



LNG Market Outlook

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Panayotis Kanellopoulos
Managing Director





- ❑ M&M Gas Co S.A. is a private corporation founded in 2010, by **MYTILINEOS HOLDINGS S.A.** and **MOTOR OIL HELLAS (CORINTH REFINERIES) S.A.**
 - **MYTILINEOS HOLDINGS S.A.** with significant presence in the Energy sector (largest independent Power Producer in Greece) and expertise in the construction as well as operation of combined cycle Gas Power Plants, and
 - **MOTOR OIL HELLAS (CORINTH REFINERIES) S.A.**, a major Energy player in the European & International market with presence in both Upstream and Downstream Oil & Gas
- ❑ M&M is active in the **“Supply and Marketing of Natural Gas”** sector and its scope is to source and provide secure and competitive Natural Gas supplies to both the shareholders’ affiliate companies as well as serving eligible customers in the Greek Market.
- ❑ M+M was the first private company to import LNG in Greece and get TPA rights in the Revythousa LNG terminal, effectively leading to the liberalisation of the NG market Greece
- ❑ Being the pioneer in the newly liberalised Greek Natural Gas market, M&M is committed in developing options that maximise the End to End benefit and lead in efficient and effective gas supplies.
- ❑ **M&M Gas Co**, on top of its main activity of sourcing, trading and marketing Natural Gas (both Pipeline and LNG) is set up to realize construction, operation, maintenance & management of Natural Gas facilities, pipelines, networks, etc., as well as providing consultancy and project management services in related fields, ensuring best in class results for the stakeholders.

Key Facts & Figures



- ❑ In a glance, both groups' assets relevant to Natural Gas are:
 - A 440 MW CCGT Power Plant, **Protergia S.A.**
 - A 440 MW CCGT Power Plant, **Korinthos Power S.A.**
 - A 330 MW CHP Power Plant, **Aluminium S.A.**
 - A 172,000 barrels/day Oil Refinery with 70 MW installed power capacity, **MOH**
- ❑ Our existing portfolio of customers represents, volume wise, over **1.6 BCM** of annual consumption, while our prospective in the Greek Market exceeds some additional **1.2 BCM**.
- ❑ Since the liberalisation of the Greek Natural Gas Market, **M&M Gas Co** is the first private Gas Marketing Company that received the licence to operate and the only one that executed supply contracts to both affiliate companies and third parties.
- ❑ During 2010, M+M Gas offloaded ca **0.4 BCM** of NG (LNG form) to Revythousa either to be used in order to cover the requirements of the shareholders or for the Public Power Company of Greece ("PPC")
 - It was the first to be awarded with the **Public Power Corporation of Greece** short term LNG supplies via an international tendering process.

Key Clients



ALOUMINION

- A 330 MW CHP Power Plant , consumption of 0.35 BCM p.a.
- An alumina furnace, consumption of 0.1 BCM p.a.

PROTERGIA

- A 444 MW CCGT Power Plant, consumption of 0.4 BCM p.a.

Korinthos Power

- A 436 MW CCGT Power Plant, consumption of 0.4 BCM p.a.

**M&M, through its shareholders,
“controls” a market of ca 1.6 BCM
or ca 40% of the Greek NG market**

MOH Korinth Refinery

- Refinery with 70 MW installed power capacity, consumption of 0.35 BCM p.a.

What does M&M do?



We support our clients by...

Covering their energy needs

Managing risk

Navigating an uncertain future

Developing Projects

By delivering...

Integrated, Innovative Solutions

- Efficient Sourcing
- Flexible Portfolio
- Decision support tools

Expert advice and support

- Match supply and demand
- Energy contracts
- Project development

Capability Development

- Operational and Regulatory issues
- Long term development
- Information services

Through...

