

# EUROPE'S GAS MARKETS IN THE CONTEXT OF GLOBAL ENERGY MARKETS

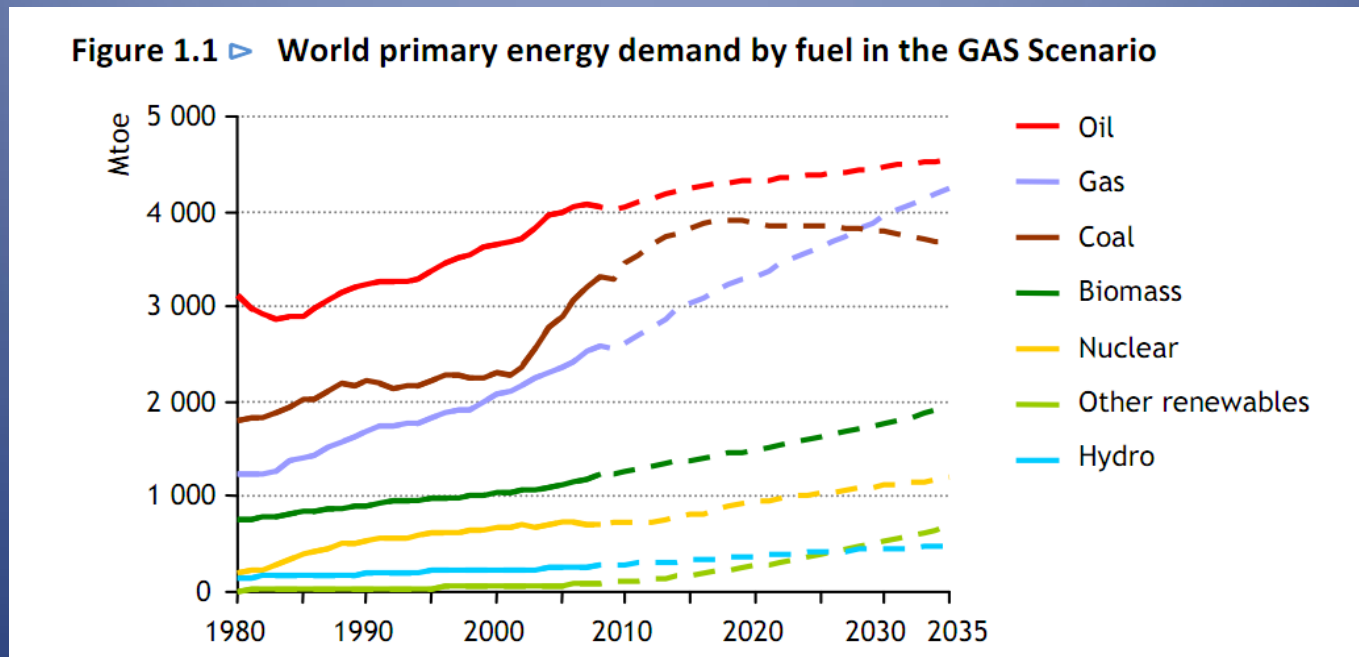
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**Thomson Reuters**  
Vilnius, Nov. 10, 2011

# I. GAS IN A GLOBAL CONTEXT

Global gas demand & production is set to rise steadily in the next decade

- Production is to be provided by vast shale resources (e.g. China, Argentina, Australia)
- LNG exports are to rise sharply and, with Australia, Qatar will have a major competitor
- Demand will rise as China and other emerging markets switch from coal to gas



Source: IEA

Despite vast new resources (especially through shale gas), this means that the current world gas glut is likely to end, and global LNG spot prices are to rise with a tighter market.

