

# Commodity and Energy Market in Japan

## Policy of Japan's Commodity Derivatives and Efforts to Establish LNG and Electricity Futures Markets

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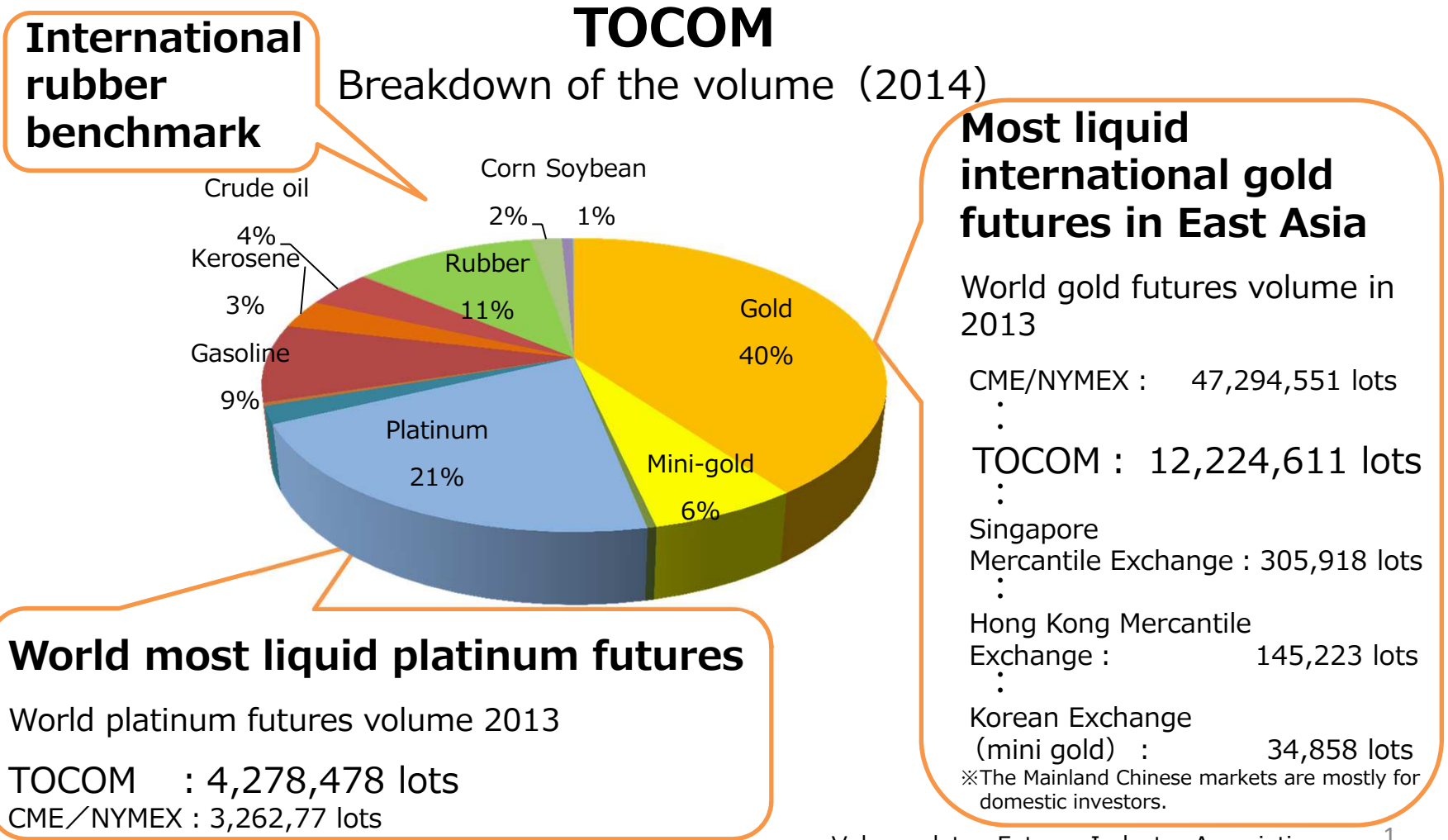
経済産業省

Ministry of Economy, Trade and Industry

***Provisional  
translation***

# 1. Japan's Commodity Futures Market – international status

Major contracts of the **Tokyo Commodity Exchange (TOCOM)** have a considerable international presence



# 1. Japan's Commodity Futures Market ① Rubber

Contract	Exchange	Currency	Initial Weight
Crude Oil	NYMEX	USD	16.00%
Brent	ICE EU	USD	13.00%
Wheat	CBOT	USD	4.75%
Corn	CBOT	USD	4.75%
Cotton	ICE US	USD	4.20%
Aluminum	LME	USD	4.00%
Copper	LME	USD	4.00%
Soybeans	CBOT	USD	3.50%
RBOB Gasoline	NYMEX	USD	3.00%
Natural Gas	NYMEX	USD	5.00%
Gold	COMEX	USD	5.00%
Soybean Oil	CBOT	USD	2.00%
Coffee	ICE EU	USD	2.00%
Silver	COMEX	USD	4.00%
Zinc	LME	USD	2.00%
Lead	LME	USD	2.00%
Live Cattle	CME	USD	2.00%
Heating Oil	NYMEX	USD	1.80%
Platinum	NYMEX	USD	1.80%
Gas Oil	ICE EU	USD	1.20%
Sugar	ICE US	USD	1.00%
Wheat	CME	USD	1.00%
Milling Wheat	EURONEXT	EUR	1.00%
Cocoa	ICE EU	GBP	1.00%
Tin	LME	USD	1.00%
Lean Hogs	CME	USD	1.00%
<b>Rubber</b>	<b>TOCOM</b>	<b>JPY</b>	<b>1.00%</b>
Lumber	CME	USD	1.00%
Rapeseed	EURONEXT	EUR	1.00%
Nickel	LME	USD	1.00%
White Sugar	ICE EU	USD	1.00%
Rice	CBOT	USD	0.75%
Soybean Meal	CBOT	USD	0.75%
Orange Juice	ICE US	USD	0.60%
Oats	CBOT	USD	0.50%
Palladium	NYMEX	USD	0.30%
Milk Class III	CME	USD	0.10%

100.00%

## TOCOM's Rubber Futures – International Benchmark

➤ **TOCOM's Rubber is the only Asian contract included in Rogers International Index (RICI).**

- Jim Rogers established Quantum Fund with George Soros. After leaving Quantum Fund, he made up Rogers International Commodity Index (RICI).
- RICI is well recognized worldwide as an international commodity index.

Left : Portfolio of Rogers International Commodity Index®

# 1. Japan's Commodity Futures Market ② Gold

## Comparison between Gold and other major financial instruments (Risk and Return)

- For the long term (past 10 years), although volatility of gold was higher than bonds, its return was greater than that of all other popular Japanese financial instruments.
- For the short term (one year or shorter), Yen-denominated gold achieved a high return due to yen depreciation.

	Annual Return			Annual volatility (Risk)		
	Past 1 yr	Past 5 yrs	Past 10 yrs	Past 1 yr	Past 5 yrs	Past 10 yrs
<b>Gold (JPY)</b>	<b>14.2%</b>	<b>7.4%</b>	<b>12.4%</b>	<b>11.3%</b>	<b>18.8%</b>	<b>21.0%</b>
Japanese bond	4.2%	2.5%	2.1%	1.3%	1.8%	2.0%
Foreign bond	19.1%	9.5%	5.8%	6.2%	9.8%	10.7%
Japanese equity	10.3%	11.5%	3.9%	18.6%	19.8%	22.8%
Foreign equity	20.0%	15.8%	8.7%	14.7%	19.4%	23.7%
Japanese REITs	25.3%	16.3%	2.5%	11.9%	17.9%	24.7%

Data of Dec. 2004 to Dec 2014 (daily return basis) were used for above calculation.