Sourcing Utilising an Extensive Network of Links and Business Partners

Gas Supply (spot and moving towards term contracts)

A highly Efficient and Proactive Approach

Experienced People in NG Business

European gas markets have experienced significant changes between 2008 and 2011

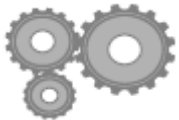


Supply: Current market oversupply, probably extending until 2014-2015



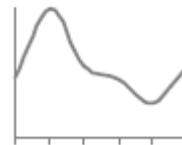
- Unexpected additional volumes of unconventional gas in US
- Additional LNG capacities in Europe
- OUTLOOK: Oversupply to last at least for some years, cyclical market development foreseen after this period

Market structure: Increased liquidity and market liberalization



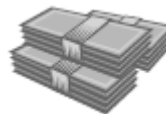
- Increased physical interconnections
- Continued market liberalisation, e.g. simplified balancing rules, improved TPA
- Efficient retail competition, e.g. through limits on duration and proportion of volume that can be purchased from one supplier (Germany) and increased customer switching possibilities
- Increased liquidity of hubs and existence of trading points in many markets
- OUTLOOK: Increase of hub liquidity expected, increased influence of hubs in pricing

Demand: Slow recovery after sharp drop in demand



- Sharp decrease in demand due to financial crisis
- OUTLOOK: Slow recovery of industrial demand, rather decreasing residential/commercial sector demand due to growing energy efficiency

Pricing: De-Coupling of oil and gas prices



- Hub price signal increasingly a reference for large gas customers
- Mismatch between oil-linked LTCs and hub gas prices sales contracts
- Hub price levels volatile and frequently below oil-indexed price levels – future development driven by supply/demand balance and commodity cycles
- OUTLOOK: De-Coupling of oil and gas prices expected to sustain, value of commodity and flexibility at risk

Regulation challenges long term booking of cross-border import capacities fostering market integration



Promotion of open access in international pipelines across Europe taking interconnection one step further

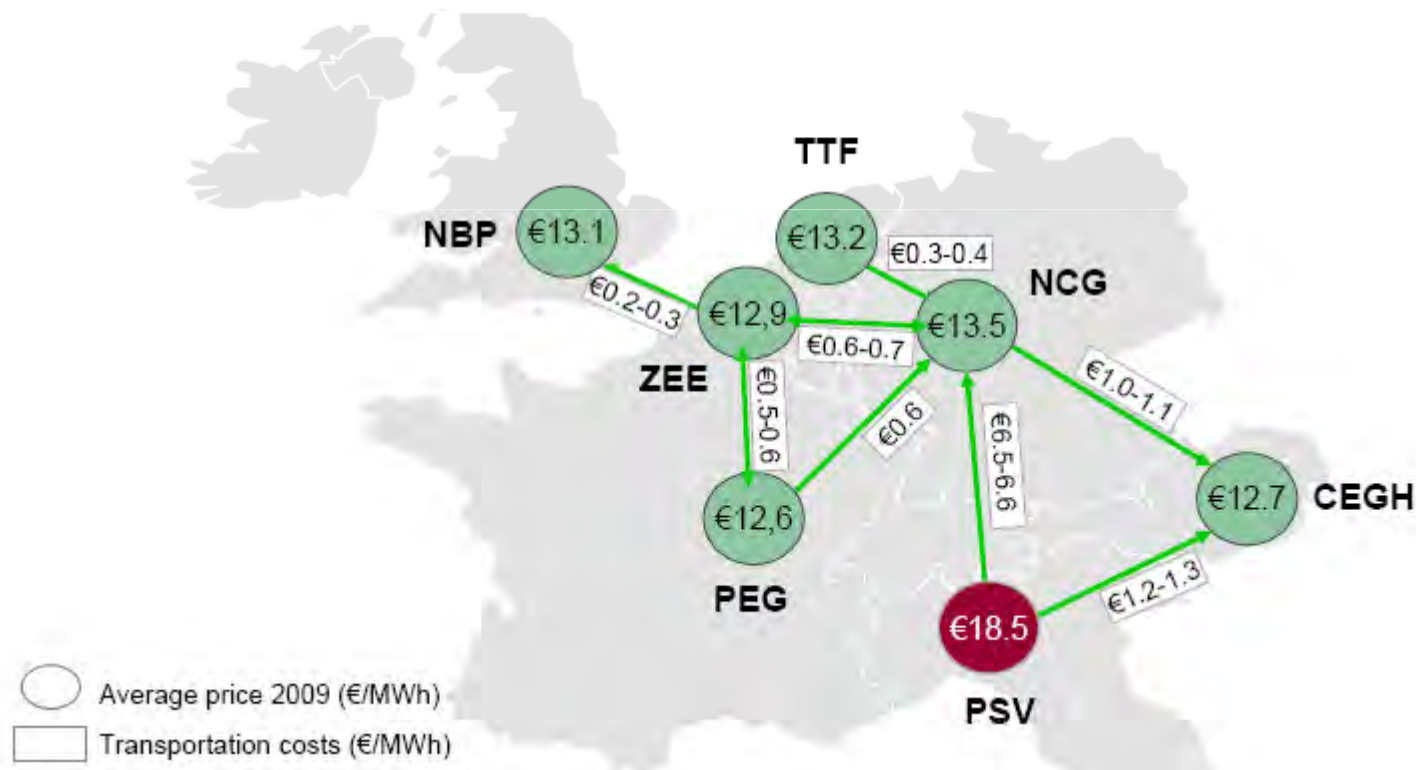
- ❑ **Incumbents traditionally in "exclusive" position to control cross-border capacities by long-term booking**
 - Shielding the market against potential competitors
 - Excluding producers from marketing directly
- ❑ **EU commission effectively challenging this status to promote market liberalization. Examples:**
 - Divestiture plans: Snam Rete Gas sales 49% TENP (Netherlands – Germany – Switzerland); 46% Transitgas (Germany – Switzerland – Italy), 89% TAG (Russia, Austria, Italy), etc.
 - German regulation:
 - 20% of intl. transmission capacity reserved for short term bookings
 - Max. 65% of transmission capacity may be booked for periods over 4 years
 - Installation of capacity trading platforms (ie: Trac-x)

