: Author.

### 3.2. Primary Energy Supply

In the COVID-19 scenario, total primary energy supply (TPES) slows to 3.8% in 2020 (5.7% in BAU) and to 4.9% per year in 2018–2023 (5.5% in BAU). The primary energy supply growth rate for coal falls the most, to 5.7% in 2020 (8.5% in BAU), rebounding to 7.7% per year in 2018–2023 (8.7% in BAU). The changes are caused by fluctuation of electricity (TFEC) after 2020 and fuel switching from coal (-6.2%) to gas (36.2%) in power generation in 2018. The primary energy supply growth rate for oil falls to 1.7% in 2020 (5.9% in BAU) and to 4.6% per

year in 2018–2023 (5.3% in BAU), and for natural gas to 7.5% in 2020 (9.4% in BAU) and to 8.4% per year in 2018–2023 (8.6% in BAU). ‘Others’ (mostly biomass) were hardly affected because of the continuous shift from biomass to other fuels (Figure 17.3).

**Figure 17.3. Annual Growth Rate of Primary Energy Supply, by Source, COVID-19 Scenario, 2018–2023**



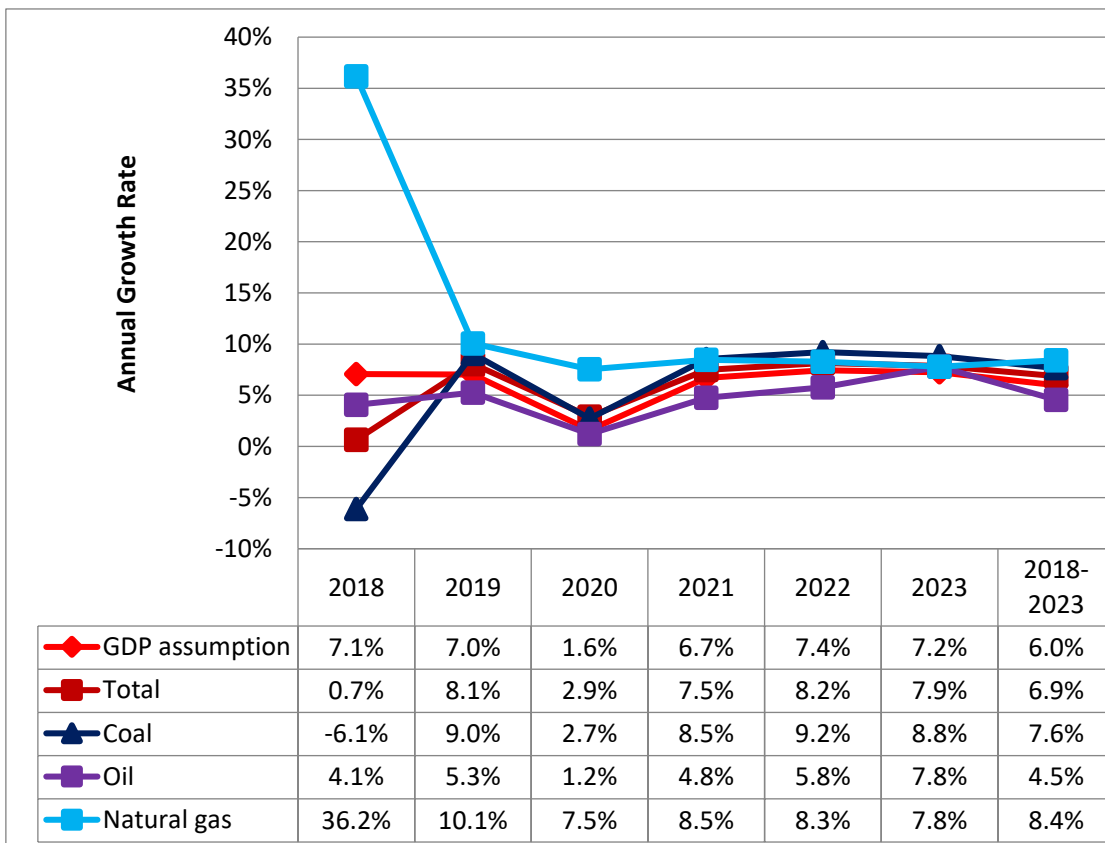
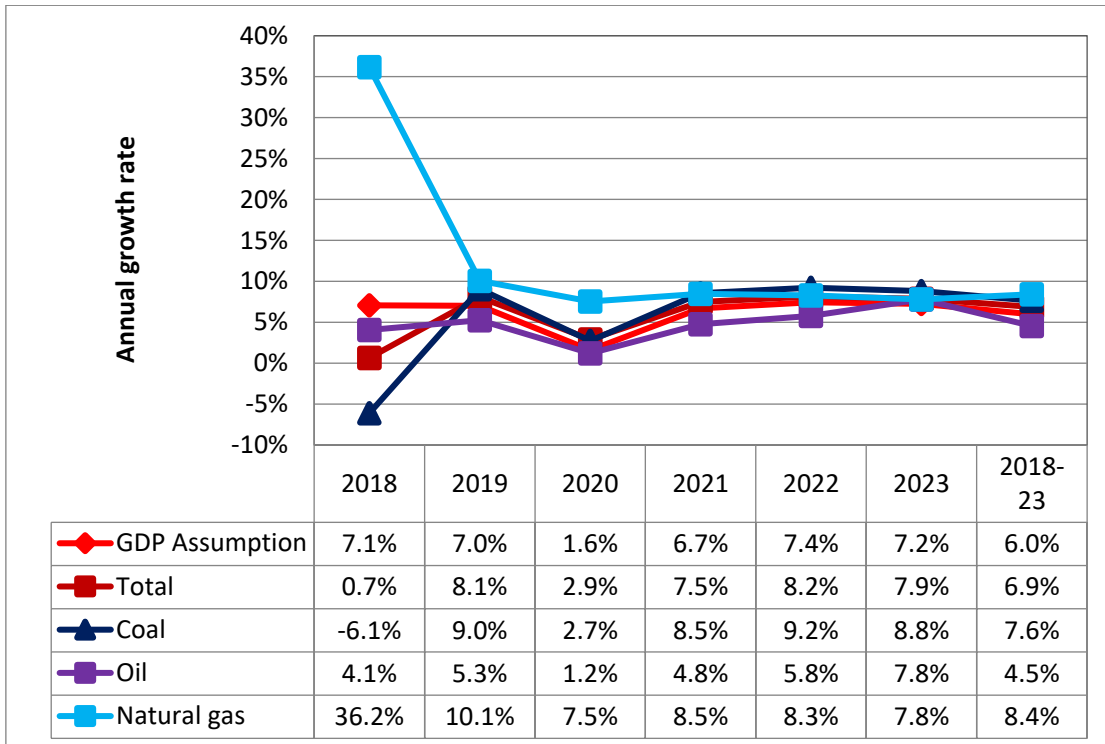
COVID-19 = coronavirus disease, GDP = gross domestic product, TPES = total primary energy supply.  
Source: Author.

