

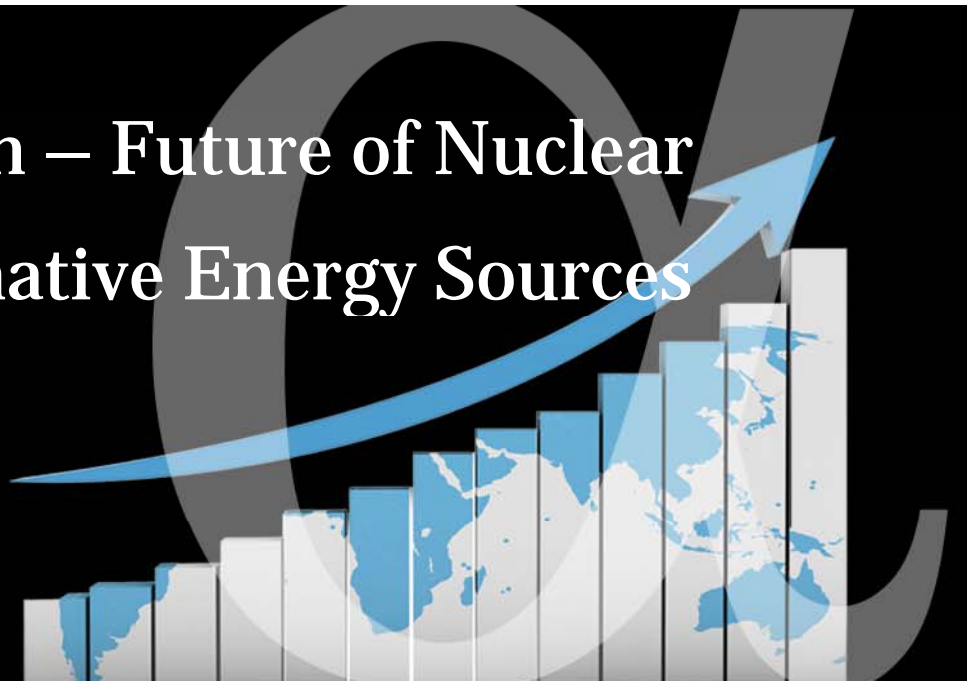
MAYER • BROWN

11th Annual Global Energy Conference

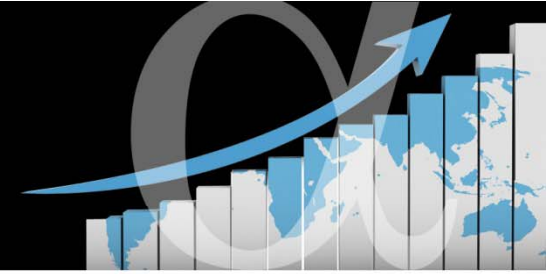
Energy Outlook in Japan – Future of Nuclear
Power Plants and Alternative Energy Sources

