Institute for Energy Economics and Financial Analysis

Data Dive - A Breakdown of Gas and LNG Demand in Asia

References, Methodology, and Notes

For the purposes of this report, "Asia" refers to Bangladesh, China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. Other countries are excluded due to a lack of sufficient publicly available annual data. However, the included markets cover a large majority of gas demand in Northeast, Southeast, and South Asia.

The report relies primarily on government data sources but also includes references to other information providers when necessary, such as the Expert Group on Energy Data and Analysis (EGEDA) for Asia-Pacific Economic Cooperation (APEC) members.

Section 1 of this document provides data sources for sectoral natural gas demand and explains the Institute for Energy Economics and Financial Analysis (IEEFA) subsector groupings used in the report.

Section 2 provides the methodologies and sources used for Charts 1–11 in the report.

Section 3 provides a table of unit conversions used in the report.

1. Data References For Sectoral Natural Gas Demand

The following sources were used for each country surveyed. The notes below each source primarily explain IEEFA's methodology for sectoral categorizations used in Chart 3: *Country-level Natural Gas Consumption by Sector.*

Bangladesh: Bangladesh Hydrocarbon Unit, Energy and Mineral Resources Division. Annual Report on Gas Production, Distribution and Consumption 2023-24. Date accessed: 21 August 2025.

Bangladesh Oil, Gas and Mineral Corporation (Petrobangla). Annual Reports. Date accessed: 21 August 2025.

- The data provided refers to fiscal years. "Other industry" includes tea estate and industry categories. Power consists of both power and captive categories. Transport includes compressed natural gas (CNG).

China: National Bureau of Statistics (NBS). Total Natural Gas Consumption by Industry. Date accessed: 21 August 2025; NBS. 2025 China Statistical Yearbook (hardcover). 2025.

- NBS data obtained online for years 2015 to 2022, while 2023 data is obtained from a hardcopy version of the 2025 China Statistical Yearbook.

- NBS data does not include Taiwan, Hong Kong, or Macau.
- NBS does not distinguish fertilizer sector gas demand from chemical manufacturing.
- The "fertilizers/chemicals" category includes the following subsectors provided by NBS: chemical raw materials and chemical products, pharmaceuticals, chemical fibers, and rubber and plastic products.
- "Iron & steel" consists of smelting and pressing of ferrous and non-ferrous metals.
- "Non-metallic minerals" include cement, glass, ceramics, and other products made from non-metallic mineral sources.

Hong Kong: EGEDA. Energy Balance Tables. Date accessed: 21 August 2025.

EGEDA data was used because Hong Kong's Census and Statistics Department only provides final gas consumption in industrial, commercial, and residential segments, without providing the power sector transformation of gas.

- "Power" gas demand includes use by both main activity producers and autoproducers listed by EGEDA.

India: Petroleum Planning & Analysis Cell (PPAC). Sectoral Consumption. Date accessed: 21 August 2025.

- The data provided refers to fiscal years minus one (e.g. FY2016 refers to 2015 in charts throughout IEEFA's report). This is because India's fiscal year runs from 01 April to 31 March of the following year.

City gas distribution (CGD) data is divided into residential, commercial, transport, and industrial categories using several of PPAC's Oil & Gas Ready Reckoner reports. These are based on annual breakdowns for 2022 to 2025 and a six-month breakdown for 2021. A breakdown of shares is estimated for the period 2015 to 2021. Commercial and residential shares are assumed to remain constant at 2022 levels (as they have been relatively stable from 2021 to 2025). The historical share trends of transport and industry are assumed to continue back to 2015, consistent with the International Energy Agency' (IEA) transport demand data here.

- "Other industry" includes the following subsectors provided in PPAC data: industrial consumption, agriculture (tea plantations), manufacturing, other small industries (glass, ceramics, etc.), and the share of CGD attributable to small industries. "Others" refers to pipeline losses and liquefied petroleum gas (LPG) shrinkage.

Indonesia: Ministry of Energy and Mineral Resources (MEMR). Handbook of Energy & Economic Statistics of Indonesia (HEESI). Date accessed: 21 August 2025.

- The residential, commercial, and transportation sectors were calculated using a relative share of total city gas sales, rather than on absolute figures from the source. 2024 splits were calculated using the average share of residential, commercial, and transport subsectors in total city gas sales from 2015 to 2023.
- "Others" includes gas fuel, lifting, LNG domestic, and LPG domestic subcategories from the source.
- HEESI categories for pipeline gas exports and LNG exports are excluded from domestic consumption figures.

Japan: Agency for Natural Resources and Energy (ANRE), Ministry of Energy, Trade, and Industry (METI). Aggregate or Estimated Results (General Energy Statistics). Date accessed: 21 August 2025.

