







3. Infrastructure



Overview

Recognizing the pressing need for infrastructure development, the Indonesian government has increased its focus on improving the regulatory environment and stimulating infrastructure spending. Over the past 5 years, infrastructure spending has more than doubled, and more spending is expected over the next few years with the removal of the fuel subsidy allowing reallocation of funds to infrastructure.

Indonesia has a huge task ahead. The World Economic Forum ranks Indonesia's infrastructure as 72nd out of 144 countries, and 4th in the ASEAN region, below Singapore, Malaysia and Thailand.

						
Infrastructure						
Road	6	19	50	72	87	104
Railway	N/A	12	74	41	80	52
Port	2	19	54	77	101	88
Airport	1	19	37	64	108	87
Power	6	39	58	84	87	88

Infrastructure spending in Indonesia (both public and private) remained subdued following the 1997 Asian economic crisis. As a result, Indonesia has poor basic infrastructure and remains under-invested, holding back not only Indonesia's growth potential but also progress in poverty reduction. The symptoms of close to two decades of limited infrastructure investment include increasing road congestion, over utilized airports, weak rail connectivity, an underdeveloped port sector, high inter-island cargo costs, electricity blackouts and poor access to improved sanitation. Population pressures and strong foreign interest in Indonesian commodities give rise to a significant need for infrastructure development in the country.

Unless progress is made, this will be a major barrier to sustained longer term economic growth and development across many industries, as well as to foreign investment. Indonesia's low infrastructure ranking is consistently identified by companies as a constraint on their operations and investment.

Indonesia infrastructure	
Road network	508,000 kilometres of which 56.7% is paved
Toll Roads	<ul style="list-style-type: none"> • 820.2 kilometres (operated) • 936.4 kilometres (construction/land acquisition) • 334.4 kilometres (tender preparation/process)
Railway network	5,107.8 kilometres, of which 235 kilometres are electrified
Air	296 airports, of which 27 are international airports 5 airports > 3,001 m runway
Maritime	111 ports managed under Pelindo I-IV with 436.5 million ton/m3 loading/unloading
Clean water	<ul style="list-style-type: none"> • 350 regional water supply companies (PDAMs) • 39 non-regional water supply (non-PDAM) of which 18 are limited liability companies • 3,347 million m3 clean water production per year. • 20-40% Non-Revenue Water
Power	<ul style="list-style-type: none"> • 82% electrification ratio • 49.7 GW/year of which 16% is installed by IPP • 41,749 kmc transmission lines • 878,926 kmc distribution lines

Road Network and Toll Roads

Indonesia's road network amounts to 508,000km, of which 287,926km (56.7%) are paved or sealed and 820km are operational toll roads. It is estimated that 90% of all domestic passenger transport and 50% of cargo traffic is carried by road. Indonesia has experienced a rapid increase in the numbers of cars in circulation, with virtually no major investment in toll and other road infrastructure. The rise of the Indonesian economy over the past decade has boosted the number of vehicles by 13.7% (two wheel) / 9.6% (four wheel) % p.a. (CAGR) vs. a 2.9% p.a. growth of paved roads.

The road network is most developed on the islands and main population centres of Java, Sumatra and Bali where over 80% of Indonesia's population live. Mining-related transport (road, rail) infrastructure is more developed in Kalimantan compared to Sumatra.

Despite being given a high priority in government spending programs, road building in Indonesia has progressed at a slow pace due mainly to land acquisition challenges. Only 135km of new toll roads have been developed since 1997-98, although a further 936.4km of new toll roads are being constructed or are in progress of design and land acquisition. Land acquisition challenges are commented on overleaf.

Toll road traffic volume has climbed around 7% over the past 7 years based on the 576km operated by PT Jasa Marga (Persero). A further 244km are operated privately through Toll Road Concession Agreements awarded/supervised by the Toll Road Regulatory Agency (BPJT).

The Government has plans to build 4,621km of additional toll roads, of which 60% are on Sumatera Island as part of its Trans Java and Trans Sumatra highway program.

Railway Network

The railway system covers 5,107.8km, all of which is narrow gauge; and 235km of which is electrified.

Most of the Indonesian rail network is operated by the state-owned enterprise/PT Kereta Api (Persero), while some freight railways are privately owned and operated in Sumatera and Kalimantan. 220 million people and 27 million tonnes of cargo (of which 60% is coal) travel by rail each year on Sumatera and Java Islands. The development rate of rail tracks over the past 5 years was 1.52% vs 1.57% for passenger movements. Recognizing the importance of rail transport, the Government's plans include improving the

quality of track, e.g., double-tracking of the southern rail line from Jakarta to Surabaya; and connectivity through its "Trans-rail" projects for Java, Sumatra, Sulawesi, Kalimantan and Irian Jaya.

Air

In February 2015, there were 296 airports, of which 27 are international airports, and 5 airports have runways of more than 3,001m; operated by Angkasa Pura I, Angkasa Pura II and the Directorate General for Aviation.

Key annual statistics include, 173 million passengers, 1,160,818 tons of cargo, and 1.7 million aircraft movements both domestic and international. The growth rate of passengers, cargo and aircraft movements over the past

5 years were 13.7%, 10%, and 11% p.a. respectively. To keep up with the demand, new airports are expected to be constructed (either privately or by AP I/II). Both AP I and II have successfully built and expanded some of the major airports in Indonesia such as Kualanamu International Airport (Medan), which began operations in March 2013, Sultan Hasanuddin International Airport (Makassar), Sepinggan International Airport (East Kalimantan), and Ngurah Rai International Airport (Bali).