Price Structure in NW and Central Europe is increasingly based in *Basis Differential Dynamics*



Markets where supplies are based on liquid hubs (UK, The Netherlands) can increasingly profit from differentials between these prices and oil indexed imports

Basis Differential Dynamics: Price in Hub A = Price in Hub B + Transport from A to B



Source: Boston Consulting Group

A diverse LNG World



The world of LNG is squeezed between greater globalisation and greater discontinuities

Atlantic Basin

- US Shale gas and interest in replacing US terminal overcapacity with LNG export (traders, banks, European utilities)
- Europe capacity utilisation worry
- West Africa (Angola, Nigeria and Equatorial Guinea) and the challenges of expansion in the Atlantic Basin
- Latin America emerges as demand centre and supply has to change target market (floating and fixed regas, operational details, risk of adjusting contracts)

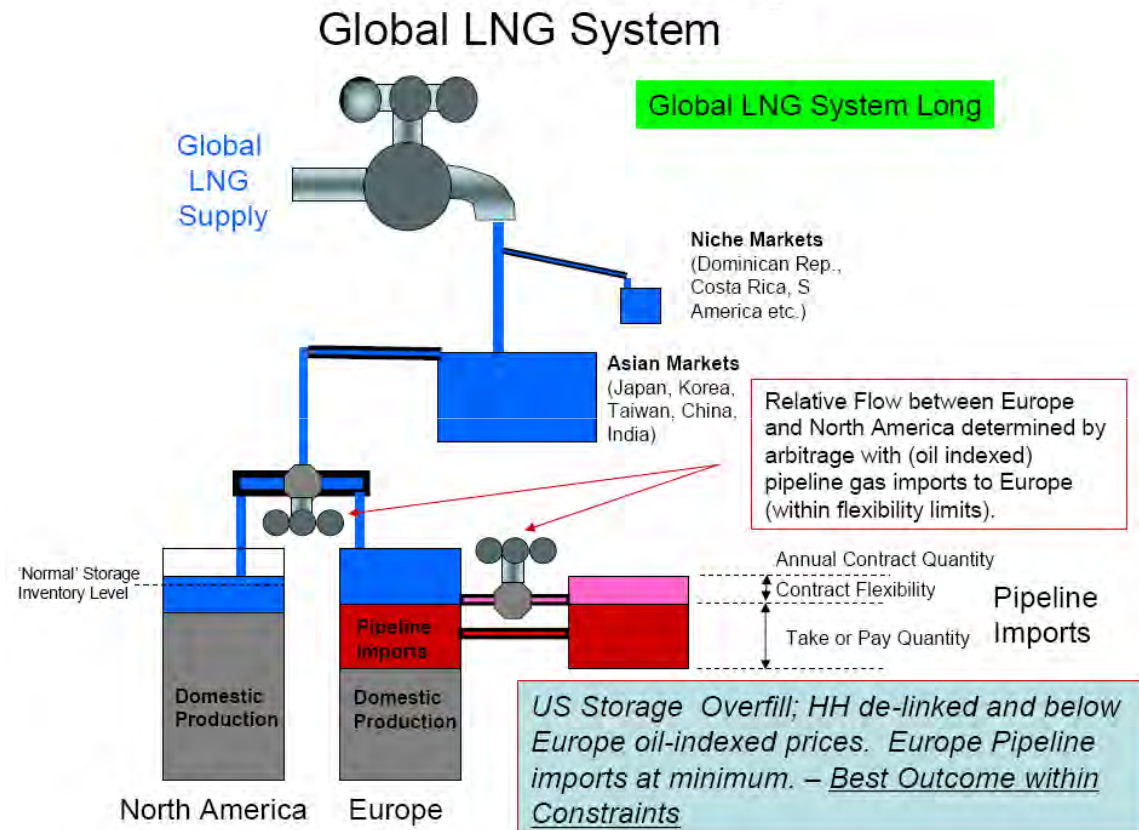
Asia Pacific

- Growing traditional markets (Japan, Korea, Taiwan) and many emerging demand centers (China, India)
- Growing complexity and competition; JCC pricing persists
- Japan's nuclear crisis; global impact
- Big shift in Pacific supply structure, new challenges, many new entrants; W. Australia mega LNG

Market Interaction through LNG and Pipeline Arbitrage



- “The markets of North America, Europe and Asia which are impacted directly or indirectly by LNG imports, despite their different market-price structures and security of supply concerns, can be described as having a ‘system dynamic’ which is heavily influenced by arbitrage, especially between oil-indexed European pipeline gas and LNG which has flexibility as to its ultimate destination.”



Source: Oxford Institute for Energy Studies

A diverse LNG World (cont.)

