

17th INTERNATIONAL CONFERENCE & EXHIBITION ON LIQUEFIED NATURAL GAS (LNG 17)



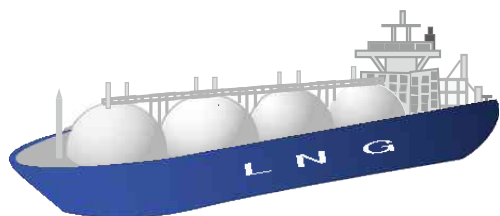
EXPANSION AND EVOLUTION OF THE ASIA PACIFIC LNG MARKETS

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International Organizers



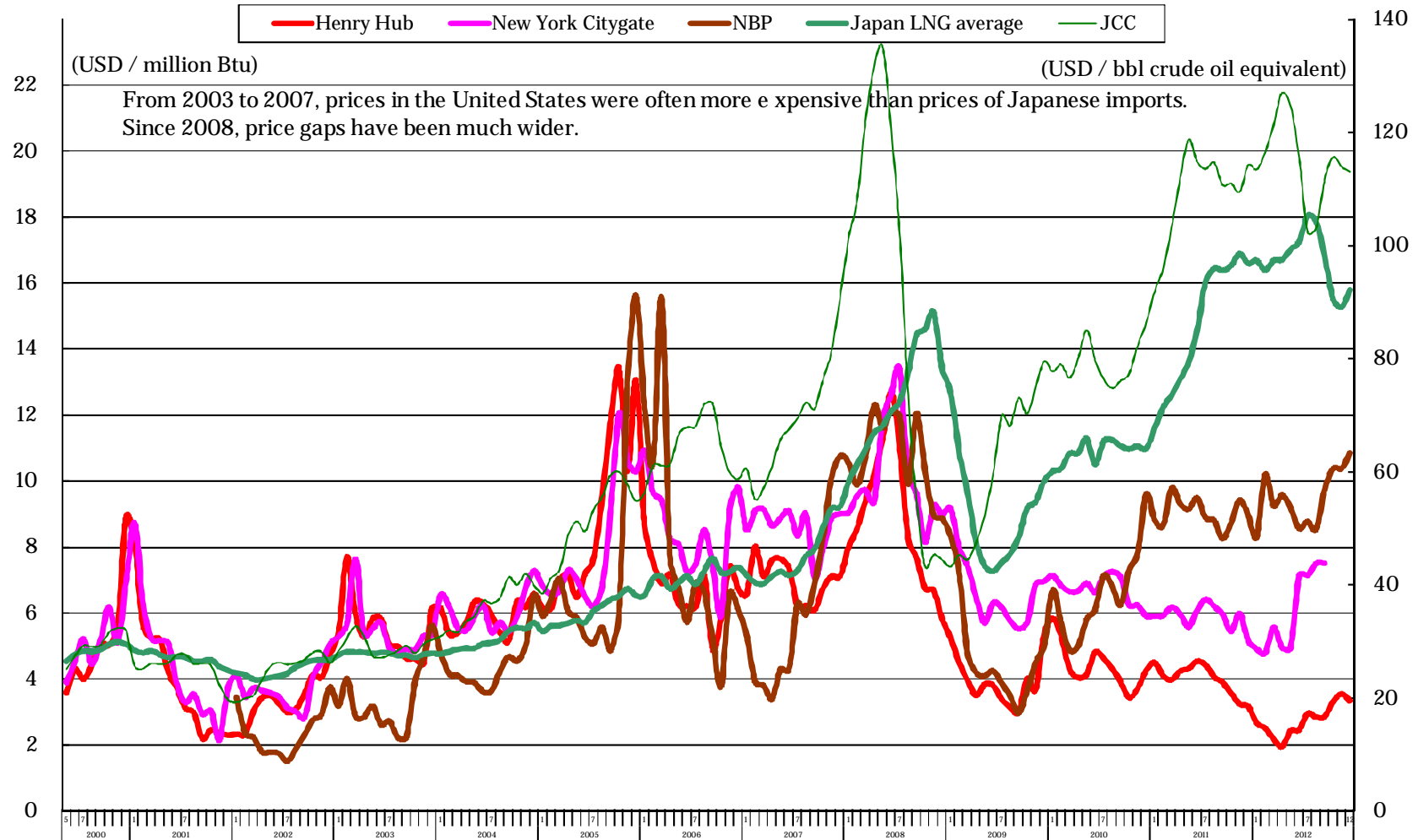
Host Association



Outline

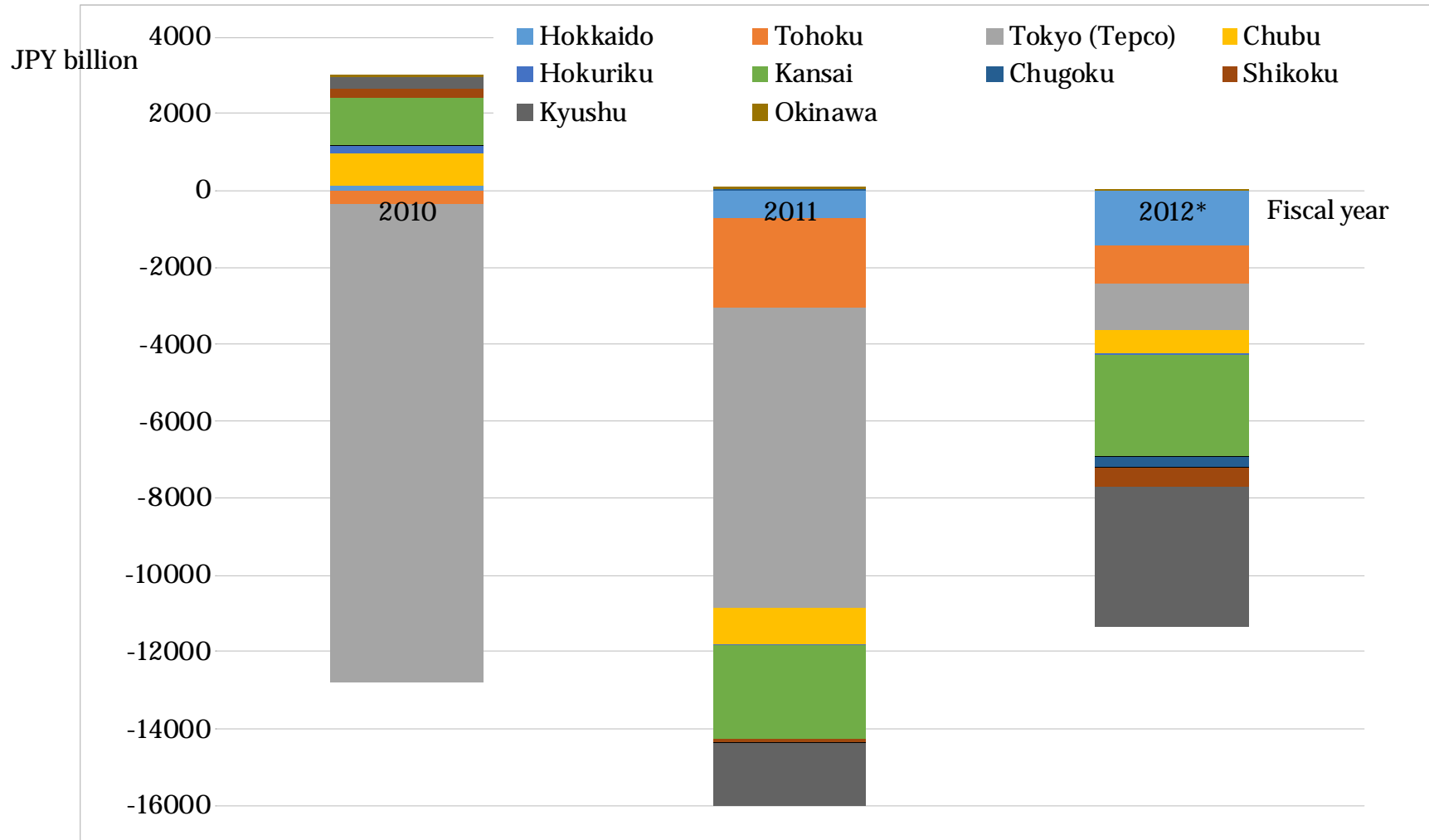
1. The current biggest issue: cost of LNG procurement
 - Widening gaps of regional gas prices
2. Evolution in the LNG markets in recent years
 - Increasing shares of the Asia Pacific markets and Japan
3. Changing pattern of LNG procurement
 - Shifts between contract and cargo purchases
4. More proactive involvement in projects
 - Incremental supply sources and accompanying more proactive involvement of Asian buyers

