

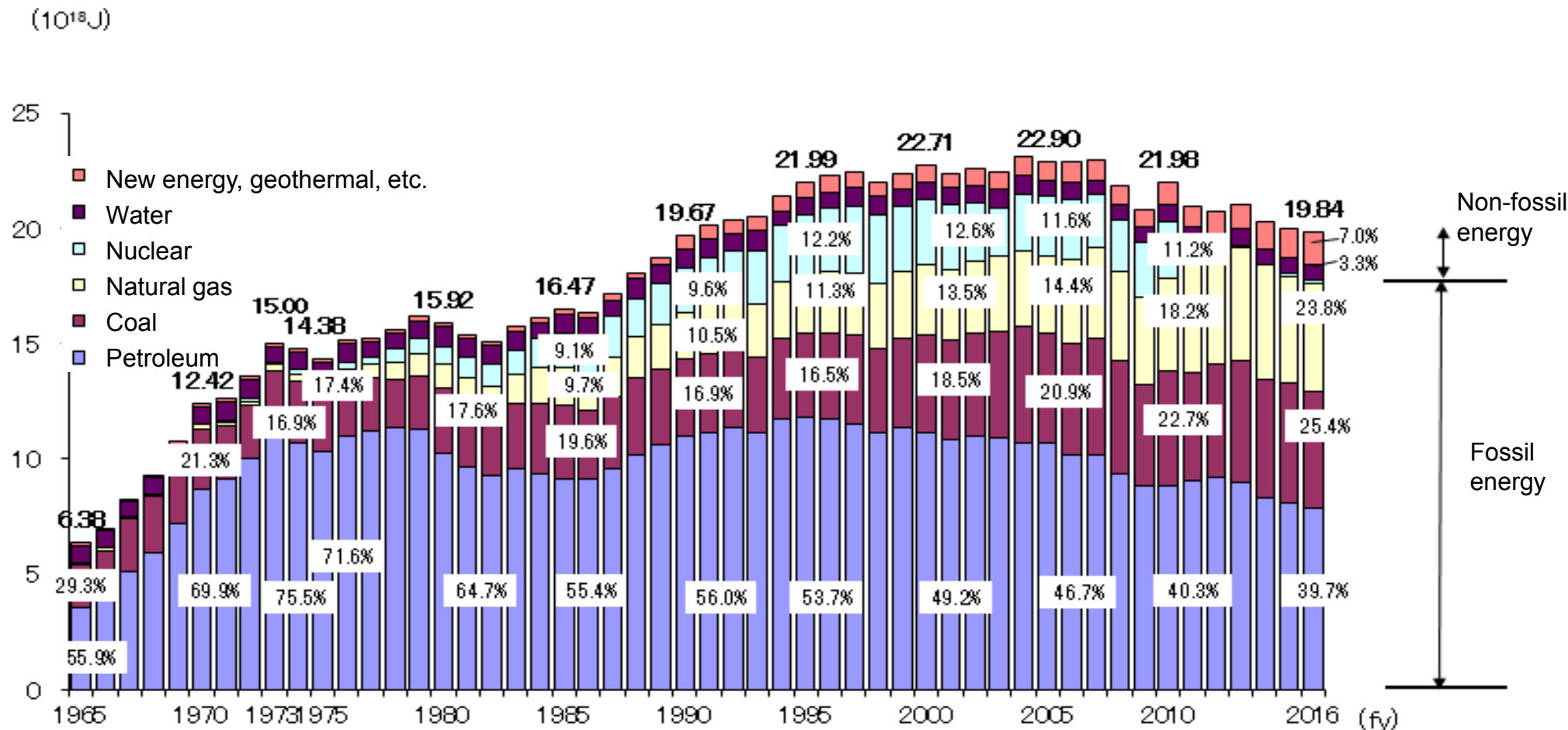
# **Notable Development on Oil and Gas in Japan**

The 2<sup>nd</sup> APEC EGCFE Oil and Gas Meeting  
11 April 2019

Agency for Natural Resources and Energy  
Ministry of Economy, Trade and Industry, Japan

# Japan's Energy Supply Structure

## Change in domestic supply of primary energy










(Note 1) Calculation method changed in FY1990 and following years in General Energy Statistics of Japan.

(Note 2) New energy, geothermal, etc. include solar power, wind, biomass, geothermal, etc. (the same hereinafter).