Japanese equity : TOPIX Total Return, Japanese bond : NOMURA Bond Performance Index , Foreign Equity : MSCI World Index (excluding Japan) , Foreign bond : Barclay's Capital World Government Bond Index (excluding Japan) , Japanese REIT: Tokyo Stock Exchange REIT Index, Gold : Loco-London

Source : World Gold Council, Bromberg

# 1. Japan's Commodity Futures Market ② Gold

## Comparison between Gold and other major financial instruments (Correlation)

- Correlation of gold with Japanese bond and Japanese equity is lower (closer to 0) than that with other financial instruments.
- By including gold into a portfolio, total return of the portfolio is expected to be improved.

	Gold (JPY)	Japanese bond	Foreign bond	Japanese equity	Foreign equity	Japanese REITs
Japanese bond	<b>-0.03</b>	1.00	-0.05	-0.37	-0.12	-0.12
Japanese equity	<b>0.22</b>	-0.37	0.36	1.00	0.35	0.54

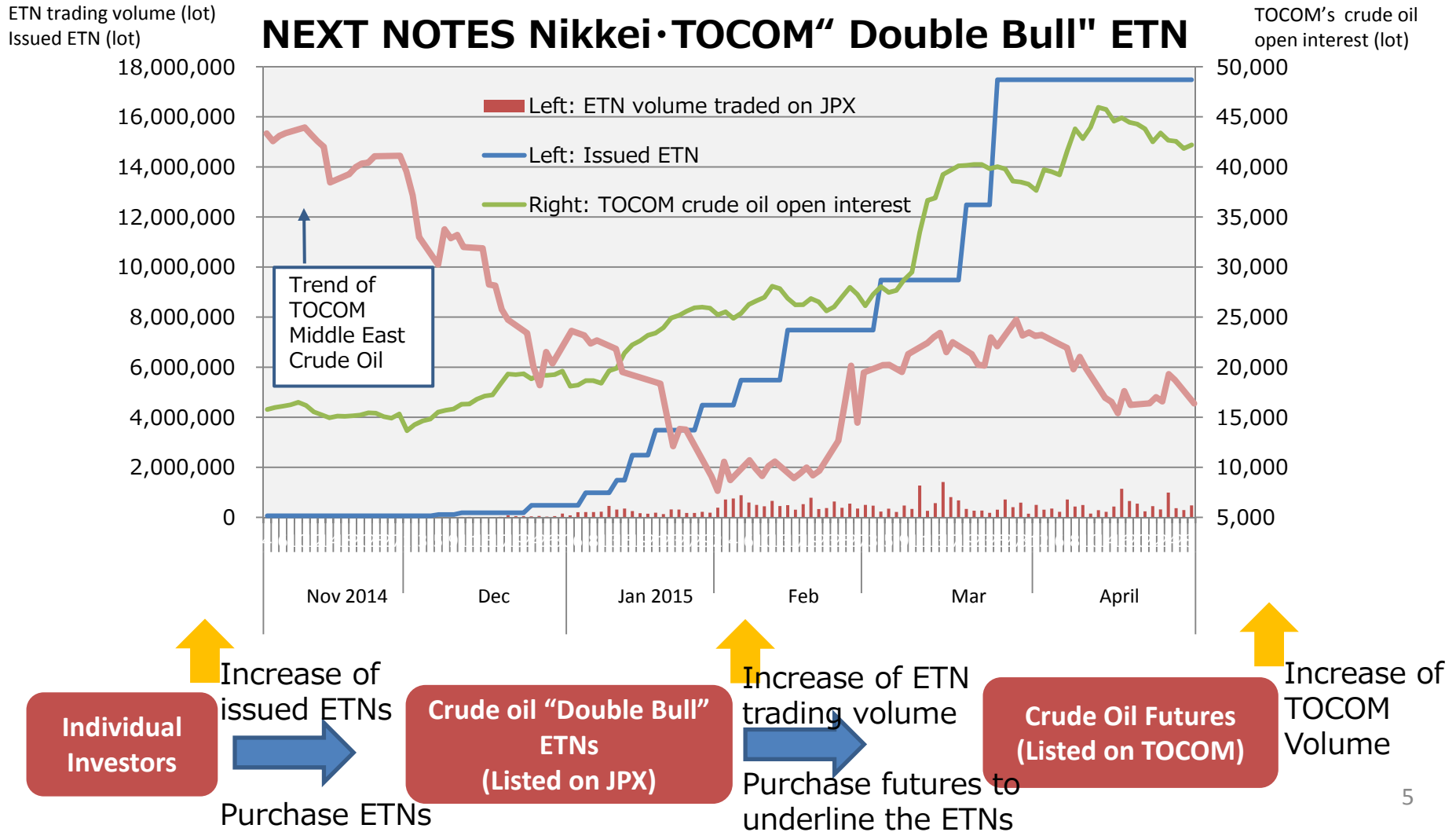
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Source : World Gold Council, Bromberg

# 1. Japan's Commodity Futures Market ③ Crude oil

- Looking at the fluctuation of the crude oil price, individual investors have been investing in ETFs and ETNs
- Open interest of commodity futures market underlying the ETFs/ETNs has been increasing



# 1. Japan's Commodity Futures Market

## Major TOCOM related ETFs • ETNs

Issue name	Type	Description	Issued amount as of Mar 31, 2015
NEXT NOTES Gold "Double Bull"	ETN	Linked to TOCOM gold leverage index	1,539 million yen
NEXT NOTES Crude Oil "Double Bull"	ETN	Linked to TOCOM crude leverage index	73,381 million yen
NEXT NOTES Crude Oil "Bear"	ETN	Linked to TOCOM crude inverse index	1,977 million yen
Pure Gold Listed ETF	ETF	Purchase gold bars, using TOCOM gold price as a benchmark	38,026 million yen
Pure Platinum Listed ETF	ETF	Purchase platinum bars, using TOCOM platinum price as a benchmark	3,953 million yen
Pure Silver Listed ETF	ETF	Purchase silver ingots, using TOCOM silver price as a benchmark	4,823 million yen

## 2. Enhancement of Commodity Futures Market

Actions made to expand participation of below categories

### <① Institutional investors and ② Commercials>

- Adding commodities into the portfolio of GPIF.
- Clarification of hedge accounting rule

### <③ Individual investors>

- Relaxation of solicitation rule
- Integration of Commodity Derivatives into Calculation of financial Income Tax

### <④ Overseas investors>

- TOCOM's FBOT registration
- High speed network service between Tokyo and Chicago

### <⑤ Brokers>

- Encouragement of financial instruments business operator's participation
- Cost reduction by system cooperation between TOCOM and JPX

Establishment of futures market coordinating with Japan's energy policy

Listed commodities  
(Gasoline, Kerosene, Gasoil, Crude)



New commodities  
(Electricity, LNG)



Comprehensive Energy  
Futures Market



## 2. Enhancement of Commodity Futures Market

### ① Institutional Investors

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<Adding Commodity into the portfolio of Government Pension Investment Fund (GPIF)>

- The final report published in November 2013 by the expert panel for sophisticating the management of public/quasi-public funds at the Cabinet Secretariat stated that **commodities should be included in the portfolio of the GPIF.**

3. Portfolios (1) Diversifying investments

“Under a long-term outlook on benefits and contributions in pension finance, **the GPIF and the like should diversify investments by investing in new types of assets** (including real estate investment trusts, real estate, infrastructure, venture capitals, private equities and **commodities**).”

