

ANGVA2U Info 12/2019 22nd October 2019. (for ANGVA members only)

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1.0 Country Energy Brief - Indonesia

Indonesia is the most populous country in Southeast Asia and the fourth most populous country in the world. It is the world largest island country, an archipelago of more than 17,000 islands.



Map of Indonesia

2018 Profile:

- Human Population** = 265,015,000
- Oil Reserves** = 7.51 Billion Barrels
(3.15 B bbls Proven. 4.36 B bbls Potential)
- Natural Gas Reserves** = 135.55 TSCF
(96.06 Tscf Proven. 39.49 Tscf Potential)
- Crude Oil Production** = 281,826,000 bbls
- Natural Gas Production** = 2,563 Tscf
- Vehicle Population** = 104,118,969 (In year 2015. Annual growth of 12.6%)
- Final Energy Consumption by sectors:**
 Transport = 45.06%. Industry = 33.51%. Household = 14.76%. Commercial = 4.82%. Others = 1.85%.

Formerly a net oil exporter, Indonesia is reorienting energy production from serving primarily export markets to meeting its growing domestic energy consumption because of inadequate infrastructure and a complex regulatory environment and inadequate investment. Also, urbanization and demand in other areas of the country are rising at a faster pace than energy infrastructure development. Currently major energy demand centers in the islands of Java and Sumatra.

The country many islands presented geographical challenges in matching energy supply especially to the eastern provinces. To meet this challenge, Indonesia had embarked on an aggressive development and expansion of Liquefied Natural Gas (LNG) infrastructure and utilization through building of LNG liquefaction plants, LNG receiving terminals, Floating Regasification & Storage Units (FRSU), local LNG hubs, Small Scale LNG plants and terminals, Small scale LNG vessels, LNG ISO tanks, LNG Road tankers, and conversion of heavy duty vehicles and marine vessels to LNG to meet the growing energy demand of various regions of the country.

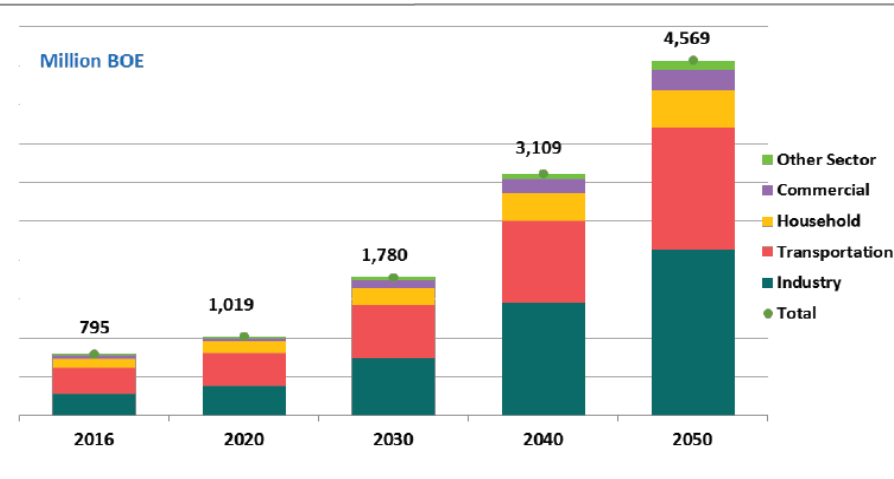
Primary energy demand of the country grew by 4.9% in 2018. Energy consumption per capita has increased 24% since 2008 but remains less than 40% of the global average. Oil accounted for 45% of incremental increase in primary energy consumption in 2018. Natural gas consumption increased marginally by 0.4 Bcm or 1.1% in 2018. Power output from gas-fired capacity increased slightly from 56 TWh in 2017 to 60 TWh in 2018.

Biofuels production surged by 81% in 2018 from 50 Kboe/d to 91 Kboe/d, reflecting strong regional demand for biodiesel. Wind and solar power generation remain negligible, but biomass and geothermal output increased 8.9% in 2018 to reach 3Mtoe. Renewables accounted for 5.5% of total generation in 2018, slightly up from 5.3% in 2017.

Despite Indonesia's energy struggles, the country was the world's second largest exporter of coal (by dollar value) and sixth largest exporter of liquefied natural gas (LNG) in 2018. As Indonesia seeks to meet its energy export obligations and earn revenues through international market sales, the country is also trying to meet energy demand at home.

It is projected that the Transport sector will remain a major consumer of the final energy in Indonesia (see figure 2.2 below).

