

# NATURAL GAS MARKET

By prof. Ruzhinskaya Tatiana I.

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## STARTING WITH THE WORLD NATURAL GAS MARKET

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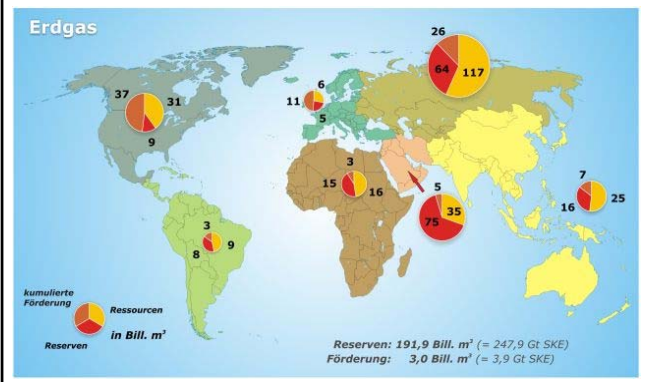
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## CONVENTIONAL GAS RESERVES WORLDWIDE



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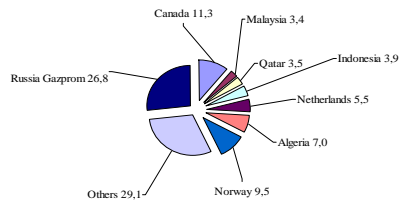
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### MAJOR GAS EXPORT 2010 (%)



Canada 11,3 11,3	Malaysia 3,4 3,4	Qatar 3,5 3,5
Indonesia 3,9 3,9	Netherlands 5,5 5,5	Algeria 7,0 7,0
Norway 9,5 9,5	Others 29,1 29,1	Russia Gazprom 26,8 26,8

### PRIMARY ENERGY CONSUMPTION (2009)

MTOE-NCV	Oil	Solid Fossil Fuels	Natural Gas	Nuclear Electricity	Renewables	Others	Total
AUSTRIA	12,8	2,9	7,4	0,0	9,4	0,1	32,6
BELGIUM	23,0	3,2	15,2	12,3	2,7	-0,1	56,3
BULGARIA	4,4	6,3	2,1	3,5	0,9	0,0	17,2
CZECH REPUBLIC	9,4	18,8	6,7	7,1	0,6	-1,2	41,9
DENMARK	7,5	4,0	3,9	0,0	3,4	0,4	19,3
ESTONIA	0,8	3,7	0,5	0,0	0,3	0,1	5,4
FINLAND	8,0	5,3	3,2	5,9	7,4	2,0	31,8
FRANCE	89,0	10,9	37,9	107,3	16,6	-3,9	257,8
GERMANY	111,5	71,3	70,2	35,1	27,9	4,1	320,0
GREECE	15,9	8,0	3,0	0,0	1,8	0,4	29,1
HUNGARY	7,1	2,6	9,2	4,0	1,8	0,5	25,2
IRELAND	7,3	2,1	4,3	0,0	0,6	0,1	14,4
ITALY	73,9	13,4	63,9	0,0	19,3	9,8	180,3
LATVIA	1,4	0,1	1,2	0,0	1,7	0,1	4,5
LITHUANIA	2,5	0,2	2,2	2,9	0,8	0,0	8,5
LUXEMBOURG	2,8	0,1	1,1	0,0	0,1	0,3	4,4
NETHERLANDS	29,6	7,5	34,6	1,1	2,1	2,4	77,3
POLAND	23,8	54,9	12,1	0,0	4,7	2,0	97,5
PORTUGAL	14,0	2,5	4,2	0,0	5,9	0,0	26,6
ROMANIA	9,9	6,2	12,0	2,7	3,6	0,0	34,4
SLOVAKIA	3,6	3,8	4,3	3,7	0,7	1,0	17,0
SLOVENIA	2,6	1,5	1,0	1,5	0,9	-0,3	7,2
SPAIN	63,7	10,4	31,1	13,8	12,3	-0,7	130,5
SWEDEN	15,7	1,5	1,1	12,8	16,8	0,9	48,8
UNITED KINGDOM	75,4	30,2	78,0	15,2	7,4	0,3	206,5
<b>EU</b>	<b>615,5</b>	<b>271,4</b>	<b>410,4</b>	<b>228,8</b>	<b>149,6</b>	<b>18,2</b>	<b>1 693,8</b>
SWITZERLAND	12,4	1,0	2,7	6,8	3,5	1,1	27,6
TURKEY	25,1	28,5	35,8	0,0	9,8	-0,1	99,1

