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Country Report | 2021

PHILIPPINES



Summary

The Philippines is the 73rd largest country in the world, with a total land area around 300,000km². Located in South East Asia, it consists of 7,641 islands of which only around 2,000 are inhabited. The 11 largest islands contain 94% of the total land area. The biggest of these islands is Luzon at about 105,000 km². The next largest island is Mindanao at about 95,000 km² then Samar at 13,429 km² and Negros 13,310 km².

The Philippines is the world's 13th largest country by population with just over 109 million people; around 1.4% of the world's total population. The United Nations estimates the population will increase by almost 45 million by 2050, equivalent to adding the current total population of Spain.

The last General Election in the Philippines took place on May 9th 2016 for the executive and legislative branches of all levels of government: national, provincial and local. Rodrigo Duterte of PDP-Laban and Leni Robredo of the Liberal Party won the presidential and vice presidential elections. At the legislative elections held in May 2019, 12 seats in the Senate and all seats in the House of Representatives were contested. PDP-LDP enjoyed a 21.2% positive swing of the popular vote in its favour at the Senate elections and a 29.3% positive swing in the House. The next Presidential Election will be held on May 9th 2022 and, under the terms of Philippines' constitution, the incumbent President will be ineligible for re-election.

The Philippine economy is the 32nd largest in the world, with an estimated annual gross domestic product in 2020 of USD362.2billion. Over the past ten years, the average annual growth of GDP in the Philippines was 4.7% and since 2000, the country has risen 10 places in the list of the world's largest economies ranked by GDP.

Standard & Poor's sovereign credit rating for the Philippines, most recently updated in April 2019, stands at BBB+ with outlook stable. Moody's credit rating is Baa2 with stable outlook whilst Fitch is at BBB with stable outlook.

The Philippines' Central Bank – Bangko Sentral Ng Pilipinas (BSP) – is tasked, "to promote a low and stable inflation conducive to a balanced and sustainable economic growth." (Republic Act 7653)



Since 2005, Standard & Poor's have upgraded the country's rating no less than five times and having achieved an 'investment grade' rating for the first time in 2013, the Philippines today stands at BBB+; on a par with Italy and Portugal and just one notch below Spain.



The adoption of an inflation targeting framework for monetary policy in January 2002 is aimed at achieving this objective and entails the announcement of an explicit inflation target that the BSP promises to achieve over a given time period. Effective from a resolution in December 2015, the current inflation target is set at 3.0 percent \pm 1.0 percentage point.

The World Bank's 'Ease of Doing Business 2020' report presents various indicators that measure, among others, the ease of starting a business, registering a property, obtaining construction permits, getting credit, paying taxes, enforcing contracts and resolving insolvency. The Philippines' rank slipped from 113 to 134 in 2018 but by 2019 it had risen to 95; its' best-ever placing in the survey.

The Philippines stands at number 96 of 141 countries for Infrastructure in the World Economic Forum's latest Global Competitiveness Report. A detailed breakdown shows it ranks 59 for shipping, 88 for ports, 88 for roads and 96 for air transport. The quality of installed electricity supply as measured by percentage of output actually delivered to final consumers puts the Philippines in 53rd position globally.

Figures from the Department of Energy show that total installed power capacity in the Phil-

ippines currently amounts to just over 26,000 MW; a figure which has increased by more than 65 per cent since 2006. Within this total, renewable energy capacity excluding geothermal and hydropower rose to 1,945 MW with solar, biomass and wind accounting for around 7.4% of the total installed capacity.

In December 2018, the Philippines government passed a tax reform bill, the key provisions of which included a rise in the excise tax on coal. The Act also significantly raised excise taxes on automobiles, petroleum products, including diesel, gasoline and cooking gas, and hiked mining levies.

The Tax Reform Act sought to achieve a simpler, fairer and more efficient tax system characterised by lower rates and a broader base, to encourage investment, job creation, and poverty reduction. It was designed to help finance what President Duterte calls "a golden age of infrastructure" with total planned spending around \$180 billion for roads, railways and airports to transform the Philippines' economy. This has become known as the "Build, build, build" programme.

BTI 2020

The Bertelsmann Stiftung Transformation Index (BTI, scale 1 to 10) analyses and evaluates the quality of the democracy, market economy and political management in 137 developing and transitioning countries. Progress and regress is measured on a path to constitutional democracy and a market economy accompanied by social policy.



*Regional average

PHILIPPINES AN OVERVIEW



+58%





POPULATION GROWTH from 2000 - 2030 GDP GROWTH from 2010 – 2019 POWER CONSUMPTION from 2010 - 2018 CREDIT RATING Standard & Poor's

BBB+

WITH STABLE OUTLOOK

13TH largest population in the world, which will increase more than 35 million by 2050 **96TH** of 141 countries in the world by infrastructure quality



2.3 MILLION homes still have no access to electricity



SECOND largest geothermal energy

producer in the world

89 BILLION US\$

The national Economic and Development Authority lists 104 Infrastructure Flagship Projects scheduled for completion by 2028.



Geography

The Philippines is the 73rd largest country in the world, with a total land area around 300,000 km². Located in South East Asia, it consists of 7,641 islands of which only around 2,000 are inhabited. Facing the South China Sea to the west, the Philippine Sea on the east and the Celebes Sea to the South, its 36,289 km of coastline makes it the country with the 5th longest coastline in the world.

The 11 largest islands contain 94% of the total land area. The biggest of these islands is Luzon at about 105,000 km². The next largest island is Mindanao at about 95,000 km² then Samar at 13,429 km² and Negros 13,310 km². The archipelago is around 800 km from the Asian mainland and is located between Taiwan and Borneo. It shares maritime borders with Taiwan to the north, Vietnam to the west, Palau to the east and Malaysia and Indonesia to the south.

Most of the mountainous islands are covered in tropical rainforest and are volcanic in origin. The highest mountain is Mount Apo. It rises to 2,954 meters above sea level and is located on the island of Mindanao. The Galathea Depth in the Philippine Trench is the deepest point in the country and the third deepest in the world. The longest river is the Cagayan River in northern Luzon.

The climate of the Philippines is tropical and strongly monsoonal with three main seasons: the hot dry season or summer from March to May; the rainy season from June to November; and the cool dry season from December to February. The western shores facing the South China Sea have the most marked dry and wet seasons. Temperatures throughout the year usually range from 21°C to 32°C, with January being the coolest month and May the warmest. The average yearly temperature is around 26.6°C.