Toshi Yoshida

May 17, 2016



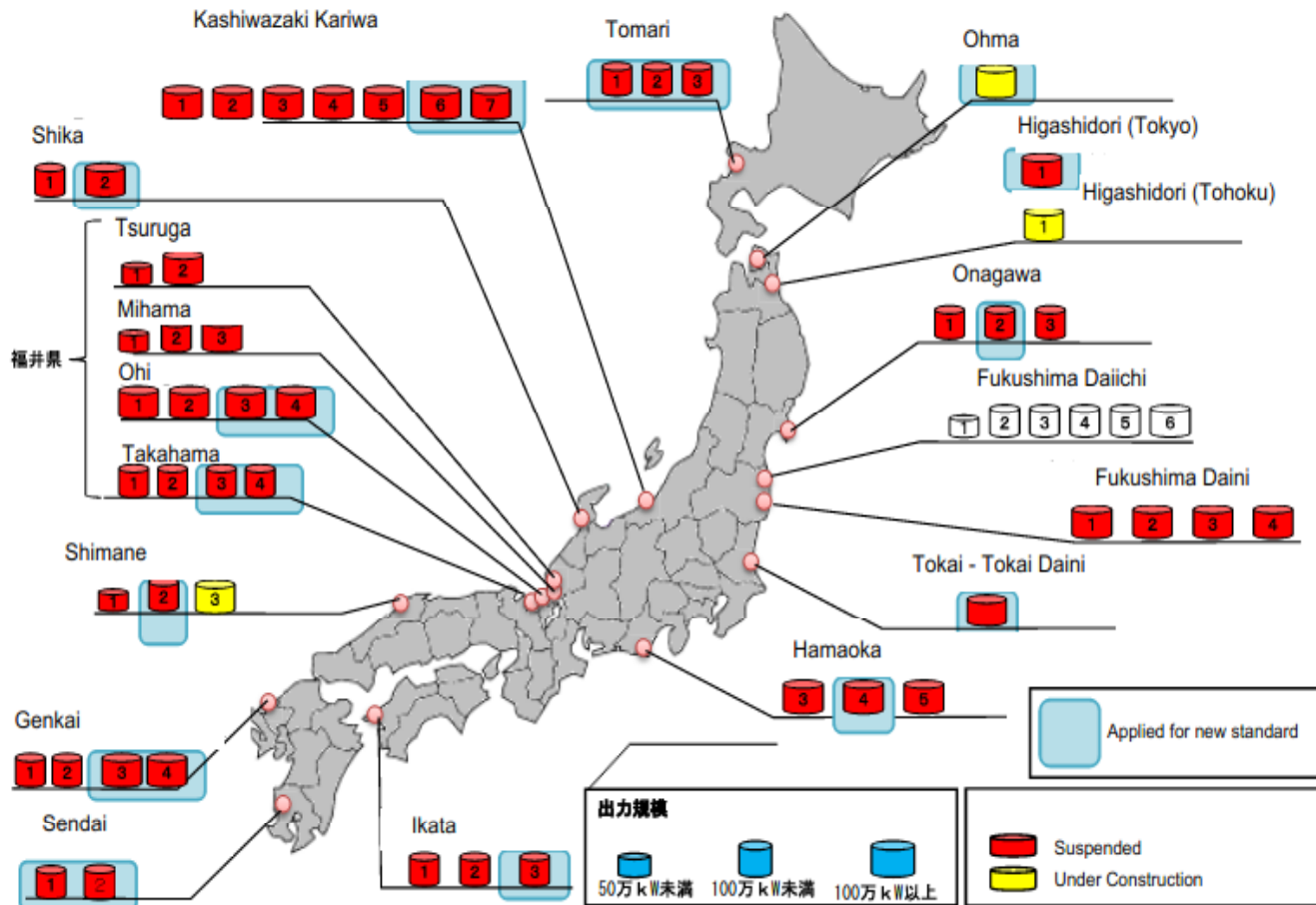
Key Issues



- Will nuclear power plants be brought back to pre-earthquake level?
- How many units and how long?
- Political intent?
- Citizens perception?
- Court?
- What is plausible alternative energy sources to nuclear?
 - Little domestic oil & gas production
 - Coal is inexpensive but with CO2
 - Renewables are costly and take time

Nuclear Power Plant Operations (Feb 4, 2015)

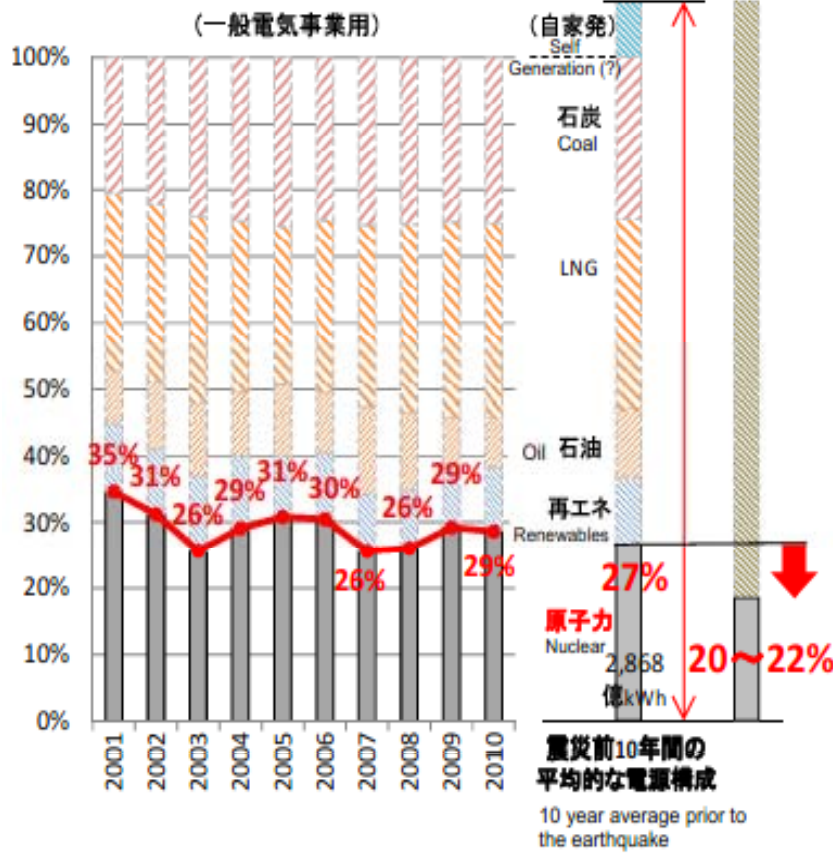
48 Commercial Units
(21 units applied for under new standards.)