Maritime

As an archipelago comprising more than 17,000 islands, covering an area of over 2 million square kilometers astride the main trade routes between the Indian Ocean and the Pacific Ocean, air and maritime connections are vital to Indonesia and its economy. There are 21,579km of navigable waterways among the larger islands that represent over 90% of Indonesia's land, Sumatra, Java, Madura, Kalimantan, Sulawesi and Irian Jaya.

There are 111 ports operated by the state-owned port corporations, Pelindo I, II, III, and IV under KM 17/2004 and 534 ports managed by the government under KM 63/2002. Of these 645 ports 4 are classified as "Prime" (Jakarta, Surabaya, Medan and Makassar) and 14 are classified as "Class I" including Semarang and Banjarmasin. Prime and Class I ports are defined as suitable for international shipping. The country's largest port, Tanjung Priok, in North Jakarta, is expected to complete the building of Terminal 1 of its Phase I expansion program, in the first half of 2015, increasing maximum draft from 11.5m to 16m and expanding its cargo handling capacity to 6.5 million TEU p.a.

In 2013, marine fleets operating in Indonesia amounted to 17,838 vessels, consisting of 13,120 national vessels, 354 foreign chartered vessels and 4,364 foreign agency vessels. The average growth rate of container handling by terminal yards in Indonesia handled by Pelindo I - IV ports corporations was 35% over the past 5 years. The new President, who made his acceptance speech on a traditional sailing ship in Sunda Kelapa harbor, Jakarta's historical trading port, has stated that the target of Tanjung Priok port in 2017 is approximately 15 million TEUs a year. In addition, the new Government is expected to improve and build 24 seaports and deep seaports as the main component of the "sea toll road" that is one of the main priorities of the new Government.

Tonnage through Indonesian ports amounted to 71,915,789 DWT in 2013, having dropped an average 13.6% p.a. since 2009. This decrease was due to a decrease in international cargo: with domestic cargo growing by 10.9% p.a. over the same period.

Indonesian ports are among the least efficient in South-east Asia in terms of lead times, which are 3 days compared to those of most ASEAN countries, which are only 1 day. Logistics costs from factories to Tanjung Priok ports) for a 40ft dry container is USD 579: far higher than logistics costs from factories in Myanmar to port, which are USD 323, Cambodia is in the same range. Corresponding costs in Vietnam are lower again at USD 237.

Clean Water

Installed capacity of the 350 Regional Water Companies (with USD 1.3 Billion of total assets) is 159,043.5 l/s (litres per second) and produce 117,225 l/s for only 55 million people in their serviced areas, which contain an estimated 140 million people. That means only 40% of the population have direct access to clean water. Although there are 8.3 million water connections in Indonesia, half of Regional Water Companies are not considered as being in a "healthy" condition. In addition to that, 70% of Regional Water Companies do not apply Full Cost Recovery (FCR), which makes it difficult for the industry to improve profitability performance. In addition, only 32 Regional Water Companies have a Non-Revenue Water ratio below 20%

The average tariff of the 350 Regional Water Companies is estimated to be around IDR 3,273/m³ and their average cost of goods sold excluding depreciation and interest is estimated at IDR 3,099/m³, which results in an operating surplus of only IDR 174/m³. Water tariffs need to use a FCR mechanism both for the 350 Regional Water Companies and the non-Regional Water Companies.

Power

Growth in the demand for electricity over the next ten years is estimated 8.7% p.a., from 219.1TWh in 2014 to 464.2TWh in 2024. As of mid-2014, Indonesia's electrification ratio was 82%, above the Philippines (70%) but below Malaysia (100%), Thailand (99%) and Vietnam (96%), although some progress has been made since 2008 (62% electrification ratio). The slow progress of the Government's Fast Track Program (FTP) I and II is one of the main reasons for the low electrification ratio. FTP I and II were enacted through Presidential Regulations in 2006 and 2010. The new Government has introduced a new 35GW program as part of its total target for the next five years, of which 24.9GW will be awarded as IPPs.

The progress of FTP I (10,000 MW) was estimated at around 77% as of November 2014 since its enactment in 2006. Most of the delays were caused by contractor performance and permit and land acquisition issues, despite irrevocable and unconditional guarantees on loans (both interest and principle) for FTP I provided by the Government. As part of a strategy to reduce two step loans and in accordance with Presidential Regulation No. 48/2011, the Government is required to provide business viability guarantee letters ("BVGLs") on FTP II projects. However, FTP II progress is also slow due to projects struggling in their preparation stage. For FTP II (17,458MW), under Presidential Regulation No. 48/2011 revised by Minister of Energy and Minerals Resources Regulation No. 21/2013, PLN is responsible for investing in 32% of capacity with the remaining 68% to be available through public bidding by experienced and proven IPP investors under BOT/BOOT/BLT and lease schemes. PLN (a Fortune 500 company) is the main off-taker for the power industry.

There are 40 IPPs in operation (7,743 MW) and 173 (9,584 MW) under development, mainly in Java and Sumatra with coal as the main fuel source. PLN planning is being updated for a 35GW fast track program with an estimated US\$62.8 billion of investment needed over the next 10 years.

Equally important, transmission and distribution grids need to be well prepared and developed. To balance generator construction, PLN estimates that 59,000kmc of transmission and 164,400kmc distribution grids will be required, with estimated costs of USD20.6 billion and USD14.5 billion, respectively.