Annual rainfall measures as much as 5,000 mm in the mountainous east coast section but less than 1,000 mm in some of the sheltered valleys. The wettest known tropical cyclone to impact the archipelago was the July 1911 cyclone, which dropped over 1,168 mm of rainfall within a 24-hour period in Baguio City.

From June to November tropical cyclones (typhoons) often strike the Philippines. Most of these storms come from the southeast, their frequency generally increasing from south to north. In some years the number of cyclones reaches 25 or more.

The Philippines experiences frequent seismic and volcanic activity. The Benham Plateau to the east is an undersea region active in tectonic subduction and around 20 earthquakes are registered daily, though most are too weak to be felt. The last major earthquake was the 1990 Luzon earthquake which measured 7.7 on the Richter scale and caused damage over an area around 20,000 km². There are altogether about 50 volcanoes, of which more than 10 are known to be active such as the Mayon Volcano, Mount Pinatubo, and Taal Volcano. The eruption of Mount Pinatubo in June 1991 produced the second largest terrestrial eruption of the



Total land area: 300,000 km², Ranked 73rd largest, (99.38% Land, 0.62% Water)

Capital: Manila

Time zone: UTC +8

Currency: Philippine peso (abbreviated as PHP)

Continent: Asia

Coordinates: 13°00'N, 122°00'E

Highest point: Mount Apo, 2,954m

Lowest point: Philippine Sea, 0 m

Longest river: Cagayan River, 505 km

Largest lake: Laguna de Bay, surface area about 911 km² 20th century bringing vast quantities of minerals and toxic metals to the surface environment.

Due to the monsoon climate and heavy rainfall, around one-quarter of the Philippines comprises tropical rainforest, though this figure has been declining gradually over a long period of time as a result of logging, mining, and farming activities. Between the mid-20th century and the early 21st century, the country's forestland was reduced by more than half. A ban on the export of hardwoods has been in effect since the mid-1980s, but it appears that hardwood timber continues to leave the country illegally.

Much of the land of the hilly and mountainous regions consists of moist, fertile soils, often with a significant concentration of volcanic ash, whilst the alluvial plains and terraces are a mixture of clay and younger soils and much of the Visayas and north–west of Luzon is dark and mineral-rich. These areas support a wide range of cultivated crops although the eastern mountains of Luzon are largely covered with shrubs, bushes, and other secondary growth that typically emerges in areas that have been cleared of their original forest cover.

The rich and fertile soils mean the agricultural sector comprises a major part of the Philippines economy and employs nearly one-third of the total workforce. Almost a quarter of the total farmland is used for rice growing with other staple crops including sugarcane and maize. The Philippines is one of the world's largest producers of coconuts and coconut products with bananas, pineapples, papayas and other tropical fruits also cultivated along with coffee, tobacco and hemp.

The indigenous vegetation of the Philippines resembles much of the Malay archipelago although the islands are home to an estimates 13,500 species of flowering plants and ferns, including hundreds of species of orchids, some of which are extremely rare. The rafflesia plant found on Mindanao has a flower almost one metre in diameter.

The Philippines' rainforests and extensive coastlines make it home to a wide range of birds, animals, and sea creatures and it is one of the world's ten most biologically diverse countries. Around 1,100 land vertebrate species can be found in the Philippines including over 100 mammal species and 170 bird species not thought to exist elsewhere.

The Philippines are inhabited by more than 200 species of mammals, including water buffalo

(carabao), goats, horses, hogs, cats, dogs, monkeys, squirrels, lemurs, mice, pangolins (scaly anteaters), mongooses, civet cats, and red and brown deer, among others. The country lacks large predators, with the exception of snakes, such as pythons and cobras, saltwater crocodiles and birds of prey, such as the national bird, known as the Philippine Eagle, one of the three largest and most powerful in the world.

The seas surrounding the Philippine islands and its inland lakes, rivers, estuaries, and ponds are inhabited by more than 2,000 varieties of fish. The Tubbataha Reefs in the Sulu Sea were designated a UNESCO World Heritage site in 1993 in recognition of their abundance and diversity of marine life and in 2009 the boundaries of the World Heritage site were extended to triple its original size.

Due to the volcanic nature of the islands, mineral deposits are abundant. The country is estimated to have the second-largest gold deposits after South Africa and one of the largest copper deposits in the world. Most of the country's metallic minerals, including gold, copper, iron ore, lead, zinc, chromite, and copper, are drawn from major deposits on the islands of Luzon and Mindanao. Smaller deposits of silver, nickel, mercury, molybdenum, cadmium, and manganese occur in several other locations. The Visayas are the principal source of non-metallic minerals, including limestone for cement, marble, asphalt, salt, sulphur, asbestos, guano, gypsum, phosphate, and silica whilst petroleum and natural gas are extracted from fields off the northwest coast of Palawan.

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The Galathea Depth is a 10,540-metre-deep (34,580 ft) depth in the Philippine Trench in the western Pacific Ocean. Biological samples collected during an expedition demonstrated a wide variety of fish, amphipods, and bacteria surviving at depths seldom seen before.

Demographics

The Philippines is the world's 13th largest country by population with just over 109 million people; around 1.4% of the world's total population. The United Nations estimates the population will increase by almost 35 million by 2050, equivalent to adding the current total population of Saudi Arabia.

The population is very young, with a median age of 25.7 years. There are around 63.3 million adults in the Philippines. Average life expectancy is around 71.7 years and it is ranked 128^{th} in the world according to the World Health Organisation. The birth rate for every 1,000 of the population is 20.4 and the death rate for every 1,000 of the population is 5.9. The country's birth rate remains significantly higher than the world average, as well as the average for the Southeast Asian region.

The population density of the Philippines is high, but the distribution of the population is uneven. It has six cities with a population exceeding one million residents; Quezon City, Manila, Caloocan City, Budta, Davao and Malingao whilst parts of Metro Manila have a population density that is more than 100 times that of some outlying areas such as the mountainous area of northern Luzon. The Philippines' population density has consistently increased since 2010, reaching 363 people per km² as of 2020. The National Capital Region - more commonly known as Metro Manila - has a population density of 21,765 people per km², almost 60x the country average. As with the country's population distribution, the population of Metro Manila is uneven. With a land area of 25 km², the City

of Manila's population density is a staggering 73,920 people per km². For comparison, London's population density was estimated at 5701 people per km² in 2020 and thus, the City of Manila's population density is almost 13x larger.