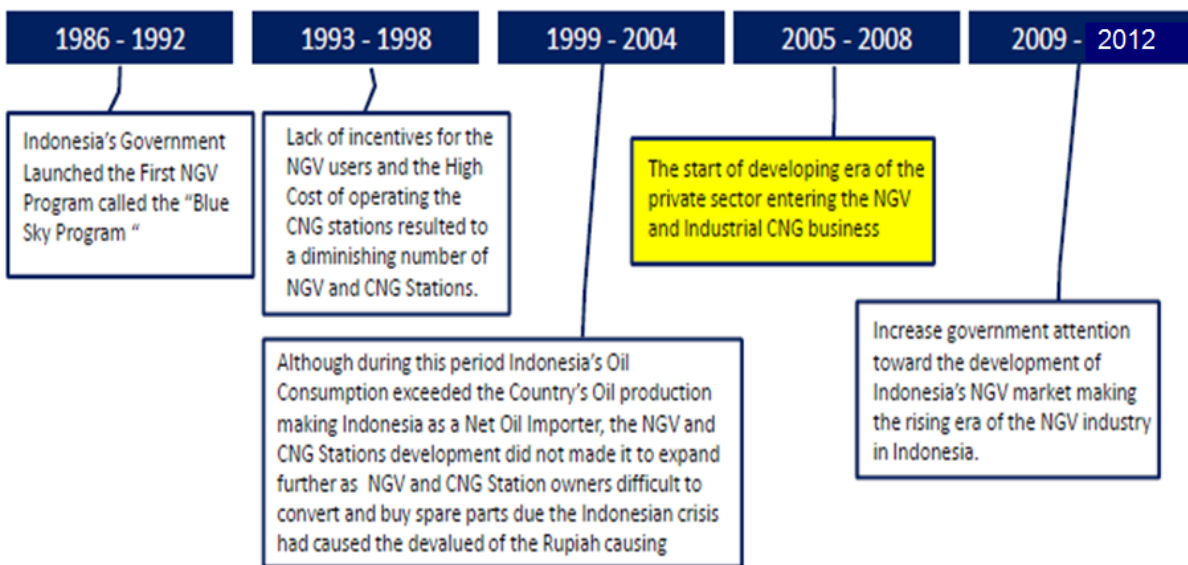
Figure 2.2 Final energy demand by sector



Source: Indonesia Energy Outlook 2018. Center of Assessment for Process and Energy Industry. Agency for the Assessment of Technology. www.bppt.go.id

NGV in Indonesia

Natural gas as fuel for vehicles was first introduced in Indonesia in 1986 (see diagram below), about 30 years ago. However, the NGV market in Indonesia had faced many challenges and had not grown as planned.



Source: "CNG Industry Players in Indonesia". Robbi Sukardi, Managing Director, PT. Raja Samudra.. 2012.

The Directorate General of Oil and Gas, Ministry of Energy & Mineral Resources, presented a Gas Infrastructure Road Map 2016 – 2030 which included the targets for CNG usage for vehicles in Indonesia at the 10th NGV & Infrastructure Indonesia Forum 2016. See below table:



GAS INFRASTRUCTURE ROAD MAP 2016 – 2030 *)

No.	URAIAN	Existing	Period I					Period II	Period III	
			2016	2017	2018	2019	2020	2021 – 2025	2026 – 2030	
1	Pipeline [KM]	Open Access	3,665	6,153	6,153	6,215	6,776	7,390	9,604	12,580
		Upstream Dedicated	4,110	4,123	4,123	4,123	4,123	4,123	4,123	4,123
		Downstream Dedicated	4,213.54	9,177	9,211	9,431	11,546	11,546	13,480	13,584
		Own Use	46	66	66	66	66	66	66	66
2	Liquefaction [UNIT]	Large Plant	2	4	5	5	5	5	6	6
		Mini Plant	0	3	5	7	7	9	10	12
3	Regasification [UNIT]	FSRU	2	2	5	9	10	11	11	12
		Land based	1	17	24	46	62	64	66	68
4	CNG Application [UNIT]	Inland	14	68	72	72	106	108	108	161
		Marine	2	4	6	9	12	15	20	30
5	GAS FUELING STATIONS [UNITS]	CNG	55	136	163	189	210	289	800	1,300
		LNG	0	0	0	0	2	4	7	12
		LGV	27	27	77	80	100	120	200	400
6	Distribution Network Area [AREA]	0	8	12	16	20	25	75	150	
7	City Gas [CONNECTION]	210K	326K	608K	924 million	1,308 million	1,5 million	3 million	5 million	
8	LPG Plant [MTPA]	4,594	4,754	4,754	4,755	4,755	4,755	6	7	
9	LPG Storage [MT]	486K	500K	510K	492K	530K	540K	620,000	800,000	

Source: "Driving Indonesia's Natural Gas for Vehicles Program Forward in 2016. Dr. I Gusti S. Sidemen, Directorate General of Oil and Gas. 10th NGV & Infrastructure Indonesia Forum, Jakarta, 22 Mac '16.

