

Monthly Gas Data Service (MGDS)

January 2023 Edition

Database documentation

International
Energy Agency

INTERNATIONAL ENERGY AGENCY

The IEA examines the full spectrum of energy issues including oil, gas and coal supply and demand, renewable energy technologies, electricity markets, energy efficiency, access to energy, demand side management and much more. Through its work, the IEA advocates policies that will enhance the reliability, affordability and sustainability of energy in its 31 member countries, 11 association countries and beyond.

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Source: IEA.
International Energy
Agency Website:
www.iea.org

IEA member countries:

Australia
Austria
Belgium
Canada
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Japan
Korea
Lithuania
Luxembourg
Mexico
Netherlands
New Zealand
Norway
Poland
Portugal
Slovak republic
Spain
Sweden
Switzerland
Republic of Türkiye
United Kingdom
United States

The European Commission also participates in the work of the IEA

IEA association countries:

Brazil
China
India
Indonesia
Morocco
Singapore
South Africa
Thailand
Ukraine



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1. Overview

The International Energy Agency (IEA) collects and analyses monthly gas data. The main source of the data is the Monthly Oil and Gas Questionnaire (MOS). MOS is a monthly survey covering OECD countries for which national administrations submit data to the IEA Secretariat. Data are collected on an M-2 basis, the so-called MOS month. The part of the questionnaire related to natural gas data can be seen here: https://iea.blob.core.windows.net/assets/47934e51-c289-472f-8d84-ab3a524a91f2/MOS_JODI_Gas.xlsm

Data are checked and assessed every month by the IEA Secretariat before being published (see publishing schedule here: <https://www.iea.org/data-and-statistics/data-product/monthly-gas-data-service-2#schedule>)

Data are available on <http://wds.iea.org> as Beyond 2020 (B2020) files. B2020 is a browser to view multi-dimensional datasets (<https://www.beyond2020.com/media/downloads/IEA/ProBrowser71.zip>)

The following table provides an overview of the different files available as part of the IEA Monthly Gas Data Service.

B2020 file	Content
ngbalf.ivt	Natural Gas Balance Natural gas balances for OECD countries (all balance items in million cubic meters and terajoules) Monthly data from 2005 onwards Historical data from 1984 to 2004 with same granularity: ngbalh.ivt
ngimpf.ivt	Natural Gas Imports Imports data by trading country for OECD countries (in million cubic meters and terajoules) Monthly data from 2005 onwards Historical data from 1984 to 2004 with same granularity: ngimph.ivt
ngexpf.ivt	Natural Gas Exports Exports data by trading country for OECD countries (in million cubic meters and terajoules) Monthly data from 2005 onwards Historical data from 1984 to 2004 with same granularity: ngexph.ivt
Ingimpf.ivt	Liquefied Natural Gas Imports Imports data by trading country for liquefied natural gas for OECD countries (in million cubic meters and terajoules) Monthly data from 2002 onwards
Ingexpf.ivt	Liquefied Natural Gas Exports Exports data by trading country for liquefied natural gas for OECD countries (in million cubic meters and terajoules) Monthly data from 2002 onwards

2. Natural Gas Balance

The Natural Gas Balance consists of two files: the Natural Gas Balance (ngbalf.ivt) and the Natural Gas Balance Historical (ngbalh.ivt).

Structure

This dataset contains monthly balances for natural gas for OECD countries from 2005 onwards in million cubic meters and terajoules for all flows.

Historical data from 1984 to 2004 are available with the same dimensions in ngbalh.ivt.

Sources

Data published as part of the service is collected by the IEA through the Monthly Oil and Gas Questionnaire from OECD member countries.

Dimensions

Time

The data set contains monthly data from January 2005 to the current MOS month.

Product

Natural gas comprises gases, occurring naturally in underground deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both "non-associated" gas originating from fields producing hydrocarbons only in gaseous form, and "associated" gas produced in association with crude oil as well as methane recovered from coal mines (colliery gas and shale gas). Manufactured gas (produced from municipal or industrial waste, or sewage) and quantities vented or flared should not be included.