At the beginning of the 20th century, more than 80% of the population was rural, but by the early 21st century that proportion had dropped to roughly 40%.

Around 51.2% of the population is now classified as urban. Quezon City, which at the time of the 2020 census contained 3 million people, forms a part of the wider Metropolitan Manila area, which is comprised of 17 cities and municipalities and has an overall estimated population today of more than 13.5 million people. The entire Greater Manila urban area spills out beyond the boundaries of Metro Manila and is reported to contain around 22.7 million people, which is more than one-fifth of the Philippines' entire population. Of the 81 provinces outside Metro Manila, six have a population more than 3 million, six between 2 and 3 million and sixteen between 1 and 2 million. The most populous province, Cavite, has approximately 230x more inhabitants than the smallest, Batanes.



The Philippines is the only Asian nation that is predominantly Christian. While many of its Southeast Asian neighbors practice Buddhism, 86% of the Filipino population is Roman Catholic.





Source: United Nations Population Division

PHILIPPINES

a constitutional republic with 17 regions and 81 provinces



Source: www.britannica.com

Economy

The Philippine economy is the 32nd largest in the world, with an estimated annual gross domestic product in 2020 of USD362.2 billion. Between 2010–2019, the average annual growth of GDP in the Philippines was 6.4%; one of the best performances in the whole of Asia and since 2000, the country had risen 11 places in the list of the world's largest economies ranked by GDP.

The emergence of COVID-19 had significant implications on economic growth, in the Philippines, across Asia and worldwide. The Philippines' economy is estimated to have contracted by 9.5% in 2020; the largest decline in growth of all countries in the region. The good news, however, is that growth is expected to rebound sharply. The IMF forecasts GDP growth in 2021 of 6.9%, a figure exceeded only twice in the ten years prior to the pandemic. Furthermore, the Philippines is projected to achieve a per-annum average GDP growth rate of 6.5% between 2022 and 2026.

The World Bank notes that, "the Philippines is one of the most dynamic economies in the East Asia Pacific region. With increasing urbanization, a growing middle class, and a large and young population, the Philippines' economic dynamism is rooted in strong consumer demand supported by a vibrant labor market and robust remittances. Business activities are buoyant with notable performance in the services sector including the business process outsourcing, real estate, and finance and insurance industries." Annual GDP growth of 6.3% in the decade to 2019 was almost 2 percentage points higher than the average of the previous decade and a globally competitive workforce, most notably in the Business Process Outsourcing (BPO) sector has enjoyed an uplift in wages, productivity and per capita GDP. From an average of just USD793 per head in 1990, per capita GDP rose more than fourfold to USD3,484 in 2019 and USD3,306 by the end of 2020. This increase came at a time of strong demographic change when the population itself almost doubled from 61 million in 1990 to 109 million at end-2020.

The Philippines' Central Bank – Bangko Sentral Ng Pilipinas (BSP) – is tasked, "to promote a low and stable inflation conducive to a balanced and sustainable economic growth." (Republic Act 7653) The adoption of an inflation targeting framework for monetary policy in January 2002 is aimed at achieving this objective and entails the announcement of an explicit inflation target (defined as year-over-year change in the Consumer Price Index) that the BSP promises to achieve over a given time period. Effective from a resolution in December 2015, the current inflation target is set at 3.0 percent \pm 1.0 percentage point.

To achieve the inflation target, the BSP uses a suite of monetary policy instruments in implementing the desired monetary policy stance. The reverse repurchase (RRP) or borrowing rate is the primary monetary policy instrument of the BSP. As with most of the G7 countries, the seven-person advisory committee holds



The Business Process Outsourcing (BPO) industry is one of the Philippines' great success stories, contributing \$26 billion to the economy in 2019. BPO employs 1.3 million people in over 1000 firms. BPO roles offer relatively high pay, working benefits and safe, air-conditioned working environments.

Economic growth in selected Asian countries (annual % change)										
Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bangladesh	6.5	6.5	6.0	6.1	6.6	7.1	7.3	7.9	8.2	3.8
China	9.5	7.9	7.8	7.4	7.0	6.9	6.9	6.7	5.8	2.3
India	6.6	5.5	6.4	7.4	8.0	8.3	6.8	6.5	4.0	-8.0
Indonesia	6.2	6.0	5.6	5.0	4.9	5.0	5.1	5.2	5.0	-2.1
Malaysia	5.3	5.5	4.7	6.0	5.0	4.5	5.8	4.8	4.3	-5.6
Philippines	3.9	6.9	6.8	6.3	6.3	7.1	6.9	6.3	6.0	-9.5
Sri Lanka	8.4	9.1	3.4	5.0	5.0	4.5	3.6	3.3	2.3	-3.6
Thailand	0.8	7.2	2.7	1.0	3.1	3.4	4.2	4.2	2.3	-6.1
Vietnam	6.4	5.5	5.6	6.4	7.0	6.7	6.9	7.1	7.0	2.9

Source: Philippine Statistics Authority

eight monetary policy meetings per year with the decision announced immediately but the detailed 'highlights' of the meeting released one month later. Four times each year, an Inflation Report is published as part of the BSP's transparency mechanism under inflation targeting and to convey to the public the overall thinking and analysis behind the BSP's decision on monetary policy. The BSP's Q2 Inflation Report 2021 revealed that year-to-date average inflation stood at 4.4%, roughly four-tenths of a percent higher than the targeted range's upper bound. The BSP expect that "average inflation will ease towards the midpoint of the 2-4 percent target in 2022 and 2023".

Employment

The Philippine Statistics Authority (PSA) provides a monthly update on the country's key employment indicators. As of June 2021, the Philippines' labour force stood at 48.9 million, of which 45.1 million were in employment. Consequently, the Philippines' unemployment rate stood at 7.7%, unchanged on the month prior. The country's working-age population (15+) stood at 75.1 million and thus, its labour force participation rate (LFPR) equated to 65%. The Philippines' labour force has increased by roughly 10 million in the last decade. Between 2010-2018, the country's average per-annum unemployment rate was 6.4%. Interestingly, the female average unemployment rate was less than that for males; it must however be considered that the male participation rate was approximately 30 percentage points higher over the same time-period.