Status of NGV in Indonesia (as of Dec 2017)

- i. Number of Vehicles = 15,500.
- ii. Number of CNG Stations = 103.
- iii. Price of CNG at Stations = Indonesian Rupiah (IDR) 3,100 per lsp (per litre equivalent of premium gasoline) in Jakarta and IDR 4,500 per lsp outside of Jakarta.

Challenges to the expansion of NGV market in Indonesia:

- i. Economics of CNG Stations - Retail price of CNG for vehicles, as set by the Government, is too low for a commercially viable market to emerge.
- ii. Lack of Land Availability – High cost of land and also location far from gas pipelines.
- iii. Permit Process – In order to build a CNG station, 23 types of permit is required excluding principal permit from the local government.
- iv. Gas Supply for CNG stations – According to Minister Decree ESDM No.2436 K/15/MEM/2014, certain amount of natural gas must be allocated for supply to land transport with special price, however, no such supply was made available.

2.0 Selected News / Articles

2.1 Indonesia

PGN committed to turning CNG into environmentally-friendly energy

Edited by INE. en.antaranews.com. 6th October 2019

At the beginning, PGN cooperated with the Bandung city administration to make (the capital of West Java province) an environmentally-friendly energy-based smart city through the use of CNG,



PT Gagas Energi corporate secretary Febrilian Hindarto and assistant manager of McDonald outlet, Nana Herdiana. (Antara Lampung/HO)

Bandarlampung, Lampung (ANTARA) - State gas company PT Perusahaan Gas Negara (PGN) through its subsidiary PT Gagas Energy is committed to turning compressed natural gas (CNG) into environmentally-friendly energy.

"At the beginning, PGN cooperated with the Bandung city administration to make (the capital of West Java province) an environmentally-friendly energy-based smart city through the use of CNG," PT Gagas Energi Corporate Secretary Febrilian Hindarto said in a written statement released Saturday,

PT Gagas Energi is currently serving 10 commercial subscribers including fast food restaurants in Bandung that use CNG. The subscribers also comprise transportation modes including 100 units of taxis and 25 units of tractors. "Some 150 vehicles currently use our CNG. We did not rule out the possibility of expanding our business to small and medium scale enterprises if they really need CNG fuel," he said.

In general, transportation modes use CNG because it is only sold at Rp4.500 per LSP, or cheaper than other fuels, he said. The use of CNG helped the government reduce fuel subsidies and support the community to become self-reliant in using natural gas, he said.

PT Gagas Energi has set itself the target of raising the number of CNG subscribers at the end of this year. The increase will help the government cut fuel subsidies.

One of PT Gagas Energy's subscribers in Bandung that uses Gaslink is fast food restaurant McDonald. Assistant manager of McDonald outlet at Soekarno Hatta Street in Bandung, Nana Herdiana, said McDonald at Soekarno-Hatta Street is the first to use Gaslink.

Source: <https://en.antaranews.com/news/134184/pgn-committed-to-turning-cng-into-environmentally-friendly-energy>

2.2 India

CNG prices cut in Delhi; discount offered between 12 am to 6 am to promote fuelling at night.

HT Correspondent. Hindustani Times, New Delhi. 3rd October 2019

"This revision in prices would result in a decrease of Rs 1.90 per kg in the consumer prices of CNG in Delhi and Rs 2.15 per kg in Noida, Greater Noida and Ghaziabad," Indraprastha Gas Limited said in a statement.



The new consumer price will be effective from Thursday.(Diwakar Prasad/ Hindustan Times)

Indraprastha Gas Limited (IGL), the sole supplier of CNG in Delhi, on Wednesday announced a reduction in the selling prices of the gas after the government reduced the prices of domestically produced natural gas. The new consumer price will be effective from Thursday.

“This revision in prices would result in a decrease of Rs 1.90 per kg in the consumer prices of CNG in Delhi and Rs 2.15 per kg in Noida, Greater Noida and Ghaziabad,” IGL said in a statement.

In order to promote CNG fuelling at night, IGL will also offer a discount of Rs 1 per kg on selling prices of CNG for filling between 12am to 6am at select outlets. IGL, which is also the sole supplier of CNG in Noida, Greater Noida and Ghaziabad, also announced a new cashback scheme for fueling through IGL Smart Card.