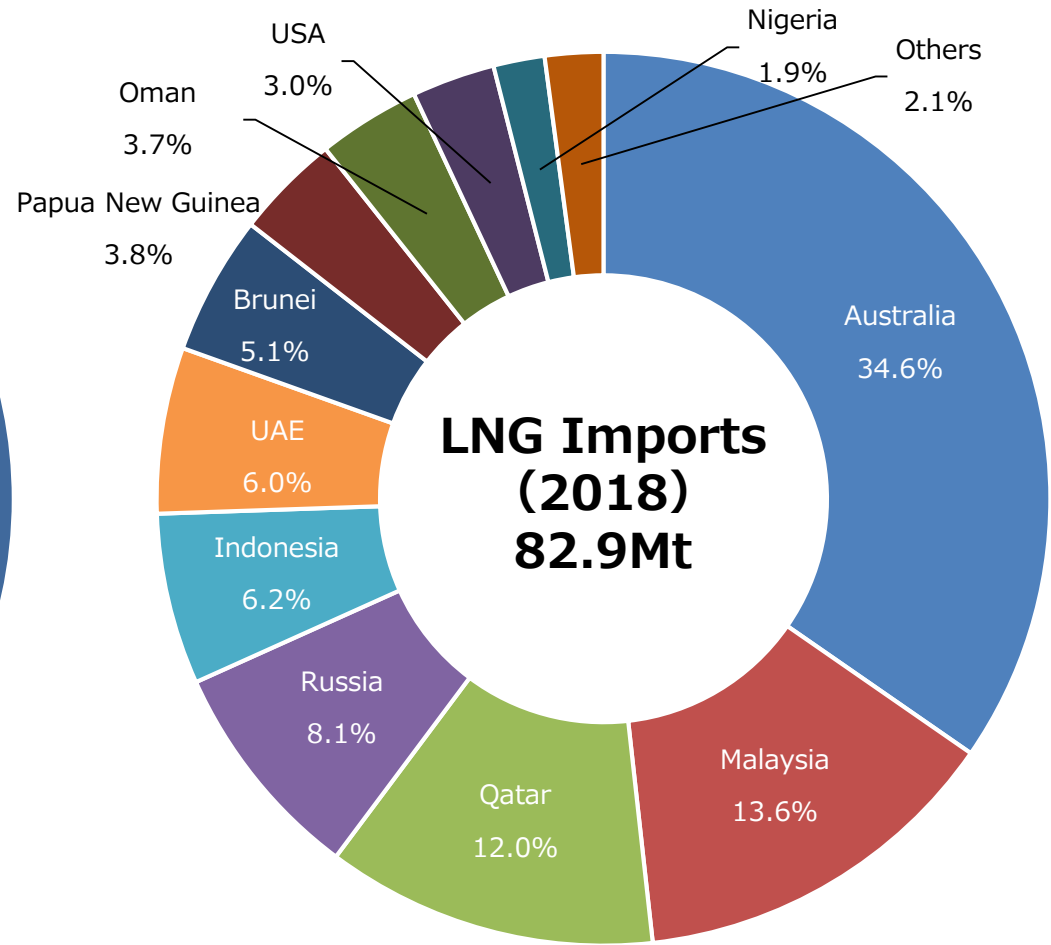
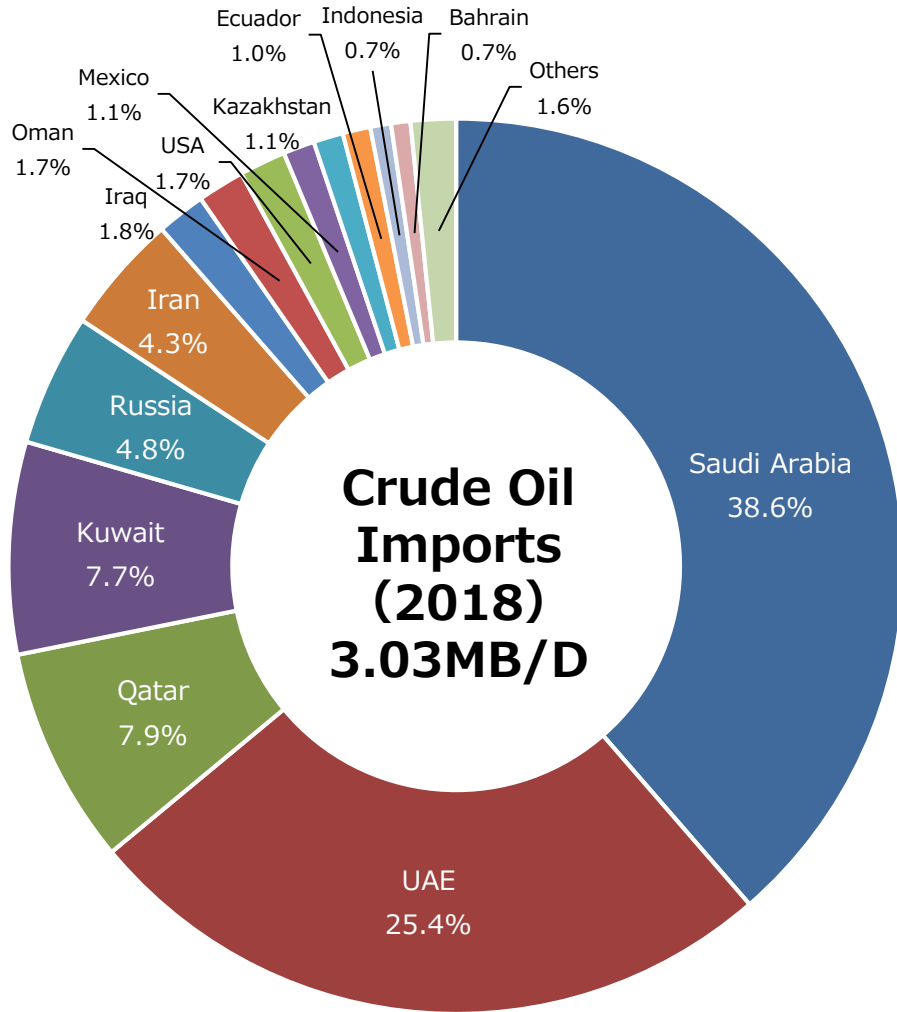
Reference: Created on the basis of Agency for Natural Resources and Energy "General Energy Statistics of Japan."