Philippine employment can be split into three sectors – Agriculture, Industry and Services. The Services sector accounts for 57.6% of total employment, with the Agriculture and

Industry sectors responsible for 24.3% and 18.1% of total employment, respectively. The composition of the Philippines' employment has changed over time, with the Agriculture sector's share of total employment having fallen by nearly ten percentage points since 2010. The Industry sector's employment is heavily weighted by two sub-sectors – Manufacturing and Construction. The two sectors' total share of Industry employment stood at 96% in June 2021.

Trade

The Philippines operates in a trade deficit, consistently importing a higher value of goods than that exported. Between 2010 and 2019, the Philippines' export and import value grew at a CAGR of 3.6% and 8.2% respectively and thus, the deficit has continued to increase. The country averaged a trade deficit of USD32.5 million between 2016 and 2020, approximately 10x the deficit seen in 2010.

Global trade in 2020 has been marked by widespread disruption and the Philippines is no exception. The value of Philippine imports fell by nearly 20% in 2020, whilst the value of exports fell 8%. The fall has not been sustained however, with the value of exports in H1 2021 up 20.9% year-on-year. That trend is replicated in the country's imports, with value up 29.8% over the same time-period.

The exportation of electronic products is the primary source of the Philippines' export value; the sector accounted for roughly 58% of total value in 2020. Of the USD36,984m generated through the exportation of electronic products, USD28,073m (75.9%) arose through the exportation of semi-conductors. The exportation of machinery and transport equipment





The Philippines is the largest exporter of nurses worldwide. For many decades, the country has consistently supplied nurses to the United States and Saudi Arabia, whilst Europe and other Middle East states now feature prominently. Of an estimated 2.2 million Overseas Filipino Workers (OFWs), around a quarter are nurses.

Value of the Philippines' Exports and Imports



(USD2,204m), wiring sets used in transportation (USD1,886m) and bananas (USD1,552m) were other notable sources of value.

83.4% of Philippine export value was attributed to ten countries in 2020, up nearly two percentage points on the year prior. Four countries – China, Japan, Hong Kong and the US – accounted for roughly USD38,291Mn or 58.7% of total export value. The Philippines' exports are heavily reliant on Asia, with the East Asia and ASEAN countries accounting for 68% of total export value in 2020. Looking at the country's imports, the reliance on China is clear and growing, with the value of goods imported from China rising 63.8% between 2016 and 2019. Over the same time-period, the value of goods imported from the four other main trading partners increased by 23.1%.

Philippines key trading partners – Value of Exports (USD millions)									
Rank	Country	2016	2017	2018	2019	2020			
1	Japan	11.670	10.853	10.323	10.675	9.897			
2	United States	8.851	9.661	10.636	11.567	9.707			
3	China	6.373	8.017	8.817	9.814	9.594			
4	Hong Kong	6.617	9.024	9.564	9.625	9.093			
5	Singapore	3.824	3.973	4.316	3.832	3.757			
-									

Source: Philippine Customs

Philippines key trading partners – Value of Imports (USD millions)									
Rank	Country	2016	2017	2018	2019	2020			
1	China	15.565	17.464	22.015	25.496	19.854			
2	Japan	9.882	10.912	10.818	10.580	8.153			
3	South Korea	5.568	8.465	11.312	8.477	6.682			
4	United States	7.576	7.784	8.062	8.072	6.632			
5	Indonesia	4.608	6.352	6.927	6.890	5.480			
Source: Philippine Customs									



Economic and business environment

Trade and Industry Secretary, Ramon Lopez, had a stated aim to reach the "top 20 percent" of 190 countries tracked by the World Bank before President Rodrigo Duterte ends his term in 2022. "Improving ease of doing business in the Philippines is an endeavour that involves the Executive, Legislative, and Judicial branches of government. It is a whole-of-government effort."

The World Bank's 'Ease of Doing Business 2020' report presents various indicators that measure, among others, the ease of starting a business, registering a property, obtaining construction permits, getting credit, paying taxes, enforcing contracts and resolving insol-

vency. The Philippines' rank slipped from 99 to 124 between 2016-18 but by 2020, it had improved to 93; its' best ever placing in the global league table. Among the ASEAN member states, there were no changes in the rankings from the 2019 to 2020 report. Singapore still leads followed by Malaysia and Thailand. The Philippines remained at 7th place followed by Cambodia, Lao PDR and Myanmar.

The World Bank noted that, "The Philippines made starting a business easier by abolishing the minimum capital requirement for domestic companies. It made dealing with construction permits easier by improving coordination and streamlining the process for obtaining an occu-



The 17 sustainable development goals (SDGs) are political objectives set by the United Nations (UN) with the aim of ensuring sustainable development economically, socially and ecologically. The goals were defined akin to the development process for the millennium development goals (MDGs) and took effect on 1 January 2016 for a period of 15 years (running until 2030). Unlike the MDGs. which were only for developing countries, the SDGs apply to all countries.





pancy certificate and strengthened minority investor protections by requiring greater disclosure of transactions with interested parties and enhancing director liability for transactions with interested parties."

The impressive performance of the Philippine economy has been recognised in a series of upgrades to its long-term credit rating. Since 2005, Standard & Poor's have upgraded the country's rating no less than five times and having achieved an 'investment grade' rating for the first time in 2013, the Philippines today stands at BBB+; on a par with Italy and Portugal and just one notch below Spain. Amongst its Asian peers, it is now above both Indonesia and India and on a par with Thailand.

The Philippines' BBB+ credit rating has been maintained by Standard & Poor's throughout the pandemic, with the rating agency quoted as saying "we affirmed the ratings because we believe the Philippines will continue to have good economic recovery prospects once the COVID-19 pandemic is contained, and that the government's fiscal performance will strengthen accordingly".

Foreign Investment

The Philippine Board of Investments (BOI) is "responsible for the development of investments in the Philippines. Leading the promotions of various industries and investment opportunities, the BOI assists Filipino and foreign investors to venture and thrive in vast areas of economic pursuits and acts as a one-stop shop in doing business in the Philippines".

On June 21st 2021, the implementing rules and regulations (IRR) of the Corporate Recovery and Tax Incentives for Enterprises (CREATE) Act were signed by the Finance Secretary, Carlos

Dominguez III, and the Trade and Industry Secretary, Ramon Lopez. The CREATE Act is the "largest fiscal stimulus package for businesses in the country's history, providing more than PHP1 trillion worth of tax relief over the next ten years". Dependent on a company's taxable income and total assets, the corporate income tax (CIT) rate will be cut by up to 10%. Before the policy's introduction, the Philippine CIT rate was the highest of all ASEAN countries. The policy aims to incentivise foreign investment, with the reduction in government revenues eventually offset by a more prosperous and competitive business environment.