### 3.3. CO<sub>2</sub> Emissions

In the COVID-19 scenario, CO<sub>2</sub> emissions increase more slowly, by 2.9% to 4.8% in 2020 (7.7% in BAU) and by 0.7% to 6.9% per year in 2018–2023 (7.6% in BAU). The CO<sub>2</sub> emission growth rate decreases the most for coal, by 2.7% to 5.7% in 2020 (8.4% in BAU) and by 1.0% to 7.6% per year in 2018–2023 (8.6% in BAU), followed by oil to 1.2% in 2020 (5.4% in BAU) and to 4.5% per year in 2018–2023 (5.2% in BAU), and natural gas to 7.5% in 2020 (9.4% in BAU) and to 8.4% per year in 2018–2023 (8.6% in BAU).

The CO<sub>2</sub> emissions decreased mostly because of the pandemic (Figure 17.4).

Figure 17.4. CO<sub>2</sub> Emissions, by Source, COVID-19 Scenario, 2018–2023



COVID-19 = coronavirus disease, GDP = gross domestic product.  
Source: Author.

#### 4. Long-term Impact (2023–2050)

##### 4.1. Final Energy Consumption

In the COVID-19 scenario, TFEC increases by an average of 3.7% per year in 2017–2050 (3.8% in BAU) because economic growth after the pandemic recovers by 5.3% (5.4% in BAU) (Table 17.2).