“With a view to promote cashless transactions and push CNG refueling during off-peak hours, IGL has introduced a special cashback scheme of Rs 0.50 per kg for CNG fuelling done only at IGL CNG Stations through IGL Smart Cards between 11am and 4 pm, and 12am and 6am,” IGL said.

Source: <https://www.hindustantimes.com/cities/cng-prices-cut-in-delhi/story-ejLBk1K3OBvAt5BNM97eaM.html>

2.3 Malaysia

Gas Malaysia Strengthens commitment towards renewable energy

by TMR. themalaysianreserve. October 10th 2019



The agreement is part of its long-term sustainable strategy, which is to have an alternative renewable and sustainable source of gas supply

GUIDED by its vision to be an innovative value-added energy solutions provider, Gas Malaysia Bhd, a member of MMC Corp Bhd, continues its aim to foster long-term sustainable development in its business activities.

On Oct 8, Gas Malaysia’s wholly owned subsidiary — Gas Malaysia Virtual Pipeline Sdn Bhd (GMVP) signed a gas purchase agreement with Kulim Green Energy Ventures Sdn Bhd — a joint-venture company between Kulim (M) Bhd (a wholly owned subsidiary of Johor Corp), O’Rec IND Sdn Bhd and MTC Engineering Sdn Bhd. Resulting from this partnership, GMVP will procure biomethane from Kulim Green Energy for injection into Gas Malaysia’s Natural Gas Distribution System (NGDS) network. From Gas Malaysia’s perspective, this business venture is part of its long-term sustainable strategy, which is to have an alternative renewable and sustainable source of gas supply.

Biomethane is produced from palm oil mill effluent and upgraded to a specification similar to natural gas available in the NGDS network. For the business undertaking, the biomethane will be upgraded and supplied from Kulim’s palm oil mill located in Sedenak in Kulai district, Johor.

This business arrangement complements the government’s effort to increase the nation’s target of renewable energy (RE) generation to 20% by 2025, as announced recently by Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin. This business arrangement shall also reduce the emission of greenhouse gases, where if the methane is released into the atmosphere, it becomes 25 times more hazardous than carbon dioxide (CO₂) in posing greenhouse effect. Therefore, this

business arrangement should save more than 90,000 metric tonnes of CO2 emission equivalent per annum.

Commenting on the new business arrangement, the GMVP CEO and chairman Ahmad Hashimi Abdul Manap (*picture*) said: “We are delighted to work closely with our business partner, Kulim Green Energy. We firmly believe that the future lies in RE. “As we observe several foreign countries, RE plays an important and growing role in their energy management system and in recent years, certain countries are actively driving the deployment of renewable technologies.”

Meanwhile, Kulim’s ED Zulkifly Zakariah said: “Though Kulim was keen to concentrate on its core plantation business, the group is also focusing on exploring untapped opportunities in relation to environment-friendly and value-adding applications such as palm oil by-product. “The conversion of biogas into biomethane is part of a circular economy and also viewed as a part of Kulim’s long-term commitment to sustainable practices along the entire chain of oil palm plantation business.

“The successful attainment of Sustainable Palm Oil (SPO) certification has enhanced Kulim’s reputation globally with regard to its awareness on environmental issues and has also helped in being the front runner in the global supply chain.” Zulkifly added: “The new business arrangement with Gas Malaysia for commercialisation of biomethane at Sedenak (Palm Oil) Mill is due to it being strategically located within the proximity of Gas Malaysia’s pipelines.

“This business arrangement is also in line with Kulim business direction to continuously identify, evaluate and expand its potential in green business and is expected to contribute positively to the group’s earnings as a new income stream, enabling us to grow on a well-diversified basis.” “As a responsible business entity, we will lay emphasis on the importance of ensuring that we develop in a sustainable manner. This is more pertinent given our role as a total energy solutions provider. True to our mission, we will continue converging sustainability initiatives into our business activities,” Ahmad Hashimi concluded.

Source: <https://themalaysianreserve.com/2019/10/10/gas-malaysia-strengthens-commitment-towards-renewable-energy/>

2.4 France

Paris to receive 409 new biogas buses

Bioenergy News. 8th October 2019



Image credit: IVECO Bus

Two French organisations, the French Public Transport Central Purchasing Office (CATP) and Ile-de-France Mobilités, have ordered 409 biogas buses for the city of Paris. The Urbanway Natural Power buses were ordered from IVECO Bus and will operate in the inner and outer suburbs of the Paris metropolitan area.

According to a report by Transport Engineer, the deal was confirmed at the National Public Transport Exhibition in Nantes and is the first time an order has been placed via a central purchasing office without going through transport operators.