Politics

The constitution of the Philippines was drafted then ratified in a popular referendum held in February 1987. Its key provision was a return to a bicameral legislature, called the Congress of the Philippines, consisting of a lower House of Representatives (currently composed of 297 members) and a much smaller upper house, the Senate, of 24 members.

Executive power is vested in the President of the Philippines who serves as both the head of state and head of government and who appoints his or her cabinet over whom he or she presides. The President also serves as the Commander-in-Chief of the Armed Forces and has the power to declare martial law. The President and Vice-President are elected by direct vote every six years, usually on the second Monday of May and may serve for only one single, fixed term. The Vice-President is first in line to succession if the President resigns, is impeached or dies and four vice presidents in history have assumed the presidency without having been elected to the office.

Congressional representatives are elected for a term of three years. They can be re-elected twice but they may not run for a fourth consecutive term. The senators are elected to a term of six years. They can be re-elected but may not run for a third term. The constitution provides Congress with impeachment powers, with the House of Representatives having the power to impeach, and the Senate having the power to try the impeached official.

The last General Election in the Philippines took place on May 9th 2016 for the executive and legislative branches of all levels of government: national, provincial and local. Rodrigo Duterte of PDP-Laban and Leni Robredo of the Liberal Party won the presidential and vice presidential elections. At the legislative elections held in May 2019, 12 seats in the Senate and all seats in the House of Representatives were contested. PDP-LDP enjoyed a 21.2% positive swing of the popular vote in its favour at the Senate elections and a 29.3% positive swing in the House.

At the end of 2019, President Duterte's net satisfaction score amongst Filipinos polled by Social Weather Stations stood at a new high of +72; the highest of any President in the past 34 years. The next Presidential Election will be held on May 9th 2022 but, under the terms of Philippines' constitution, the incumbent President will be ineligible for re-election. The Commission on Elections is expected to publish the list of official candidates by January 2022



The Philippines has twice elected a female President

Corazon Aquino

Gloria Macapagal-Arroyo 2001–2010





Source: Social Weather Stations



Infrastructure

The planning, design, construction and maintenance of infrastructure facilities, especially national highways, flood control and water resources development systems, and other public works in accordance with national development objectives is the responsibility the Department of Public Works and Highways, (DPWH or Obras Publica), whose history stretches way back to 1868.

As at October 2020, the Philippines' road system comprises about 33,100 kilometres, of which more than 98% are paved with either concrete or asphalt. According to the DPWH's own classification, only 29% of the concrete and 15% of the asphalt roads are in 'good' condition, with the respective totals for 'fair' condition being 25% and 8%. Between 2011 and 2020, the Philippines has added a per-annum average of 187.7 kilometres to the road network. The national roads connecting major cities are numbered N1–N82. They are mostly single and dual carriageways linking two or more cities.

The railway system consists of light rail transit (LRT) lines in Metro Manila and heavy rail lines in Luzon. The three LRT lines commenced opera-

tions in 1984, 1999, and 2003. Two lines known as the Yellow and Purple Lines are owned and operated by a government-owned corporation, the Light Rail Transit Authority (LRTA), while the third, Blue Line, was financed and constructed by a private corporation, the Metro Rapid Transit Corporation (MRTC), and is operated by the government under a build-lease-transfer agreement. The lines operated by the LRTA carry about 700,000 passengers along 31km and between 31 stations each day, while the MRT line has 13 stations along 16.9km and carries more than 600,000 passengers daily. A limited number of heavy rail commuter services are operated by Philippine National Railways (PNR), serving areas to the south of Metro Manila. Other than these commuter services and some other services linking towns in the Bicol region, however, the heavy rail lines in the Philippines have been essentially non-operational for several years. The total length of the railway system is just 77km. According to the Department of Transportation, the Philippine government is aiming to "build and lay the groundwork for approximately 1,200 kilometres by 2022 and beyond" with the construction benefiting around 4.5 million passengers per day.

World Economic Forum Global Competitiveness Index for Infrastructure



Inter-island water transport is a very important subsector of the national transport system. There are about 1,250 ports, of which about 1,000 are government-owned and the rest are privately owned and managed. Of the government-owned ports, about 140 fall under the jurisdiction of the Philippine Ports Authority (PPA) and the Cebu Ports Authority; the remainder are the responsibility of other government agencies or local government units. The busiest port is the Port of Manila, which comprises four main sections: North harbour, South harbour, Manilla international container terminal and Harbour centre terminal. It has 22 available berths and 12 piers with an annual cargo tonnage of around 75 million and container volume of 4.5 million twenty-foot equivalents (TEU's) annually. In H1 2021, the PPA's container traffic stood at 3.6 million TEU's, with the cargo throughput standing at 127.5 million metric tonnes.

In recent years, there has been significant development of roll-on roll-off (ro-ro) ferry services, which are aimed at providing an alternative to traditional long-distance interisland shipping services. In 2003, the Government of the Philippines issued a policy to promote ro-ro: the Strong Republic Nautical Highway Program. This is composed of three major trunk lines: the western, eastern, and central nautical highways consisting of 12 main routes along 919 kilometres served by different shipping operators. This program has not only linked the country's major island groups of Luzon, Visayas, and Mindanao, but it has also had positive effects on the economies of the smaller islands along the major routes.

There are 215 airports in the Philippines, of which 85 are government-owned and controlled and the rest are privately owned and operated. Of the government-controlled airports, 12 are designated as international airports, 13 are Principal Class 1 airports, 19 are Principal Class 2 airports, and 41 are community airports. The Ninoy Aquino International Airport is currently the main gateway of the Philippines, serving the Metro Manila area and its surrounding regions. In 2019, it was the world's 39th busiest airport by passenger numbers with 47.89 million. The construction of a new terminal building at Clark International Airport has been completed and will bring its total capacity to 12.2 million passengers. Two more terminals are expected to be completed by 2025, boosting Clark's passenger capacity to more than 110 million annually. In addition, construction on the New Manila International Airport has begun, with its completion expected in 2026.