**Table 17.2. Gross Domestic Product and Total Final Energy Consumption, Business-as-Usual vs. COVID-19 Scenarios, 2017–2050**

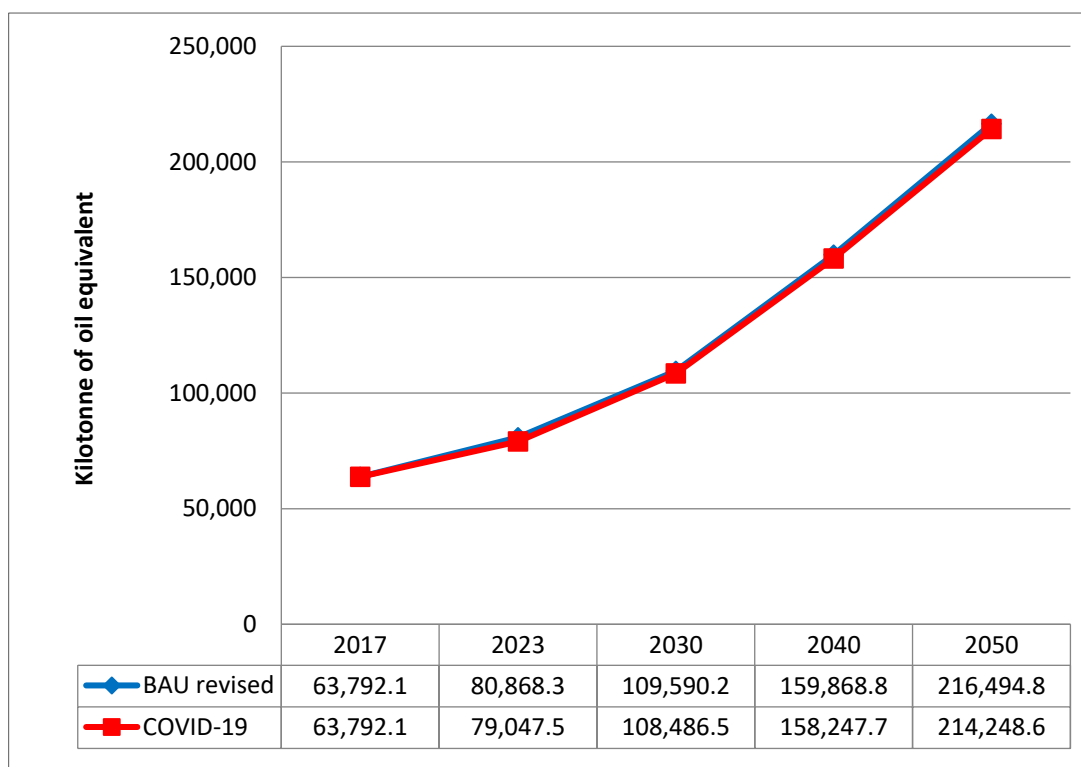
		2017	2023	2030	2040	2050	AAGR (2017– 2050)
<b>GDP (VND trillion, 2010)</b>	<b>BAU</b>	3,262.5	4,823.1	7,348.4	12,199.7	18,408.9	5.4%
	<b>COVID-19</b>	3,262.5	4,669.6	7,256.5	12,047.2	18,178.8	5.3%
	<b>COVID-19 vs. BAU</b>	0.0	–3.2%	–1.3%	–1.3%	–1.3%	
<b>TFEC (Ktoe)</b>	<b>BAU</b>	63,792.1	80,868.3	109,590.2	159,868.8	216,494.8	3.8%
	<b>COVID-19</b>	63,792.1	79,047.5	108,486.5	158,247.7	214,248.6	3.7%
	<b>COVID-19 vs. BAU</b>	0.0	–2.3%	–1.0%	–1.0%	–1.0%	

COVID-19 = coronavirus disease, GDP = gross domestic product, Ktoe = kilo tonne of oil equivalent, TFEC = total final energy consumption.

Source: Author.