# Low Self Sufficiency Rate

	Self Sufficiency (2000)		Self Sufficiency (2017p)	Primary Nationally Produced Resources
U.S.	73%		93%	Coal, Oil, Gas
Germany	40%		37%	Coal, Biofuels/Waste
France	52%		53%	Nuclear Power
U.K.	122%		68%	Oil, Gas
China	99%		80%	Coal
India	80%		65%	Coal, Biofuels/Waste
Japan	20%		9%	None

\*China, India = 2016

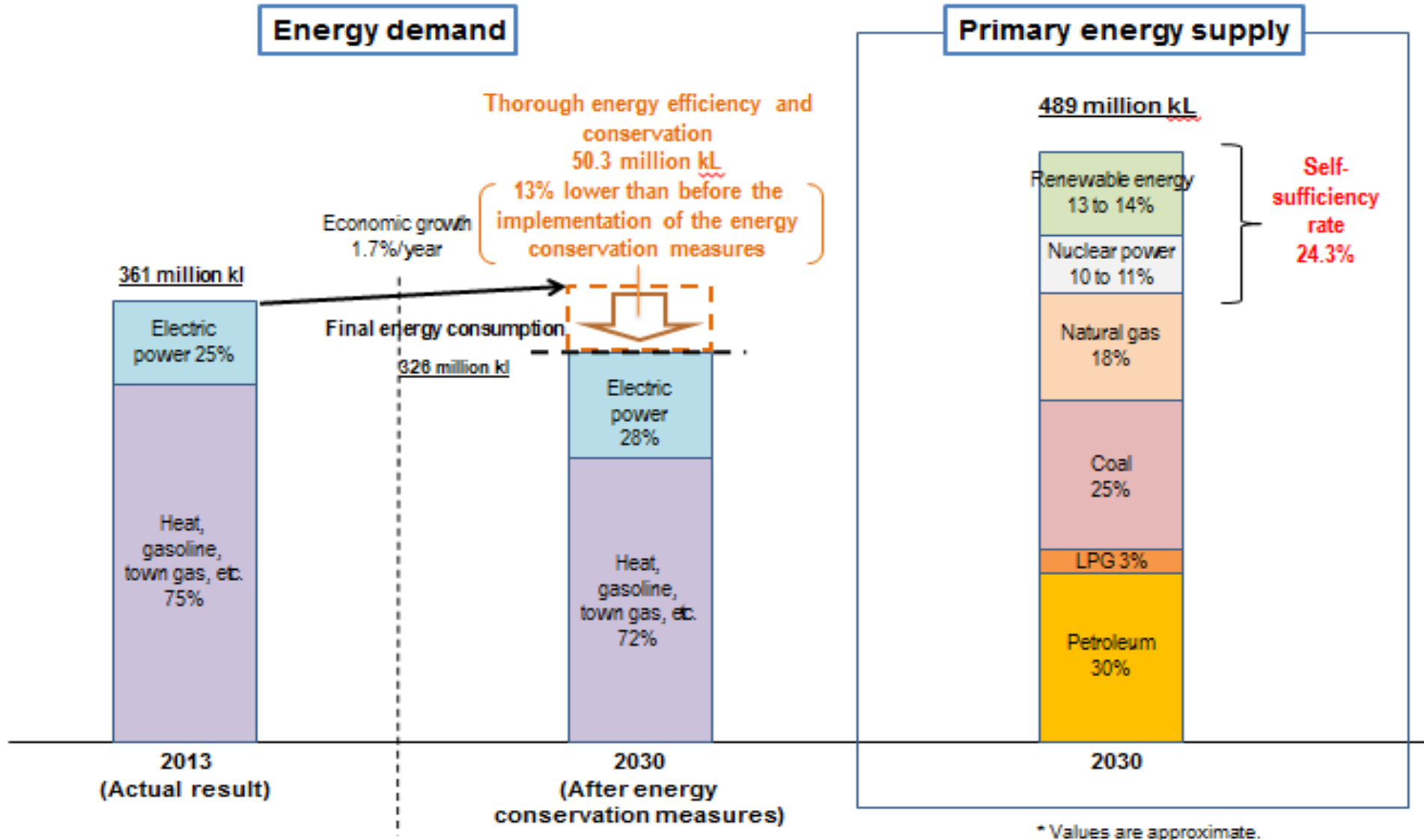
# Japan's Major Procurement of Crude Oil and LNG



**Dependency on the Middle East 88.0%**  
**Dependency on the Strait of Hormuz 86.3%**

**Dependency on the Middle East 21.7%**  
**Dependency on the Strait of Hormuz 18.0%**

# Energy Demand and Primary Energy Supply in 2030



**We aim to contribute to further growth of the Japanese economy, improvement of the standard of living, and global development through energy supply that is stable, sustainable long term, and independent.**

Following the 3Es+S principles, realise an energy supply and demand structure that is stable, low-burden, and compatible with the environment.

<u>3Es+S</u>	⇒	<u>Sophisticated 3Es+S</u>
○ <b>S</b> afety	+	Safety innovation by technology/governance reform
○ <b>E</b> nergy security	+	Raise technical self-sufficiency rate and ensure diversity of choice
○ <b>E</b> nvironment	+	Work towards decarbonisation
○ <b>E</b> conomic efficiency	+	Enhance domestic industrial competitiveness

- Changing circumstances**
- ① Start of inter-technology competition for decarbonisation
  - ② Geopolitical risk increased by technology changes
  - ③ Intensified competition between nations and firms



## Towards 2030

~ To reduce emission of greenhouse gases by 26% ~

~ To achieve energy mix target ~

- Currently halfway to the target
- Realistic initiatives
- Deliberate promotion
- Intensify and enhance measures

### <Primary measures>

#### ○ Renewable energy

- Lay foundations to use as major power source
- Cost reduction, overcome system constraints, secure flexibility of thermal power

#### ○ Nuclear power

- Lower dependency on nuclear power generation to the extent possible
- Restart of nuclear power plants and continuous improvement of safety

#### ○ Fossil fuels

- Promote independent development of fossil fuels upstream, etc.
- Effective use of high-efficiency thermal power generation
- Enhance response to disaster risks, etc.