- "Power" comprises energy used for both power and heat.
- "Iron and steel" includes non-ferrous metals.
- "Others" includes energy industry own use and losses.

Malaysia: EGEDA. Energy Balance Tables. Date accessed: 21 August 2025.

- EGEDA data was used in the absence of official government data.
- "Power" gas demand includes use by both main activity producers and autoproducers listed by EGEDA.
- "Petrochemicals" includes chemical use and non-energy use.

Pakistan: Finance Division, Government of Pakistan. Pakistan Economic Survey, Energy. Date accessed: 21 August 2025.

- The data provided refers to fiscal years.
- Volumes withheld by Sui Southern Gas Company (SSGC) are excluded from demand.

The Philippines: Department of Energy. Natural Gas Production and Consumption as of September 23, 2024. Data accessed: 21 August 2025.

- Banked gas data provided by the Department of Energy is included in the demand for power and industry.

Singapore: Energy Market Authority. Singapore Energy Statistics 2024, Chapter 4: Energy Balance. Date accessed: 06 November 2025.

- Industrial demand includes other transformations, others, and industrial-related uses.

South Korea: Korea Energy Statistics Information System (KESIS). National Energy Supply and Demand Statistics. Date accessed: 21 August 2025.

- "Industry" includes the following KESIS subcategories: non-specified transformation, agriculture/forestry, mining and quarrying, construction, and manufacturing (except chemical and petrochemical, iron and steel, non-metallic minerals, and non-ferrous metals).
- "Others" includes transformation own use and losses provided by KESIS.
- "Power" includes electricity-only plants, clean heat and power (CHP) plants, and heat-only plants.
- The total of all sectoral demand data provided by KESIS exceeds total primary energy demand but remains within a margin of error of 0.6% or less for every year of the survey.

Taiwan: Energy Administration, Ministry of Economic Affairs. Annual Energy Report (Energy Balance). Date accessed: 21 August 2025.

- "Power" includes the following subcategories provided in the source: public electricity plants, autoproducer electricity plants, public cogeneration plants, autoproducer cogeneration plants, and energy sector own use of electricity plants and cogeneration plants.

- "Refineries" includes energy sector own use attributable to refineries.
- "Chemicals/fertilizers" includes chemical material and fertilizers, medical and other chemical products, rubber products, and plastic products.
- "Iron & steel and aluminum" includes basic metals.
- "Other industrial" comprises the remaining industrial subsectors provided in the source, energy sector own use by gas companies, and the agriculture sector.

Thailand: Energy Policy and Planning Office (EPPO), Ministry of Energy. Natural Gas Statistics. Date accessed: 21 August 2025.

EGEDA's Energy Balance Tables were used to allocate EPPO industry and gas separation plant (GSP) data across industrial subsectors and commercial sectors. Since EGEDA data is available until 2022, an average share from 2018 to 2022 is used to assign EPPO data for 2023 and 2024.

"Other industries" includes the following categories provided by EGEDA: non-specified transformation; machinery; food, beverages, and tobacco; pulp, paper, and printing; wood and wood products; textiles and leather; and non-specified industry.

- "Others" includes own use.

Vietnam: EGEDA. Energy Balance Tables. Date accessed: 21 August 2025.

- EGEDA data was used in the absence of official government data.
- "Power" gas demand includes use by both main activity producers and autoproducers listed by EGEDA.
- "Other industries" includes the following categories provided by EGEDA: non-specified transformation; machinery; food, beverages, and tobacco; pulp, paper, and printing; wood and wood products; textiles and leather; and non-specified industry.
- "Others" includes own use.

2. Chart Methodologies and Sources

Chart 1: Overall Natural Gas Demand Growth by Country

This chart shows growth between 2015 and 2023 based on available government data (from the above citations), converted to energy equivalent units by IEEFA. China's 2015 demand figures are derived from NBS, while 2023 figures are from China's 2025 Statistical Yearbook. Official data for 2023 was not available in Hong Kong or Malaysia, so estimates were derived from the Energy Institute's Statistical Review of World Energy for that year. Data from India, Bangladesh, Pakistan, and Japan refers to fiscal years.

Chart 2: Natural Gas Demand by Sector

This chart reflects gas demand in the most recent year available, which is:

- 2022: Hong Kong and Vietnam
- 2023: Bangladesh, China, Indonesia, Japan, and the Philippines

- 2024: Pakistan, Singapore, South Korea, Taiwan and Thailand
- 2025: India

Industrial demand includes all gas use that is not classified into the other categories. This includes industrial uses, energy industry own use, and agricultural activities.

Where possible, residential and commercial energy use are aggregated into one sector. However, commercial data may include some industrial energy use, such as data centers or light manufacturing.

Power may include heat and cogeneration.