TFEC in the COVID-19 scenario cannot catch up with TFEC in BAU until 2050 because GDP in the COVID-19 scenario is lower than GDP in BAU. But TFEC in the COVID-19 scenario catches up with TFEC in BAU after 2030 because GDP rebounds in 2021–2030 (Figure 17.5).

**Figure 17.5. Total Final Energy Consumption, Business-as-Usual vs. COVID-19 Scenarios, 2017–2050**



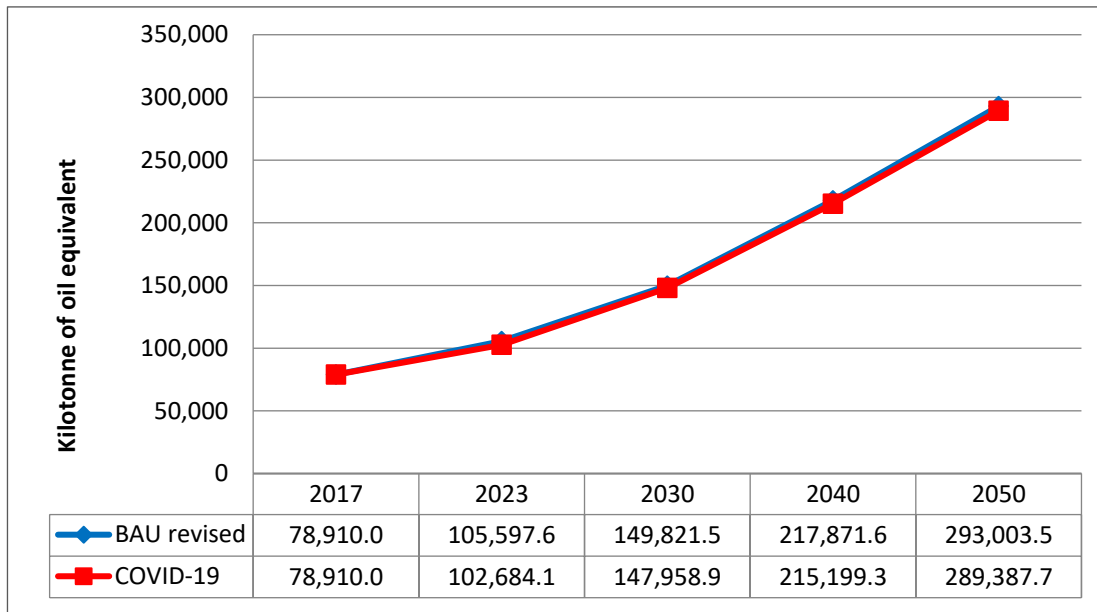
BAU = business as usual, COVID-19 = coronavirus disease.  
Source: Author.

#### 4.2. Primary Energy Supply

In the COVID-19 scenario, TPES increases by an average of 4.0% per year in 2017–2050. Like TFEC, TPES in the COVID-19 scenario is the same as in BAU after 2030 because of strong GDP recovery in 2021–2030 (Figure 17.6).