- GPIF is the world's largest fund of JPY 120 trillion

## 2. Enhancement of Commodity Futures Market

### ② Commercials (producers, merchants, processors and users)

#### <Clarification of Hedge Accounting Rule>

- Following METI and MAFF requests, **the Japanese Institute of Certified Public Accountants publicized the revisions of “Practical Guideline for Accounting for Financial Instruments” and “Accounting for Financial Instruments Q&A” on April 14, 2015.**
- **It was clarified that;**
  - Hedge accounting is applicable for cross hedge (between different commodities e.g. crude oil and an oil product) and roll-over (change of hedging period)**
- **By this, derivatives trade to hedge their business operation can be conducted smoothly by commercials.**

## 2. Enhancement of Commodity Futures Market

### ③ Individual investors

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#### <Relaxation of Solicitation Rule>

METI and MAFF amended the Ministry Ordinance on January 23, 2015 to **deregulate the prohibition on uninvited solicitation** for below types of investors. (**to be effective as of June 1, 2015**)

- (1) investors who have experience of high risk trading including FX, derivatives trading (e.g. Nikkei 225) and margin trading
- (2) investors who have no experience of such high risk trading but meet several criteria, such as the amount of income and financial asset etc.

#### <Integration of Commodity Derivatives into Calculation of financial Income Tax>

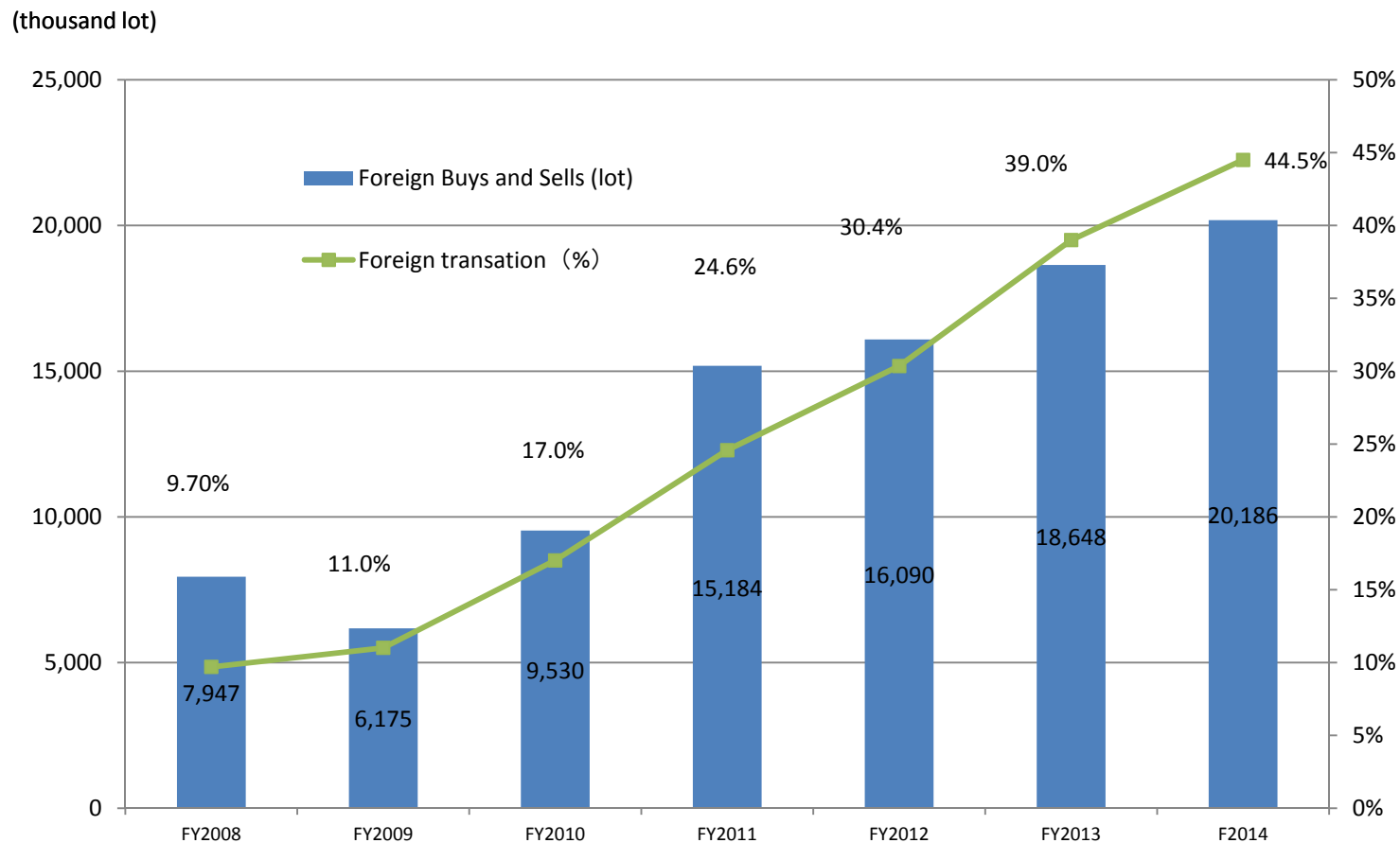
Integration of commodity derivatives with securities etc. into profit/loss calculation of financial income tax is included in the agenda of FY 2015 package of Tax Revisions for further deliberation.

## 2. Enhancement of Commodity Futures Market

### ④ Foreign investors

Percentage of overseas participation in total TOCOM volume has been increasing to 44.5% in FY 2014.

Transaction from overseas in TOCOM (FY2008-FY2014)



## 2. Enhancement of Commodity Futures Market

### ④ Foreign investors

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<TOCOM was granted registration as a Foreign Board of Trade (FBOT) by US Commodity Futures Trading Commission (CFTC)>

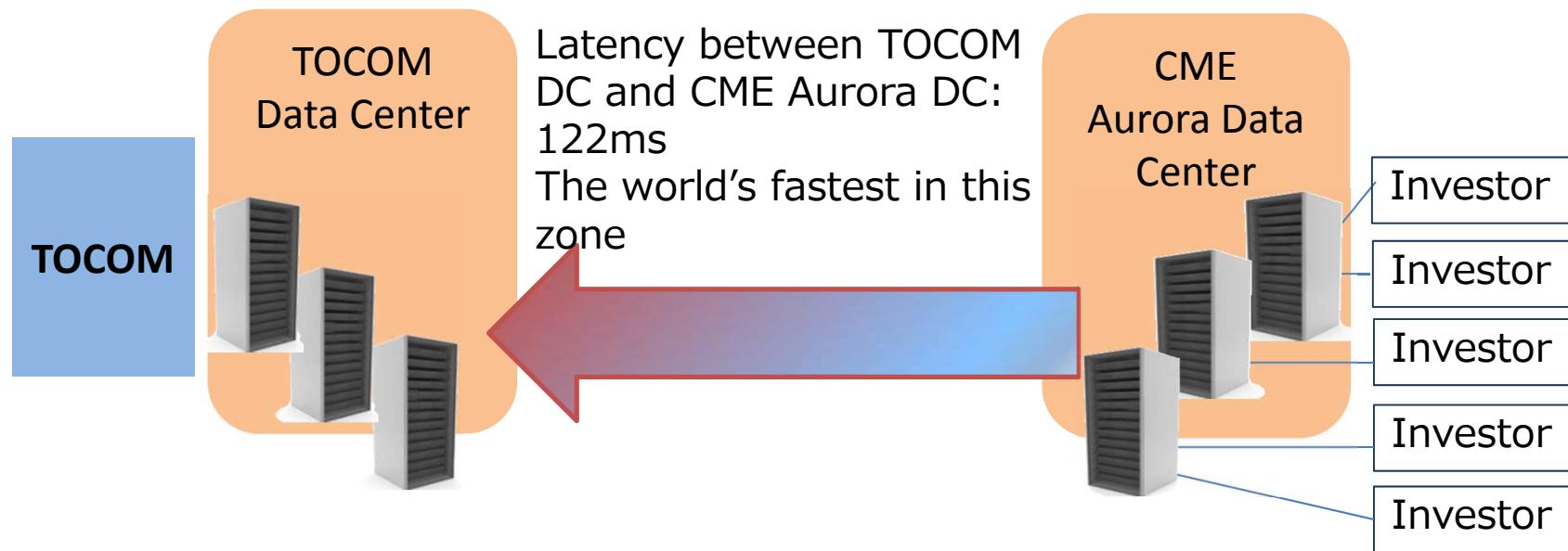
- CFTC granted TOCOM's application for FBOT registration as of January 21, 2015. (TOCOM is the third FBOT in the world and the first FBOT in Asia.)
- Chairman Massad of CFTC announced this news by himself at the FIA Japan's seminar in Tokyo.
- By this, **US traders can connect directly to TOCOM. US traders who do not have branches etc. in Japan can be a member.** This could cause the trade to become more active.
- As FBOT registration means to verify that FBOTs conform to the same level of regulatory requirements applied to US exchanges, **TOCOM's international credibility is expected to increase.**