### COMING TO THE EUROPEAN NATURAL GAS MARKET

## EUROPEAN GAS COMPANIES




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## CURRENT CHALLENGES

### External effects

- Global economic crisis lead to significant demand decrease
- US unconventional gas production reduces need for further natural gas imports
- New LNG liquefaction capacity in use (e.g Qatar)
- LNG cargo's diverted to Europe targeting North West European hubs

### Main impacts

- Increased liquidity of spot gas markets
- LTC customers facing problems

prof. Ruzhinskaya Tatiana I.

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## NATURAL GAS SUPPLIERS IN EU (2009)

PJ - GCV	Indigenous Production	Total Net Imports EU	Total Net Imports non-EU	Changes in stocks	Other balances	Total Net Supplies
AUSTRIA	66,9	36,2	267,1	-17,2	-23,9	329,6
BELGIUM	0,0	278,4	417,6	6,9	0,0	702,9
BULGARIA	0,3	0,0	83,4	1,4	0,0	85,1
CZECH REPUBLIC	4,2	6,6	322,7	-22,1	-1,5	310,0
DENMARK	315,3	-149,9	0,0	-1,9	-24,8	138,7
ESTONIA	0,0	0,0	24,4	0,0	0,0	24,4
FINLAND	0,0	0,0	162,5	-0,1	0,0	162,5
FRANCE	33,5	61,6	1 743,1	-49,2	0,0	1 789,0
GERMANY	510,0	497,0	2 322,0	-72,0	-37,0	3 220,0
GREECE	0,0	0,0	136,6	0,0	0,0	136,6
HUNGARY	111,5	38,7	320,0	-44,5	0,0	425,7
IRELAND	14,0	183,8	0,0	0,0	0,0	197,8
ITALY	305,4	270,1	2 364,6	33,7	0,0	2 973,7
LATVIA	0,0	0,0	95,7	0,0	0,0	95,7
LITHUANIA	0,0	0,0	101,5	-0,3	-0,1	101,2
LUXEMBOURG	0,0	0,6	51,1	0,0	0,0	51,7
NETHERLANDS	2 606,1	-1 561,5	659,2	0,0	0,0	1 603,8
POLAND	173,9	39,1	332,1	9,2	-9,2	545,0
PORTUGAL	0,0	0,0	186,6	-1,0	0,0	185,6
ROMANIA	430,0	0,0	74,2	0,0	0,0	504,2
SLOVAKIA	2,6	19,7	188,8	-18,1	6,8	199,8
SLOVENIA	0,0	6,7	29,4	0,2	0,5	36,8
SPAIN	6,2	-35,9	1 472,1	9,7	-6,2	1 445,9
SWEDEN	0,0	50,5	0,0	0,3	-0,2	50,6
UNITED KINGDOM	2 500,3	-187,4	1 333,5	-17,6	-1,3	3 627,6
<b>EU 27</b>	<b>7 080,2</b>	<b>-446,7</b>	<b>12 548,7</b>	<b>-182,6</b>	<b>-96,4</b>	<b>18 904,2</b>
SWITZERLAND	0,0	51,4	74,0	-1,3	0,0	124,0
TURKEY	0,0	-27,2	1 321,8	0,0	0,0	1 294,6

Changes in stocks: (+) Injection (-) Withdrawal

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## LIBERALIZATION OF NATURAL GAS MARKET

- General change of market framework
- EU and national legislation (e.g. 3<sup>rd</sup> energy package)
- Abolition of destination clauses
- Unbundling rules
- Capacity allocation and congestion management rules
- Limitation of LTCs, creating new portfolio
- Reduction of Transmission System Operator market areas



prof. Ruzhinskaya Tatiana I.

