EU Gas Fundamentals Dashboard Methodology

Methodology last updated: 12 November 2014

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Introduction

ICIS harvests, normalises and aggregates gas flow data for 19 European countries (Austria; Belgium; Bulgaria; Czech Republic; Denmark; France; Germany; Greece; Hungary; Italy; the Netherlands; Poland; Portugal; Romania; Slovakia; Slovenia; Spain; Great Britain; Norway). The data is presented in a series of tables and charts (covering gas flows and nomination, supply, demand, storage and LNG) on the ICIS Dashboard.

Production times

The European gas fundamentals information will be published every UK working day. ICIS will aim to publish the information related to gas day previous to the day of the report (D-1) via Dashboard by 2.30pm and there will be hourly updates to incomplete or missing previous days data until 7.30pm.

Data for the weekends and public holidays will be made available on the next working day before 11.30am.

General methodology

1. Unit of measure

All data is expressed in both megawatt hours (MWh) at 25°C combustion temperature and standard million cubic metres (mcm) at 15°C and at an absolute pressure of 101.325 kilopascals (kpa).

Conversions between values in energy and volumes are made through punctual hourly/ daily/ monthly gross calorific values where available from infrastructure operators. Reference gross calorific values are used in all other cases.

Data presented on the ICIS Dashboard reflects both high calorific and low calorific gas quality.

2. Gas day

Data is reported and aggregated according to the specific country's gas day.

The gas day, in local time, for all European countries covered in the report is as follows:

1. Austria: 6:00:00-5:59:59 CET/CEST
2. Belgium: 6:00:00-5:59:59 CET/CEST
3. Bulgaria: 8:00:00-7:59:59 EET/EEST
4. Czech Republic: 6:00:00-5:59:59 CET/CEST
5. Denmark: 6:00:00-5:59:59 CET/CEST
6. France: 6:00:00-5:59:59 CET/CEST
7. Germany: 6:00:00-5:59:59 CET/CEST
8. Great Britain: 6:00:00-5:59:59 GMT/BST
9. Greece: 8:00:00-7:59:59 EET/EEST
10. Hungary: 6:00:00-5:59:59 CET/CEST
11. Italy: 6:00:00-5:59:59 CET/CEST
12. The Netherlands: 6:00:00-5:59:59 CET/CEST
13. Poland: 6:00:00-5:59:59 CET/CEST
14. Portugal: 0:00:00- 23:59:59 WET/WEST
15. Romania: 6:00:00-5:59:59 EET/EEST
16. Slovakia: 8:00:00-7:59:59 CET/CEST
17. Slovenia: 8:00:00-7:59:59 CET/CEST
18. Spain: 0:00:00- 23:59:59 CET/CEST
19. Norway: does not have a gas day. In this report, data follows the British gas day.

3. Data sources

Gas flow data is derived from the ICIS proprietary Energy Data Warehouse. The primary sources of raw data are the European infrastructure operator websites.

4. Gas fundamentals categories/data

4.1 Cross border physical gas flows

Values are displayed by gas day until the end of gas day prior to the gas day of publication (D-1). For the publication's gas day, according to the data availability

either daily values updated hourly or intra-day (hourly) values updated hourly during the gas day of publication will be published. Data is automatically refreshed with the latest data set. The latest timestamp is not published.

Data is aggregated by cross border points between countries in the “Net gas flows” chart and by country for all other tables and charts.

4.1.1. Austria

4.1.2. Belgium

4.1.3. Bulgaria

4.1.4. Czech Republic

4.1.5. Denmark

4.1.6. France

4.1.7. Germany

4.1.8. Greece

4.1.9. Hungary

4.1.10. Italy

4.1.11. Netherlands

4.1.12. Poland

4.1.13. Portugal

4.1.14. Romania

4.1.15. Slovakia

4.1.16. Slovenia

4.1.17. Spain

4.1.18. Great Britain

4.1.19. Norway

Denmark/Netherlands

Exports from Denmark to the Netherlands through the undersea NOGAT pipeline are assumed to be equal to 15% of the gas flowing through Nybro in Denmark. This percentage has been calculated comparing yearly figures (for the last 5 years) on gas production and exports to the Netherlands published by the Danish Energy Agency.

Great Britain

St Fergus Shell and St Fergus Total are both capable of receiving gas that is either produced domestically offshore, or imported from Norway. On a daily basis ICIS compares the data produced by National Grid and by Gassco to establish how much gas is domestic UK production and how much is imported.