## 2. Enhancement of Commodity Futures Market

### ④ Overseas Investors

#### <Chicago-Tokyo High Speed Network Service>

- TOCOM offers high speed network service between Chicago and Tokyo Data Center.  
(Started on Sep 15, 2014 Chicago time)
- Transactions have started since February 2015.



## 2. Enhancement of Commodity Futures Market

### ⑤ Brokers

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<Encouragement of Financial Instruments Business Operator's Participation>

Minimize the differences in procedures etc. between Financial Instruments and Exchange Act and Commodity Derivatives Act to facilitate participation of Financial Instruments Business Operators into commodity derivatives. (July 2014)



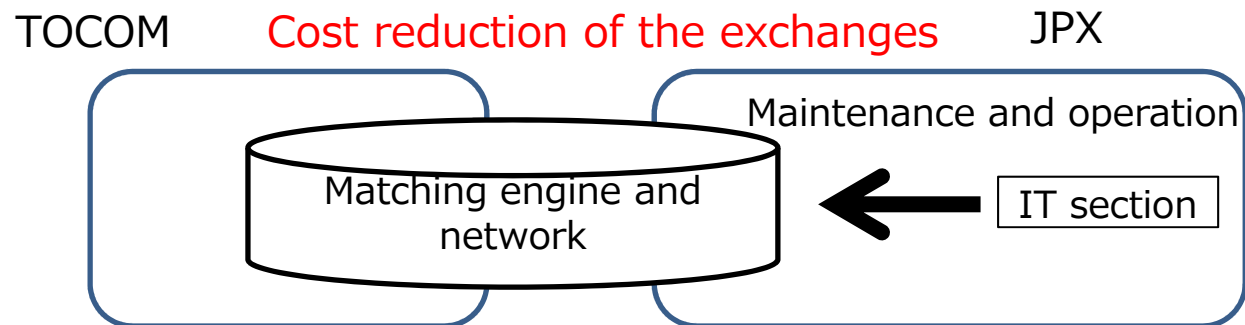
Almost no additional cost to start commodity derivatives business

## 2. Enhancement of Commodity Futures Market

### ⑤ Brokers

#### <System cooperation between TOCOM and JPX>

- On December 19, 2014, TOCOM signed a contract with JPX group (Osaka Exchange Inc.) to **jointly use the next generation system provided by NASDAQ OMX and have JPX IT section to provide maintenance and operation of system services to TOCOM.**
- Next generation system is planned to start operation in autumn 2016.



Cost reduction of brokers who participate in commodity as well as financial market

- By this system cooperation, brokers who participate in both TOCOM and JPX are integrating their systems to offer **one-stop trading interface to their customers.**
- One example is that in case of a major online security firm, 1.67 million customers who have a cash management account could potentially trade commodity futures.



### 3 . Establishment of LNG and Electricity Futures Market Government policy

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Development of LNG and Electricity futures market is included in the third arrow of Abenomics

**Revised “Japan Revitalization Strategy” (approved by the Cabinet on June 24, 2014) (extract)**

5-3. (3) “... the Government will make swift, steady progress with initiatives including ... **developing the market for energy futures.**”

**Strategic Energy Plan (approved by the Cabinet on April 11, 2014) (extract)**

Chapter 3.

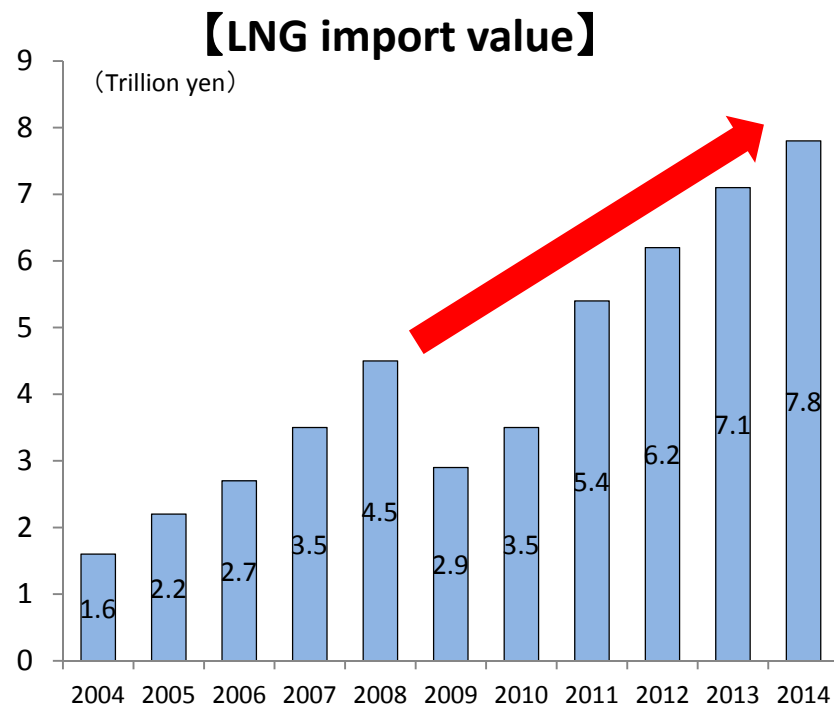
Section 1 **“The Japanese government will proactively support ... by conducting a study on a LNG futures market.”**

Section 6 “... the full retail competition, full liberalization of power generation **and introducing electric power in the futures market aims to create a structure** to suppress electricity rates...by increasing competition in the market...”

