

Resources, Geopolitics, and National Strategies

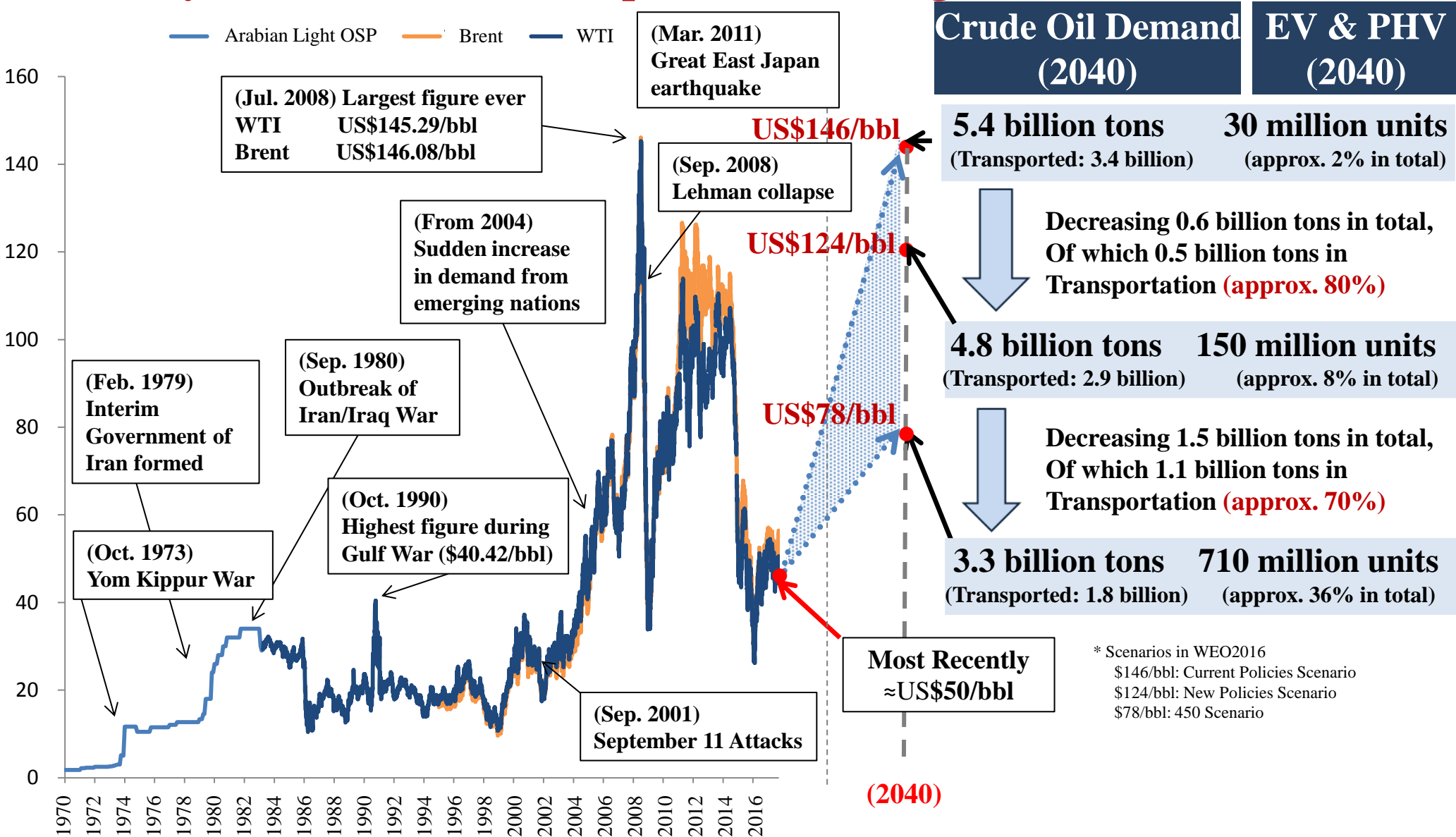
September 29th, 2017

Agency for Natural Resources and Energy

Ministry of Economy, Trade and Industry

The oil price continues to change, and most recently is at US\$50/bbl.

What do you think of resources prices in the long term?