The biggest problem: widening gaps



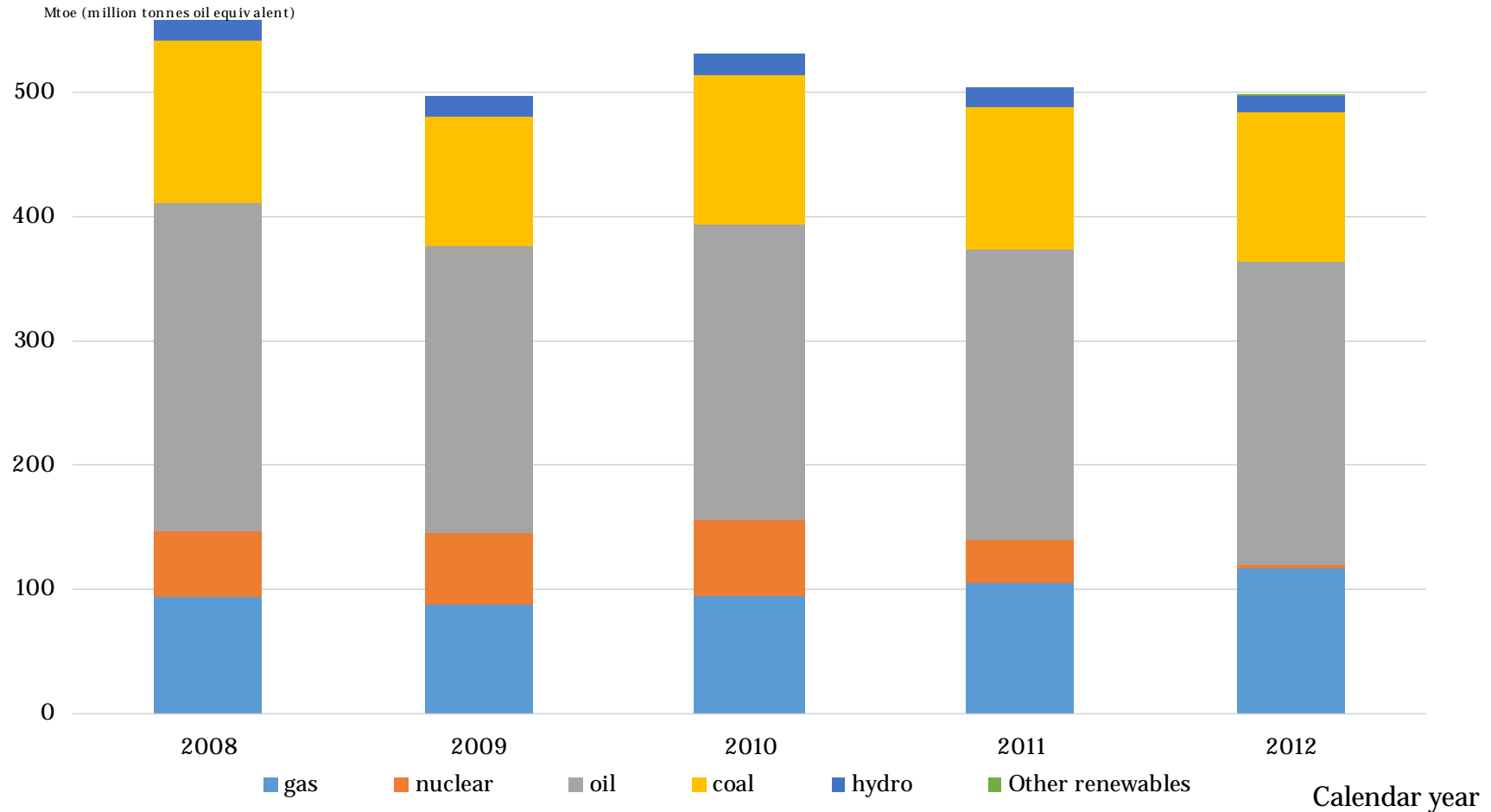
(Data sources) Japan's custom statistics, Department of Energy (United States), Energy Intelligence, compiled and converted by the authors.

Bloody performance by the Japanese electric power sector



(Note) *2012 preliminary estimates.
 (Data source) companies, compiled by the authors.

