The role of LNG in diversification

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CONCURRENT SESSIONS TRACK A - SESSION 4: Gas market regulation: the role of LNG

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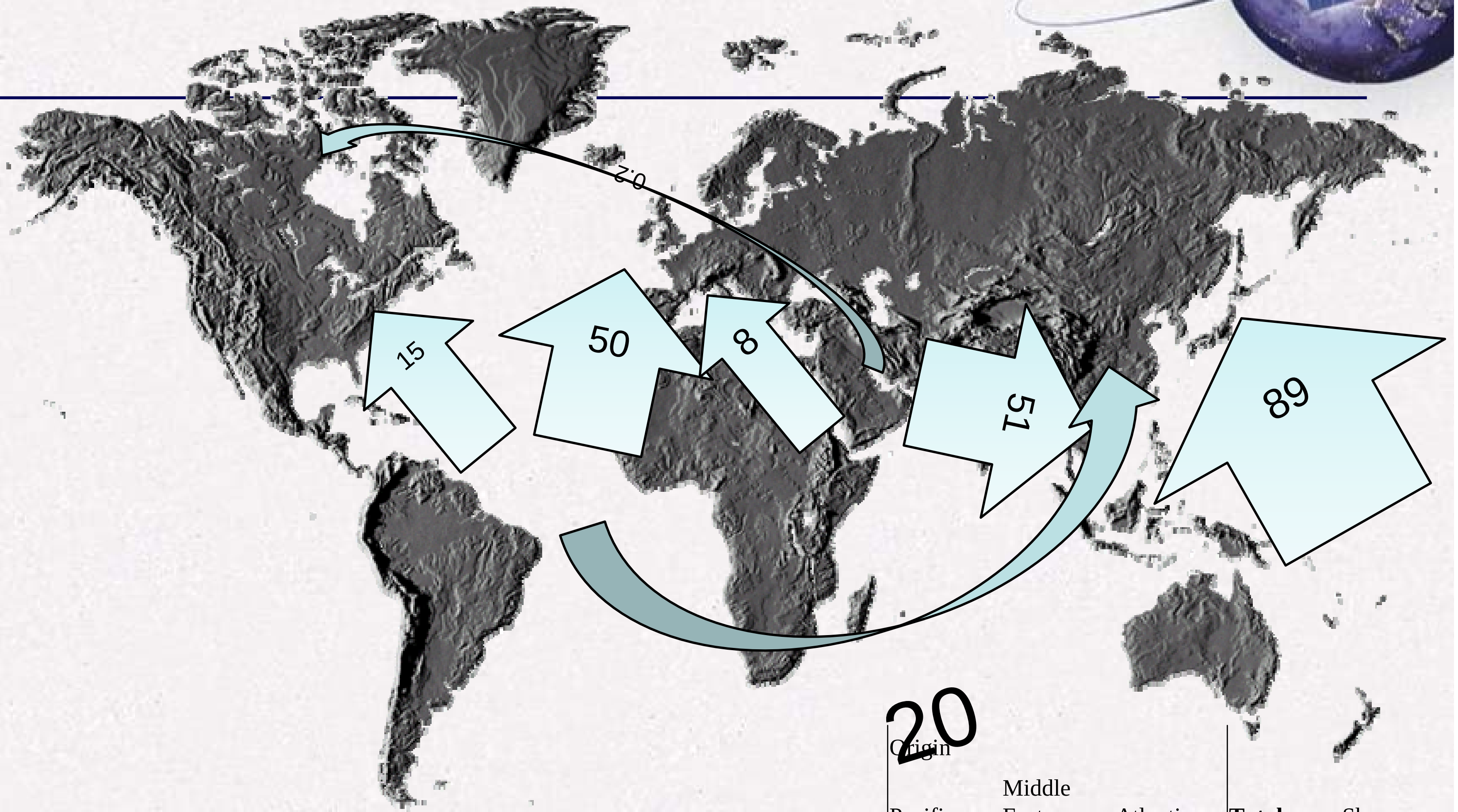
Role of LNG

- Long-term security, particularly in North Asia, and as a marginal supply source in OECD Europe.
- Long-term security of demand
- Short-term relief in emergency
- A balancing role
  - Between regions, countries
- As an energy security measure, LNG will remain marginal and supplemental to other suite of measures.

