



Natural Gas In The World

2009 Edition

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November 2009

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Cedigaz is an international association dedicated to natural gas information, created in 1961 by a group of international gas companies and the Institut Français du Pétrole (IFP). It is based in Rueil-Malmaison near Paris. Cedigaz has more than 150 members in 40 countries.

“**Natural gas in the world, 2009 Edition**” offers a compilation of the main statistical data in terms of reserves, gross and marketed production, the volume of international gas trade by pipeline and by LNG tanker, consumption, prices of the main contracts, LNG infrastructures and underground gas storage. The main trends for the year 2009 have also been reviewed.

This study represents only one aspect of the services accomplished by CEDIGAZ for its members.

It is supplemented with **the following four main types of products proposed by CEDIGAZ.**

1) First and revised estimates.

Each year, at the end of April, Cedigaz publishes its first estimates of the natural gas industrial activities in the world during the precedent year. The activities covered by these estimates are: marketed gas production, reserves, international trade by pipelines and/or tankers, consumption levels and prices as available at the publication date. Revised estimates are published at the end of July, in order to take into account official documents released in the meantime.

2) Statistical database and Gas Storage Facilities database.

Cedigaz owns an unparalleled statistical database which can be used through its website. This database covers around 119 countries. It also offers long series over the years about the following subjects: Gross production, reinjected, flared or marketed gas ; Imports, exports and domestic consumption; Proved reserves of natural gas ; Marketed offshore production ; Imports and exports by pipelines or tankers. This statistical tool can be used to extract series by countries, economical or geographical areas for one or several years. A regularly updated database of underground gas storage facilities worldwide is also available

3) Thematic studies, analytical publications, graphs and maps.

Cedigaz publishes a thematic study yearly. In 2010, an update of a previous study about underground gas storages in the world will be published. Meanwhile, analytical or prospective articles are published in professional reviews or posted on the website in the member's area. Cedigaz has created a virtual library offering sets of slides, gas flow maps and specific databases about gas contracts or projects.

4) Newsletters.

Cedigaz publishes for its members the “Cedigaz News Report” which is a newsletter with around forty issues and 1500 news published yearly. This publication covers the worldwide economical activity of the natural gas, including liquefied natural gas and, less in depth, liquefied petroleum gas and gas to liquid. The news provided deal with the entire gas chain, from exploration and production to distribution. The news are displayed in a synthetic form in order to offer to the reader a quick way to be informed about facts and data. An online database of the news over the years is also available with advanced search tips. A supplement about unconventional gas is published twice a month. The U-Gas News Report covers the worldwide economic activity on coalbed methane, shale gas, tight gas and gas hydrates.

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CONTENTS

1. PROVED NATURAL GAS RESERVES IN THE WORLD	1
1.1 General trends in world reserves	1
1.2 Proved offshore natural gas reserves	15
1.3 Main reassessments of reserves in 2008	18
2. NATURAL GAS PRODUCTION IN THE WORLD.....	35
2.1 Major trends in world production.....	35
2.2 Evolution of world gas balance structure	39
2.3 Major developments in 2008	53
2.4 Offshore gas production	75
3. INTERNATIONAL NATURAL GAS TRADE	79
3.1 General developments in international gas trade.....	79
3.2 LNG trade and infrastructures	92
3.3 The pipeline trade in 2008	105
4. UNDERGROUND GAS STORAGE IN THE WORLD.....	111
4.1 Major trends	111
4.2 Recent regional developments.....	111
5. NATURAL GAS PRICES ON THE INTERNATIONAL MARKET.....	117
5.1 Recent developments in international gas prices	117
5.2 Historic evolution of international prices, 2004-2008	117
5.3 Oil and gas price trends in 2008.....	120
6. NATURAL GAS CONSUMPTION IN THE WORLD.....	131
6.1 General trends	131
6.2 Market trends in 2008.....	136
7. 2009 PROSPECTS FOR MARKETED GAS PRODUCTION	147
7.1 World trends.....	147
7.2 Regional prospects.....	149
Appendix 1 Main conversions used	153
Appendix 2 Geographical coverage	154
List of Tables.....	155
List of Figures	157

SUMMARY

In 2008, natural gas showed a buoyant activity worldwide. On the supply side, marketed natural gas production recorded an exceptional performance, rising by 4.2% to 3065 billion cubic metres (bcm), well above the average growth observed in the ten previous years (+ 2.7%/year). This evolution attests to large production gains recorded in every parts of the World, including some mature OECD markets (United States, Norway, the Netherlands). Furthermore, it demonstrated the increased use of non-associated gas reserves, including unconventional gas (North America), as a result of gas price competitiveness, while oil production only increased 0.4% in the same year. Accordingly, natural gas strengthened its relative share in world primary energy supply, which exceeded 24% in 2008. Marketed natural gas production now accounts for more than 70% of oil production, against 67.8% on the previous year.

In fact, the global production growth in the first half 2008 strongly contrasted with an abrupt slowdown in the last quarter, as the economic recession began to impact energy production substantially, in OECD and C.I.S countries in particular.

In 2008, the breakdown of production was again modified in favour of the Middle East, which accounted for 12.5% of world production, whereas the share of the Commonwealth of Independent States (C.I.S) dropped from 27.1% to 26.6%.