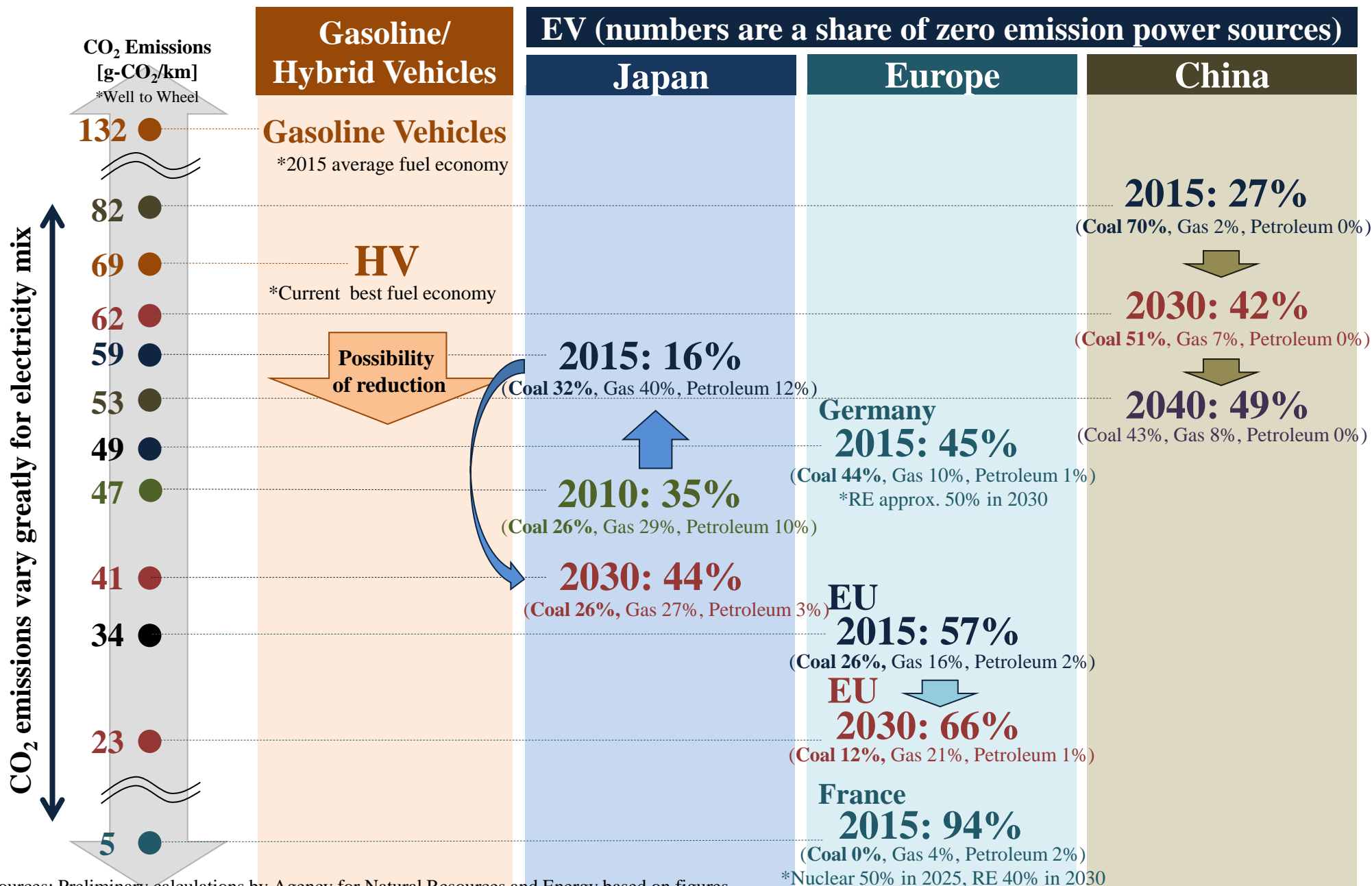
*In 1983 both the WTI futures (NYMEX) and blend futures (IPE, currently ICE) were listed.

*Price was per-barrel, demand was crude oil equivalent

*Unit of EV & PHV is an example of factors of oil demand decrease

* Scenarios in WEO2016
 \$146/bbl: Current Policies Scenario
 \$124/bbl: New Policies Scenario
 \$78/bbl: 450 Scenario








(Ref.) The impact of electric vehicles on CO₂ will differ greatly due to **zero emission ratios**



Sources: Preliminary calculations by Agency for Natural Resources and Energy based on figures from the Japan Automobile Research Institute, IEA Energy Balances, WEO2016 etc.

*Calculation for Europe and China are partly based on assumptions for Japan

Japan lacks natural resources and is **particularly low in self sufficiency**. How can this be increased in the long-term?

	Self Sufficiency (2000)		Self Sufficiency (2016)	Primary Nationally Produced Resources
U.S.	73%		<small>*China/India = 2015</small> 88%	Natural Gas Coal, Petroleum
U.K.	74%		67%	Petroleum
Germany	40%		37%	Coal
France	52%		54%	Nuclear Power
China	98%		84%	Coal
India	80%		65%	Coal
Japan	20%		8%	None