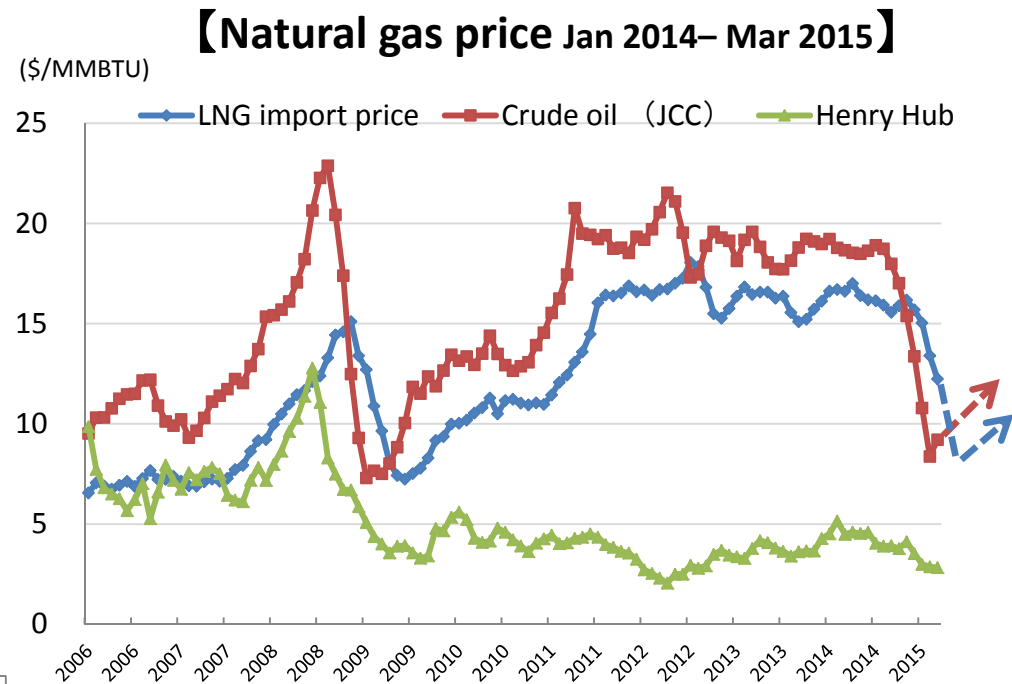
Section 9 “In Japan as well, there are expectations that a study will be conducted on the reform of the electricity and LNG markets...**so as to ensure the establishment of reliable and transparent price benchmarks that reflects energy supply and demand and that the energy futures market will be developed.**”

### 3. Establishment of LNG and Electricity Futures Market ①LNG

- Japan's import value of LNG has been rising, as the import of the fuel for power generation has increased after the Great East Japan Earthquake  
JPY 1.6 trillion (2004) → JPY 7.8 trillion (2014)
- Asia's LNG import price is linked to the crude oil price. While natural gas price has been stable due to shale gas revolution etc., Japan's LNG import price increased because of the increase of the oil price since mid 2000's.
- Most recently oil price dropped but it has already started to increase. It **is not rational that LNG price is set by linking to crude oil which is more volatile and different in the balance of supply and demand of LNG.**



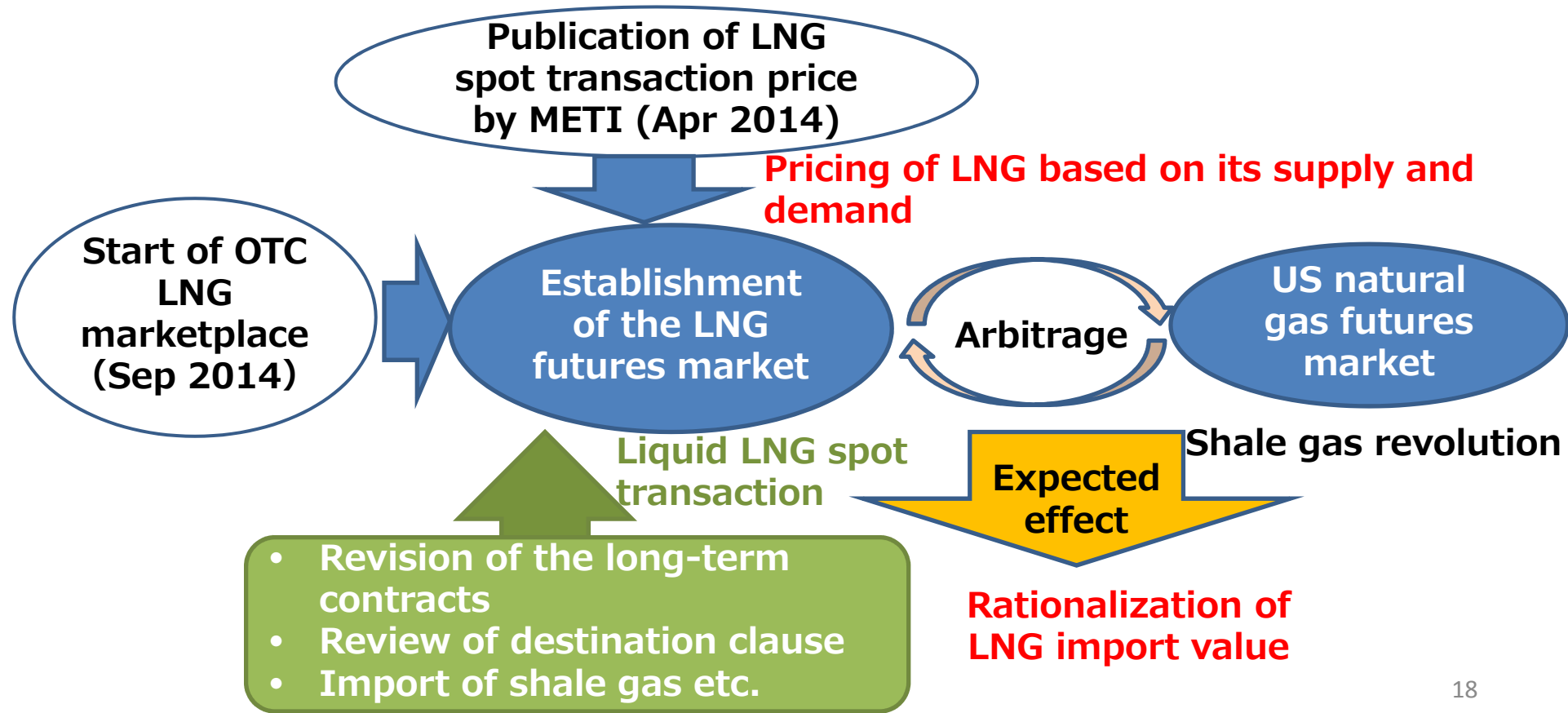
Source: Trade statistics of Japan, Ministry of Finance, and EIA etc.



Source: Trade statistics of Japan, Ministry of Finance

### 3. Establishment of LNG and Electricity Futures Market ①LNG

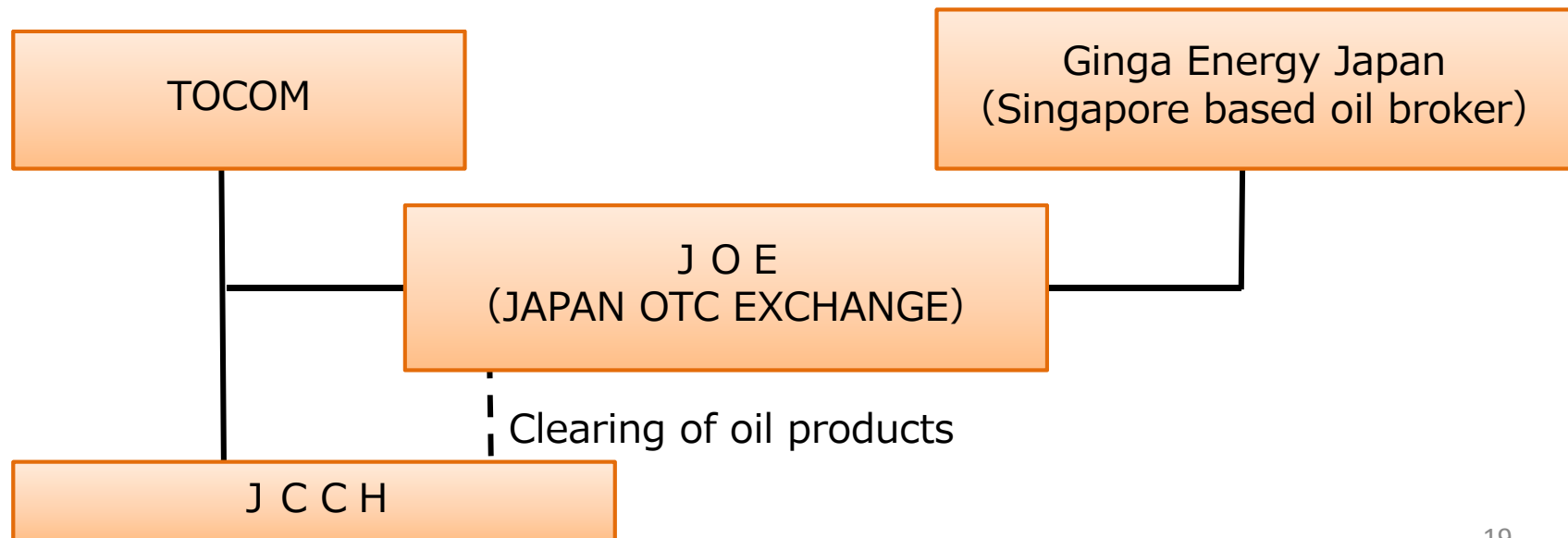
- Establishment of the LNG futures market is expected to rationalize the pricing
  - Oil-linked-LNG pricing mechanism to be shifted to the pricing based on supply and demand of LNG
  - LNG price to be rationalized by arbitrage with US natural gas following the import of shale gas from US