Source: METI

Share of Nuclear Power Plants

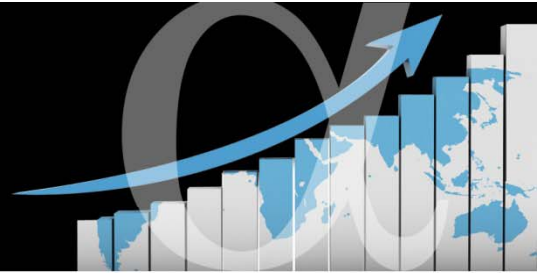
Share of Nuclear
原発依存度の推移



1. Saving Energy
17% Reduction of Electricity Demand by 2030
2. Replacing Nuclear with Renewables
3. Reducing Nuclear by Increasing Fuel Burning Efficiency

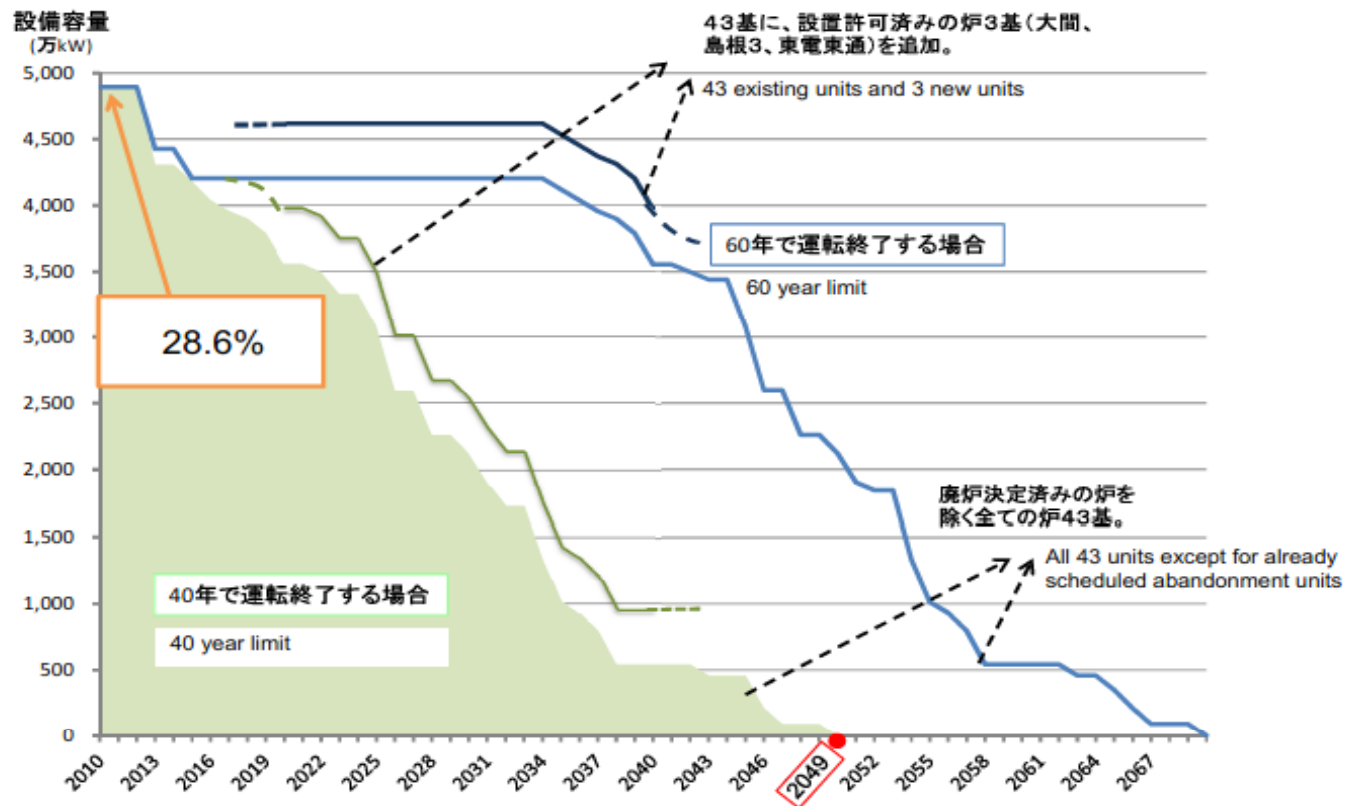
SOURCE: METI

Life of Nuclear Power Plants

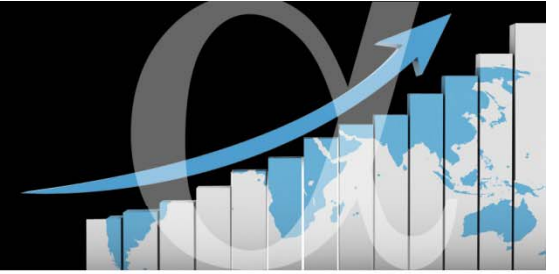


40 YEAR LIMIT SCENARIO

Half the Capacity in 2030, 20% in 2040
Source: METI



Key Issues - Revisited