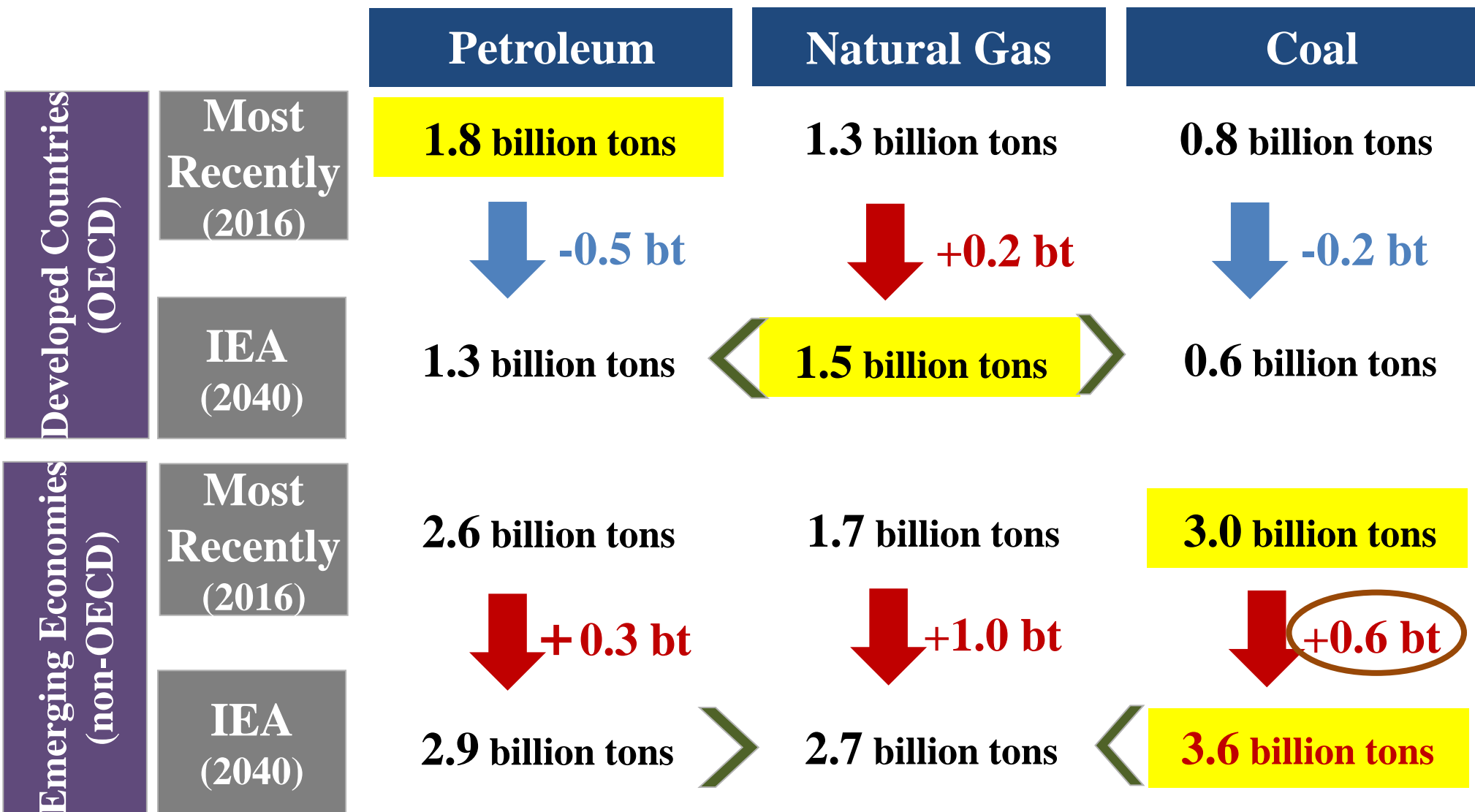
Japan's imports are **particularly reliant on the Middle East**. What will be the **long-term situation there?**

	Petroleum			Gas		
	Import Reliance	% Middle East	Largest Importer	Import Reliance	% Middle East	Largest Importer
U.S.	41%	8%	15% Canada → Connected via Pipeline	3%	0%	3% Canada → Connected via Pipeline
U.K.	22%	1%	12% Norway → Connected via Pipeline	46%	10%	32% Norway → Connected via Pipeline
Germany	96%	4%	37% Russia → Connected via Pipeline	90%	0%	44% Russia → Connected via Pipeline
France	97%	25%	15% Saudi Arabia → Tanker Transport *Connected via European Pipeline	99%	2%	40% Norway → Connected via Pipeline
China	61%	31%	9% Saudi Arabia → Tanker Transport *Connected via pipeline to Russia etc.	29%	4%	15% Turkmenistan → Connected via Pipeline
India	83%	46%	15% Saudi Arabia → Tanker Transport *No pipeline	40%	25%	22% Qatar → Tanker Transport *No pipeline
Japan	99%	85%	37% Saudi Arabia → Tanker Transport *No pipeline	98%	23%	28% Australia → Tanker Transport *No pipeline

Source: Produced by Agency for Natural Resources and Energy from IEA/Energy balances etc.

*Data for China and India is from 2015

Developed countries **shift to gas**, and emerging countries continue **coal** dependency. How will Japan **contribute to CO2 reduction**?



Source: New Policy Scenario, WEO2016 IEA etc.

Note: Unit is tons of crude oil equivalent.