Units

Natural Gas	Short name	Definition
Natural gas (Million cubic meters)	NATGASCM	Volumetric unit measured at standard conditions, i.e. 15°C and 760 mm Hg.
Natural gas (Terajoules)	NGASTJOU	Energy unit: 1 Terajoule = 10 ¹² Joules

Balance

Balance	Short name	Definition
Indigenous production	INDPROD	Dry marketable production within national boundaries, including offshore production. Production is measured after purification and extraction of NGL and sulphur. Production includes quantities used within the natural gas industry, in gas extraction, pipeline systems and processing plants. It also includes receipts from other sources, i.e. supplies of fuel of which production is covered in other fuel energy balances, but which are blended with natural gas, and consumed as a blend. Production does not include quantities reinjected, manufactured gas (produced from municipal or industrial waste, or sewage) extraction losses and quantities vented or flared.
Total imports (entries)	TOTIMPSB	Amounts are considered as imported (entries) or exported (exits) when they have physically crossed the national boundaries of the country, whether customs clearance has taken place or not. From January 2011 data onwards, this category includes transits; transit volumes are included as imports and exports. This definition differs from the annual data of natural gas trade published by the IEA, which reflects imports by country of origin and exports by country of final destination, excluding any transits. It includes imports of natural gas by pipeline, liquefied natural gas and compressed natural gas.
Memo: Imports (entries) of liquefied natural gas	TOTIMPST	Imports of liquefied natural gas cover only the dry marketable equivalent, including amounts used as own consumption in the regasification process (always on a re-gasified equivalent basis).
Total exports (exits)	TOTEXPSB	Amounts are considered as imported (entries) or exported (exits) when they have physically crossed the national boundaries of the country, whether customs clearance has taken place or not. From January 2011 data onwards, this category includes transits; transit volumes are included as imports and exports. Please note that this definition differs from the annual data of natural gas trade published by the IEA, which reflects imports by country of origin and exports by country of final destination, excluding any transits. It includes exports of natural gas by pipeline, liquefied natural gas and compressed natural gas.
Memo: Exports (exits) of liquefied natural gas	TOTEXPST	It includes exports of liquefied natural gas (always on a re-gasified equivalent basis)
Stock change (national territory)	STCHANAT	Stock changes reflect the difference between the closing stock level and the opening stock level on national territory. Stock changes include additions to and withdrawals from LNG storage. A stock build is shown as a positive number while a stock draw is shown as a negative number. This definition differs from the annual data of natural gas trade published by the IEA, for which stock changes reflect the difference between opening and closing stock levels, i.e. the mathematical signs for stock build and stock draws are reverse to monthly data.