The 12m biogas-powered vehicles will be delivered between 2020 and 2021 and will be equipped with air conditioning, CCTV, USB ports and under-seat LED lighting. Each bus will have a range of 400km.

Source: <https://www.bioenergy-news.com/news/paris-to-receive-409-new-biogas-buses/>

2.5 Belgium

PitPoint opens its first LNG station in Belgium

Lngworldnews.com. 3rd October 2019.



Image courtesy of PitPoint LNG

Together with Total, Dutch company PitPoint has opened its first LNG refueling station for trucks in Belgium. The station is located in Rekkem, near the French border, the company said in its statement.

Together with the previously opened PitPoint LNG stations at logistical hubs in the Netherlands, this location represents a step towards the realization of an international covering LNG network in north-west Europe. The new station will operate 24/7 and is equipped with two LNG pumps and three staging areas for trucks that run on LNG.

Source: https://www.lngworldnews.com/pitpoint-opens-its-first-lng-station-in-belgium/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-lng-world-news-2019-10-04&uid=46966

2.6 France

XPO Logistics expands LNG-fueled truck fleet

Lngworldnews.com. 15th October 2019.



Image courtesy of XPO Logistics

XPO Logistics, a provider of transportation and logistics solutions, has expanded its LNG-fueled fleet with the purchase of 100 Stralis Natural Power Euro VI tractors from IVECO.

The new tractors will be dedicated to the company's less-than-truckload network in France, serving customers in the Greater Lyon and Paris areas and the South West and Northern regions, it said in a statement.

Stralis Natural Power tractors use a combination of liquefied and compressed natural gas (LNG/CNG) to generate lower NOx emissions than the Euro VI standard and reduce noise in densely populated areas.

XPO's investment will expand its natural gas fleet in France to 170 tractors, with more than 20 additional LNG/CNG vehicles operating in the UK, Spain and Portugal.

Source: https://www.lngworldnews.com/xpo-logistics-expands-lng-fueled-truck-fleet/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-lng-world-news-2019-10-16&uid=46966

2.6 Malaysia

Petronas sets up LNG trucking business

Lngworldnews.com. 18th October 2019.

Malaysian energy giant Petronas has launched its LNG trucking business in order to supply liquefied natural gas to off-grid customers in Peninsular Malaysia starting in the second half of 2020.

The company held a ground-breaking ceremony to commemorate the LNG truck loading facilities. The loading facility will initially have four truck loading lanes with the potential for further expansion, Petronas said in its statement.

Currently, Petronas said it is providing solutions to support the gas market growth in Malaysia through the 2,500 km Peninsular Gas Utilisation (PGU) pipeline network and the RGT in Pengerang, Johor, as well as in Sungai Udang, Melaka.

Ezran Mahadzir, CEO of Petronas Energy & Gas Trading said that the transporting of LNG via trucks can also be the model to facilitate gas conversions for industries.

LNG sourced from the Pengerang regasification terminal (RGT) is set to be transported via trucks to off-grid customers located away from the main pipeline, as well as to small-scale customers.

Source: https://www.lngworldnews.com/petronas-sets-up-lng-trucking-business/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-lng-world-news-2019-10-21&uid=46966

3.0 ANGVA related / participated events

- i. 12th Regional Environmentally Sustainable Transport (EST) Forum in Asia, 28th – 31st October 2019, Hanoi, Vietnam. Co-organised by Government of Vietnam, Ministry of the Environment of the Government of Japan (MOE-Japan), and the United Nations Centre for Regional Development's Division for Sustainable Development Goals/ UN DESA. The Forum theme is "*Achieving Smart and Resilient Cities through Low Carbon and Intelligent Transport System*". ANGVA is participating as delegate. More information on this Forum can be viewed at: <http://www.uncrd.or.jp/index.php?menu=384>
- ii. ANGVA 2019, the 8th ANGVA International Biennial Conference & Exhibition. Jakarta, Indonesia. 25th – 27th Nov 2019. Theme: *Moving Towards Low Carbon, Low Emission, Next Generation Vehicles*. This event is taking place at the Tribata Convention Center and hosted by ANGVA and Indonesian CNG Association (APCNGI). ANGVA 2019 will be co-located with the 8th Biogas Asia Pacific Forum and Exhibition and Electric Vehicles Indonesia Forum and Exhibition.



Registration for ANGVA 2019 is now opened at www.angva2019.com

4.0 End

Any comments and suggestions on the topics and information covered and to be covered in future are most welcome. Please send your comments and suggestions to Lee Giok Seng at email: leegs@angva.org