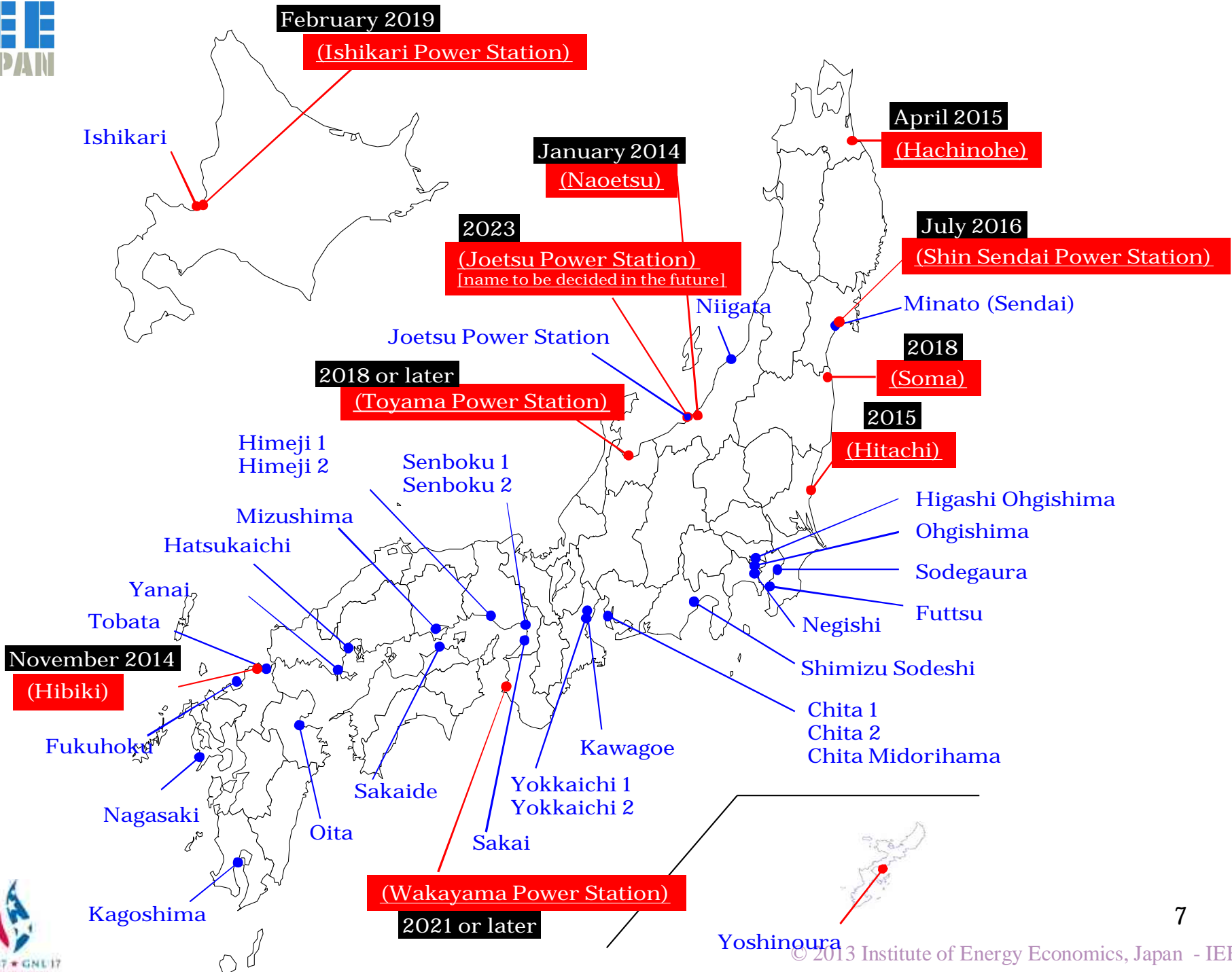
Shifting primary energy mix



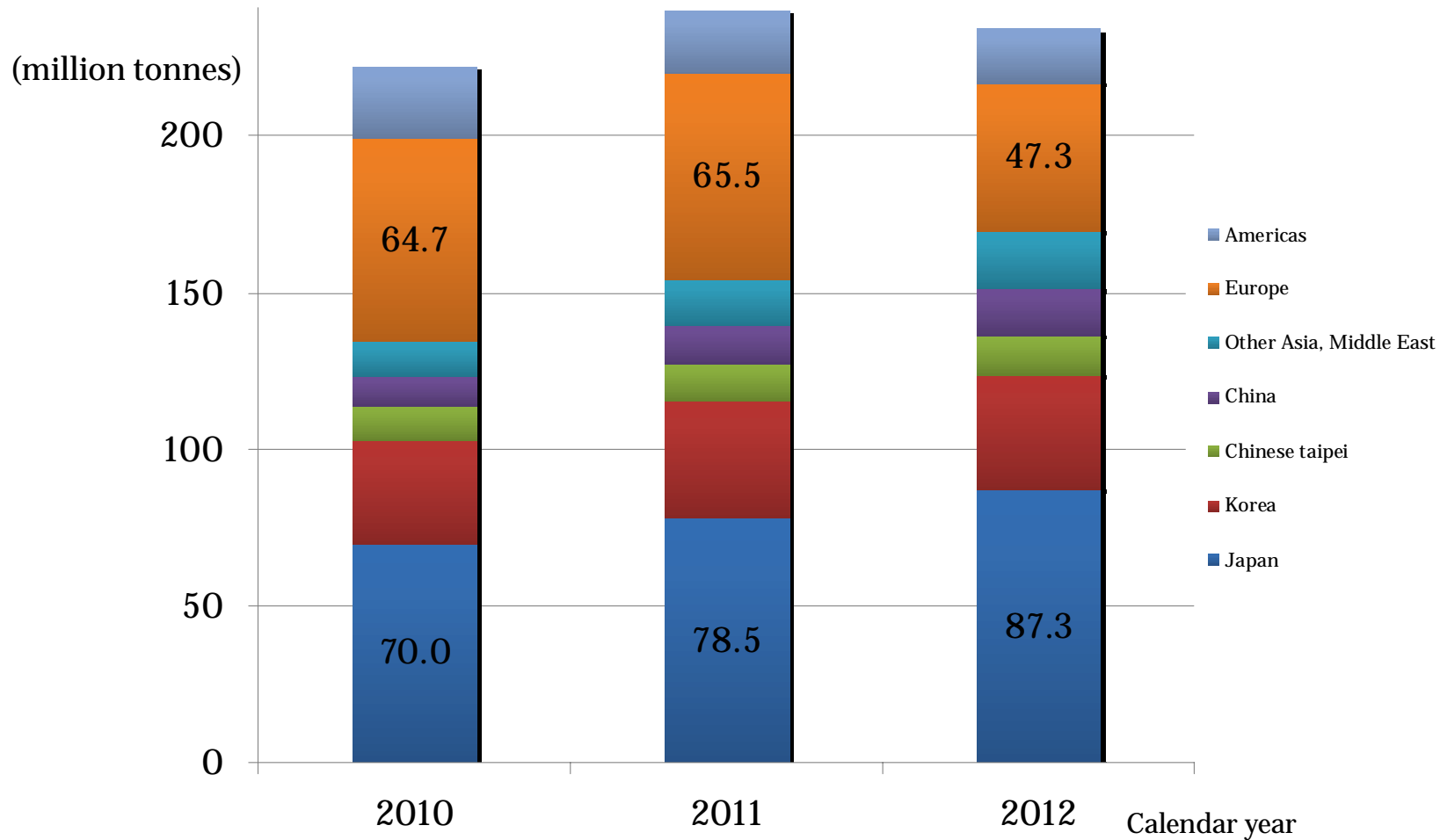
(Source) EDMC Energy Trend, April 2013, IEEJ

Japanese LNG buyers' dilemma: misinterpreted both in and outside of the country

- Ordinary people in Japan tend to think that “Japan buys the most expensive LNG because it is supplied as LNG and because the utility buyers do not work hard to reduce prices.”
- Some external experts describe “Asian buyers are willing to pay higher prices for security of supply” and “Utility companies can easily pass incremental fuel costs onto customers.”
- Anti-nuclear and pro-nuclear discussions in Japan do not always recognise global implications of Japanese policy, including those on global LNG supply/demand and pricing.