		New Policies Scenario					
	Unit	2010	2015	2020	2025	2030	2035
<b>Real terms (2010 prices)</b>							
IEA crude oil imports	barrel	60.4	102.0	108.6	113.6	117.3	120.0
Natural gas imports							
United States	MBtu	4.1	6.0	6.7	7.3	7.9	8.6
Europe	MBtu	7.4	9.6	10.4	11.1	11.7	12.1
Japan	MBtu	9.4	12.2	12.9	13.4	13.9	14.3
OECD steam coal imports	tonne	97.3	103.7	106.3	108.1	109.3	110.0
<b>Nominal terms</b>							
IEA crude oil imports	barrel	60.4	114.3	136.4	159.8	184.9	211.9
Natural gas imports							
United States	MBtu	4.1	6.8	8.4	10.3	12.5	15.1
Europe	MBtu	7.4	10.8	13.0	15.6	18.4	21.3
Japan	MBtu	9.4	13.7	16.2	18.9	21.9	25.2
OECD steam coal imports	tonne	97.3	116.2	133.5	152.0	172.2	194.2

Source: IEA

# But unlike the global picture, Europe's demand may not rise as sharply

- Europe's population is stagnating

- Economic growth is slow

Global Outlook for Growth of Gross Domestic Product, 2000-2020 (November 2010)

	2000-2010		2010-2015		2015-2020		2010-2020		Distribution of World Output 2020
	GDP Growth	Contribution to World GDP growth**	Projected GDP Growth	Contribution to World GDP growth**	Projected GDP Growth	Contribution to World GDP growth**	Projected GDP Growth	Contribution to World GDP growth**	
US	1.6	0.3	1.8	0.3	2.5	0.4	2.2	0.3	14.8%
EU-15	1.2	0.2	1.3	0.2	1.7	0.2	1.5	0.2	13.4%
Japan	0.7	0.0	0.9	0.0	1.5	0.1	1.2	0.1	4.2%
Other*	3.0	0.3	2.9	0.2	2.7	0.2	2.8	0.2	7.0%
<b>Advanced Economies</b>	<b>1.6</b>	<b>0.9</b>	<b>1.7</b>	<b>0.8</b>	<b>2.2</b>	<b>0.9</b>	<b>1.9</b>	<b>0.9</b>	<b>39.4%</b>
China	11.4	1.3	9.2	1.6	7.9	1.7	8.6	1.7	24.1%
India	7.6	0.3	8.3	0.5	9.1	0.6	8.7	0.6	8.0%
Other developing Asia	5.1	0.2	5.1	0.3	6.0	0.3	5.5	0.3	5.7%
Latin America	3.2	0.2	4.0	0.3	3.8	0.3	3.9	0.3	7.7%
Middle East	4.8	0.2	4.5	0.2	5.3	0.2	4.9	0.2	4.4%
Africa	5.1	0.1	4.7	0.1	5.9	0.2	5.3	0.2	3.1%
Central & Eastern Europe	3.5	0.1	3.3	0.1	3.0	0.1	3.2	0.1	3.7%
Russia and other CIS	4.9	0.2	3.2	0.1	3.1	0.1	3.2	0.1	3.9%
<b>Emerging Market and Developing Economies</b>	<b>6.4</b>	<b>2.7</b>	<b>6.3</b>	<b>3.3</b>	<b>6.4</b>	<b>3.6</b>	<b>6.3</b>	<b>3.4</b>	<b>60.6%</b>
<b>World</b>	<b>3.7</b>		<b>4.1</b>		<b>4.6</b>		<b>4.4</b>		<b>100.0%</b>

\* Other advanced economies include Canada, Switzerland, Norway, Israel, Iceland, Cyprus, Korea, Australia, Taiwan Province of China, Hong Kong, Singapore, New

## II. GAS IN A EUROPEAN CONTEXT

### European gas supplies look healthy

- New pipeline projects are likely to bring gas to Europe from new sources
  - New LNG terminals across Europe are diversifying supply
- Shale gas could be a game-changer, particularly in Poland and CEE

<b>EU GAS</b> (all figures in bcm)	<b>2010</b>	<b>2011</b> (estimates)	<b>2012</b> (estimates)
Imports	328.21	340	350
Domestic production	174.9	171	168
Consumption	492.5	450	456
<b>NET BALANCE</b>	<b>10.61</b>	<b>61</b>	<b>62</b>