**Figure 17.6. Total Primary Energy Consumption, Business-as-Usual vs. COVID-19 Scenarios, 2017–2050**

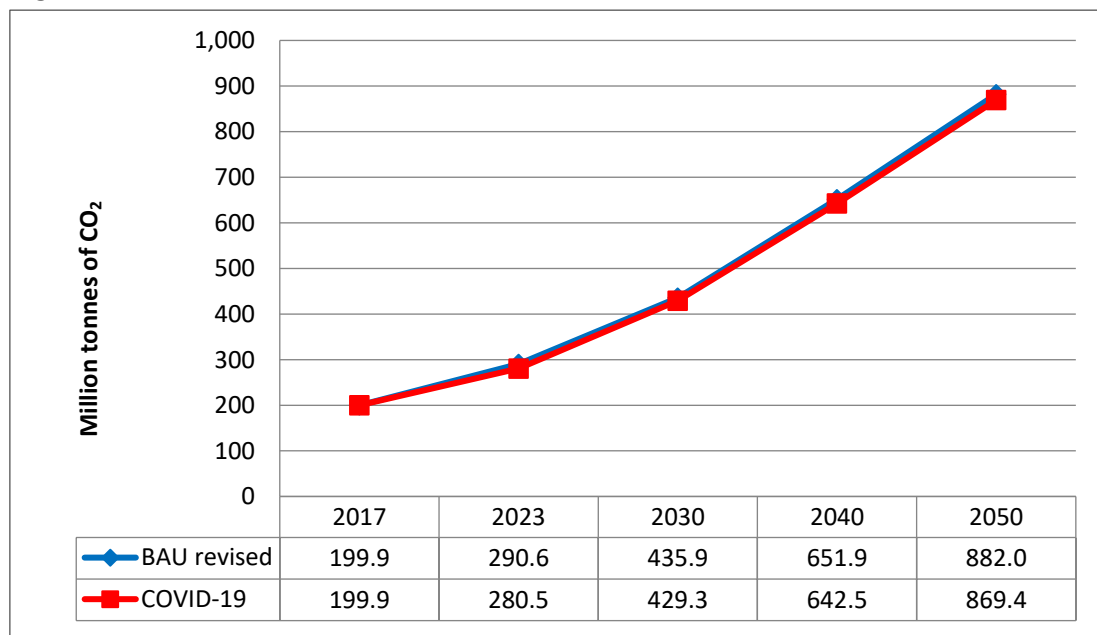


BAU = business as usual, COVID-19 = coronavirus disease.  
Source: Author.

### 4.3. CO<sub>2</sub> Emissions

In the COVID-19 scenario, greenhouse gas (GHG) emissions increase by 4.56% in 2017–2050 (4.6% in BAU) and are almost the same as in BAU after 2030 (Figure 17.7).

**Figure 17.7. Total CO<sub>2</sub> Emissions, Business-as-Usual vs. COVID-19 Scenarios, 2017–2050**



BAU = business as usual, COVID-19 = coronavirus disease.  
Source: Author.

## 5. Implications and Policy Recommendations

The COVID-19 pandemic has caused an unprecedented shock to Viet Nam's economy. Since the beginning of the pandemic, Viet Nam has shown resilience in its considerable efforts to enforce border closure; isolation, including social distancing; quarantines; and strengthening of health-care capacity. The government's cost-effective measures to combat the virus include strategic testing, contact tracing through apps, effective public communication campaigns, and limited national lockdowns. These timely and evidence-based responses have led to great success in combating the COVID-19 outbreak. Viet Nam's economy is one of few to have positive GDP growth in 2020. Based on the above results and discussions, the following implications and policy recommendations can be derived:

- (i) As economic activities increase, so does energy demand. In 2020, GDP growth rate declines from the expected 6.8% (in BAU) to a preliminary 1.6%, affecting energy consumption in 2020 and after. The decline of GDP growth leads to a decline of energy consumption (1.2% of TFEC in 2020). The results, therefore, should be compared with actual energy consumption after official energy statistics are released.
- (ii) In the long term, TFEC in the COVID-19 scenario does not catch up with that in BAU after 2020. The GDP growth rate assumption in the COVID-19 scenario in 2021–2030 is higher than in BAU, and energy consumption rebounds after 2020. However, because of the strong negative impact in 2020, TFEC in the COVID-19 scenario is slightly lower than in BAU in 2020–2050. But TFEC in the COVID-19 scenario is extremely close to that in BAU after 2030.
- (iii) Although CO<sub>2</sub> emission reduction from energy consumption in the COVID-19 scenario is significant (4.8%) compared with BAU, CO<sub>2</sub> emissions in 2020 are still higher than in 2018 (by 11%) and 2019 (by 3%) and projected to increase by an average of 6.9% in 2018–2023 and by 4.2% in 2023–2050. Continuous post-COVID-19 GHG reduction measures are needed. Viet Nam still needs to support measures such as energy efficiency and conservation on the demand side and highly efficient thermal power plants and deployment of renewable energy such as solar photovoltaic.
- (iv) In the COVID-19 scenario, CO<sub>2</sub> emission growth rate is estimated to decrease to about 4.8% compared with BAU in 2020 mainly because of decreased fuel consumption, especially in transport, because of limited travel and work from home. If Viet Nam continues its digitalisation efforts after COVID-19, which will promote remote work, online business, and e-learning, Viet Nam could achieve long-term energy saving and GHG emission reduction along with stable economic growth.

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