Balance	Short name	Definition
Gross inland deliveries (calculated)	GDINCTRC	Calculated gross inland deliveries are defined as: Gross inland deliveries (calculated) = Indigenous production + Total imports (Entries) – Total exports (Exits) - Stock change
Statistical difference	STATDIFF	The statistical difference reflects the difference between calculated and observed gross inland deliveries.
Gross inland deliveries (observed)	GDINCTRO	Observed gross inland deliveries represent deliveries of marketable gas to the inland market, including gas used by the gas industry for heating and operation of its equipment (i.e. consumption in gas extraction, in the pipeline system and in processing plants). Observed gross inland deliveries also include any losses in distribution.
Gross inland deliveries adjustment for the Medium Term Gas Market Report	GMRADJ	The gross inland deliveries adjustment represents the difference in information on observed gross inland deliveries between annual and monthly IEA data for any particular year. The adjustment makes the yearly 12 months total of monthly data consistent with separately collected annual data. The adjustment is incorporated in the gross inland deliveries aggregates shown in the Medium Term Gas Market Report.
Adjusted gross inland deliveries as defined in the Medium Term Gas Market Report	GDINCTROAD	The adjusted gross inland deliveries as defined in the Medium Term Gas Market Report are the sum of the observed gross inland deliveries observed and the gross inland deliveries adjustment.
Own use and losses	OWNUSE	This category covers own use by the gas industry for heating and operation of its equipment (i.e. consumption in gas extraction, in the pipeline system and in processing plants). It also includes any losses occurring in the distribution system. Natural gas consumed as fuel at gas liquefaction and regasification plants should be included in this category.
Deliveries to electricity and heat generation	DELPOWER	Deliveries to power generation cover the amounts of natural gas delivered to main activity producers of electricity, heat plants as well as combined heat and power plants. For some OECD countries, information for deliveries to power generation is not available. Therefore, regional subtotals for this flow are not presented.
Opening stock level - national territory	OSNATTER	Opening stock levels cover the amount of stocks held on national territory independent of ownership (including government controlled stocks and stocks held for other countries), as of the first day of the month. Stock levels include all amounts of natural gas stored in special storage facilities (depleted gas and/or oil field, aquifer, salt cavity, mixed caverns or other) as well as liquefied natural gas storage. Amounts of cushion gas are not included.
Closing stock level - national territory	CSNATTER	Closing stock levels cover the amount of stocks held on national territory independent of ownership (including government controlled stocks and stocks held for other countries), as of the last day of the month. Stock levels include all amounts of natural gas stored in special storage facilities (depleted gas and/or oil field, aquifer, salt cavity, mixed caverns or other) as well as liquefied natural gas storage. Amounts of cushion gas are not included.

Countries

Country	Short name	Definition
OECD Total	OECDTOT	Includes Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.
OECD Americas	OECDAME	Includes Canada, Chile, Mexico and the United States.
OECD Asia Oceania	OECDAOC	Includes Australia, Israel, Japan, Korea and New Zealand.
OECD Europe	OECD EUR	Includes Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.
Australia	AUSTRALI	Australia excludes the overseas territories.
Austria	AUSTRIA	
Belgium	BELGIUM	
Canada	CANADA	
Chile	CHILE	
Czech Republic	CZECH	
Denmark	DENMARK	Denmark excludes the Danish Faroes and Greenland.
Estonia	ESTONIA	
Finland	FINLAND	
France	FRANCE	France includes Monaco and excludes the overseas territories Guadeloupe, Martinique, French Guyana, Reunion, St.-Pierre and Miquelon, New Caledonia, French Polynesia, Wallis and Futuna, and Mayotte. Following a methodological change in the French statistics coverage, data from January 2017 includes the overseas departments (French Guiana, Guadeloupe, Martinique, Mayotte and Reunion).
Germany	GERMANY	
Greece	GREECE	
Hungary	HUNGARY	
Iceland	ICELAND	
Ireland	IRELAND	

Country	Short name	Definition
Israel ¹	ISRAEL	
Italy	ITALY	Italy includes San Marino and the Vatican.
Japan	JAPAN	Japan includes Okinawa.
Korea	KOREA	
Latvia	LATVIA	
Lithuania	LITHUANIA	
Luxembourg	LUXEMBOU	
Mexico	MEXICO	
Netherlands	NETHLAND	The Netherlands exclude Suriname and the Netherlands Antilles.
New Zealand	NZ	
Norway	NORWAY	
Poland	POLAND	
Portugal	PORTUGAL	Portugal includes the Azores and Madeira.
Slovak Republic	SLOVAKIA	
Slovenia	SLOVENIA	
Spain	SPAIN	Spain includes the Canary Islands, the Balearic Islands, and Ceuta and Melilla.
Sweden	SWEDEN	
Switzerland	SWITLAND	Switzerland includes Liechtenstein.
Turkey	TURKEY	
United Kingdom	UK	
United States	USA	The United States includes the 50 States, District of Columbia, Puerto Rico, Guam, the US Virgin Islands and the Hawaiian Foreign Trade Zone.

1. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

3. Natural Gas Trade

Trade datasets contain detailed information on trade between OECD countries as well as trade between OECD countries and the rest of the world. There are two files in this package with identical detail (except for differences in the country lists). Monthly data of natural gas trade is published in six separate files: Natural Gas Imports (ngimpf.ivt), Natural Gas Exports (ngexpf.ivt), Liquefied Natural Gas Imports (lngimpf.ivt), Liquefied Natural Gas Exports (lngexpf.ivt) as well as Natural Gas Imports Historical (ngimph.ivt) and Natural Gas Exports Historical (ngexph.ivt)

Structure

The datasets on imports and exports contain monthly trade data for natural gas for OECD countries in million cubic meters and terajoules. Data for natural gas imports and exports (including amounts of LNG) is published from 2005 onwards. Data for LNG imports and exports is also published separately from 2002 onwards. Historical data for natural gas imports and exports from 1984 to 2004 are available with the same dimensions in ngimph.ivt and ngexph.ivt.

Amounts are considered as imported (entries) or exported (exits) when they have physically crossed the national boundaries of the country, whether customs clearance has taken place or not. From January 2011 data onwards, this category includes transits; transit volumes are included as imports and exports. Please note that this definition differs from the annual data of natural gas trade published by the IEA, which reflects imports by country of origin and exports by country of final destination, excluding any transits.

Sources

Data published as part of the service is collected by the IEA through the Monthly Oil and Gas Questionnaire from OECD member countries.

Dimensions

Time

Data for natural gas imports and exports contains monthly data from January 2005 to the current MOS month. Historical data for natural gas imports and exports contains monthly data from January 1984 to December 2004. Data for liquefied natural gas imports and exports contains monthly data from January 2002 to the current MOS month.

Products

Natural gas comprises gases, occurring naturally in underground deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both "non-associated" gas originating from fields producing hydrocarbons only in gaseous form, and "associated" gas produced in association with crude oil as well as methane recovered from coal mines (colliery gas and shale gas). Manufactured

gas (produced from municipal or industrial waste, or sewage) and quantities vented or flared should not be included.

Liquefied natural gas (LNG) is natural gas which has been cooled to a temperature of about -160°C at which it becomes a liquid at atmospheric pressure. The volume of LNG occupies around 1/600th of its original volume in a gaseous state.

Units

Natural Gas Trade:

Product	Short name	Definition
Natural gas (Million cubic meters)	NATGASCM	Volumetric unit measured at standard conditions, i.e. 15°C and 760 mm Hg
Natural gas (Terajoules)	NGASTJOU	Energy unit: 1 Terajoule = 10 ¹² Joules

Liquefied Natural Gas Trade:

Product	Short name	Definition
Liquefied natural gas (Million cubic meters)	LNGCM	Volumetric unit measured at standard conditions, i.e. 15°C and 760 mm Hg (always on a re-gasified equivalent basis)
Liquefied natural gas (Terajoules)	LNGTJ	Energy unit: 1 Terajoule = 10 ¹² Joules

Countries

OECD countries (see the list of countries under Natural Gas Balance for a list of long and short names as well as definitions for OECD countries).

Imports and Exports

Country	Short name	Imports / Exports	Definition
Australia	AUSTRALI	Both	
Austria	AUSTRIA	Both	
Belgium	BELGIUM	Both	
Canada	CANADA	Both	
Chile	CHILE	Both	
Czech Republic	CZECH	Both	