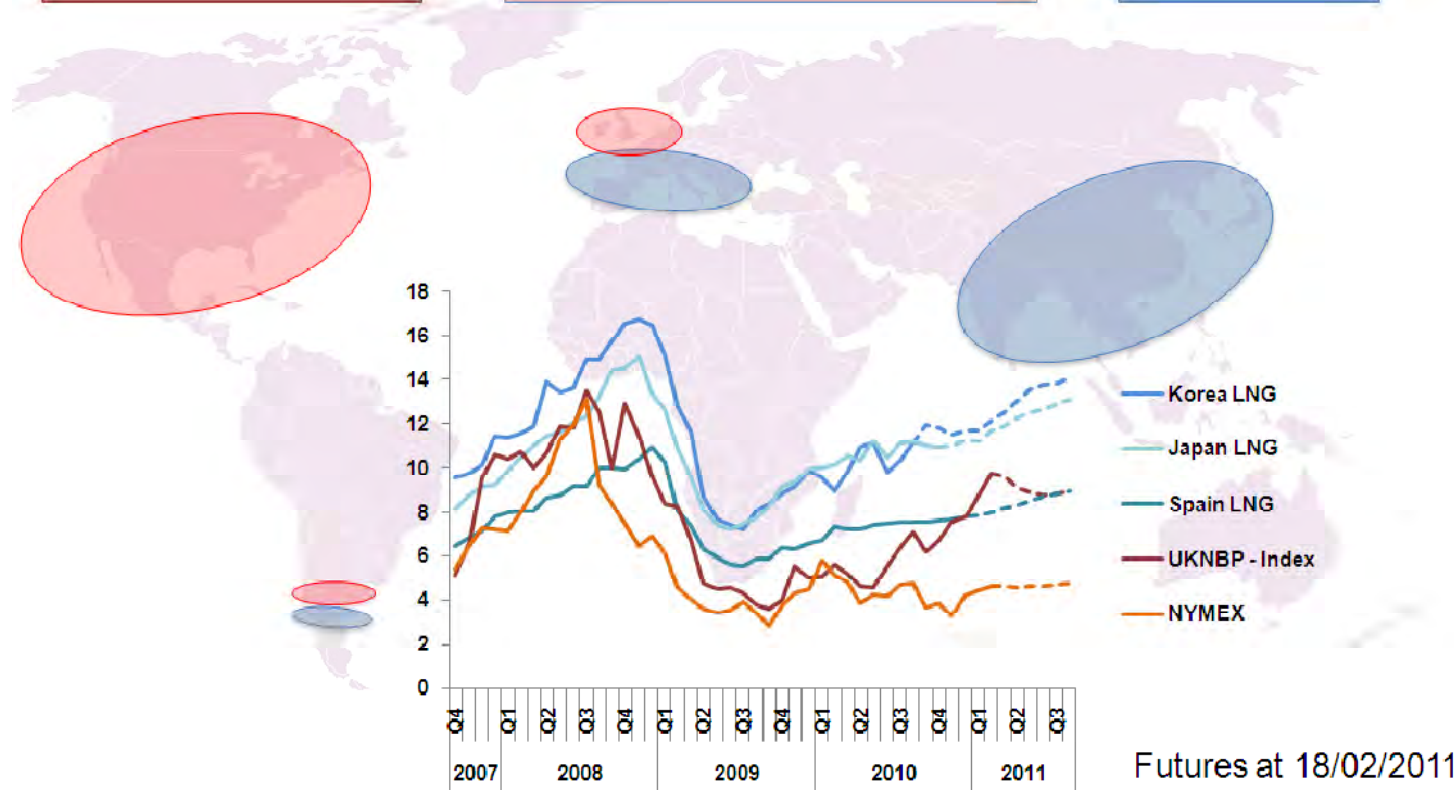


Europe is currently a “battleground for pricing”, with the Americas largely hub-based and Asia oil based

Gas pricing Hub
“Henry Hub”