#### ○ Energy efficiency

- Continued thorough energy efficiency
- Integrated implementation of regulation of Act on Rationalizing Energy Use and support measures

#### ○ Promotion of hydrogen/power storage/distributed energy

## Towards 2050

~ Toward reducing GHGs by 80% ~

~ Challenges towards energy transitions and decarbonisation ~

- Possibility and uncertainty
- Ambitious multiple track scenario
- Pursue every option
- Choose priorities by scientific review

<Primary directions>

### ○Renewable energy

- Aim to use as major power source, economically independent and decarbonised
- Start on hydrogen/power storage/digital technology development

### ○Nuclear power

- One of the options for decarbonisation
- Pursuit of safe reactors, development of back end technologies

### ○Fossil fuels

- Major power source during the transitional period. Enhance resource diplomacy
- Shift to gas, fadeout inefficient coal
- Start hydrogen development for decarbonisation

### ○Heat & transportation, distributed energy

- Challenges for decarbonisation with hydrogen, power storage, etc.
  - Distributed energy systems and regional development
- (Combination of next generation renewables/ power storage, EV, micro grid, etc.)

strategic plan ⇨ All Japan's efforts (projects, international collaboration, financial dialogue, policy)



# Vision of LNG Trade Japan Should Pursue

## LNG trade in the past

- Largely long-term contracts
- Reselling restricted by destination clauses
- Pricing linked to crude oil prices

## LNG trade in the future

- **Increase short-term and spot contracts and optimize the procurement terms**  
→ **Supply and demand balance**
- **Abolish or relax the destination clause. Utilize reselling and arbitrage trading**  
→ **More reasonable Price**
- **Pricing reflecting LNG supply and demand**  
→ **Price stabilization and transparency**

## Changes in the Market Environment

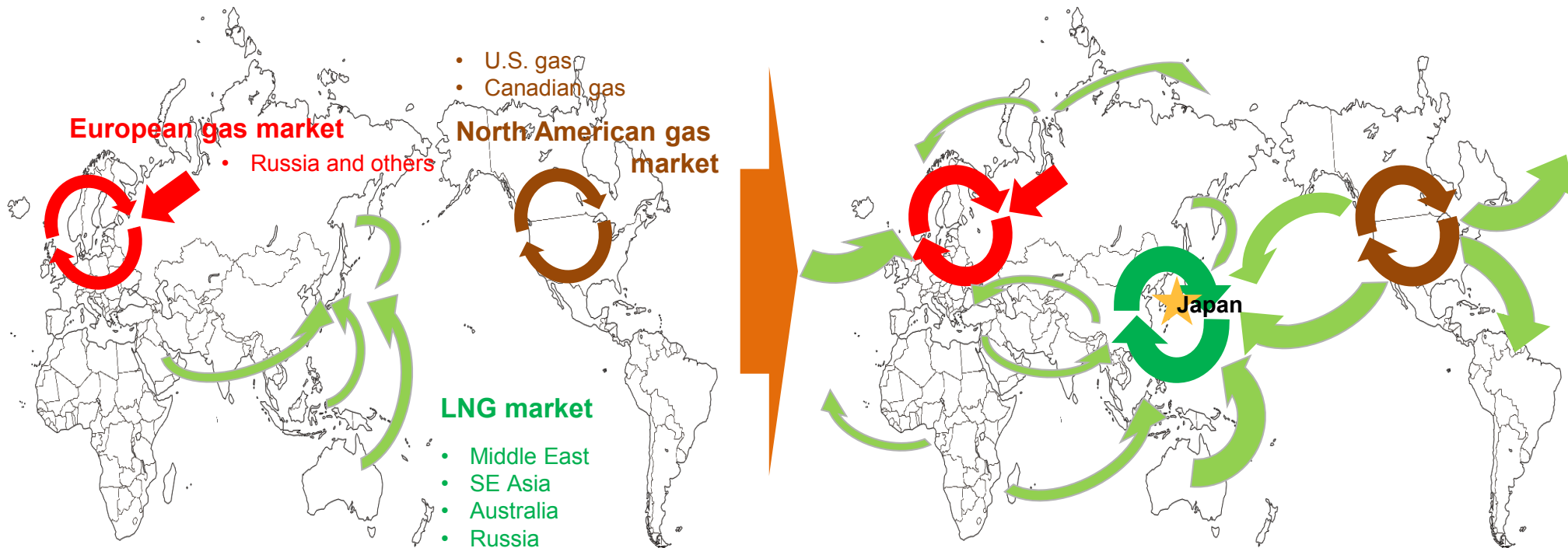
- Liberalization of electricity and gas market in Japan
- Diversification of LNG supplying countries
- Diversification of LNG consuming countries

- **A highly fluid and global LNG market** is required to bolster LNG trade in the future.
- At the same time, **Japan, as the world's largest LNG consuming country**, should attempt to become **an LNG trading hub**, engaging in price formation, and dissemination

# “Strategy for LNG Market Development”

(announced by METI in May 2016)

- In addition to the growth in global LNG demand, the market environment surrounding LNG is now experiencing drastic changes; the reform of the electricity and gas market in the biggest LNG market, Japan, the shale revolution, the development of LNG spot markets and rapid increase of related players in this market.
- Taking into account the size of its LNG demand and the proximity to LNG trade routes, Japan should accelerate all efforts in order to achieve the goal of obtaining the status as an internationally recognized hub (\*) by the early 2020s.
  - \* a base where many LNG trades take place, market prices are formed and publicly reported
- To meet this goal, ①enhancement of tradability, ②creation of a proper price discovery mechanism, and ③ open and sufficient infrastructure are important elements.