### 3. Establishment of LNG and Electricity Futures Market ①LNG

#### Establishment of LNG market in Japan OTC Exchange(JOE) (Sep2014)

- JOE is an OTC trading facility between commercials and with financial institutions (Facility Similar to Specified Commodity Market)
- Licensed to establish an oil product market on May 20, 2014.
- **Licensed to establish an LNG market on Sep 11, 2014 participated by major electricity, gas, oil companies and trading houses.**
- **Members of the LNG market were 17 at the opening, and now increased to 21 companies.**
- **Orders were placed by Japanese trading houses at the beginning, now orders are placed by various members including energy and overseas companies.**



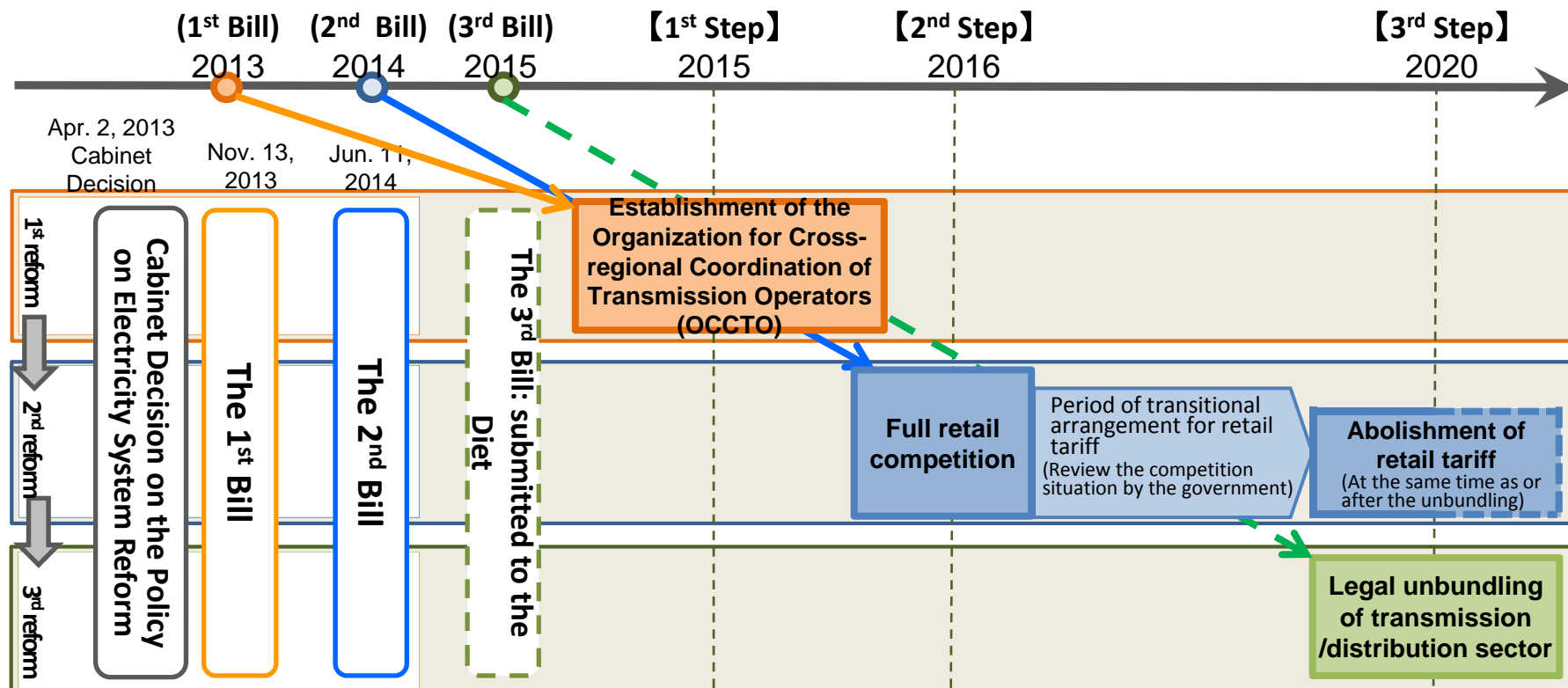
### 3. Establishment of LNG and Electricity Futures Market ①LNG

- To establish an independent LNG benchmark for Asia as the largest importing area of LNG, alongside of Europe and US, is a great advantage to Asian countries.
- Expect variety of international buyers and sellers to participate in JOE so that it can become an LNG benchmark for Asia.