Gas pricing Hub (NBP/TTF)
and oil/oil products

Oil related
pricing

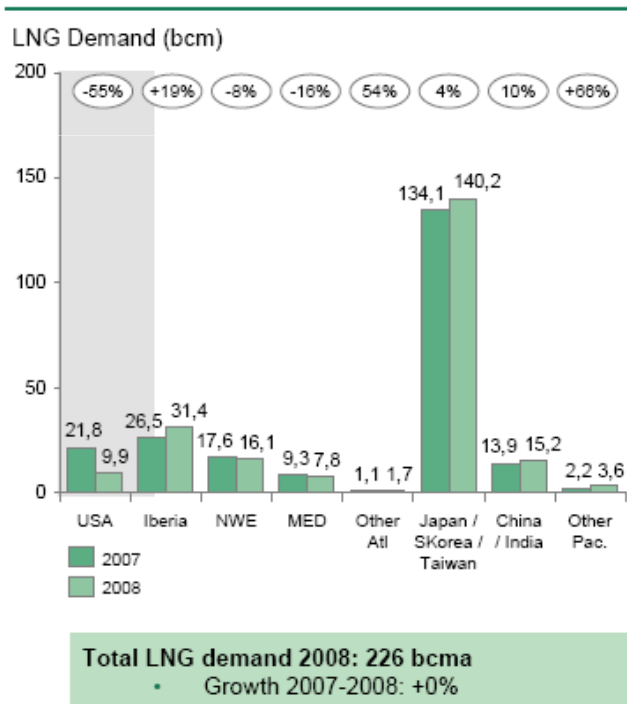


Global LNG Outlook

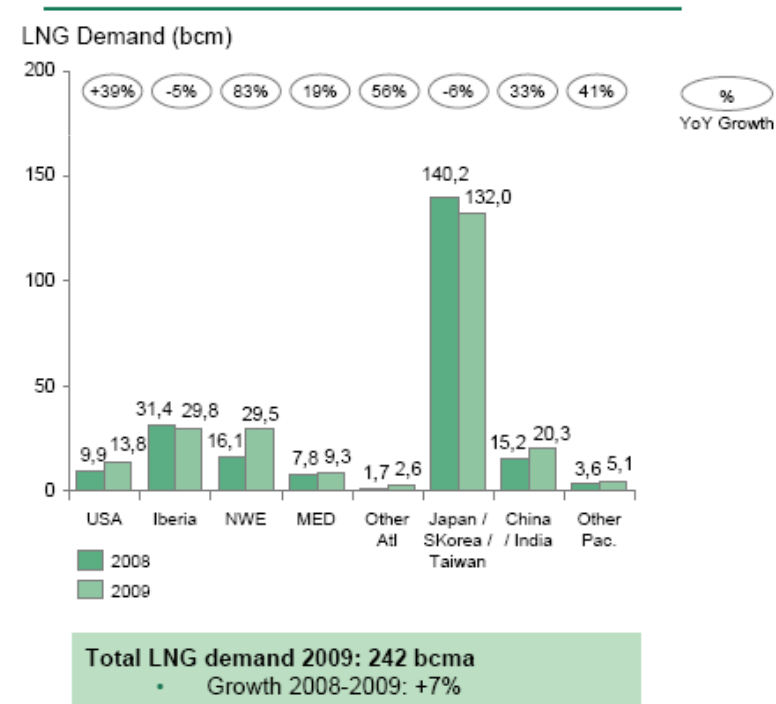


- ❑ LNG demand deeply impacted by the financial crisis and by the development of unconventional production in the US
 - Stagnation of demand in 2008, driven by slowdown of demand in the U.S.