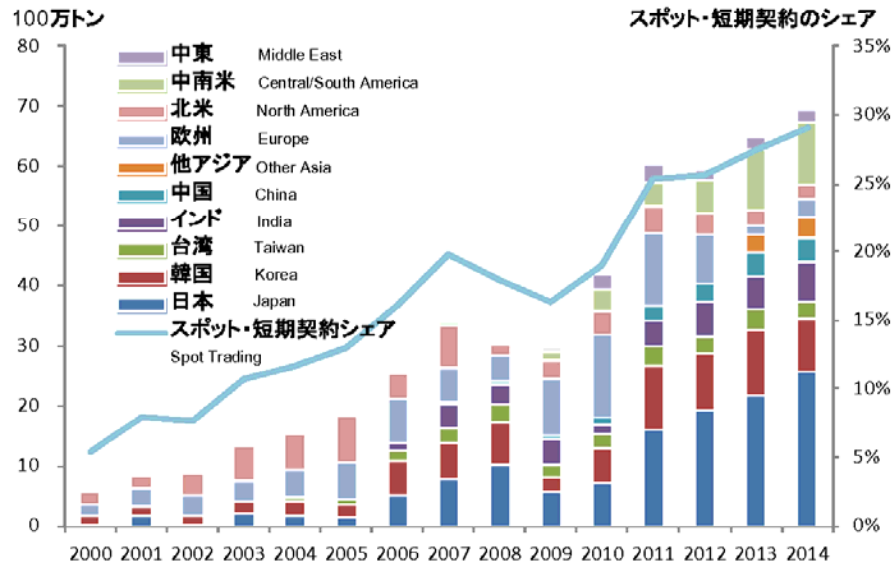
- Will nuclear power plants be brought back to pre-earthquake level? - No
- How many units and how long? – Less than half and maximum 40 years
- Political intent? – Moderate capacity of nuclear to support economic growth
- Citizens perception? - ???
- Court? - Divided
- What is plausible alternative energy sources to nuclear?
 - Little domestic oil & gas production
 - Coal is inexpensive but with CO2
 - Renewables are costly and take time