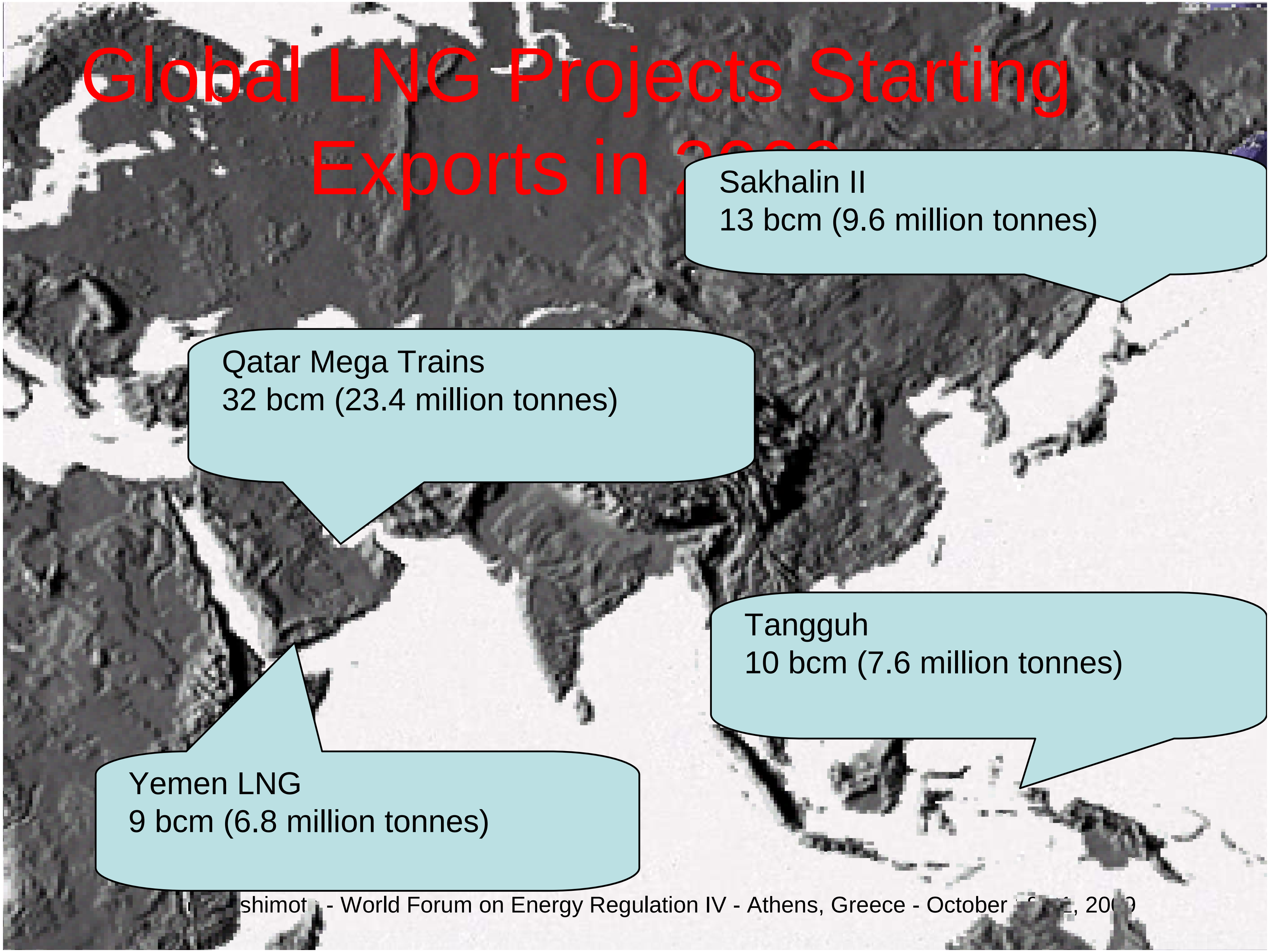
2008 LNG Movement



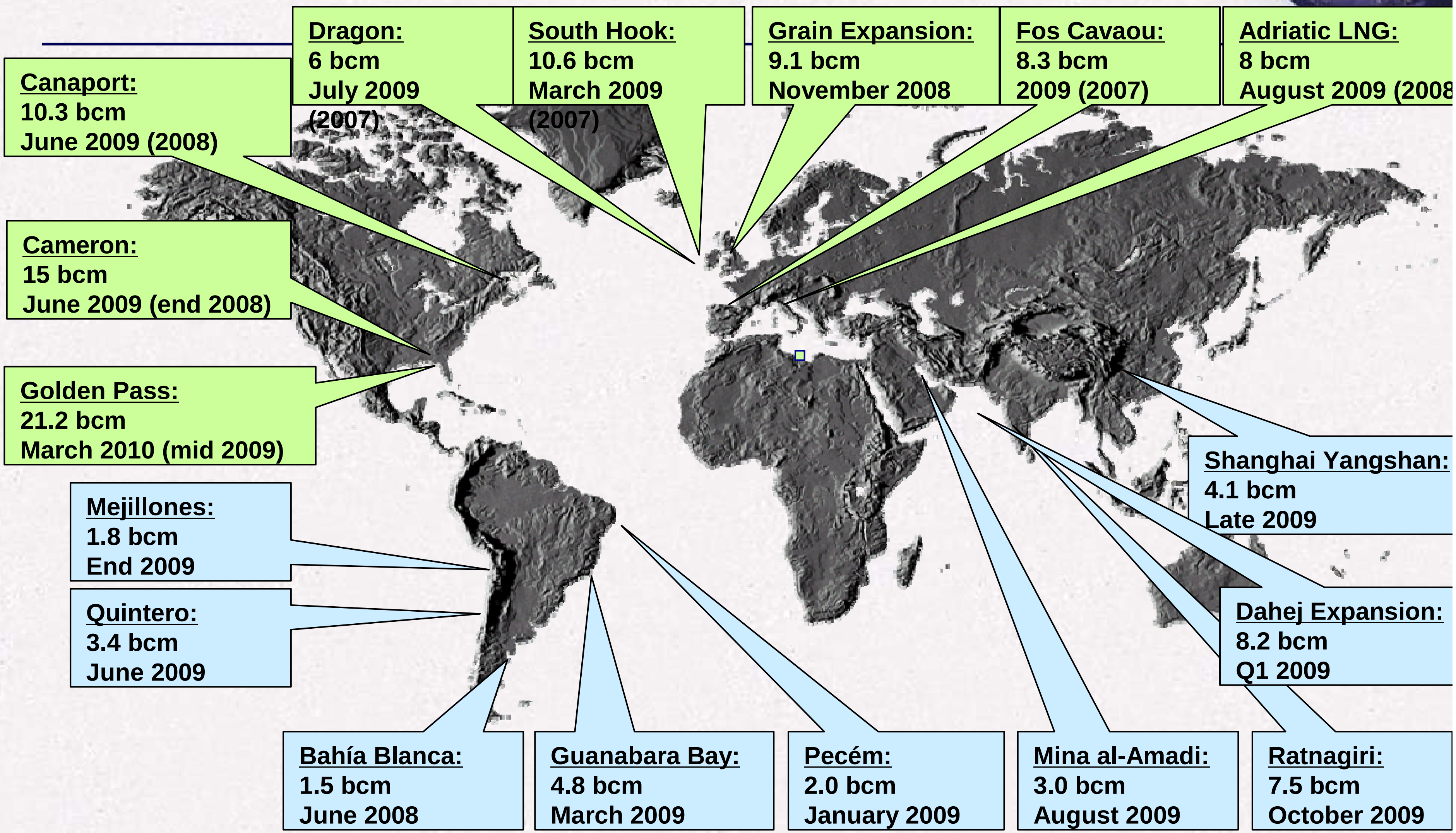
		Origin Pacific	Middle East	Atlantic	Total	Share
Destination	Asia	89	51	**20**	**160**	68%
	Europe	-	8	50	**59**	25%
	Americas	-	0.2	15	**15**	7%
	Total	**89**	**60**	**85**	**234**	
	Share	38%	26%	36%		