 - Recovery of demand growth in 2009 and 2010, driven by supply additions, displacement of pipeline imports in Europe and new LNG markets
 - LNG demand in 2012 could reach 310-330 bcma (80-100 bcma below industry estimates before the crisis)

LNG demand growth 2007–2008



LNG demand growth 2008-2009



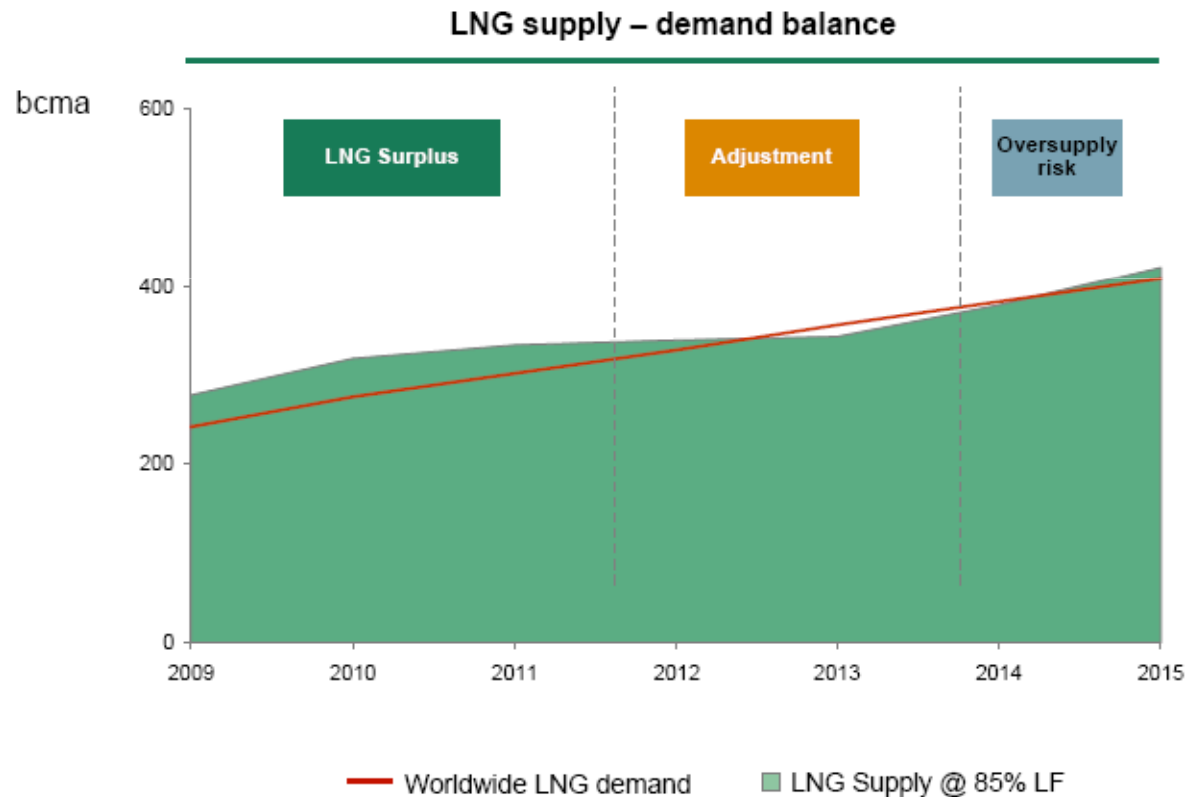
Source: CEDIGAZ; Boston Consulting Group