LNG Buyers by Country

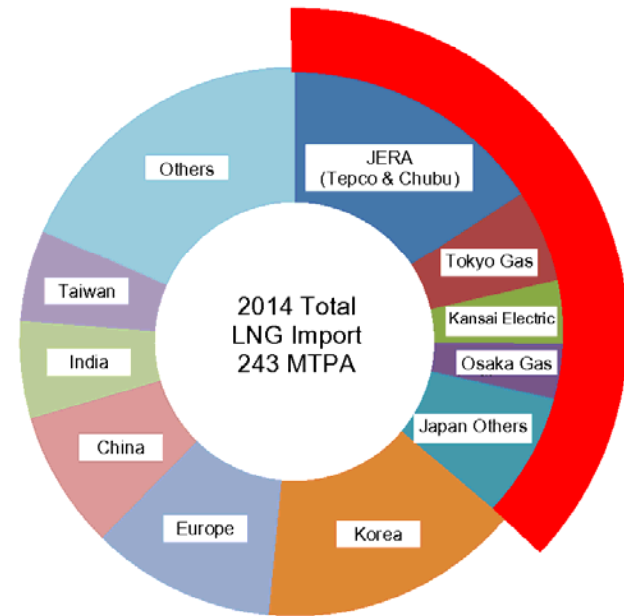
Spot Trading and Short Term Purchase



SPOT TRANSACTIONS
(5% IN 2000 → 30% IN 2014)

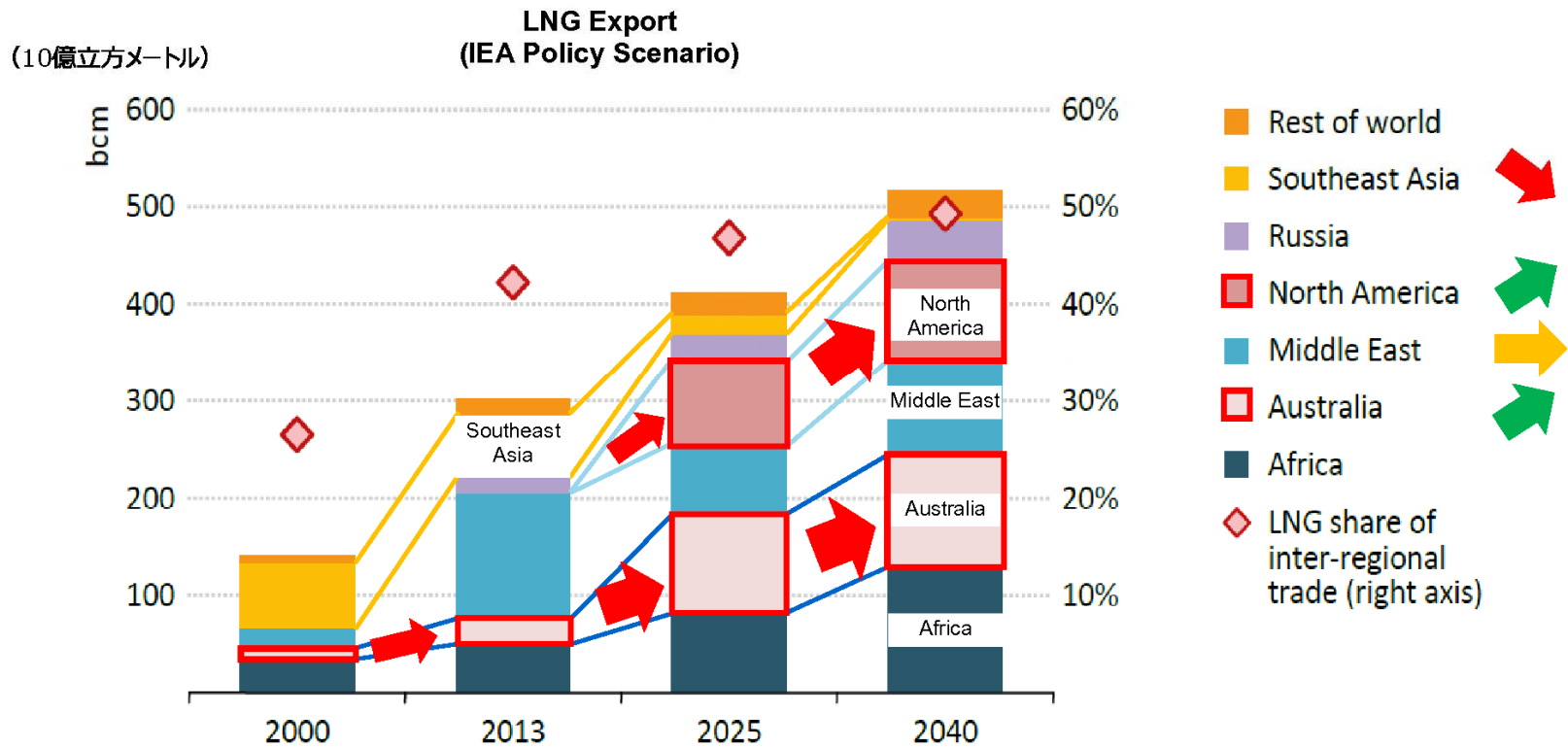
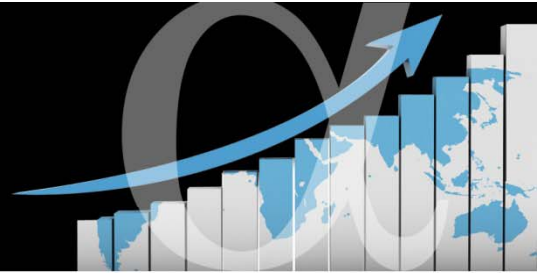