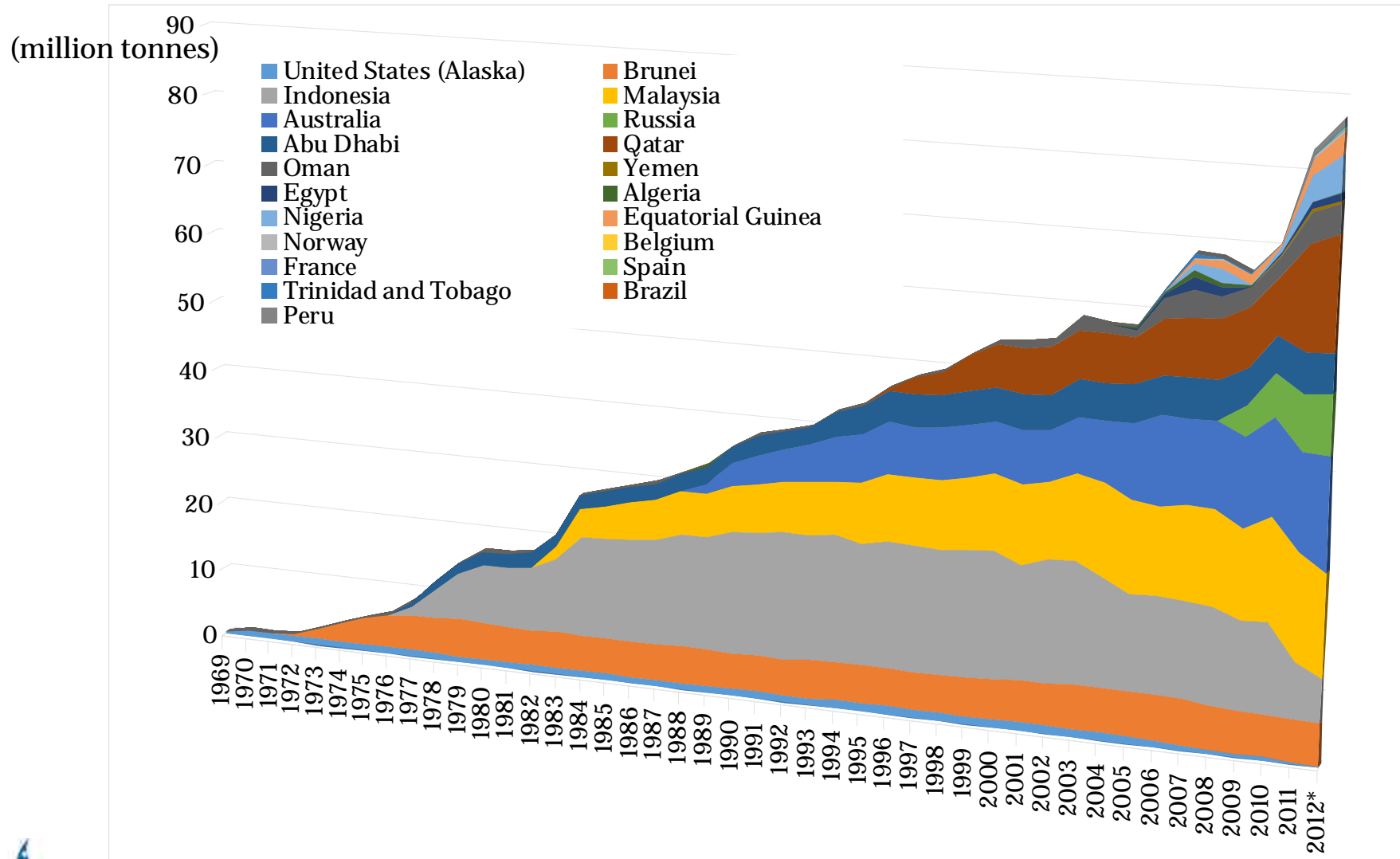


Global LNG trades declines in 2012, whereas share of Asia (Japan) increases



(Data source) GIIGNL, customs statistics, etc.

Japan's LNG imports by source

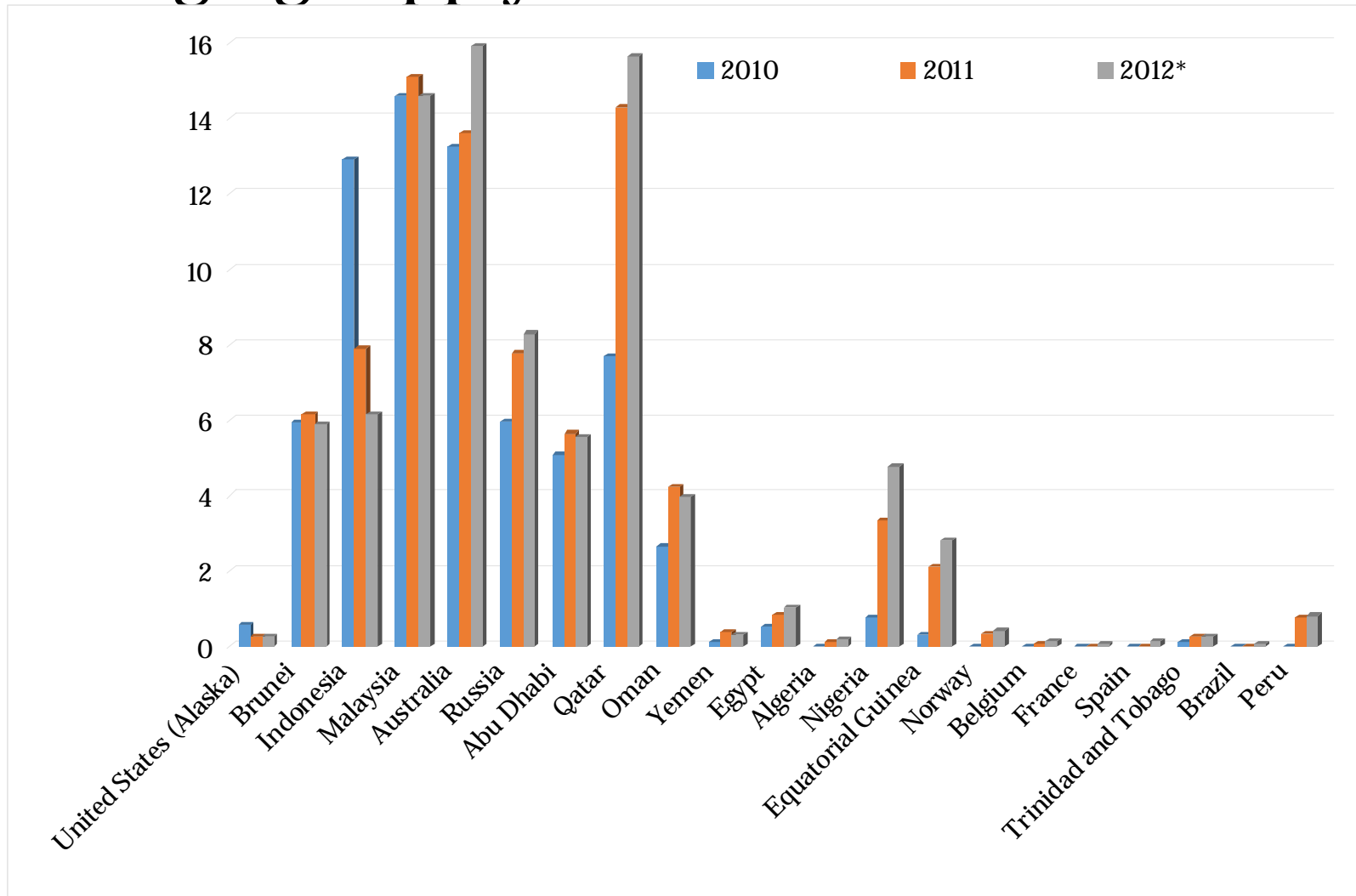


(note) Figures are for fiscal years. *Only 2012 Figures are for the calendar year.