# Announcement at LNG Producer Consumer Conference (2018)

- ✓ Date/ Place: October 22<sup>nd</sup>, 2018/ Hotel Nagoya Castle, Nagoya
- ✓ Participants: around 1000 people including ministers, top executives of related enterprises and international organizations from 28 countries and regions
- Mr. Hiroshige Seko, Minister of Economy, Trade and Industry, delivered a speech stating that Japan will contribute to expanding the LNG market, by **drastic expansion of financing support** and **support for LNG consumers in development of regulation, master plans etc.** and called for cooperation between producers and consumers in order to enhance the LNG supply security.

## Japan's Contribution towards Market Expansion

Drastic expansion of financing support  
(JOGMEC/JBIC/NEXI)

Support for development of regulation, master plans etc.

= **Contributes to the creation of LNG market of 50 million tons.**

### Security/Destination Clause

Global public and private network development for emergency.

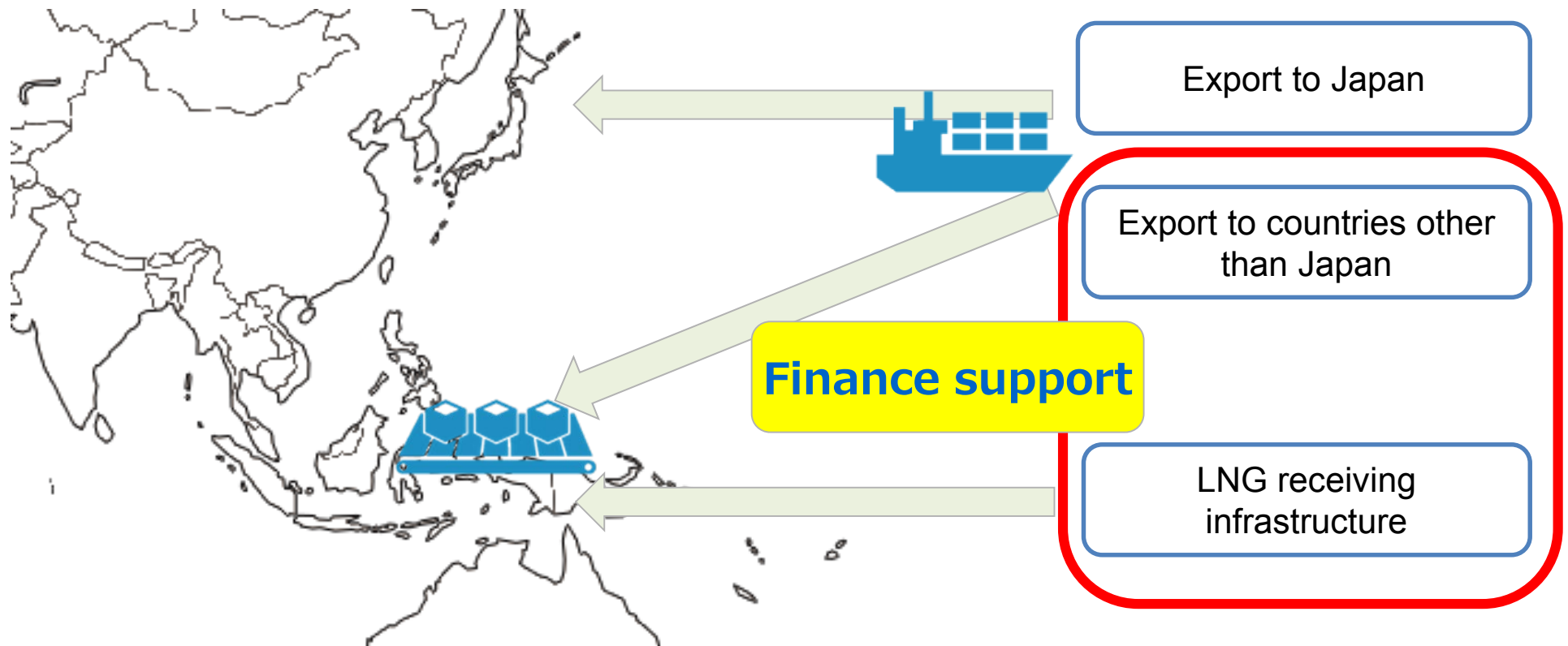
Coordinate efforts on security enforcement.