LNG Import to Japan
88 MTPA (36%)



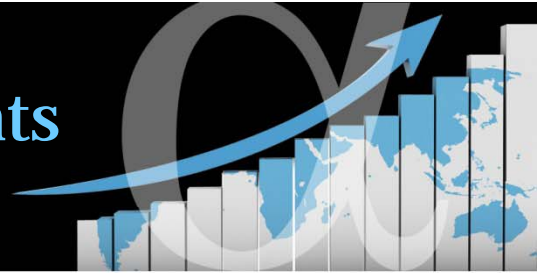
Source: GIIGNL, 貿易統計および資源エネルギー庁調べ

LNG Export Forecast

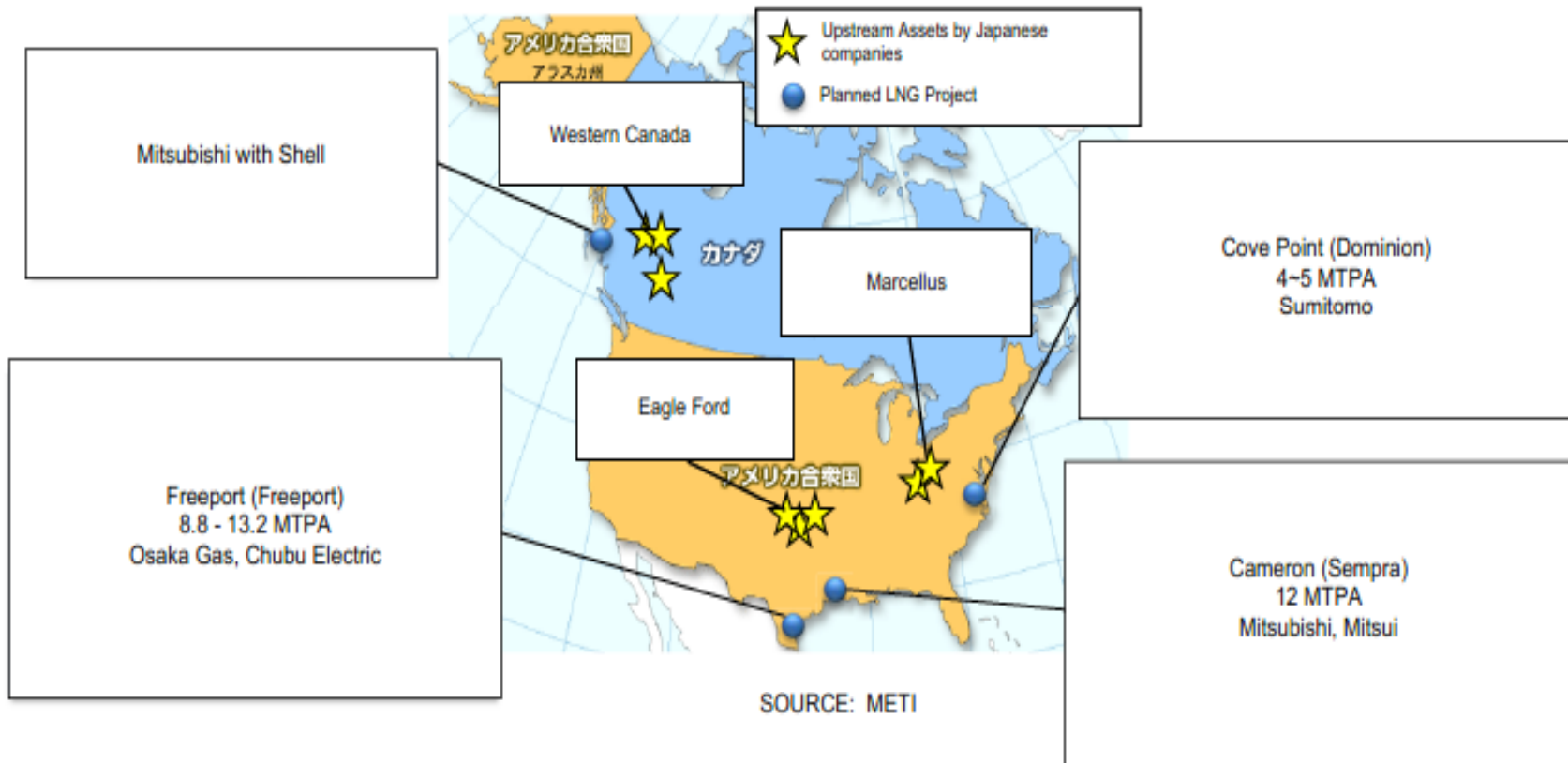