Sources: Reuters research, Deutsche Bank, Societe Generale, BarCap, BP, Eurostat

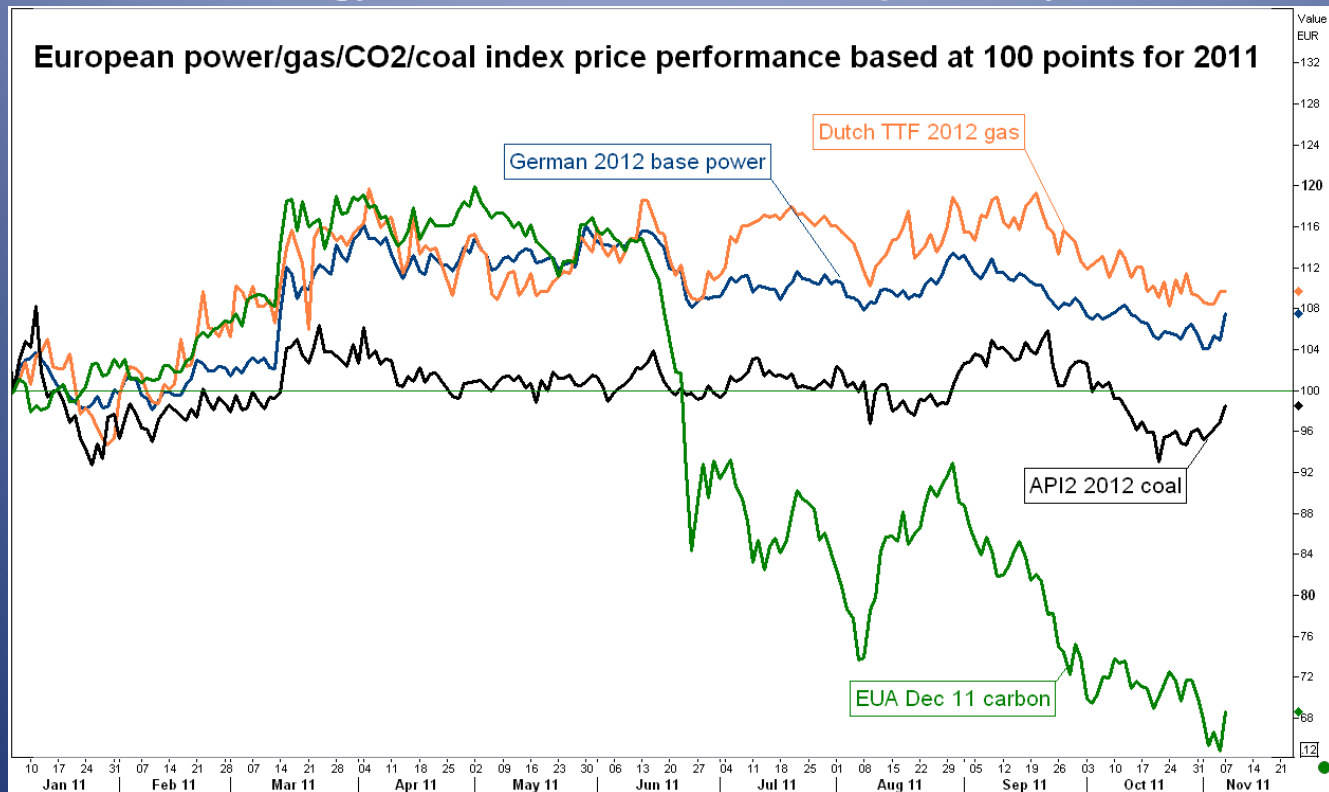
So if Europe has enough gas, are Europe's gas prices low?