Unit: bcm

Global LNG Projects Starting Exports in 2009

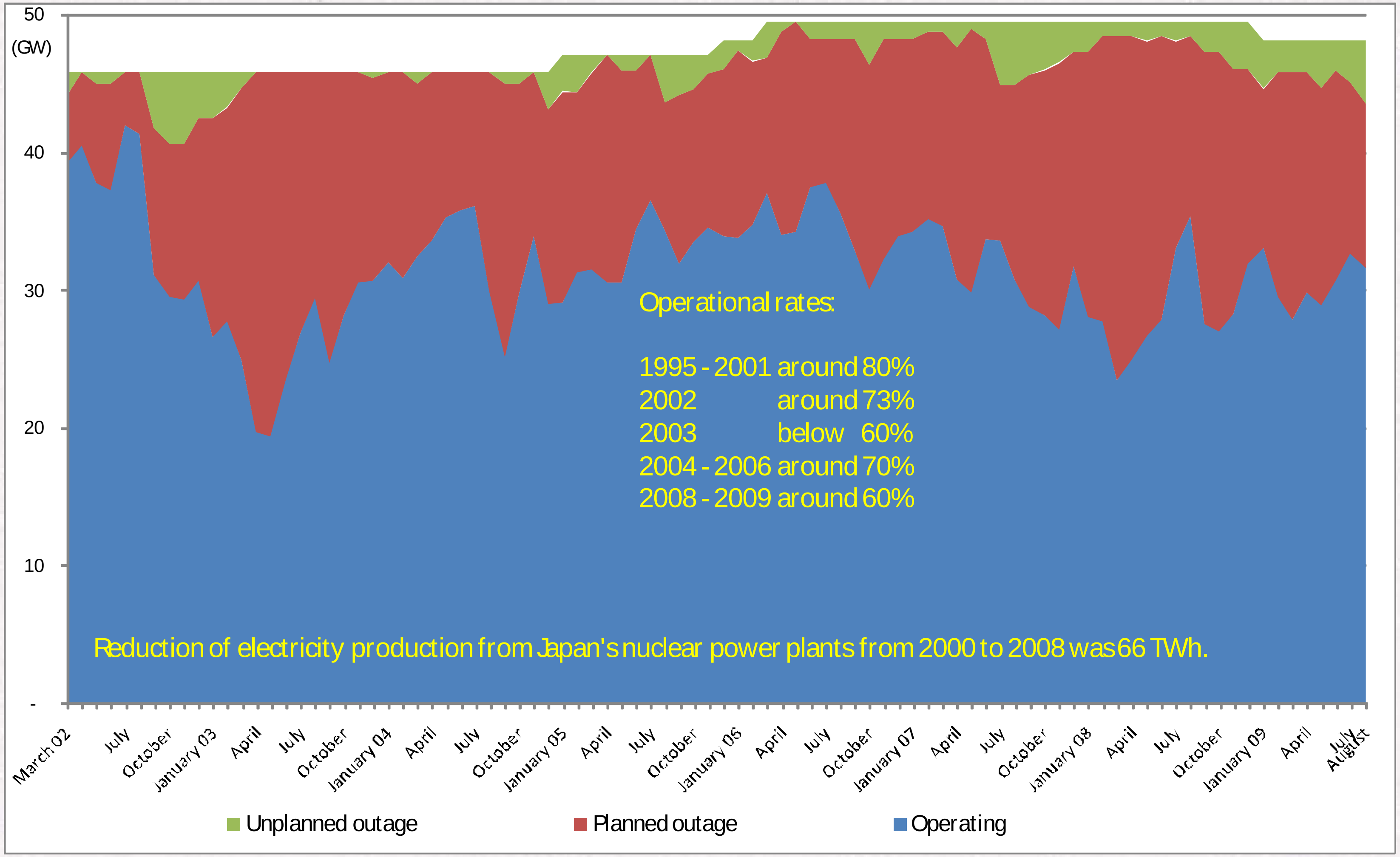


Selected LNG Terminals with Start-up in 2009

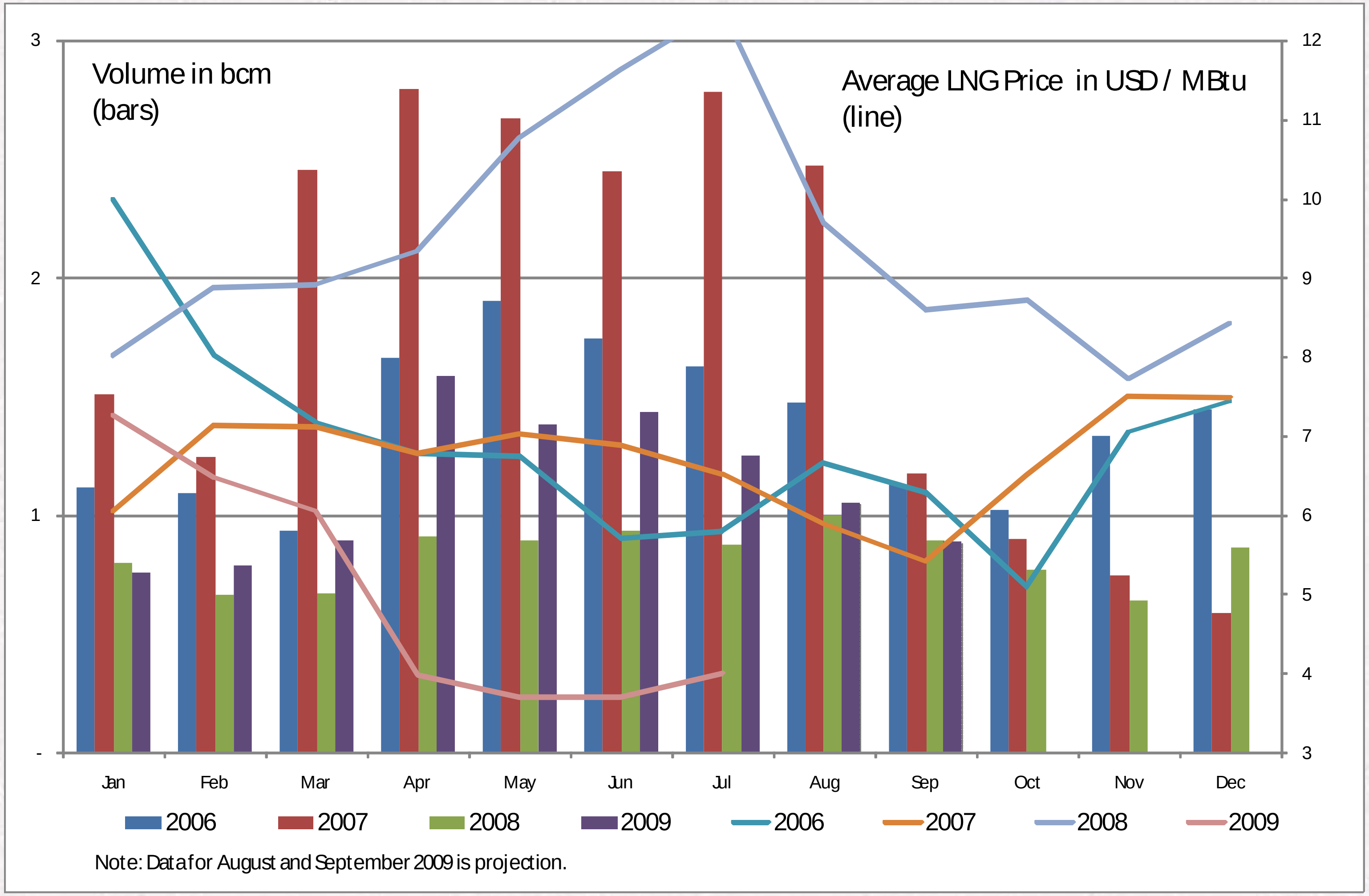


Filling the gap - Japan’s Nuclear Power

Available nuclear plant capacity in Japan (2002 - 2009)



LNG Imports into the United States



Inter-regional Imports Dependence by OECD Region

	1980	2000	2006	2015	2030
OECD	8%	21%	24%	30%	41%
North America	1.4%	4%	2%	6%	16%
Europe	18%	36%	45%	54%	69%
(European Union)			57%	72%	85%
Pacific	66%	68%	61%	61%	54%