Country	Short name	Imports / Ex-ports	Definition
Denmark	DENMARK	Both	
Estonia	ESTONIA	Both	
Finland	FINLAND	Both	
France	FRANCE	Both	
Germany	GERMANY	Both	
Greece	GREECE	Both	
Hungary	HUNGARY	Both	
Iceland	ICELAND	Both	
Ireland	IRELAND	Both	
Israel	ISRAEL	Both	
Italy	ITALY	Both	
Japan	JAPAN	Both	
Korea	KOREA	Both	
Latvia	LATVIA	Both	
Lithuania	LITHUANIA	Both	
Luxembourg	LUXEMBOU	Both	
Mexico	MEXICO	Both	
Netherlands	NETHLAND	Both	
New Zealand	NZ	Both	
Norway	NORWAY	Both	
Poland	POLAND	Both	
Portugal	PORTUGAL	Both	
Slovak Republic	SLOVAKIA	Both	
Slovenia	SLOVENIA	Both	
Spain	SPAIN	Both	
Sweden	SWEDEN	Both	
Switzerland	SWITLAND	Both	
Turkey	TURKEY	Both	
United Kingdom	UK	Both	
United States	USA	Both	

Country	Short name	Imports / Exports	Definition
Total OECD	TOTOECD	Both	Includes Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.
Algeria	ALGERIA	IMPORTS	
Brunei Darussalam	BRUNEI	IMPORTS	
Bulgaria	BULGARIA	EXPORTS	
Egypt	EGYPT	IMPORTS	
Indonesia	INDONESIA	IMPORTS	
Iran	IRAN	IMPORTS	
Iraq	IRAQ	IMPORTS	
Libya	LIBYA	IMPORTS	
Malaysia	MALAYSIA	IMPORTS	
Morocco	MOROCCO	IMPORTS	
Nigeria	NIGERIA	IMPORTS	
Oman	OMAN	IMPORTS	
Peru	PERU	IMPORTS	
Qatar	QATAR	IMPORTS	
Romania	ROMANIA	EXPORTS	
Trinidad and Tobago	TRINIDAD	IMPORTS	
Tunisia	TUNISIA	IMPORTS	
Total Former Soviet Union	FSU	Both	Former Soviet Union does not include Estonian or Latvian data. Estonian, Latvian and Lithuanian data are available as a part of the OECD total.
Belarus	BELARUS	Both	
Georgia	GEORGIA	IMPORTS	
Kazakhstan	KAZAKHSTAN	IMPORTS	
Republic of Moldova	MOLDOVA	EXPORTS	

Country	Short name	Imports / Exports	Definition
Russian Federation	RUSSIA	Both	
Ukraine	UKRAINE	Both	
Other Former USSR	OTHFUSSR	IMPORTS	Includes Armenia, Azerbaijan, Lithuania, the Republic of Moldova and non-specified former FSU.
Other Former USSR	OTHFUSSR	EXPORTS	Includes Armenia and non-specified former FSU.
United Arab Emirates	UAE	IMPORTS	
Bosnia and Herzegovina	BOSNIAHERZ	EXPORTS	
Croatia	CROATIA	EXPORTS	
North Macedonia	NORTHMACED	EXPORTS	
Montenegro	MONTENEGRO	EXPORTS	
Serbia	SERBIA	EXPORTS	
Other Former Yugoslavia (if no detail)	FORMERYUGO	EXPORTS	
Other Asia and Pacific	OTHERASIA	IMPORTS	Bangladesh, Cambodia, China, Fiji, Kiribati, Macao, Maldives, Myanmar (Burma), Nauru, North Korea, Pakistan, Palau, Philippines, Solomon Islands, Sri Lanka, Chinese Taipei, Thailand, Tonga, Tuvalu, Vanuatu
Not elsewhere specified	NONSPEC	Both	Includes non-specified origins.
Total exports	TOTEXPST	EXPORTS	
Total imports	TOTIMPST	IMPORTS	

4. Units and conversions

Selected Conversion Factors from Mass or Volume to Heat (Gross Calorific Value)

To	Norway		Netherlands		Russia		Algeria		Qatar	
	MJ	Btu	MJ	Btu	MJ	Btu	MJ	Btu	MJ	Btu
From	multiply by									
Cubic metre ¹	40.00	37913	33.32	31518	38.23	36235	39.19	37145	41.17	39018
Kilogramme	52.62	49495	42.07	39875	55.25	52363	52.46	49726	64.98	52107

¹At 15°C and 760 mm Hg

The gross calorific value for methane is 55.52 MJ/kg or 37.652MJ/m³. As natural gas contains gases in addition to methane (usually ethane and propane), the heavier gases raise the calorific value per cubic meter. The table above illustrates this large variance.