Global LNG Outlook (cont.)



LNG supply-demand balance: progressive adjustment until 2012-2013 followed by new risk of oversupply in 2014+

- Market under severe oversupply in 2H 2008 and 2009
- 2010: strong improvement of supply-demand balance driven by demand growth and "gOPEC behaviors" (Qatar maintenance)
- 2012-2013: High probability for a balanced market (@85% LF), driven by limited number of facilities starting up during the period
- 2014: high risk of oversupply, driven by FIDs in the Pacific (esp. Australia)



Source: CEDIGAZ; IEA; BCG; WoodMackenzie

Global LNG Outlook (cont.)



- ❑ **LNG spot prices in 2009–2011 were structurally below long-term prices, although final pricing structure was very reliant on**
 - throughput from core suppliers (Qatar maintenance, Nigeria force majeure, Bontang decline, etc), price negotiations in Europe (speed moving towards liquidity) and demand development
 - Potential surge of LNG spot prices in 2012-2013, although premiums vs long term not comparable to 2005-1H2008, given increase in market liquidity
 - 2014-2015 could poise an additional window of opportunity to source competitively
- ❑ **Short-term European spot gas prices are expected to trade below the oil-linked contract price**
 - Poor demand on 2011e – European demand is likely to fall by 4% due to milder winter and power cut (Soc Gen)
 - Pre-paid Russian gas is still available
 - No LNG rerouting from UK to Japan – Limited rerouting from other countries marks a demand for higher premium over NBP
 - No storage cost in summer in UK
- ❑ **Over the long term, contract LNG prices expected over ~\$7/MMbtu, as this price level is required to recover capital costs for marginal supplies**
 - Level of integration in the value chain, market balance at the time of negotiation and logistics could significantly impact final contractual conditions