Source: World Energy Outlook 2008, IEA (in the Reference Scenario)

LNG in the 20th and 21st Centuries - More Diversified

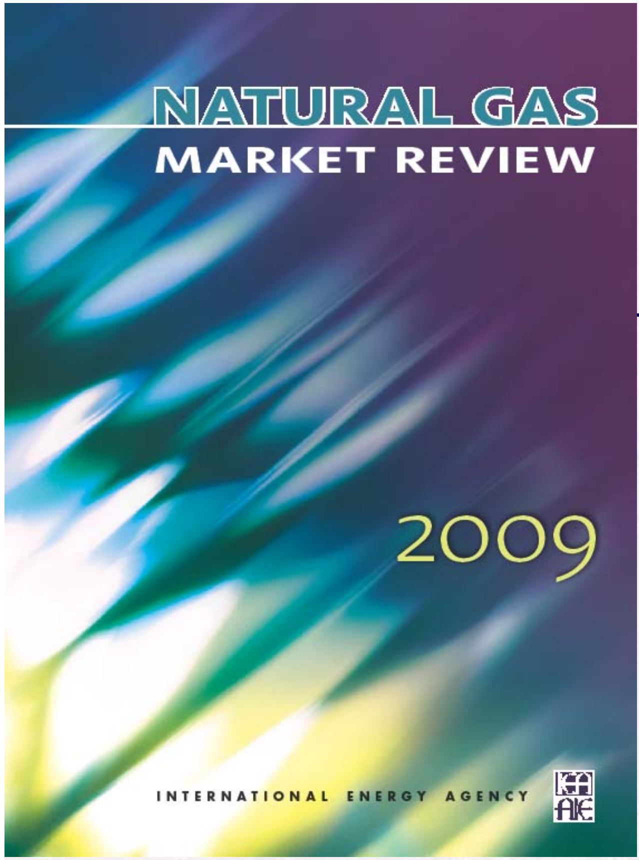
	1990	2009
LNG as. . .	The most expensive fossil fuel	A less expensive alternative to oil, and pipeline gas
Importers	Exclusive club, mostly OECD members	Affordable to emerging economies
Players	Sellers, buyers, transporters	Players have multiple roles, integrated business models
Value chains	Parallel, point-to-point	Multiplied chains and points
Projects	Capital intensive, bigger and bigger	Even more super giant, but also small-scale models emerging
Gas fields	Large, easy to tap	Frontier, difficult to exploit
Carrier ships	Bigger and bigger, expensive	Even bigger, but also smaller ones and used ones

Sakhalin II - 25 Years in Making

1984-86	Lunskoye and Piltun-Astokhskoye fields are discovered.
1992	A feasibility study agreement by MMM (Marathon, McDermott and Mitsui) and Russian Federation.
	Shell and Mitsubishi join.
1994	Sakhalin II PSA by the Russian Federation, the Sakhalin Oblast Administration and Sakhalin Energy.
1997	McDermott withdraws.
1999	First production at Piltun-Astokhskoye - Russia's first offshore oil production.
2000	Marathon withdraws.
2001	Supervisory Board approves Phase 2.
2003	Sakhalin Energy signs sales with Japan's Tokyo Gas, Tepco, Kyushu Electric.
	Full development of both Piltun-Astokhskoye and Lunskoye fields starts.
2005	A major cost increase and project delay (from 2007 to 2008) is revealed.
Dec 2006	A protocol to bring Gazprom into the Sakhalin Energy as a leading shareholder.
Apr 2007	Gazprom acquires 50% plus 1 share and the leading role.
Jun 2008	Project financing deal with JBIC and other lenders.

Conclusions

- LNG grows faster than other parts of gas business -- slowing in 2008 and 2009
- LNG enhances connectivity and flexibility in the global gas markets - affecting regional prices
- Unprecedented capacity growth is underway in 2009 - 2010, but unbalanced, and may be uncertain
- LNG assumes more, and new, roles
- Next generation LNG wanted - critical year 2009 - 2010



Thank you!

- Questions and comments will be welcomed at **hiroshi.hashimoto@iea.org**