Marketed production grew in every geographic area: North America (+ 4.4%), Latin America (+ 1.3%), Europe (+ 5.5%), the C.I.S (+ 2.4%), Africa (+ 4.2%), the Middle East (+ 7.3%) and Asia-Oceania (+ 5.2%). The strong growth of volumes produced in the United States is chiefly due to the contribution of shale gas. In Europe, Norway's strong production growth (+ 11%) was explained by capacity ramp up from recent fields in the Norwegian and Barents Seas. In the Netherlands, the output rise (+ 11%) reflects recent additional production capacity from the existing Groningen field.

Gross world production rose 3.7% to 3854 bcm, against 3718 bcm in the previous year. With a figure of 440 bcm, quantities of re-injected gas continued to rise (+ 2.1% over 2007) and now account for 11.4% of production, roughly equivalent to the average ratio over the last decade. Forty-two countries conduct re-injection activities today, compared with only thirty-one in 1995.

Flaring losses again increased in 2008, going from 128.0 to 133.9 bcm in 2008, a rise of 4.6%, and now represent 3.5% of the total volume produced.

Other losses resulting from the extraction of natural gas liquids amounted to 215.2 bcm in 2008, down 1.8% over the previous year, and now account for 5.6% of world production. The liquefiable fractions of natural gas are an important factor, in North America (70.2 bcm) and OPEC countries (82.8 bcm) in particular, where the equivalent of 9% of their gross production was absorbed by the processing plants.

In the light of these different developments, the utilization rate of production reached 85.1% in 2008, which is quasi-equivalent to the average ratio over the 1980-2007 period (85.4%).

Offshore marketed production soared 5% to 830.2 bcm, under the impetus of 26 producing countries in every parts of the world, accounting for just over 27% of global marketed production. Offshore production soared 3.7%/year in the last decade, and should continue to grow substantially in the future, raising its share in global production to 30% in 2015 and 35% in 2020, according to CEDIGAZ forecasts.

The international gas trade (including intra-C.I.S trade) grew 4.2% to 970.5 bcm. This global expansion was only driven by pipeline flows, which soared 5.6% to 744.0 bcm, as LNG flows slightly declined 0.2% to 226.5 bcm. The C.I.S largely remains the leading export area, with a 32.5% share of the world total. In terms of imports, the European market represented the main trading zone, accounting for 46.4% of global flows. Asia-Oceania recently emerged as the second main import area, with a 17.8% share.

The growth in pipeline trade reflects in particular the rising European import needs and the coming into operation of full export capacities from Qatar to the fast-growing markets of the United Arab Emirates. The slight drop in LNG trade reflects the dramatic cut in LNG imports to the United States, which competed with both domestic unconventional production and LNG supply in other markets, such as Japan and Spain. Spot LNG transactions decreased by 9.2% to 41.4 bcm, mainly due to the severe contraction of US imports. The quantities traded accounted for 18.3% of global LNG flows, compared to 20.1% in the previous year.

World trade represented 31.7% of world marketed natural gas production, and LNG 23.3% of total trade, against 24.4% in 2007.

Apparent natural gas consumption, up 4.2%, reached 3065 bcm in 2008. This growth occurred chiefly in Asia-Oceania (+ 6.5%), and Europe (+ 4.5%). Net gas consumption (after storage variations) increased 5.7% to 468 bcm in Asia-Oceania, under the impetus of both rising city gas sales (Japan, South Korea, Indonesia), and growing needs of large industrial customers, including power utilities (China, India, Taiwan, Australia, Thailand). In Europe, net consumption grew 2.4% to 567 bcm, as a result of a higher gas price competitiveness in the power sector in Western Europe and an average colder than 2007 weather.

In 2008, natural gas prices closely matched the upward and downward trend in the prices of oil, with time lags for oil-linked gas and LNG prices according to the long-term contracts' formulas. However, the recent increase in oil prices accentuated the gap between Asian, Henry Hub and NBP spot prices, which recently converged down to exceptionally low levels of \$3-4/MBtu, and oil-indexed gas prices, as oil prices recovered to approximately \$13/MBtu in October 2009. This new pattern would create much pressure to change pricing formulas in long term contracts if the current surplus of supply persists.

First results on natural gas consumption in 2009 highlight the markets where industrial activity suffered the most from the economic crisis (Russia, Romania, Hungary, Germany, Italy, Spain, Japan, Brazil).

In 2009, world marketed gas supply is forecast to slump by 4.2% to 5.5%, but at contrasting rates in the different geographic areas. In the reference case, the largest production cuts are predicted in the C.I.S (-12.7%), Europe (- 9.7%), Africa (- 7.7%) and Latin America (- 5.5%), while North American production is expected to decline slightly by 0.7%. On the contrary, Asia-Oceania should continue to post sustained and significant growth (+ 3.7%), while the Middle East is poised to present an unusually flat trend, with strong disparities among markets.

However, natural gas should remain on average highly competitive throughout the years 2009 and 2010, especially against coal in the power sector, while demand destruction in the industrial sector has affected every fossil fuel. This price competitiveness will partially limit the negative effects of the economic crisis on gas consumption. For illustration, natural gas use has recently gained momentum in the power sector against coal in the United States and the United Kingdom, boosted by price, but also environmental and installed capacity flexibility reasons. Spot gas prices are thus expected to follow an upward trend toward coal prices, taking efficiency differential into account.