For St Fergus Total, Vesterled flows as published by Gassco are subtracted from the overall St Fergus Total entry volume, as published by National Grid. All Vesterled gas is assumed to be Norwegian imports. The remainder, which is gas transported via Frigg, is assumed to be domestic British production.

At St Fergus Shell, Norwegian gas is assumed to be all volume that passes through the Tampen Link into FLAGS as measured by Gassco at its Entry SEGAL point. This figure, allowing for an approximate 10-hour time-lag and losses, is subtracted from National Grid’s recorded volume at St Fergus Shell. This remaining volume is assumed to be British production.

ICIS is aware that gas produced at the Statfjord field which flows through the Tampen Link includes 14.53% of British production, as the field is proportionally shared between Great Britain and Norway. It is not possible, however, to separate the ownership of the gas in the daily flows.

Italy

Figures for physical gas flows expressed in mcm assume the same underlying gross calorific value used by the Italian TSO Snam Rete Gas, 38.1MJ/Sm3

Netherlands

Figures for physical gas flows expressed in mcm assume the same underlying gross calorific value used by the Dutch TSO Gasunie Transport Services, 9.77kWh/Nm3

Norway

Instantaneous flows are collected every 15 minutes by ICIS and the daily values are calculated averaging the 96 values collected for each gas day.

4.2 Nominations/Re-nominations

Values are displayed by gas day until the gas day prior to the gas day of publication and represent latest day-ahead nominations/ nomination/ /re-nominations available.

4.2.1 Austria

4.2.2 Belgium

4.2.3 Czech Republic

4.2.4 Denmark

4.2.5 France

4.2.6 Germany

4.2.7 Greece

4.2.8 Hungary

4.2.9 Italy

4.2.10 The Netherlands

4.2.11 Poland

4.2.12 Portugal

4.2.13 Slovakia

4.2.14 Slovenia

4.2.15 Spain

4.2.16 Great Britain

4.2.17 Norway

Italy

Figures for nomination data expressed in mcm are assuming the same underlying gross calorific value used by the Italian TSO Snam Rete Gas, 38.1MJ/cm.

The Netherlands

Nominated backhaul quantities are considered as nominations in the opposite directions to the main nominations.

4.3 Storage data

Data is aggregated at country level.

Both opening and Closing Stock and Maximum Technical Capacity are shown excluding gas stored for strategic purposes (if applicable).

If a storage facility is located in one country but used by a neighbouring country's network, data is displayed for the country which makes use of the storage facility independently from the storage facility's location.

Storage indicators are displayed for the gas day prior to the current gas day at publication for:

4.3.1 Austria

4.3.2 Belgium

4.3.3 Czech Republic

4.3.4 France

4.3.5 Germany

4.3.6 Hungary

4.3.7 Italy

4.3.8 Netherlands

4.3.9 Poland

4.3.10 Portugal

4.3.11 Slovakia

4.3.12 Spain

And for two gas days prior to the current gas day at publication for:

4.3.13 Denmark

4.3.14 Great Britain

Germany

The storage facility of Berlin operated by Berliner Gaswerke, is assumed to be equally accessible via both NCG and Gaspool market areas but with the possibility to inject into storage just from the Gaspool market area.

The storage facility of Etzel ESE, operated by E.ON Gas Storage, is assumed to be accessible via the NCG's market area by 34% of its capacity, via Gaspool market areas by 33% and by 33% via the Gasunie Transport Services grid in the Netherlands.

RWE Gasspeicher

Kalle - It is assumed to be connected to the German grid for 85% and for 15% to the Dutch grid.

Gasspeicher Hannover

Empelde - Inventory level published daily does not include only working gas volume, but also minimum gas required at the storage facility. The amount of non-working gas volume included in the total inventory level is assumed to be 138mcm.

E.ON Gas storage

Seven Fields – The storage facility is in Austria but entirely connected to the German grid.

Etzel ESE – It is assumed to be accessible via the NCG's market area by 34% of its capacity, via Gaspool market areas by 33% and by 33% via the Gasunie Transport Services grid in the Netherlands.

Berliner Gaswerke

Berlin - It is assumed to be equally accessible via both

NCG and Gaspool market areas but with the physical capacility to inject into storage only from the Gaspool market area.

EWE

We assume that 159mcm of capacity for Nuttermoor H is equally connected to the Dutch grid (GTS) and the German grid (GUD).

