



European Gas Fundamentals Daily Report Methodology

Latest update: 29 April 2013

To comment on any aspect of this methodology, or to propose changes, please contact **Daniela Rosci**, analyst, ICIS on daniela.roschi@icis.com or energyinfo@icis.com



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), highlighting current and historical trends. It also plots these trends against ICIS' proprietary gas markets prices.

Publication times

The European Gas Fundamentals Daily Report will be published every UK working day. ICIS will aim to publish this report in the form of a PDF report before 13:00 London time.

Flow data for the weekends and public holidays will not be made available in the report, but will be available via the company's FTP data feed.

General Methodology

1. Unit of measure
2. Gas day
3. Data sources
4. Gas fundamentals categories/data availability/ country-specific notes
5. Notes on some indicators
6. Estimation rules by gas fundamental category
7. Weather map
8. Daily report re-issue for corrections

1. Unit of measure

All data is expressed in million standard cubic metres (mcm) at 15°C and at an absolute pressure of 101.325 kPa (kiloPascal).

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 in the report 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: 6:00:00-5:59:59 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 from 01/07/12, 22:00:00pm-21:59:59pm CET/CEST up to 30/06/12
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 availability/country-specific notes:

4.1. Cross-border physical gas flows

Values are displayed for the gas day prior to the gas day of publication.

Data is aggregated by cross-border points between countries in the “Net gas flows” table on page 1 and by country in the “Cross-border gas flows and nominations” table on page 5.

Countries included:

- 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/Renominations

Values are displayed for the gas day prior to publication and the gas day of publication and represent latest nominations/day-ahead nominations/renominations available.

Data is aggregated by country in the “Cross-border gas flows and nominations” table on page 5.

Countries included:

- 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

Netherlands

Nominated backhaul quantities are considered as counter-nomination and net against forward 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 information is available, 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 EON 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.

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
- 4.4.9 Spain

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 denominated "internal demand" in the report.

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

Data is aggregated at country level and disaggregated by sector for Great Britain, Germany and the Netherlands.

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.

5. Notes on some indicators

5.1. “Pan-European indicators” Table on page 1:

The indicator Gas imports is given by the sum of European natural gas imports from Norway, Russia and North Africa plus the total LNG sendout from European LNG facilities.

The indicator Storage is given by the sum of total European withdrawals from storage minus total European injections into storage.

5.2. Table “Pipeline gas exports and nominations to Europe” on page 5:

Exports and nominations from North Africa to Europe are calculated aggregating all gas imported by European countries from north African countries and nominations for gas coming from north African countries and entering Europe.

Exports from Norway to Europe represent the aggregated exports from Norway to European countries. For exports to Great Britain before March 2013 the calculation assumes that 50% of the flows recorded at St Fergus Shell and St Fergus Total were imports from Norway.

Nominations from Norway to Europe represent the aggregated nominations for gas coming from Norway into European countries but using data from the gas importing countries as nomination data is not published by the Norwegian TSO, Gassco.

Exports and nominations from Russia to Europe are calculated aggregating all gas imported by European

countries from Russia and nominations for gas coming from Russia and entering Europe.

6. Estimation rules by gas fundamental category

6.1. Cross-border gas flows:

- 6.1.1. If any import/export data is missing, the report 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.
- 6.1.2. ICIS flags estimated values with an asterisk placed next to the figure (*).
- 6.1.3. For Hungary, an asterisk will be present every day as the Hungarian physical flow data is not available at the time our publication is released.
- 6.1.4. At the bottom of the “Cross-border gas flows and nominations” table, the TSOs whose values are estimated are listed.

6.2. Nominations:

- 6.2.1. 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.
- 6.2.2. 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.
- 6.2.3. For Bulgaria and Romania, which do not publish nomination data at all, ICIS will always display a N/A.
- 6.2.4. ICIS flags estimated values with a symbol next to the figure (^).
- 6.2.5. The TSOs whose values are estimated are listed at the bottom of the “Cross-border gas flows and nominations” table.

6.3. Storage data:

- 6.3.1. 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.
- 6.3.2. ICIS flags the estimated values with a symbol next to the country's name code (*).
- 6.3.3. The SSOs whose values are estimated are listed at the bottom of the "European gas storage" table on page 6.
- 6.3.4. To calculate net withdrawals for the gas day prior to the current gas day at publication, published in the "Pan-European indicators" table on page 1, and net storage in "Net storage flows at traded markets – last three months" graph on page 6, 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 be always 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 publication at the time our publication is released.
- 6.3.5. 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 in those specific days.

6.4. LNG data:

- 6.4.1. If data is missing for a country, ICIS uses the latest gas day's inflow and outflow available, and the stock level will be adjusted accordingly. This procedure will be applied at LNG facility level.
- 6.4.2. ICIS flags estimated values with a symbol next to the country's name code (‡).
- 6.4.3. The LSOs whose values are estimated are listed at the bottom of the "LNG flows in Europe" table on page 7.

- 6.4.4. To calculate the LNG Sendout for the gas day prior to the current gas day at publication and published in the "Pan-European indicators" table on page 1, and in both the "British fundamentals summary" and "Sources of British supply" chart and "British LNG end of day Flows – last month" on page 2, physical send-out data into the national transmission system are used for Great Britain instead of send-out (outflow) from LNG facilities.

6.5. Production data:

- 6.5.1. 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.
- 6.5.2. ICIS flags estimated values with a symbol next to the country's production value (*).
- 6.5.3. For Hungary, nominations on production will be used every day as the physical flows for production data is not available at the time our publication is released.
- 6.5.4. The TSOs whose values are estimated are listed at the bottom of the "Supply-Demand" table.
- 6.5.5. 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, hence ICIS always show N/A for these countries in the "Supply-Demand" table on page 7.

6.6. Demand data:

- 6.6.1. 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.
- 6.6.2. ICIS flags estimated values with a symbol next to the country's internal demand value (α).

- 6.6.3. For Hungary, nominations will be used every day as the physical flows for demand data is not available at the time our publication is released.
- 6.6.4. The TSOs whose values are estimated are listed at the bottom of the “Supply-Demand” table.
- 6.6.5. Demand data will not be published for Bulgaria, Slovakia and Slovenia as the data is not publicly available, hence the report always shows N/A in the “Supply-Demand” table on page 7.

7. Weather map

Pan-European weather forecasts on a 1-5 day and 6-10 day basis are provided to ICIS by Weather Services International. For more information, please e-mail energy@wsieurope.com or visit the company's website – www.wsieurope.com.

8. Daily report re-issue for corrections

Corrections will be made and the Daily Report will be re-issued in case of errors in ICIS primary data or errors from ICIS Production department (technical data errors).

For secondary data - in case data published by the European System Operators are retrospectively changed - ICIS will not re-issue the report.

ICIS is committed to deliver the most accurate data possible. With this aim, it undertakes continuous communications with the European System Operators and raises questions directly with these operators where it believes data is incorrect. ICIS will always attempt to obtain corrected information from the operators before the report is published.