Chart 3: Country-level Natural Gas Demand by Sector

IEEFA categorizations for the various sectors in this chart are detailed in the above list of citations for each country.

Chart 4: Natural Gas Demand Growth by Sector

While 2015 is the base year for all countries in this chart, the end year relies on each country's most recently available data (detailed above). As a result, the timeframes for growth vary according to data availability. Therefore, conclusions from this chart illustrate growth in various countries rather than present exact comparisons over a single timeframe.

Chart 5: Domestic Gas Production in Asian Countries

Sources for national production data include:

Bangladesh: Petrobangla. Annual Reports. Date accessed: 21 August 2025.

China: NBS. Output of Natural Gas. Date accessed: 21 August 2025.

Hong Kong: EGEDA. Joint Organisations Data Initiative --- Extended Monthly Gas Data Collection in APEC Region. Date accessed: 21 August 2025.

India: PPAC. Gross/Net Production in India. Date accessed: 21 August 2025.

- IEEFA used gross production, which includes flared and lost gas, rather than net production.

Indonesia: MEMR. HEESI. Date accessed: 21 August 2025.

- IEEFA used gross production, which includes flared and lost gas, rather than net production.

Japan: ANRE. General Energy Statistics. Date accessed: 21 August 2025.

Malaysia: EGEDA. Joint Organisations Data Initiative --- Extended Monthly Gas Data Collection in APEC Region. Date accessed: 21 August 2025.

Pakistan: Finance Division, Government of Pakistan. Pakistan Economic Survey, Energy. Date accessed: 21 August 2025.

The Philippines: Department of Energy. Natural Gas Production and Consumption as of September 23, 2024. Date accessed: 21 August 2025.

Singapore: Energy Market Authority. Singapore Energy Statistics 2024, Chapter 1: Energy Supply. Date accessed: 21 August 2025.

South Korea: KESIS. National Energy Supply and Demand Statistics. Date accessed: 21 August 2025.

Taiwan: Energy Administration, Ministry of Economic Affairs. Annual Energy Report (Energy Balance). Date accessed: 21 August 2025.

Thailand: EPPO. Natural Gas Statistics. Date accessed: 21 August 2025.Vietnam: Energy Institute. Statistical Review of World Energy. 2025.

Chart 6: Proven Natural Gas Reserves in Select Asian Economies

Source: Energy Institute. Statistical Review of World Energy. 2025.

Chart 7: LNG Imports by Supply Country

Source: Kpler.

Note: Data reflects shipments that have been discharged in importing countries, but volumes may be re-exported rather than consumed domestically.

Chart 8: Value of LNG Imports by Country

This section primarily relies on government customs data and United Nations (UN) Comtrade data. Indonesia, Hong Kong, and Vietnam were not included in this chart due to data limitations. For primary source values not denominated in United States (US) dollars, average annual exchange rates were used to convert from local currency denominations. Sources for each country include:

Bangladesh: Petrobangla. Annual Reports. Date accessed: 21 August 2025.

China: General Administration of Customs of the People's Republic of China. Customs Statistics. Date accessed: 21 August 2025.

India: PPAC. LNG Imports. Date accessed: 21 August 2025.

Japan: Ministry of Finance. Trade Statistics of Japan. Date accessed: 21 August 2025.

Malaysia: Malaysia External Trade Statistics (METS). Classification. Date accessed: 21 August 2025.

Pakistan: HDIP. Pakistan Energy Yearbook 2023-24. Date accessed: 21 August 2025.

Philippines: Philippine Statistics Authority. OpenSTAT. Date accessed: 21 August 2025.

Singapore: UN Comtrade. UN Comtrade Database. Date accessed: 21 August 2025.

South Korea: KESIS. Monthly Energy Statistics. Date accessed: 21 August 2025.

Taiwan: International Trade Administration. Trade Statistics. Date accessed: 21 August 2025.

Thailand: EPPO. Natural Gas Statistics. Date accessed: 21 August 2025.

Chart 9: Average LNG Import Costs in Select Markets

IEEFA calculated monthly average LNG prices based on available data for Japan, India, the Philippines, and South Korea. For all other countries, prices shown the chart represent average annual values.

Bangladesh: Average annual prices calculated by IEEFA based on:

- Total annual LNG import costs and volumes from: Petrobangla. Annual Reports. Date accessed: 21 August 2025.
- Average annual exchange rates calculated by IEEFA from: Exchange-Rates.org. US Dollar (USD) To Bangladeshi Taka (BDT) Exchange Rate History. Date accessed: 21 August 2025.

China: Average annual prices calculated by IEEFA based on:

- Total annual LNG imports from: Energy Institute. Statistical Review of World Energy. 2025.
- General Administration of Customs of the People's Republic of China. Customs Statistics. Date accessed: 21 August 2025.