Philippine Airlines (PAL) is the national flag carrier of the Philippines and was the first commercial airline in Asia. It is the country's biggest airline company and has the largest number of international flights to the Philippines as well as domestic flights. Cebu Pacific is the leading domestic airline with a 61% market share. It flies to 36 different domestic destinations in Philippines and to 26 international destinations.



In the 2020 PHP3.6tn total spending budget, 38% was allotted for education, healthcare, housing and social welfare; 29% for infrastructure, tourism, trade, job generation and agriculture; and 11% for debt payments. The telecommunications industry in the Philippines was de-regulated in 1995, leading to the creation of many telecommunication service providers for mobile, fixed-line, internet and other services. Subsequent mergers and takeover activity have seen the emergence of two dominant players; PLDT's Smart Communications and Globe. A new entrant to the market, Dito Telecommunity, pledged to provide coverage for 37% of the population by end-2020 and has since connected two million subscribers in roughly 200 cities nationwide. Dito has committed to covering 84% of the population by the end of its fifth year of commercial operations and believes the implementation of the Mobile Number Portability (MNP) Act will help. Commercial rollout for the MNP Act will begin in September 2021, with the act enabling mobile phone users to retain their number despite switching network.

As of January 2021, more than 73 million people used the internet in the country, accounting for 68% of the total population; more than 10 percentage points higher than the Asian regional average of 55%. A report from We are Social showing online behaviour around the world revealed that Filipinos spend on average 10.56 hours a day on the internet on any device, the most of any country globally. Filipinos also spent the most time on social media at four hours and 15 minutes on average per day. The country has the highest female ratio on Twitter at 76 percent, and Instagram at 65 percent.

Overall, however, the Philippines ranks only number 96 of 141 countries for Infrastructure in the World Economic Forum's 2019 Global Competitiveness Report. A detailed breakdown shows it ranks 88 for railroads, 88 for ports, 88 for roads and 96 for air transport. Indeed, its overall rank of 96 was down 4 places on the previous year; a period in which its population increased by over 1.5 million people.

Back in December 2017, the Philippines government passed a tax reform bill – the Tax Reform for Acceleration and Inclusion (TRAIN). This was designed to help finance what President Duterte had called in his second State of the Nation address, "a golden age of infrastructure" with total planned spending around USD180 billion for roads, railways and airports to transform the Philippines' economy. This has become known as the "Build, build, build" programme and it planned to increase infrastructure spending to 7.3% of GDP by the end of the Presidential term of office in 2022.

The Government initially lined up 75 big-ticket infrastructure projects under the "Build, build, build" programme but as of October 2019, only two projects had been completed whilst a further nine were under construction. Senator Juan Edgardo Angara told a Senate hearing in late 2019 that that at least 12 projects would be completed by 2020, 17 projects by 2021, 26 projects by 2022, and the rest beyond the Duterte administration. A revised schedule of Infrastructure Flagship Projects on the National Economic and Development Authority website now lists 104 projects but has a lower cost of PHP4.3tn (USD89bn). It suggests the government is aiming to complete just a little over half (56) of the projects by the end of the presidential term of office with the balance targeted to finish by 2028.





Energy market

Figures from the Department of Energy show that total installed power capacity in the Philippines currently amounts to just over 26,000 MW; a figure which has increased by more than 65 per cent since 2006. Within this total, renewable energy capacity excluding geothermal and hydropower rose to 1,945 MW with solar, biomass and wind accounting for around 7.4% of the total installed capacity. **COAL:** Coal still accounts for more than 40% of all electricity capacity installed in the Philippines. The country has vast potential coal deposits (estimated by the DoE at 2.37 billion tonnes) and in 2019 it produced 15.27 million metric tonnes, of which 10.24 million tonnes were exported. At the same time, the country imported 27.69 million tonnes; largely from Indonesia, South Africa and Australia. The power sector is by far the biggest user of coal,

Total installed power capacity											
	Thermal (GWh)					Renewable (MW)					
Year	Coal	Oil Based	Natural Gas	Sub-Total Thermal	Geothermal	Hydro	Wind	Biomass	Solar	Sub-Total Renewable	(MW)
2006	15.294	4.665	16.336	36.295	10.465	9.939	53	0	1	20.458	56.753
2008	15.749	4.868	19.576	40.193	10.723	9.843	61	0	1	20.628	60.821
2010	23.301	7.701	19.518	50.520	9.929	7.803	62	27	1	17.822	68.342
2012	28.265	4.254	19.642	52.161	10.250	10.252	75	183	1	20.761	72.922
2014	33.054	5.708	18.690	57.452	10.308	9.137	152	196	17	19.810	77.262
2016	43.303	5.661	19.854	68.818	11.070	8.111	975	726	1.097	21.979	90.797
2018	51.932	3.173	21.334	76.439	10.435	9.384	1.153	1.105	1.249	23.326	99.765
2020	58.176	2.474	19.497	80.147	10.757	7.192	1.026	1.261	1.373	21.609	101.756

Source: Department of Energy

consuming 28.65 million tonnes of the total 33.12 million tonnes burned in 2019.

There are 21 coal-fired power stations nationally, the most recent of which was a 500 MW plant in Luzon grid-connected on October 2019 which was included in the 'Build, build, build' programme. The Philippines added 2.1 GW in coal capacity between 2018 and 2020. Despite the concerning additions to the Philippine grid, the DoE's issuing of a moratorium on new-coal plants should ease concerns. Encouragingly, the policy's implementation has resulted in several planned coal-fired projects being dropped, including three from San Miguel Corp.

NATURAL GAS: Natural gas comprises 13.1 of the country's total installed power capacity. In 1991, Shell Philippine Exploration B.V. and Oxy drilled the Malampaya gas field which became the largest gas discovery in the country with proven reserves of 2.7 to 3.2 trillion cubic metres of gas. Located just off Palawan Island's west coast, it accounts for nearly all of the Philippines' domestic natural gas output, with the much smaller and older Libertad gas field contributing less than 1% of the national total. The vast majority of natural gas from Malampaya provides fuel for three power plants in Batangas.

OIL-BASED: The Philippines consists of more than 7,000 islands, many of which are small and have traditionally relied on generators fuelled by imported diesel. This is heavily subsidised by consumers through what is known as the Universal Charge for Missionary Electrification (UCME) with a planned cost of PHP8.8 billion (USD176m) in H1 2021. Diesel, oil thermal and combined cycle power generation amounts to 17% of current installed capacity.