Conversion Equivalents between Standard Cubic Metres and Normal Cubic Metres

To	Standard cubic metre ¹	Normal cubic metre ²
From	multiply by	
Standard cubic metre ¹	1	0.948
Normal cubic metre ²	1.055	1

¹ Standard cubic metre measured at 15°C and 760mm Hg.

² Normal cubic metre measured at 0°C and 760 mm Hg.

Conversion Equivalents between LNG and Natural Gas Units

To	Metric ton of LNG	Cubic metre of LNG	Standard cubic metre ¹
From	multiply by		
Metric ton of LNG	1	2.22	1360
Cubic metre of LNG	0.45	1	615
Standard cubic metre ¹	7.35×10^{-4}	1.626×10^{-3}	1

¹ Standard cubic metre measured at 15°C and 760mm Hg.

Gross versus Net Calorific Value of Natural Gas

1 Net Calorific Value = 0.9 Gross Calorific Value

General Conversion Factors for Volume

To	gal U.S.	gal U.K.	bbl	ft ³	l	m ³
From	multiply by					
U.S. gallon (gal U.S.)	1	8.327x10 ⁻¹	2.381x10 ⁻²	1.337x10 ⁻¹	3.785	3.785x10 ⁻³
U.K. gallon (gal U.K.)	1.201	1	2.859x10 ⁻²	1.605x10 ⁻¹	4.546	4.546x10 ⁻³
Barrel (bbl)	4.200x10 ¹	3.497x10 ¹	1	5.615	1.590x10 ²	1.590x10 ⁻¹
Cubic foot (ft ³)	7.481	6.229	1.781x10 ⁻¹	1	2.832x10 ¹	2.832x10 ⁻²
Litre (l)	2.642x10 ⁻¹	2.200x10 ⁻¹	6.290x10 ⁻³	3.531x10 ⁻²	1	1.000x10 ⁻³
Cubic metre (m ³)	2.642x10 ²	2.200x10 ²	6.290	3.531x10 ¹	1.000x10 ³	1

General Conversion Factors for Energy

To	TJ	Gcal	Mtoe	MBtu	GWh
From	multiply by				
Terajoule (TJ)	1	2.388x10 ²	2.388x10 ⁻⁵	9.478x10 ²	2.778x10 ⁻¹
Gigacalorie (Gcal)	4.187x10 ⁻³	1	1.000x10 ⁻⁷	3.968	1.163x10 ⁻³
Million tonnes of oil equivalent (Mtoe)	4.187x10 ⁴	1.000x10 ⁷	1	3.968x10 ⁷	1.163x10 ⁴
Million British thermal units (MBtu)	1.055x10 ⁻³	2.520x10 ⁻¹	2.520x10 ⁻⁸	1	2.931x10 ⁻⁴
Gigawatt hour (GWh)	3.600	8.598x10 ²	8.598x10 ⁻⁵	3.412x10 ³	1

General Conversion Factors for Mass

To	kg	t	lt	st	lb
From	multiply by				
Kilogramme (kg)	1	1.000x10 ⁻³	9.842x10 ⁻⁴	1.102x10 ⁻³	2.205
Tonne (t)	1.000x10 ³	1	9.842x10 ⁻¹	1.102	2.205x10 ³
Long ton (lt)	1.016x10 ³	1.016	1	1.120	2.240x10 ³
Short ton (st)	9.072x10 ²	9.072x10 ⁻¹	8.929x10 ⁻¹	1	2.000x10 ³
Pound (lb)	4.536x10 ⁻¹	4.536x10 ⁻⁴	4.464x10 ⁻⁴	5.000x10 ⁻⁴	1