Source: IEA World Energy Outlook 2015 より資源エネルギー庁作成

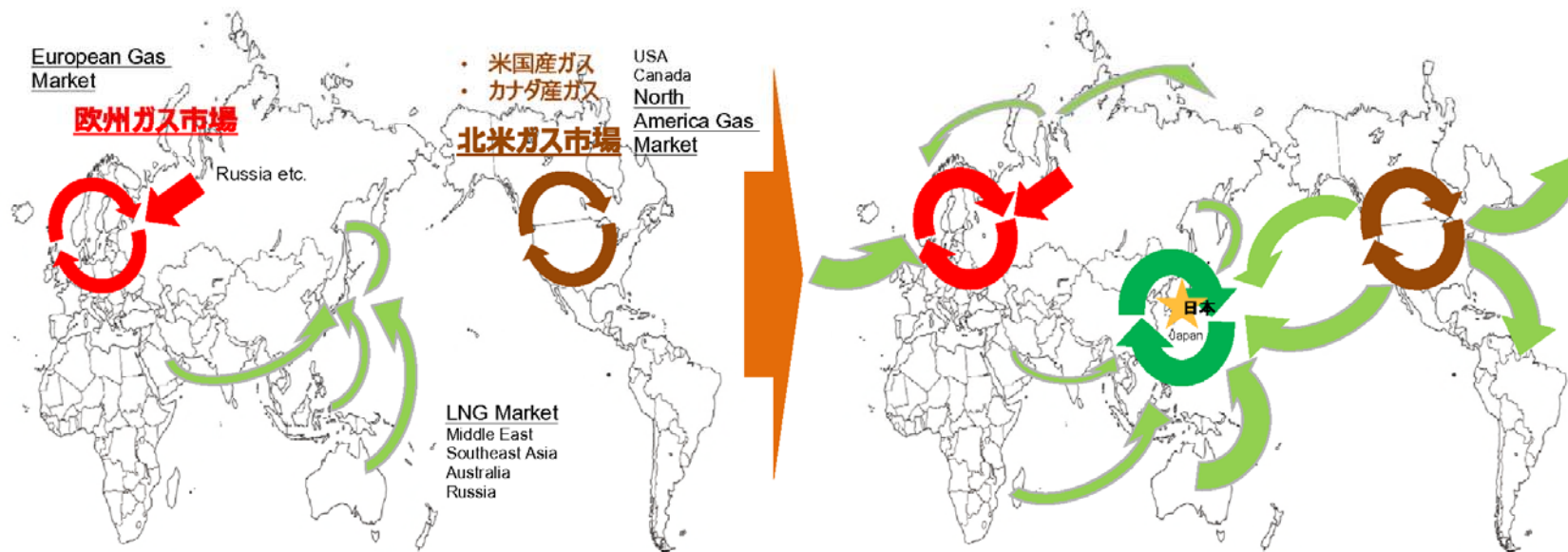
LNG Projects in US – Japanese Participants



North America LNG Projects



LNG Global Flow – Regional to Inter-Regional



SOURCE: METI