Fukushima Impact

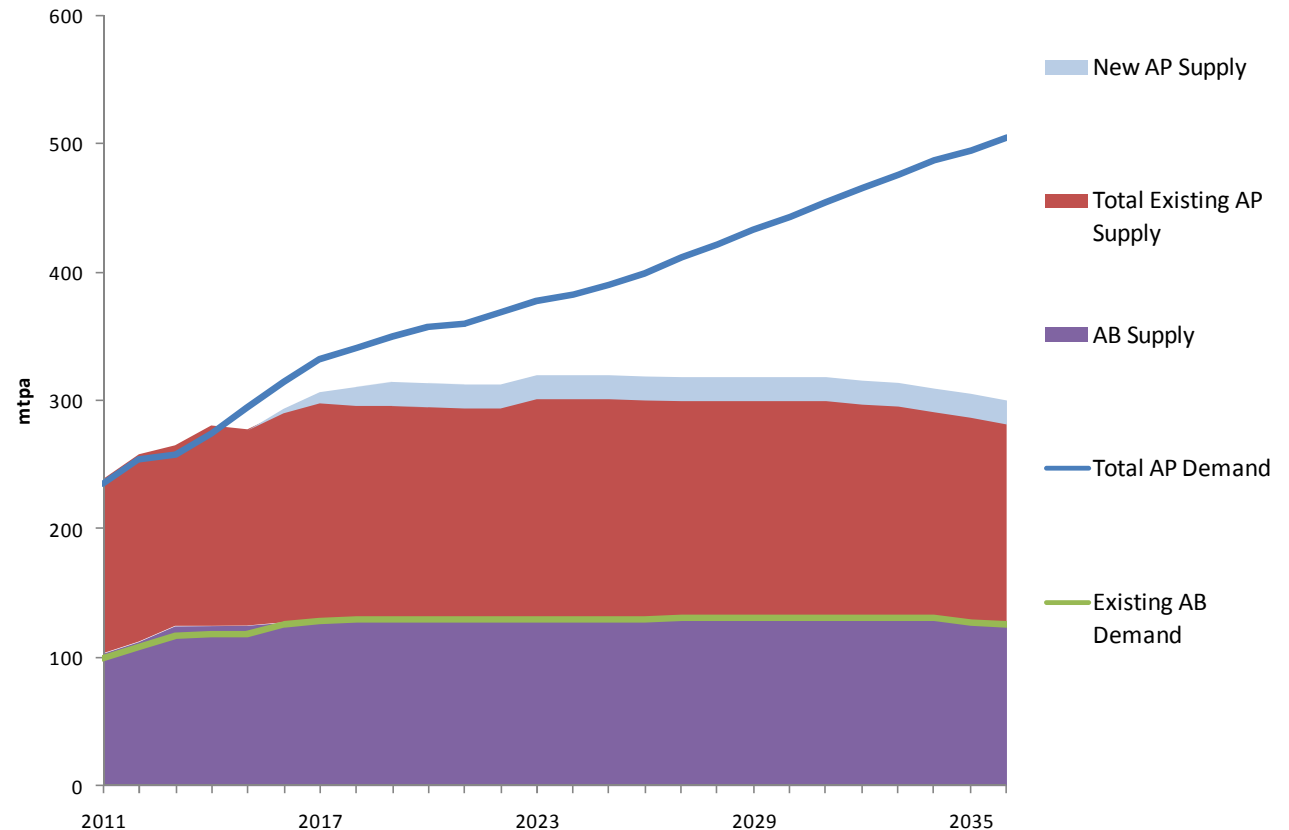


Short-term impact on global LNG demand

- At least 60-70 TWh nuclear power supply to replace
- A 30-50% replacement by gas implies a LNG demand increase equivalent to 6-10% of global liquid LNG supply (6-7.5 bcma)
- This could double easily with other safety or inspection shut-downs (in Japan)
- TEPCO being the largest LNG buyer worldwide, price increases have been limited, so far
- Asia Pacific demand is the big theatre of interaction which will increasingly draw Middle East flexible LNG in its direction - especially in winter

Longer term implications could be more significant

- Possibly a deep review of current nuclear policy over the long term
- ... and LNG is consumed nearly exclusively in nuclear countries



Source: Gas Strategies

Summary and Conclusions



- ❑ Structural changes in the European gas market are underway
 - EC actively promotes market liberalization
- ❑ Slow demand recovery combined with slight oversupply may create windows of opportunity
- ❑ LNG world is fragmented with different characteristics
 - However, LNG is gradually becoming a true commodity
- ❑ Fukushima incident could lead to significant implications
- ❑ 2011 will be a decisive year for European gas prices and contracts
 - transition away from oil-linked and towards hub-based prices which began in 2009 will continue
 - Shift towards a more diversified portfolio of contractual agreements