(Date source) Japan's customs statistics.

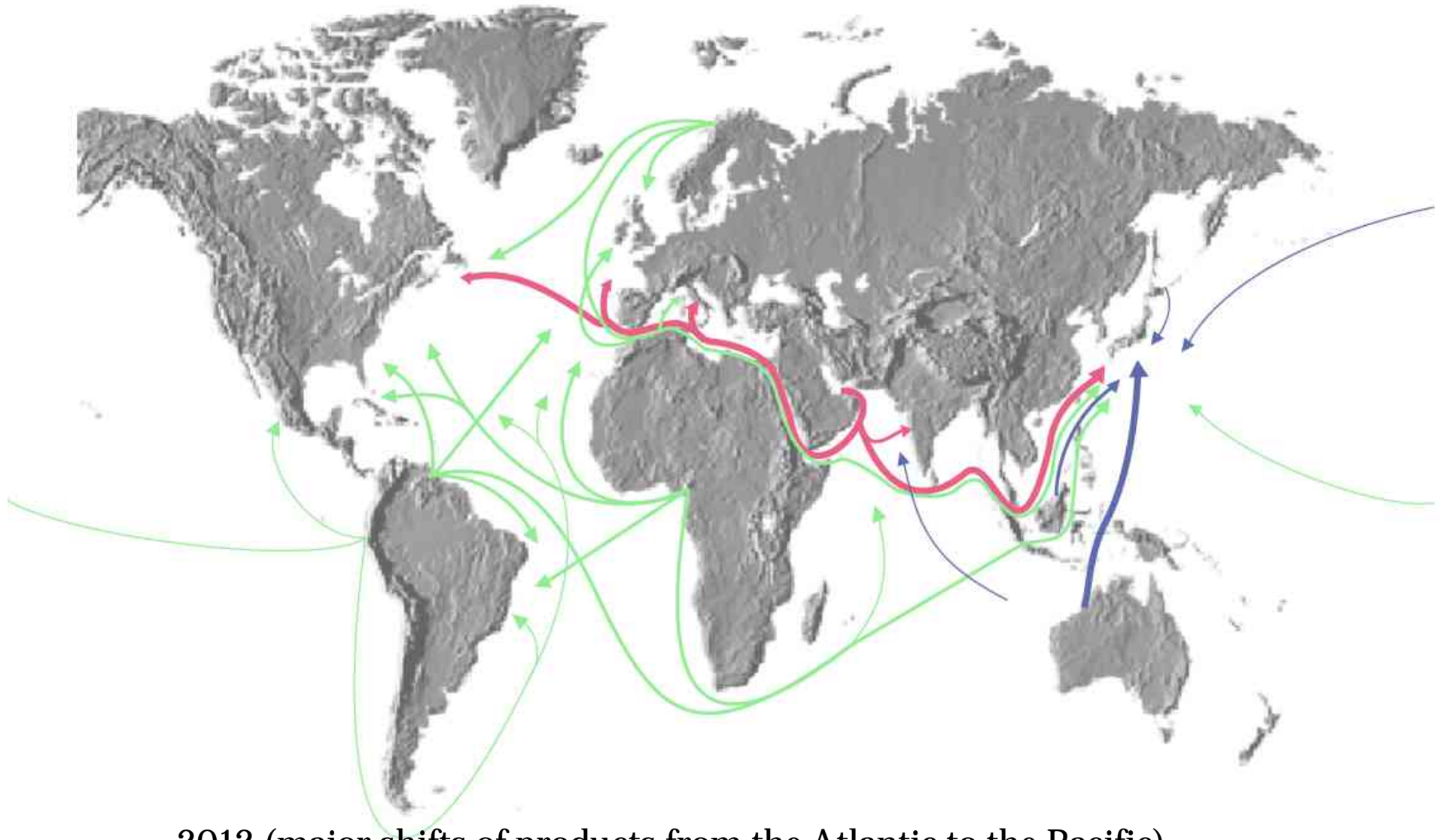


Changing supply sources from 2010 to 2012



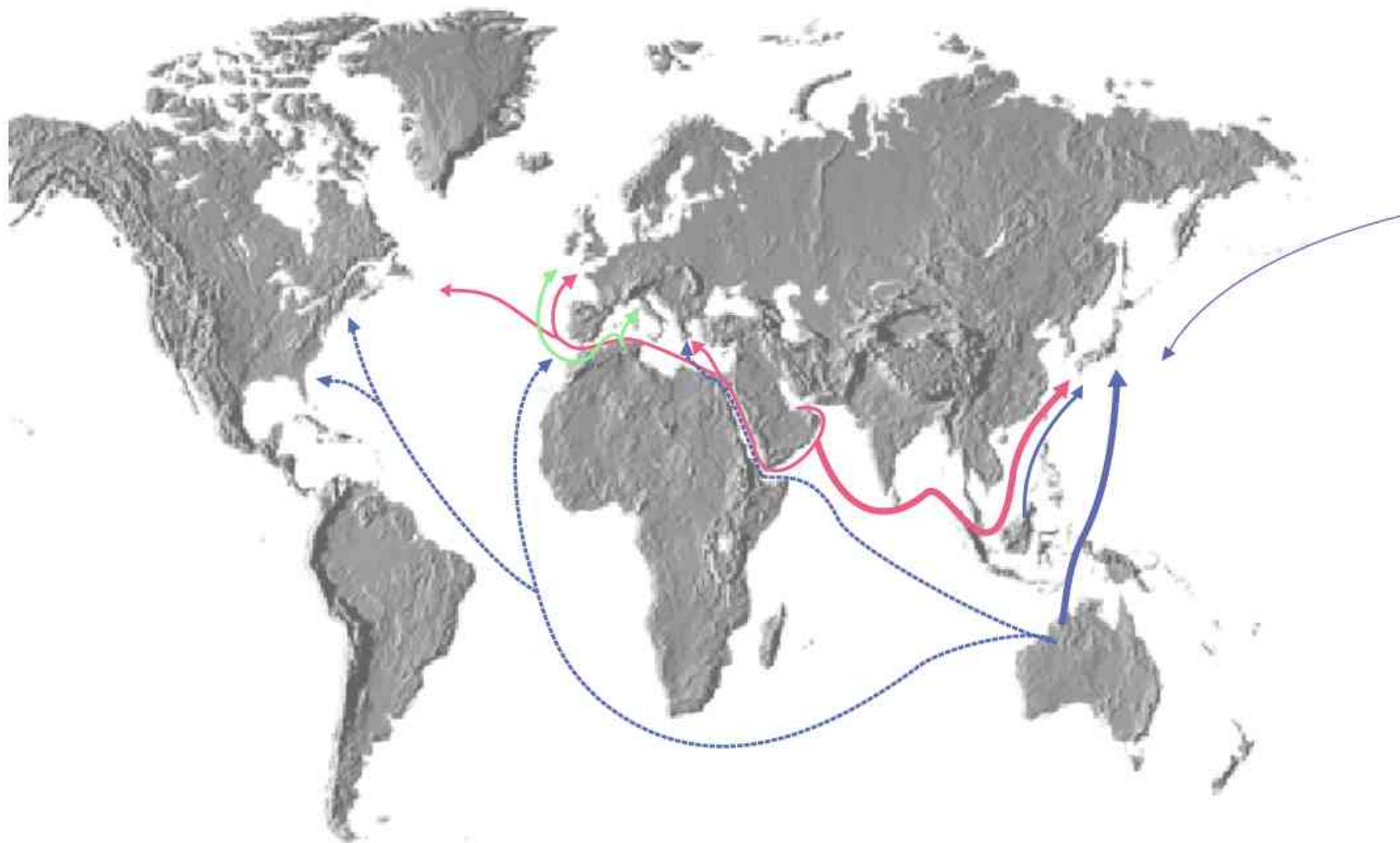
(note) Figures are for fiscal years. *Only 2012 Figures are for the calendar year.
 (Date source) Japan's customs statistics.