Model clauses regarding destination restrictions.



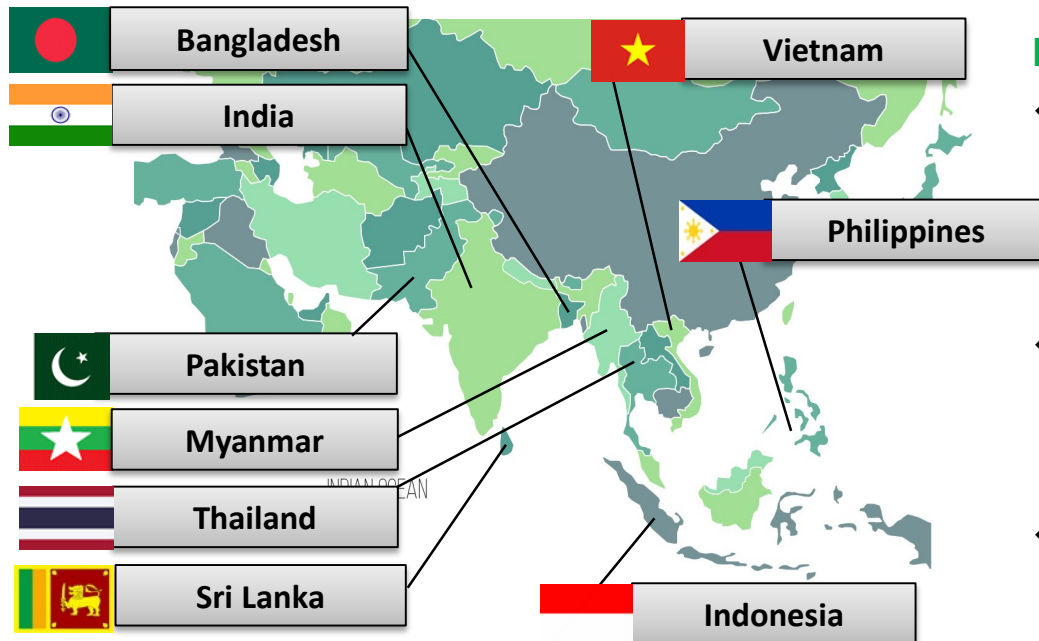
# Reinforcement of Japanese public finance support

- The system of Japanese public finance is updated by JBIC and NEXI.
- As a result of this update, it is now possible to support LNG receiving terminals and FSRU or LNG projects which export LNG to countries other than Japan with competitive terms.



# JOGMEC's LNG Value Chain Training Program

- JOGMEC launched the LNG Value Chain Training Program to contribute to expanding the LNG market in Asia in 2018.
- Spearheading the Program to reflect the commitment of Mr. Hiroshige Seko, Minister of METI during "the LNG Producer-Consumer Conference 2017" at Tokyo.
- 1<sup>st</sup> round of the program was held in June, 2<sup>nd</sup> in August and 3<sup>rd</sup> in December.
- The participants include high-level Government officials and NOC employees from 9 countries in Asia.
- Senior Advisor of US DOE joined the 3<sup>rd</sup> round as a lecturer for the program.



## Program Contents

- ◆ Introductory Session: Commercial aspects of LNG value chain business and general information on the technical aspects of regasification. (Incl. FSRU)
- ◆ Practical Business Session: Finance, contracts, relevant parts of the legal system of Japan, project management, etc.
- ◆ 2 weeks duration of each round.

# LNG Producer Consumer Conference 2019

- ✓ METI is pleased to announce that the 8<sup>th</sup> LNG Producer-Consumer Conference will be held on **Thursday September 26, 2019 in Tokyo**, jointly hosted by the Asia Pacific Energy Research Centre (APERC).
- ✓ **Registration is planned to start around July** on the conference website.
- ✓ URL, <http://www.lng-conference.org/english/>