**NO**

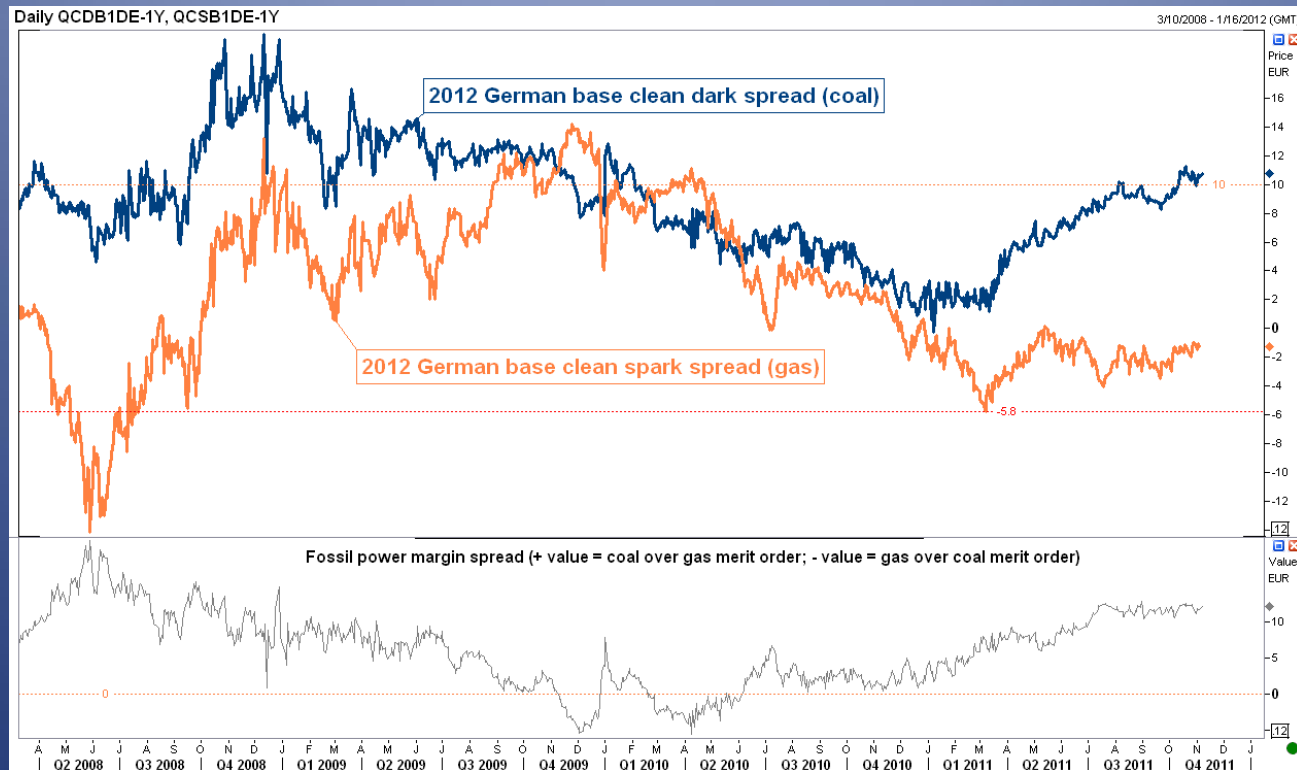
- A) Long-term oil-indexation of pipeline prices locks Europe's customers into fixed prices
  - B) Global LNG spot market is tight
- > Because long-term pipe gas oversupplies can't be offset with short-term LNG squeezes (or reverse) through a free market, overall European gas prices are overblown.

# III. HOW IT IMPACTS EUROPE'S PRICES

- Gas market trends are important because they impact the profitability of gas-power plants
- In 2011, gas & power have risen because of Libya (gas), and Fukushima (power)
- Other energy markets have not been impacted by these events



- These differing performances mean that in 2011 coal power generation has been much more profitable than gas-fired electricity production
- If these price structures stay in place, it will make it harder to find investors willing to cough up cash for gas-fired power plants or LNG terminals
- "Large-scale investments into new power plants are not to be expected because revenues would not be sufficient to cover fixed, variable and capital costs," BET energy consultants.





# IV. LNG INVESTMENT RISKS & BENEFITS

## Benefit:

Security hedge from pipeline supplies through access to global markets

&

Price hedge against long-term gas-oil price indexation



# VS

## Risk

High investment cost at low returns for foreseeable future

&

Exposure to a global market risk like conflict, competition, currency swings...



# CONCLUSION

- The gas market is becoming increasingly global, and both demand & production are set to rise
- Europe is well supplied with gas, but badly priced as it is stuck between oil-indexed pipeline prices and tightening global LNG spot prices
- This means that gas-fired electricity is likely to remain less competitive than coal
- But LNG terminal access, combined with integrated European energy markets, provides improved security of supply along with a price hedge against pipeline gas.

# Thanks for listening!

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