Hungary

MMBF – As data for the previous gas day is published at about 14:00UK time, for data before 14:00 nominations on injection and withdrawals are used in place of the actual gas injected/withdrawn. Then, after data is published on the SSO's website, actual gas injected and withdrawn are considered. The storage facility has strategic reserves.

Italy

Figures for storage capacities and daily storage data expressed in mcm are assuming the same underlying gross calorific value used by the Italian TSO Snam Rete Gas, 38.1MJ/cm.

Both SSOs Stogit and Edison Stoccaggio hold strategic gas reserves. By law the Italian SSOs need to have a certain quantity of gas stored for strategic purposes. This gas can be used at the discretion of the SSO when there are emergencies, making it available to the storage users, but it can be released only by government decree.

Stogit

Capacities in mcm on Stogit's website are calculated from the values in million gigajoules (MGJ) applying a gross calorific value (GCV) of 39.4MJ/cm, whilst in ICIS data a GCV of 38.1MJ/cm is used in order to be consistent with the data published on the Snam Rete Gas website on the Transported Gas Balance page, where a GCV of 38.1MJ/cm is used.

Poland

From 1st April 2013 to 1st April 2014 strategic gas stocks are calculated as equal to 20 days of average daily imports for the period from 1st April 2014 onward they are calculated as equal to 30 days of average daily imports

Strategic stocks are assumed to be kept in the high-gas storage facilities proportionally to their contribution to the country's capacity.

When working gas is completely used, ICIS assumes that strategic gas is being used (in this case the percentage of fullness for inventory available will be equal to 0).

Portugal

Security reserves are about 85% of the total capacity. (this has increased slightly since 2013)

Spain

Security reserves correspond to 20 days of imports.

The Netherlands

RWE Gasspeicher

Epe L - The storage facility is in Germany but is entirely connected to the Dutch grid. According to a note from the storage operator: "The presented stock levels and gas inflows/outflows for our storage facilities Epe L-Gas and Stassfurt comprise the utilisation of the current technical capacities as well as the amounts of the first gas fill for the caverns which are still under construction."

Kalle – It is assumed to be connected to the German grid for 85% and for 15% to the Dutch grid

E.ON Gas Storage

Etzel ESE – It is assumed to be accessible via the NCG's market area by 34% of its capacity, via Gaspool market areas by 33% and by 33% via the Gasunie Transport Services grid in the Netherlands.

EWE

ICIS assumes that 151mcm normal of capacity for Nuttermoor H is equally connected to the Dutch grid (GTS) and to the German grid (GUD).

For all countries:

Percentage of fullness is calculated by ICIS on the values expressed in mcm.

4.4 LNG data

Data is aggregated at country level.

LNG indicators are displayed for the gas day prior to the current gas day at publication for:

4.4.1 Belgium

4.4.2 France

4.4.3 Portugal

4.4.4 Spain

And for two gas days prior to the current gas day at

publication for:

4.4.5 Netherlands

4.4.6 Great Britain

4.4.7 Greece

4.4.8 Italy

4.5 Production data

Values are displayed for the gas day prior to the current gas day at publication. Data is aggregated at country level. Losses, line pack changes, fuel consumption and unaccounted gas are not considered.

Countries included:

4.5.1 Denmark

4.5.2 Great Britain

4.5.3 Germany

4.5.4 Hungary

4.5.5 Italy

4.5.6 Netherlands

4.5.7 Poland

4.5.8 Romania

4.5.9 Spain

Great Britain

St Fergus Shell and St Fergus Total are both capable of receiving gas that is either produced domestically offshore, or imported from Norway. On a daily basis ICIS compares the data produced by National Grid and by Gassco to establish how much gas is domestic UK production and how much is imported.

For St Fergus Total, Vesterled flows as published by Gassco are subtracted from the overall St Fergus Total entry volume, as published by National Grid. All Vesterled gas is assumed

to be Norwegian imports. The remainder, which is gas transported via Frigg, is assumed to be domestic British production.

At St Fergus Shell, Norwegian gas is assumed to be all volume that passes through the Tampen Link into FLAGS as measured by Gassco at its Entry SEGAL point. This figure:
– allowing for an approximate 10-hour time-lag and losses
– is subtracted from National Grid's recorded volume at St Fergus Shell. This remaining volume is assumed to be British production.

ICIS is aware that gas produced at the Statfjord field which flows through the Tampen Link includes 14.53% of British production, as the field is proportionally shared between Great Britain and Norway. It is not possible, however, to separate the ownership of the gas in the daily flows.