Changing flows of LNG trade



2012 (major shifts of products from the Atlantic to the Pacific)

Changing flows of LNG trade

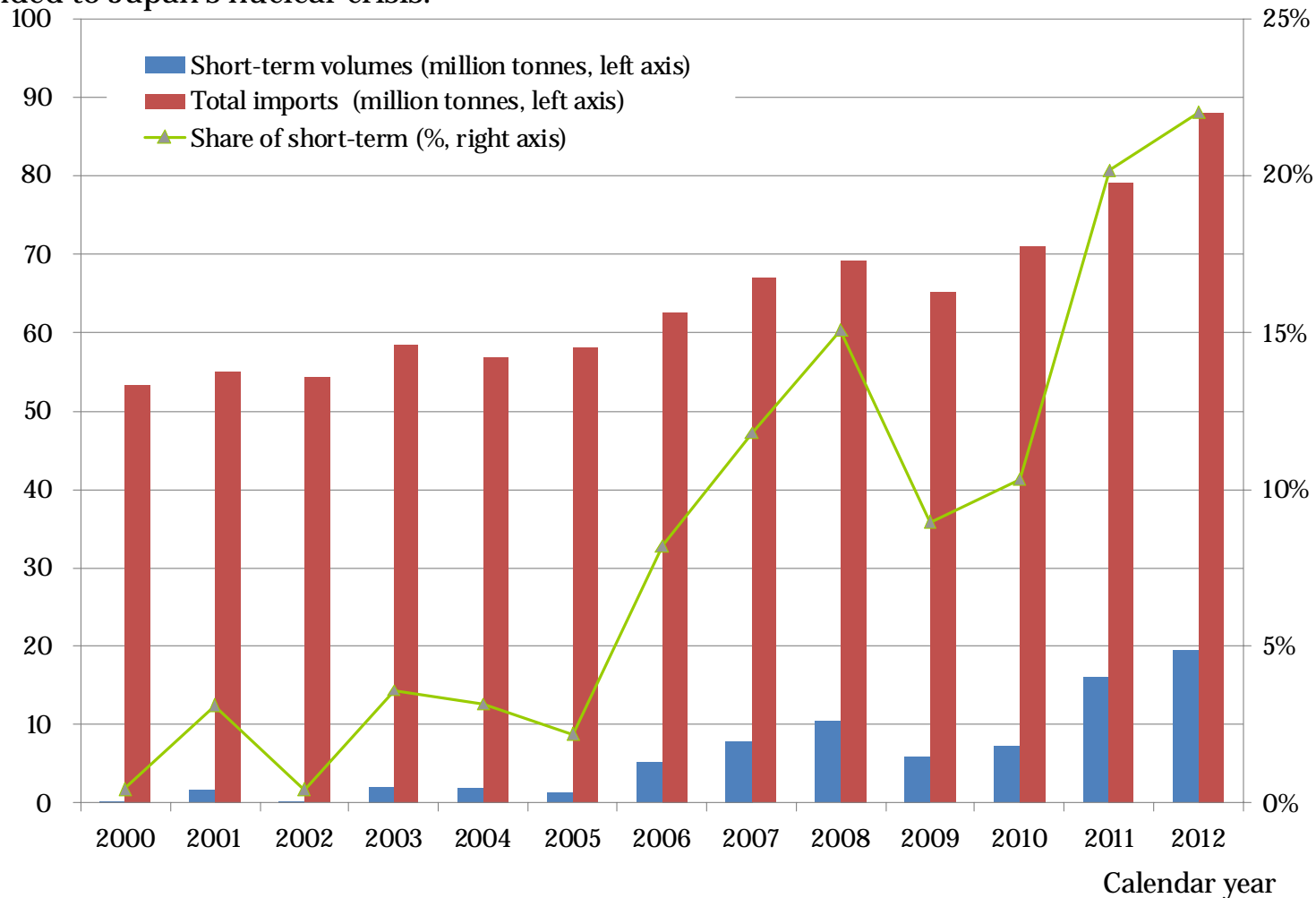


1997 (before major Atlantic sources began exports)

Evolving short-term procurement

Share of short-term volume in the total imports in Japan

- Flexibility of global LNG has responded to Japan's nuclear crisis.