HYDROELECTRICITY: The Philippines is not short of water and there are many hydroelectric power plants located in Luzon, Visayas and Mindanao. Around 14% of the country's installed power capacity comes from hydroelectricity and there are at least 30 operational plants with several more already under construction. According to the Department of Energy, the total untapped hydropower resource potential of the country is estimated at 13,097 MW, of which 85 percent are considered large and small hydros (11,223 MW), 14 percent (1,847 MW) are classified as mini-hydros while less than 1 percent (27 MW) are considered micro-hydros. Almost all the large hydro plants are connected to the main transmission grid, while most of mini and micro plants are embedded to the local distribution system. In January 2021, plans were announced by the DoE to offer a further 17 hydropower projects (90.4 MW) to renewable energy developers.

GEOTHERMAL: According to the International Geothermal Association (IGA), the Philippines ranks second globally to the United States in producing geothermal energy. As of 2015, the US had a capacity of 3,450 megawatts of geothermal power, while that of the Philippines was 1,870 MW. This had increased to 1,928 MW by the end of 2020. Combined energy from the nation's six geothermal fields, located in the islands of Luzon, Leyte, Negros and Mindanao,



accounts for approximately 7.3% of the country's installed generating capacity.

WIND: Wind power accounts for less than 2% of total installed energy capacity, with 443 MW. All wind power sites in the Philippines are on-shore facilities, although in early 2020, the DoE awarded rights to study and develop two offshore wind energy projects with a combined potential output of more than 1.2GW. The first plant, named "Aparri Bay" and located in Northern Philippines will have 500-600 MW capacity and the second, which is in the central part of the country, will have a capacity of 600 MW. An additional three wind contracts have been awarded, bringing the combined potential capacity of the five projects to 5 GW. According to a study by the US National Energy Laboratory, the Philippines has around 10,000 square kilometres of land area with good-to-excellent wind resources due to their elevation and proximity to coastline and the US Department of Energy estimates that wind resources in the Philippines could generate up to 70,000 MW of electricity. The DoE, with support from the World Bank Group, has launched the Offshore Wind Roadmap Project. According to the project's co-lead, early estimates indicate that the Philippines "has over 170 GW of offshore wind capacity".

BIOENERGY: Bioenergy accounts for just 1.8% of installed power generation capacity, with 483 MW. The Philippines has plentiful supplies of biomass energy resources in the form of agricultural crop residues, forest residues, animal wastes and agro-industrial wastes. The Department of Environment and Natural Resources (DENR) says the Philippines could generate substantial volumes of residues which can be utilized as energy fuel. As of May 2021, four biomass projects totalling 110.4 MW are under submission for approval.

SOLAR: As at end-2020, the installed capacity of solar electricity was 1,019 MW, almost 4% of the total but more than six times greater than just five years' previously. As of May 2021, the Department of Energy's website lists a total of a further 11,774 MW in potential capacity either at the pre-development or development phase, although there is no certainty or time horizon upon which these will proceed.

Whilst the composition of installed capacity is important, the actual generation of electricity must be analysed to gain a full understanding of a country's energy market. In 2020, the Philippine Grid generated a total of 101,756 GWh, down 4% on the year prior. Roughly 70% of the country's electricity was generated by the Luzon grid, with the remaining 30% split evenly across the Visayas and Mindanao grids.

A comparison of installed capacity and actual generation provides insight into the Philippines grid's reliance on coal; the fossil-fuel accounts for 57.2% of power generation, despite only accounting for 41.6% of installed capacity. The same is seen for natural gas, with the fuel's share of the grid's generation exceeding its share of the grid's installed capacity. Since 2006, coal-fired electricity generation has increased at a CAGR of 10%, eclipsing the total grid's CAGR by around six percentage points.

Looking at renewable energy, it can be seen that electricity generation grew at a CAGR of 0.4%. That figure is somewhat distorted by the lack of growth in geothermal generation and the negative growth in hydro generation. The generation of electricity through wind, solar and biomass has increased at a CAGR of 35.2%, albeit from a very small start-point.

Renewable energy policy

The Philippines' electricity transmission is divided into three grids; one each for Luzon, Visayas and Mindanao. As at end-2020, the total installed electricity capacity across the three grids was 17,840 MW, 3,862 MW and 4,583 MW respectively. The Luzon and Visayas grids are interconnected through the 350 kV DC HVDC Leyte-Luzon transmission line, while the Mindanao Grid remains isolated until the completion of a HVDC link from Negros to Lanao del Norte which was scheduled for end-December 2020. The project's completion date was then extended to end-December 2021, citing the COVID-19 pandemic and subsequent quarantine restrictions as the cause. The National Grid Corp. of the Philippines announced in February 2021 that several portions of the already completed cables had been damaged and thus, Q1 2022 is now the targeted date of completion.

The Department of Energy's 2019 Power Situation report lists fourteen transmission projects which are proposed for a 25-year development plan between 2020 and 2045. These are designed to increase energy supply, improve reliability and resilience, and enhance interconnectedness across a widespread and challenging geography. The long-term planning assumptions for the three grids in 2040 envisage a further 24,385 MW capacity addition in Luzon, 9,180 MW in Visayas and 10,200 MW in Mindanao. This represents a more than 70% increase on current capacity of just 25,531 MW.

The accelerated exploration and development of renewable energy sector began with the

enactment of RA 9513 otherwise known as Renewable Energy Law of 2008. To achieve the objectives of the RE Law, the DoE together with its stakeholders headed by the National Renewable Energy Board (NREB) formulated the National Renewable Energy Plan (NREP) which summarised the 20-year aspirational targets from biomass, solar, wind, hydropower, geothermal and ocean energy. It also called for a series of programmes – including fiscal incentives for eligible renewable energy developers, a Green Energy Option Programme and a Renewable Portfolio Standard – which we look at later in this section.

The NREP, which was launched in 2011, served as the country's roadmap in the development and utilization of renewable energy. The targets under NREP were to triple the 2010 installed capacity of 5,439 MW by 2030. The NREP was always intended to be a 'living document' whose forecasts and targets would be updated in line with programme reviews, project deployment and technological development. It would not have been realistic in any market economy to hit a multi-year target at the end of every plan period.