4.6 Demand data

With demand we refer to the domestic demand, excluding demand for storage injections, and it is classed as "internal demand" in the report.

Values are displayed for the gas day prior to the current gas day at publication.

Losses, line pack changes, fuel consumption and unaccounted gas are not considered.

Countries included:

4.6.1 Austria

4.6.2 Belgium

4.6.3 Czech Republic

4.6.4 Denmark

4.6.5 France

4.6.6 Germany

4.6.7 Greece

4.6.8 Hungary

4.6.9 Italy

4.6.10 Netherlands

4.6.11 Poland

4.6.12 Portugal

4.6.13 Romania

4.6.14 Spain

4.6.15 Great Britain

Austria

Demand for the Tyrol area is not included in the data

Great Britain

Daily data for domestic demand are disaggregated by

sector until the gas day prior to publication.

Aggregated daily data for total British demand (including demand for storage and demand from abroad) referring to the gas day previous to publication, to the gas day of publication and forecast values are also published

5. Estimation rules by gas fundamentals category

5.1. Cross-border gas flows

5.1.1. If any import/export data is missing, the dashboard will display the latest gas day's data available. There is an exception for Italy, where if data for the gas day prior to publication is not available, the TSO forecast value published in the previous gas day is displayed. If this is also unavailable, the latest gas day's data available will be displayed. This procedure will be applied at cross-border point level.

5.2. Nominations

5.2.1. If missing for the gas day prior to the current gas day at publication, ICIS uses physical flows for the gas day prior to the current gas day at publication or the latest gas day's physical flow available. This procedure will be applied at cross-border point level.

5.2.2. If missing for the current gas day at publication, ICIS uses nominations for the gas day prior to the current gas day at publication. This procedure will be applied at cross-border point level.

5.2.3. For Bulgaria and Romania, which do not publish nomination data at all, ICIS will always display "N/A".

5.3. Storage data

5.3.1. If data is missing for a country, ICIS uses the latest gas day's inflow and outflow available, whilst the stock level will be adjusted accordingly. This procedure will be applied at storage facility level.

5.3.2. To calculate net withdrawals for the gas day prior to the current gas day at publication physical inflow/ Outflow data from/into the national gas system are used for Great Britain instead of Inflow/Outflow data from the storage facilities. Inflow/outflow data for Denmark will always be estimated for the gas day prior to the current gas day at publication as one of the Danish SSOs, DoNG Storage, does not publish data for the gas day prior to the current gas day at the time ICIS publishes its data on Dashboard.

5.3.3. For historical data: If for a storage facility one day's worth of data was missing, ICIS estimates the stock level on a certain gas day as = stock level on following gas day – inflow for following gas day + outflow for following gas day. If more than one day's worth of data is missing, ICIS estimates stock level, inflow and outflow supposing that the stock level would have increased or decreased in a linear fashion on those specific days.

5.4. LNG data

5.4.1. If data is missing for a country, ICIS uses a zero value for gas day's inflow and the latest gas day's available for outflow, and the stock level will be adjusted accordingly. This procedure will be applied at LNG facility level.

5.4.2. To calculate the LNG Sendout for the gas day prior to the current gas day at publication physical send-out data into the national transmission system are used for Great Britain instead of send-out (outflow) from LNG facilities.

5.4.3 Reloads are not considered in calculations for LNG flow data

5.5. Production data

5.5.1. If data is missing for a country, ICIS uses either nominations or TSO forecast value. If these are not available, ICIS uses the latest gas day's production flow data available. This procedure will be applied at TSO/production point level.

5.5.2. For Hungary, nominations on production will be used every day as the physical flow for production data is not available at the time ICIS publishes its data on Dashboard.

5.5.3. Production data will not be published for Austria, Belgium, Bulgaria, Czech Republic, France, Greece, Portugal, Slovakia and Slovenia as either the type of data is not applicable for the country (i.e. the country does not have a domestic gas production) or the data is not publicly available.

5.6. Demand data

5.6.1. If data is missing for a country, ICIS uses either nominations or TSO forecast value. If these are not available, ICIS uses the latest gas day's demand flow data available. This procedure will be applied at TSO level.

6. ICIS policy on new data

ICIS reserves the right to add new sources of data for existing or new countries when they become available at any point. Data is expected to be then available on the ICIS Dashboard after a reasonable number of days necessary for the technological set ups to be modified.

7. Frequency of data updates

For questions about frequency of data refreshes please contact ICIS at energyinfo@icis.com.

8. ICIS contact details

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