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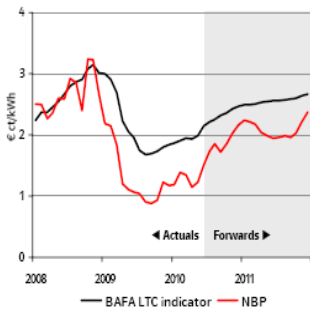
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## GAS PRICES

Gas prices in NW Europe



- **Recent sales trends**
- Customers build up supply portfolios geared towards hub price levels
- Mix of different price elements requested (e.g. Fixed prices)
- Majority of customers use tenders or request offers from multiple suppliers
- Customers are able to determine main conditions of contracts

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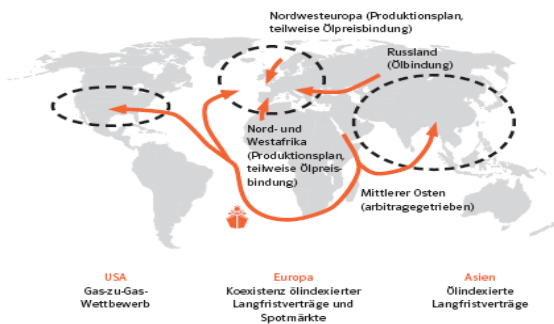
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## NATURAL GAS PRICE SETTING



Quelle: E.ON Gasmarkanalyse

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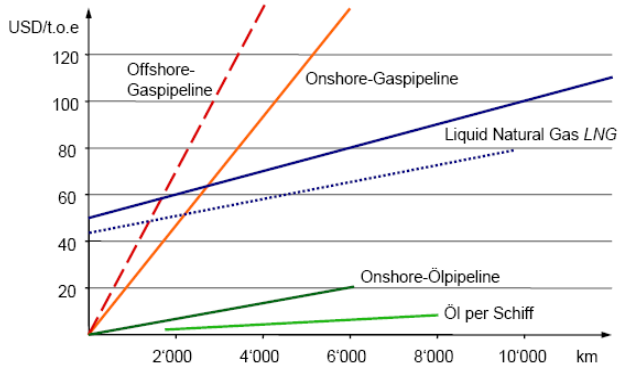
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## TRANSPORTATION




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## TRENDS IN EU NATURAL GAS MARKET

- gas power plants have 60% degree of efficiency and comparable little CO2 emissions
- IEA expects until 2030 growth between 17-42%
  - → though in Europe little rise of demand expected
  - → development of renewable energies and adherence on nuclear energy restrict gas market extension
- uprising in Arabic countries, Fukushima catastrophe influence gas and oil prices
  - → changing environment makes it difficult to make predictable / reliable 5-10 year lasting market forecast
  - → current situation chance for natural gas to enfold its bridge technology character (important for future energy mix)
- Growing industry with synthetic fuels made out of natural gas (GTL)

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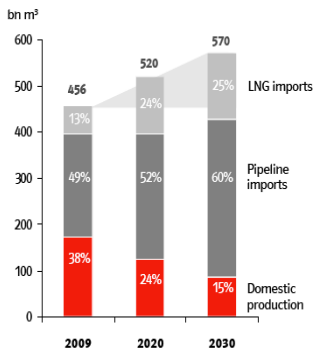
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## TRENDS IN EU NATURAL GAS MARKET



LTC are efficient sale channels for producers of large volumes

LTC secure investments in upstream and transport

LTC are for depending markets a backbone for secure and sustainable energy supply

prof. Ruzhinskaya Tatiana I.

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THANK YOU  
FOR  
YOUR ATTENTION



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