India: IEEFA calculations based on monthly LNG import volumes and values provided by PPAC.

Japan: Monthly average LNG import costs provided by: Japan Organization for Metals and Energy Security (JOGMEC). Trend of Natural Gas and LNG Prices. Date accessed: 21 August 2025.

Malaysia: IEEFA calculations based on:

- Annual LNG import volumes provided by: EGEDA. Energy Balance Tables. Date accessed: 21 August 2025.
- Malaysia. Malaysia External Trade Statistics (METS). Classification. Date accessed: 21 August 2025.
- Annual LNG values converted to USD using annual exchange rates provided by: Sauder School of Business. Pacific Exchange Rate Service. Date accessed: 21 August 2025.

The Philippines: IEEFA calculations based on:

- Monthly LNG values (cost, insurance, and freight) and volumes provided by: Philippine Statistics Authority. OpenSTAT. Date accessed: 21 August 2025.

South Korea: Monthly LNG import volumes and values provided by: KESIS. Monthly Energy Statistics. Date accessed: 21 August 2025.

Taiwan: IEEFA calculations based on:

- Annual LNG import volumes provided by: Energy Administration, Ministry of Economic Affairs. Annual Energy Report (Energy Balance). Date accessed: 21 August 2025.
- Average LNG import values provided by: International Trade Administration. Trade Statistics. Date accessed: 21 August 2025.

Thailand: IEEFA calculations based on:

- Annual LNG import volumes provided by: EPPO. Natural Gas Statistics. Date accessed: 21 August 2025.
- Annual LNG import value provided by: EPPO. Value Energy Statistics. Date accessed: 21 August 2025.

Annual LNG values converted to US$ using annual exchange rates provided by: Sauder School of Business. Pacific Exchange Rate Service. Date accessed: 21 August 2025.

Japan-Korea Marker prices provided by: Investing.com. LNG Japan/Korea Market PLATTS. Date accessed: 21 August 2025.

Chart 10: Cost of Gas Supplies in Thailand

Source: EPPO. Price Pool. Date accessed: 06 November 2025.

The Gulf of Thailand price represents the average cost of gas supply from offshore production, including the joint development area. The Pool Price, determined by the Pool Manager, reflects a weighted average cost of domestic production, pipeline imports from Myanmar, and imported LNG, including transportation and infrastructure costs. The pool price formula and its application for various end-use sectors are subject to change.

Chart 11: Electricity Generation from Select Technologies in Asian Markets

The following source was used for China, Hong Kong, Indonesia, Japan, Malaysia, Pakistan, Singapore, and South Korea:

- Source: Ember. Electricity Data Explorer. Date accessed: 21 August 2025.
- 2024 data was not available for Indonesia and Hong Kong.
- Ember data used here does not include net imports.

Sources used for Bangladesh, India, the Philippines, Taiwan, and Thailand are as follows:

Bangladesh Power Development Board (BPDB). Annual Reports. Date accessed: 04 September 2025.

NITI Aayog (India). Source-wise Electricity Generation Trends. Date accessed: 04 September 2025.

- "Non-hydro renewables" includes solar, wind, small hydro, and biopower.
- NITI Aayog data does not reflect electricity imports.

National Grid Corporation of the Philippines (NGCP). Operations. Date accessed: 03 September 2025.

- In 2015, solar and wind data are reported together as "Renewable (Wind/Solar)." Ember is used as a source for wind generation in this year and the remaining generation reported by NGCP is allocated to solar.
- "Other fossil" includes both "Diesel" and "Thermal" categories.
- "Biomass" includes both "Bio-gas" and "Renewable (Biomass)."
- "Gas" includes "Gas Turbine," "Combined Cycle / Natural Gas," and "Natural Gas."

Energy Administration, Ministry of Economic Affairs. Monthly Energy Statistics. Date accessed: 03 September 2025.

"Bioenergy" includes generation from "biomass" and "waste".

EPPO (Thailand). Electricity Statistics. Date accessed: 04 September 2025.

3. Energy Conversions

Unit	Equivalent to	Unit
1 billion cubic metres (bcm)	35.315	billion cubic feet (bcf)
1 billion cubic metres (bcm)	36.000	Petajoules (PJ)
1 billion cubic metres (bcm)	0.860	Million tonnes of oil equivalent (Mtoe)
1 billion cubic metres (bcm)	0.735	Million tonnes of LNG (Mt LNG)
1 billion cubic metres (bcm)	37.313	Trillion British thermal units (one million MMBtu)
1 billion cubic metres (bcm)	5.882	Million barrels of oil equivalent (Mboe)

Source: BP. Approximate conversion factors. Date accessed: 21 August 2025.