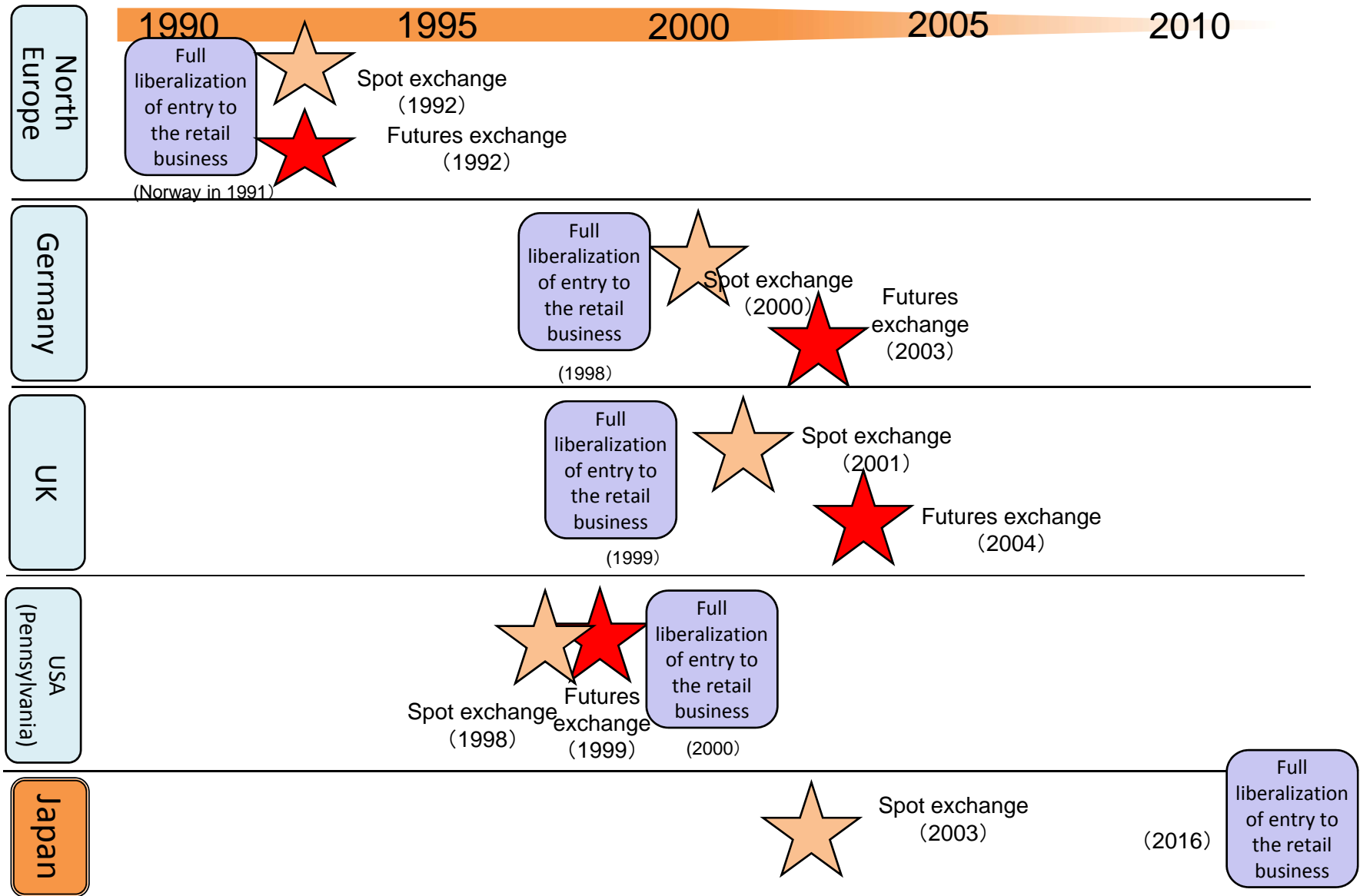
### 3. Establishment of LNG and Electricity Futures Market ②Electricity

Reforms in three steps has been stipulated in the first bill. The third bill which includes legal unbundling of transmission sector was submitted to the Diet this year. Full retail competition is scheduled in April 2016.



### 3. Establishment of LNG and Electricity Futures Market ②Electricity

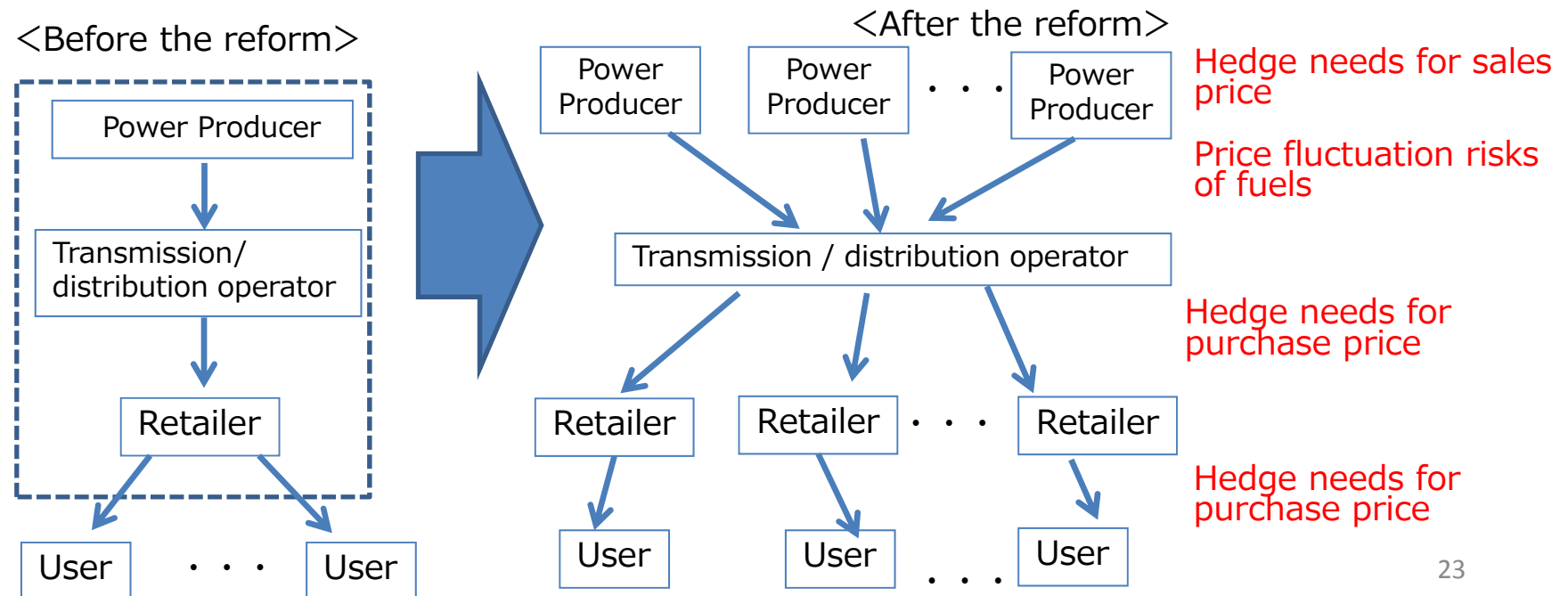
In Europe and US, following the full liberalization of retail business, a spot exchange was established in 1 to 2 years, a futures exchange was established in 1 to 5 years.



### 3. Establishment of LNG and Electricity Futures Market ②Electricity

#### Electricity futures in line with Electricity System Reform

- By the introduction of electricity futures market, business entities come to be **able to hedge price fluctuation of electricity**. Such environment will **encourage new comers to join electricity business and facilitate their smooth operation**.
- Active participation to the market and business operation by power producers and retailers will lead to **decrease in electricity price**, which is aimed for in the reform.
- Commodity Derivatives Act was amended together with Electricity Business Act, so that electricity can be listed as a futures contract (Enacted as of June 2014)





### 3. Establishment of LNG and Electricity Futures Market ②Electricity

**Electricity Futures Council was established in March 2015** to consider a desirable framework of electricity futures market in Japan, by studying cases in other countries. It is planned to publish a summary report in June 2015.

#### <Electricity Futures Council>

##### Main agenda

- Market structure of wholesale electricity market and the transaction
- Case examples of hedging electricity and electricity futures markets in foreign countries
- Desirable framework of electricity futures trading in Japan (contract specification)
- Measures for preventing “money game”