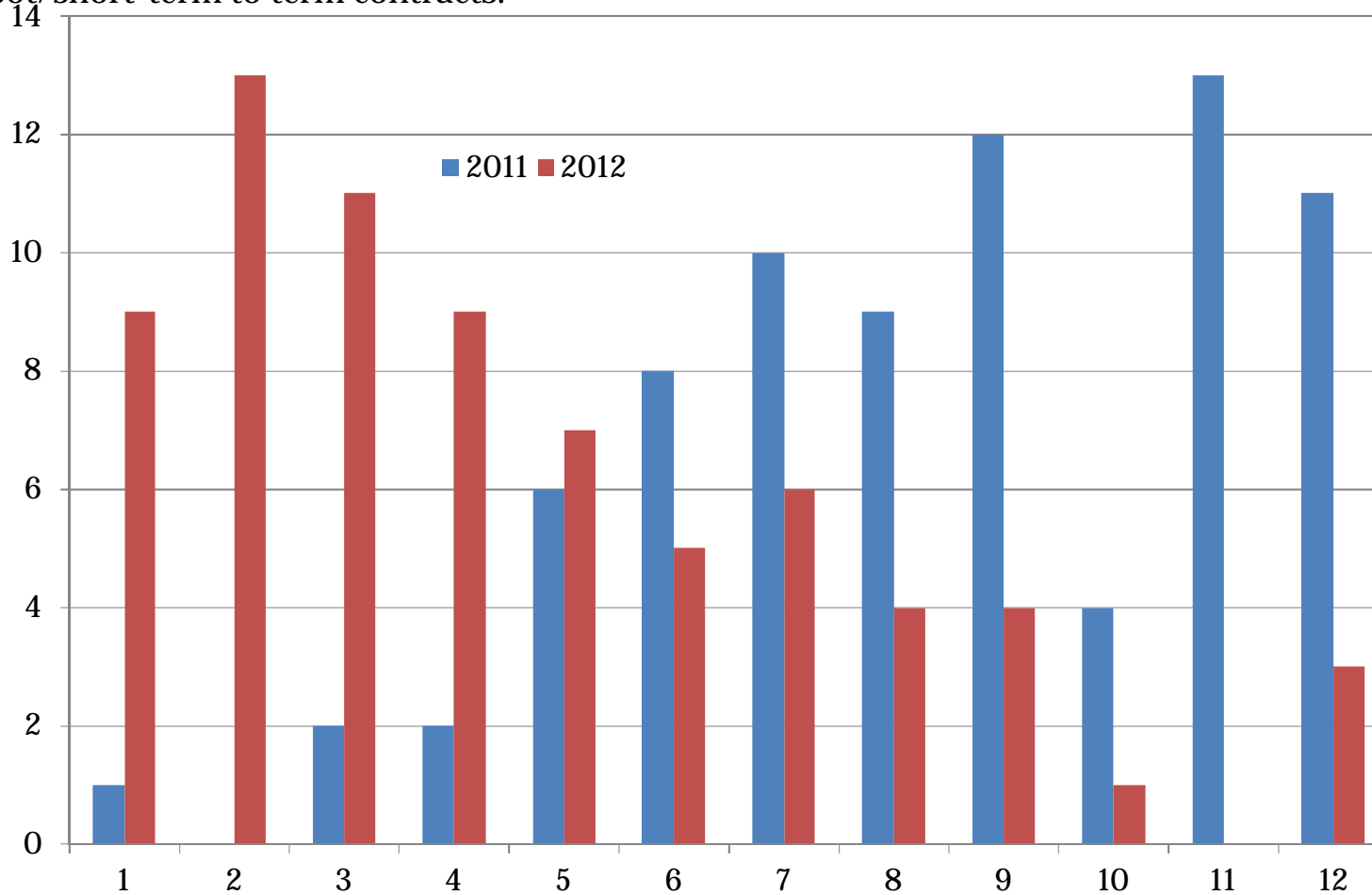


(Data sources) compiled from customs statistics and GIIGNL data

Evolving short-term procurement

Monthly spot cargo purchase in 2011-2012

- Trading patterns tend to shift back from spot/short-term to term contracts.



(Data sources) compiled from ICIS Heren, Argus, Platts information

More proactive involvement by Japanese companies

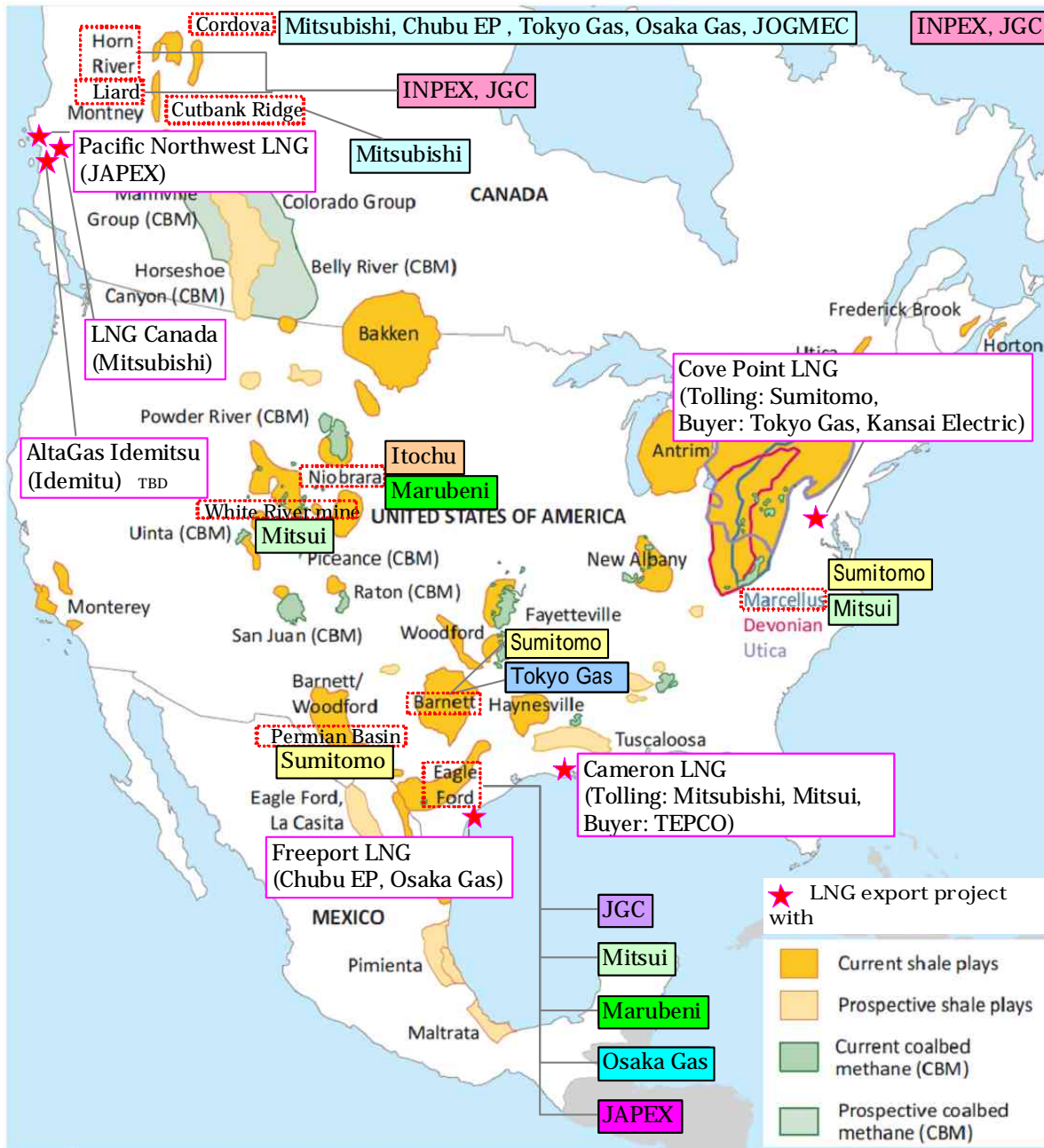
	Tohoku	Tepco	Chubu	Kansai	Chugoku	Kyushu	Tokyo Gas	Osaka Gas	Toho Gas
NWS									
Darwin									
Pluto									
Gorgon									
Wheatstone									
Prelude								()	
Ichthys									
QCLNG			()						
GLNG									
APLNG									
Arrow LNG									
PNG LNG									
Canada			Cordova				Cordova	Cordova	
United States		Cameron	Freeport	Cove Point (Freeport)			Cove Point	Freeport	
East Africa									