By 2015, the energy market had of course evolved, not necessarily in line with the plans outlined in the original NREP. Only biomass had met or exceeded its target with a 335 MW increase against a planned 227 MW uplift. Hydro capacity rose 190 MW versus a planned 341 MW, solar rose 115 MW versus a 269 MW plan whilst wind capacity showed a huge shortfall; increasing by only 394 MW compared to a planned increase of 1048 MW. Total geothermal

	Actual	Target Capa	city Addition by	Total new	Total capacity by 2030	
in MW	capacity (as of 2015)	2020	2020	2020 2025		
Geothermal	1,906	183	900	288	1,371	3,277
Hydro	3,590	192	565	991	1,748	5,338
Biomass	374	550	550	550	1,650	2,024
Wind	427	1,000	1,162	1,000	3,162	3,589
Solar	116	2,006	3,508	4,008	9,522	9,638
Ocean	0	0	31	60	91	91
Total	6,413	3,931	6,716	6,897	17,544	23,957

NREP proposed revised targets 2016

Source: Department of Energy, ThomasLloyd



capacity, meanwhile, actually fell by 60 MW during the period under review.

Taking the developments of the previous four years into account, it was proposed in 2016 to revise and amend the NREP. The new document was submitted by the National Renewable Energy Board (NREB) to the DoE in 2017 but it was never signed into law; hence the original 2011 still stands as the official reference work.

The striking feature of the proposed revised plan compared to the original version was the huge increase in the installed capacity of solar energy. This was expected now to increase by 9,522 MW by 2030 versus an originally estimated increase of just 284 MW. Indeed, the planned increase for solar energy was greater than all the other sources combined: geothermal, hydro, biomass, wind and ocean totalled 8,022 MW versus 9,522 MW for solar.

Not only has solar now taken centre stage in the Philippines' push for renewable energy, it is the clear leader in terms of installation, operation and grid connectivity. In the period since the latest proposed (but unsigned) iteration of the NREP, growth in solar has significantly outpaced that of other renewable technologies. Of a total 1,069 MW of new installed RE capacity between 2015 and 2019, fully 756 MW came from solar energy; almost three-quarters of the entire amount.

To help the future development of renewable energy, rules for the Renewable Portfolio Standard (RPS) and Green Energy Option Program (GEOP) provided for in the 2008 RE Act were finally released in 2017, with mandatory RPS compliance scheduled from 2020. The RPS stipulates that all distribution utilities, electricity suppliers and generating companies increase their renewable energy by 1% per annum the next ten years. This should help meet the goal of 35% renewable energy generation across the country by 2030.

In a notable relaxation of previous rules on foreign ownership, the DoE in October 2019 issued Department Circular #DC2019-10-0013: 'Omnibus Guidelines Governing the Award and Administration of Renewable Energy Contracts and the Registration of Renewable Energy Developers'. Section 4.2.1 notes, "The RE Applicant must be a Filipino or, if a corporation, must be duly registered with the Securities and Exchange Commission (SEC), with at least 60% of its capitalisation duly owned and controlled by Filipinos, unless the application is for biomass development and/or uses waste-to-energy technology, in which case the 60% Filipino capitalisation requirement shall not apply. This provision shall retroact to all RE Applications for biomass resources development and utilisation that are being evaluating prior to the effectivity of this Circular".

The DoE permits the development of "biomass, waste to energy technology, wind, solar, runof-river, impounding hydropower sources that meet internationally accepted standards, ocean, hybrid systems, geothermal and other RE technologies that may be later identified by the DoE". To demonstrate compliance with the RPS, a system of Renewable Energy Certificates (REC) trading will be put in place and

Electricity costs in the Philippines are the highest among the Association of Southeast Asian Nations' (ASEAN) 10 member countries at around 10 PhP/kWh (USD0.20/kWh). New utility-scale solar installations have been contracted for prices as low as PhP2.99 (USD0.058) per kWh.

Newly installed renewable energy capacity since 2015 (MW) 600 500 400 300 200 100 0 Geothermal Hvdro Biomass Wind Sola Ocean -100 2018 2017 2016 2015 2020 2019 Source: Department of Energy, ThomasLloyd

administered by a newly-created Philippine Renewable Energy Market System (PREMS).

In parallel to the RPS system, the Green Energy Option Program aims to develop and improve the functioning of a market in which large-scale corporate power consumers can enter into agreements with registered third-party renewable energy developers to purchase renewable electricity which is transmitted to them by the existing power Distribution Utilities. In addition to fee income, the DU's also retains the REC's from the third-party RE suppliers. These corporate Power Purchase Agreements (PPA's) are becoming a familiar feature of electricity markets around the world. A Philippine GEOP system designed to complement the RPS framework could thus help lower energy costs whilst meeting the new legal obligations.

The Department of Energy's stated mission is, "to improve the quality of life of the Filipino by formulating and implementing policies and programs to ensure sustainable, stable, secure, sufficient, accessible and reasonably-priced energy." Its' vision is of, "a globally-competitive DoE powering up Filipino communities through clean, efficient, robust and sustainable energy systems that will create wealth, propel industries and transform the lives of men and women and the generations to come."

The Philippines has committed to climate change goals and announced in 2017 its plan to achieve a 70% reduction in greenhouse gases by 2030. The target has since been revised upwards, with the country announcing its intentions of achieving a 75% reduction in greenhouse gases by 2030. To help meet this

commitment, a more rapid build-up in both electricity capacity and production will have to come from solar, wind and biomass energy. It is to be hoped that the opportunities afforded by the reaffirmed RE Act and provisions can be the catalyst for a new wave of investment to drive the energy transition.

The Philippine Energy Secretary, Alfonso G. Cusi, has announced the DoE's moratorium on greenfield coal power plants. The DoE's announcement means that new planned coal projects will no longer receive permits, affecting over 10 GW of greenfield coal power plants. According to the Institute of Energy Economics and Financial Analysis (IEEFA), 82.1% of the capacity was planned for the Luzon grid. As mentioned previously, the DoE's moratorium is already taking effect, with San Miguel Corp. dropping coal projects from its expansion plan. In the announcement Cusi said "As the Philippines Department of Energy re-evaluates the appropriateness of our country energy mix vis-à-vis our energy goals, I am optimistic that this would lead to more opportunities for RE to figure prominently in our country's energy future".

The moratorium's announcement was coupled with an announcement on geothermal energy, and the Philippines' new acceptance of 100% foreign ownership in large-scale geothermal exploration, development and utilisation projects. Financial and Technical Assistance Agreements (FTAAs) can now entered into between foreign contractors and the Philippine government on geothermal projects with an initial investment of circa USD50 million.

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