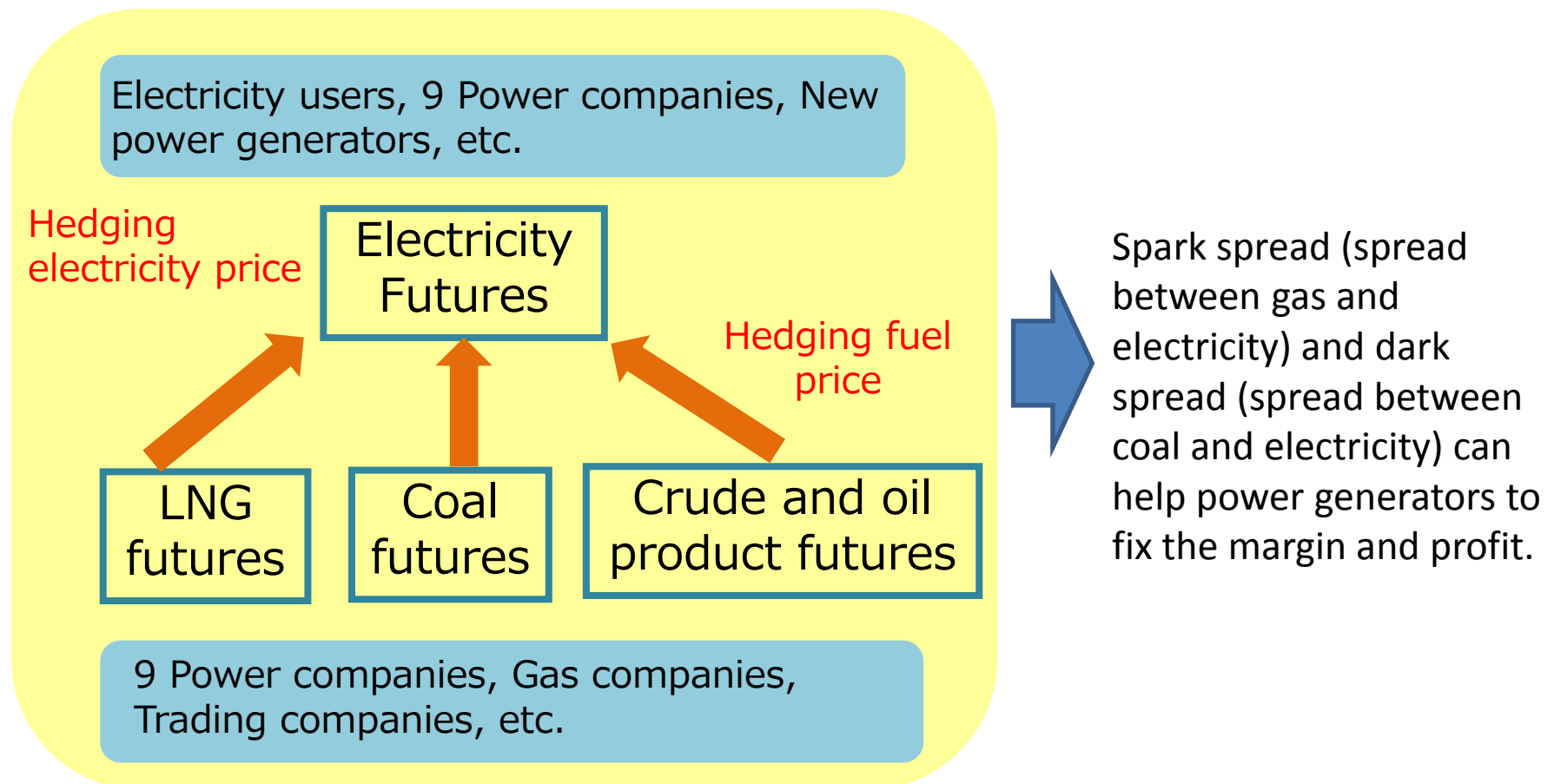
##### Members

- Electricity suppliers (TEPCO, KEPCO, J-Power, Osaka Gas, Ennet, etc.)
- Electricity consumers (JX Nippon Oil & Energy Corporation, Nippon Steel & Sumitomo Metal Corporation)
- Financial Institutions (Mizuho Bank, Goldman Sachs Japan)
- Exchanges (TOCOM, JCCH, Japan Electric Power Exchange)

### 3. Establishment of LNG and Electricity Futures Market ②Electricity

- Establishment of energy futures market is expected so that the price hedge for fuels (LNG, coal, crude oil, oil products) in addition to electricity can be smoothly conducted.

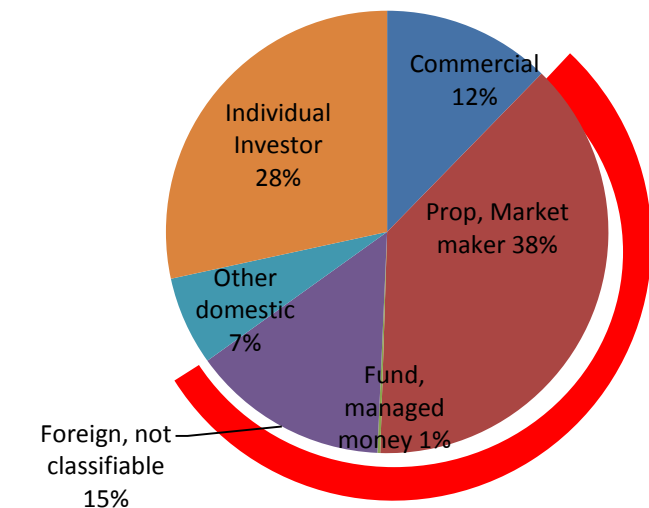
#### Energy futures market



#### 4. For further participation by Financial Institutions to Commodity Market

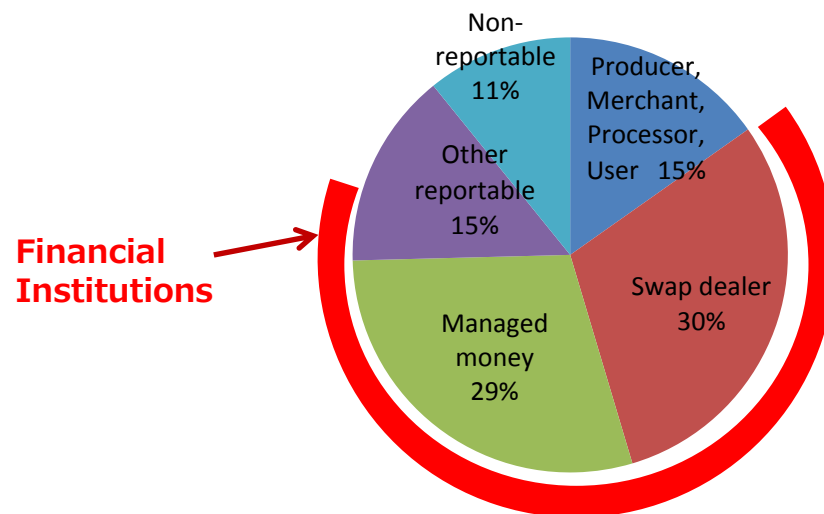
- Ratio of commercial participation in TOCOM gold is at a level comparable to CME gold market.
- **Currently, TOCOM participating financial firms are mainly overseas proprietary companies which conduct arbitration.**
- **More domestic funds and financial firms are expected to participate in Japanese commodity market, leveraging the liquidity provided by prop companies.**

TOCOM Gold : Volume by participant types  
(As of Sep 2014)



Source: TOCOM

CME-Group Gold (NYMEX/COMEX): Open interest by participant types  
(As of Sep 2014)



Source: CFTC Commitments of Traders Report

## 4. For further participation by Financial Institutions to Commodity Market

- Commodities consist a part of portfolio of funds including corporate pension funds overseas.

### Asset allocation of US California Public employees' Retirement System(CalPERS)

(As of Jan 31, 2015 )

	Current Allocation (%)	Actual Investment (\$ Billions)
Income	18.9%	1,840
Equity	62.8%	553
Real Assets and Infrastructure	10.1%	296
<b>Inflation-Linked Assets (Commodities and Inflation-linked bonds)</b>	<b>5.0%</b>	<b>147</b>
Other	3.2%	94
<b>TOTAL</b>	<b>100.0%</b>	<b>2,930</b>

Percentage of asset allocation has been adjusted to maximize returns at a prudent level of risk at CalPERS. **Commodities have been included in the portfolio 1) to achieve long-term returns above inflation and 2) to diversify the investment.**

- **Japanese commodity market can be utilized via ETFs and ETNs** which underline commodities.
- **Commodity investment is expected to expand in Japan as a part of the portfolio of financial institutions.**