(Note) = long-term purchase, = equity participation, () = suspected main supply source under portfolio deals

Other Asian players are also increasingly active in supply projects

	Kogas	CNOOC	PetroChina	Sinopec	CPC	Petronet	Gail	PTT	Petronas
NWS									
Darwin									
Pluto									
Gorgon									
Wheatstone									
Prelude					()				
Ichthys	()								
QCLNG									
GLNG									
APLNG									
Arrow LNG									
PNG LNG									
Canada	LNG Canada		LNG Canada						Pacific Northwest LNG
United States	Sabine Pass	(Sabine Pass)					Sabine Pass Cove Point		
East Africa	Area 4		Area 4					Area 1	

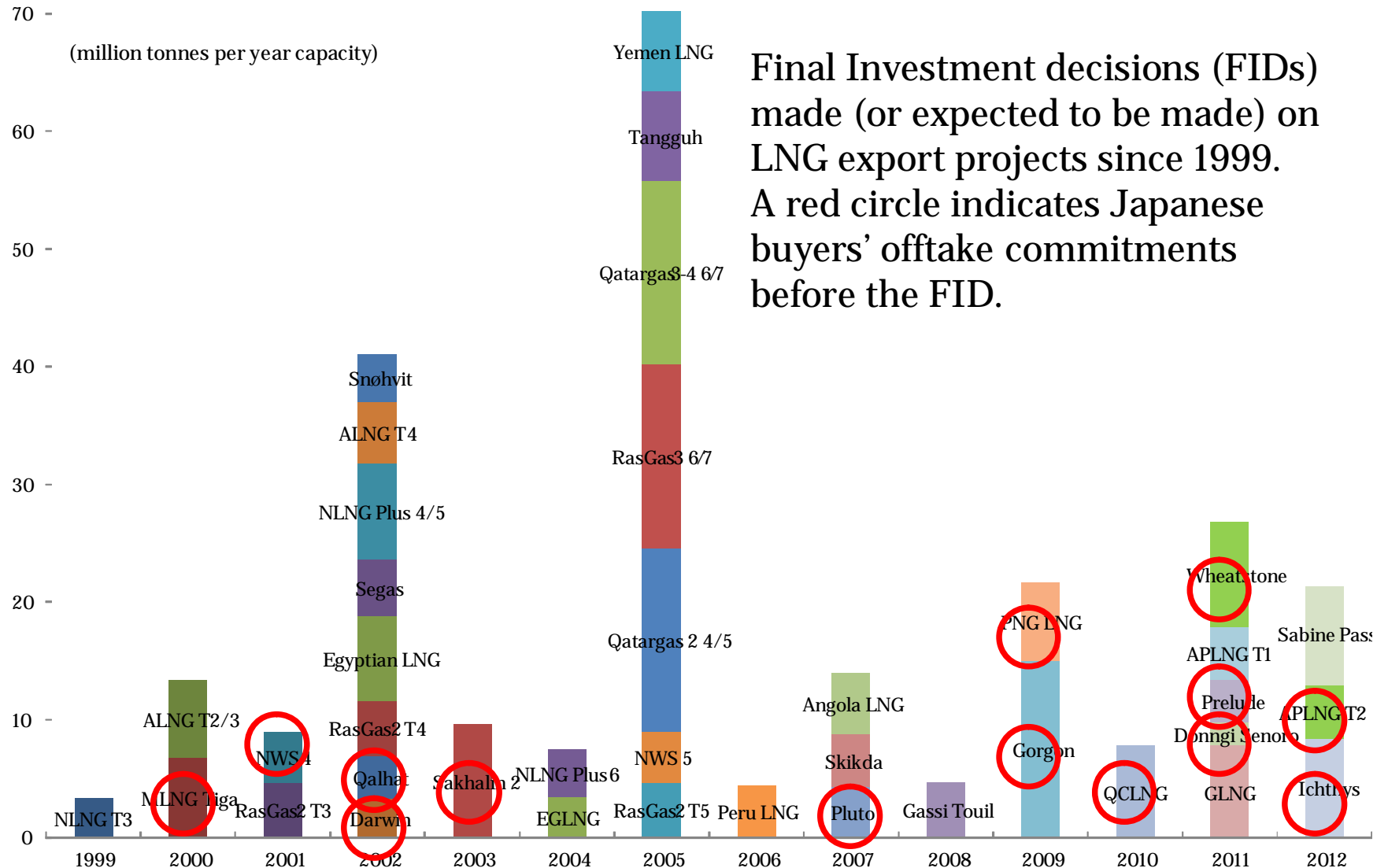
(Note) = long-term purchase, = equity participation, () = suspected main supply source under portfolio deals



- **United States**
 - Freeport - Osaka Gas and Chubu Electric Power
 - Cameron – Mitsubishi/Mitsui + Tepco
 - Cove Point - Sumitomo + Tokyo Gas/Kansai Electric
- **Canada**
 - LNG Canada
 - Inpex / JGC
 - Idemitsu
 - Japex

(Source) Compiled from "Golden Rules for a Golden Age of Gas, World Energy Outlook Special Report on Unconventional Gas", International Energy Agency (IEA), 29 May 2012 and company announcements.

More LNG is looking at Japan



(Source) Author, based on publicly available information




There have already been many notable events in the LNG industry so far in 2013

1. Rate cases by electric power companies in Japan are explicitly linked with future LNG procurement costs
2. There have been limited spot LNG deliveries into Asia partly because South American markets attract more cargoes
3. Tepco, Tokyo Gas, and Kansai Electric Power plan to purchase LNG from the United States and BP reserves liquefaction capacity at Freeport LNG
4. LNG Canada is granted a federal license to export LNG
5. Chevron becomes the Kitimat LNG operator
6. Idemitsu and Japex respectively participate in LNG projects in Canada
7. LNG export projects in Mozambique continue to advance
8. Nigeria and Egypt reduce LNG production
9. A new LNG liquefaction plant starts operation in Algeria
10. Winter gas prices spike in New England and the United Kingdom
11. New LNG import terminals start operation in Singapore, Israel and India
12. Methane hydrate production test is carried out in Japan

The 10 biggest question marks in the LNG industry

1. When and how much LNG will be allowed to be exported from (how many projects in) the United States
2. How effective LNG imports from the United States will be in reducing Japan's (and Asian) LNG prices
3. How the Panama Canal expansion will facilitate more LNG trades
4. How Australia's LNG projects will be realised on schedule and within budget
5. How LNG supply/demand balance beyond 2015 will be relaxed or tightened
6. How much incremental LNG Japan will import
7. How many more LNG receiving terminals Japan will have
8. If Japan will have a nationwide trunk pipeline network, as well as any international pipeline
9. How far and effectively Japanese companies will be able to go into and lead LNG supply value chains
10. If Asia will have an LNG trading hub



Thank you for your attention.

LNG is expected to expand its market reach, so long as . . .

1. it is priced reasonably to both buyers and sellers, as well as to final consumers;
2. projects are structured beneficially to both buyers and sellers, as well as to other parties involved; and
3. diversification of supply sources (markets), supply routes and pricing terms, as well as flexibility of LNG trades, are maintained and enhanced.

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