



Challenges in Asia/World Energy Market and the role of Russia



The 10th Japan-Russia Dialogue on Energy & Environment in Niigata

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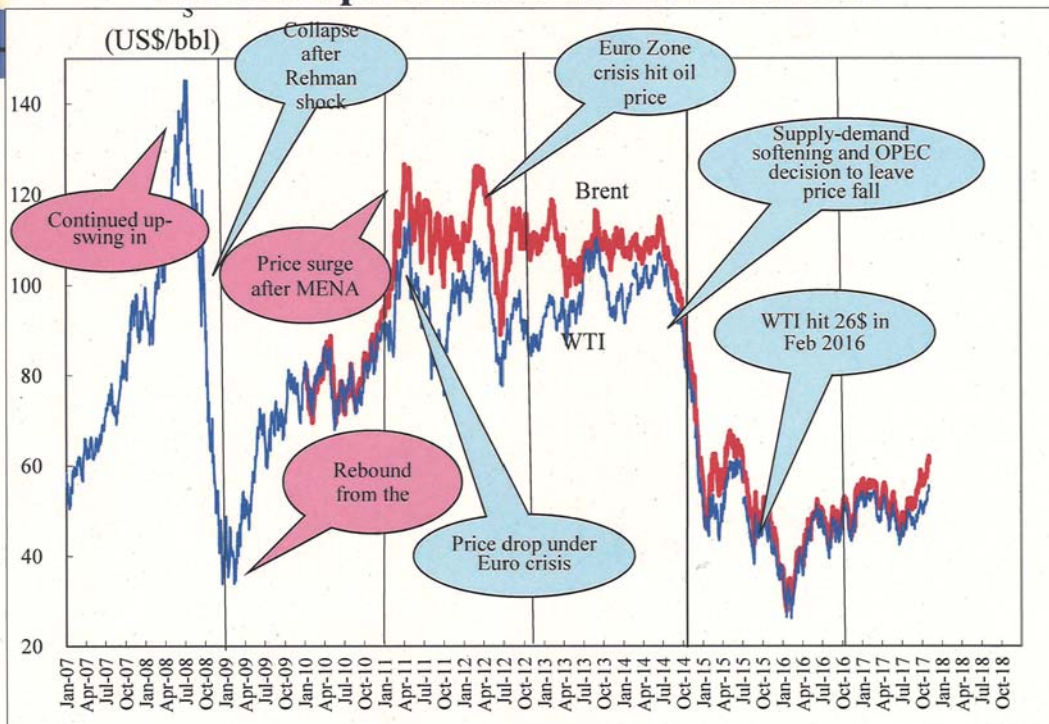
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Crude Oil Price Volatility

Crude oil price continued to be volatile



Source: NYMEX data, etc.



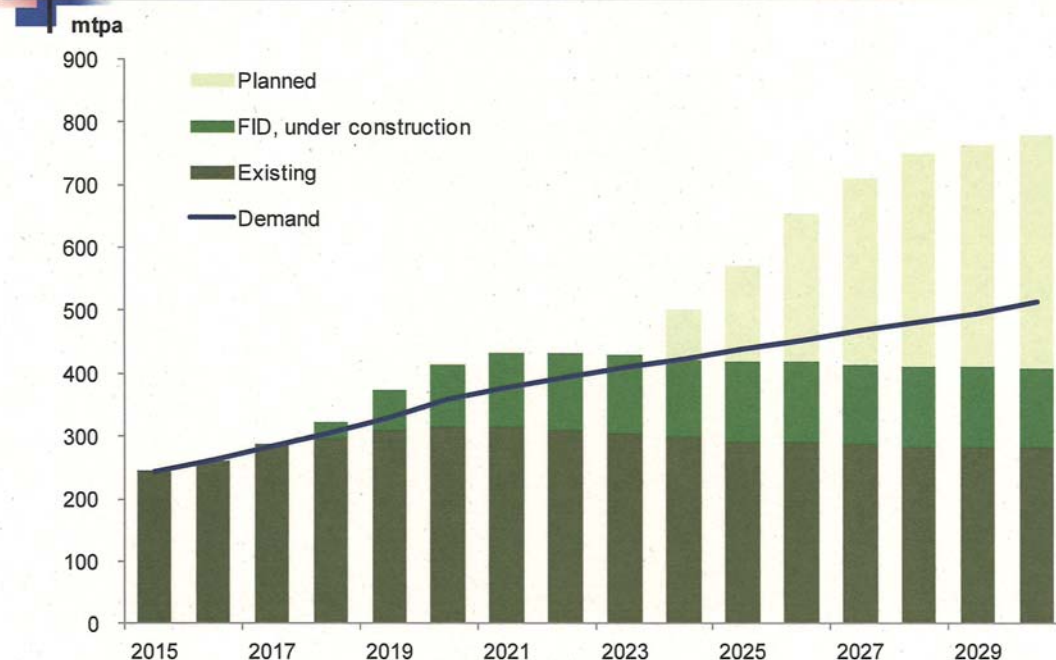
Outlook for Near-Term Global Oil Market

- **Current price level likely to remain in the near term.**
- **Market is heading for “Re-balancing”, but...**
- **US LTO production is resilient and start to pick up again if oil price goes beyond a certain level.**
- **What can be a “surprise”?**
 - **OPEC decision?**
 - **Supply disruption in oil producer countries?**
 - **Economic downside risks?**
- **Current price level is not sustainable for mid-term. Market may head for 70 in 2020s**
- **Another uncertainty has emerged for longer term...**



World LNG Supply-Demand Outlook

- **Supply surplus is likely to continue in the medium term (~2024).**
- **Realization of planned capacity in a timely manner is needed to keep the demand and supply balanced beyond the mid-2020s.**
 - **Qatari expansion of its capacity may greatly contribute to maintain the balance.**



Source: Yoshikazu Kobayashi, “The Role of Natural Gas in Japan and Asia” (September 11, 2017)



Supply flexibility of LNG

- Inflexible contract terms prevent liquidity improvement in Asia LNG market
 - Contract duration (20 years+)
 - Take or Pay
 - Destination clause
- Background of inflexibility
 - Remote greenfield projects need traditional rigid contract to manage the investment risk.
 - Flexible LNG can cause additional cost in logistics.
- Changing realities in the world LNG market:
 - Increasing supply of US LNG without destination restriction
 - Operational flexibility in tolling business model in the US
 - Lowering the hurdle to introduce LNG thanks to adoption of FSRU
 - Market liberalization of the uncertain demand for each buyer
 - Uncertainty in nuclear power generation due to policy and PA factors
- Flexibility is essential and useful for both importers and exporters because right price signal will adjust demand/supply efficiently.

Source: Yoshikazu Kobayashi, "The Role of Natural Gas in Japan and Asia" (September 11, 2017)

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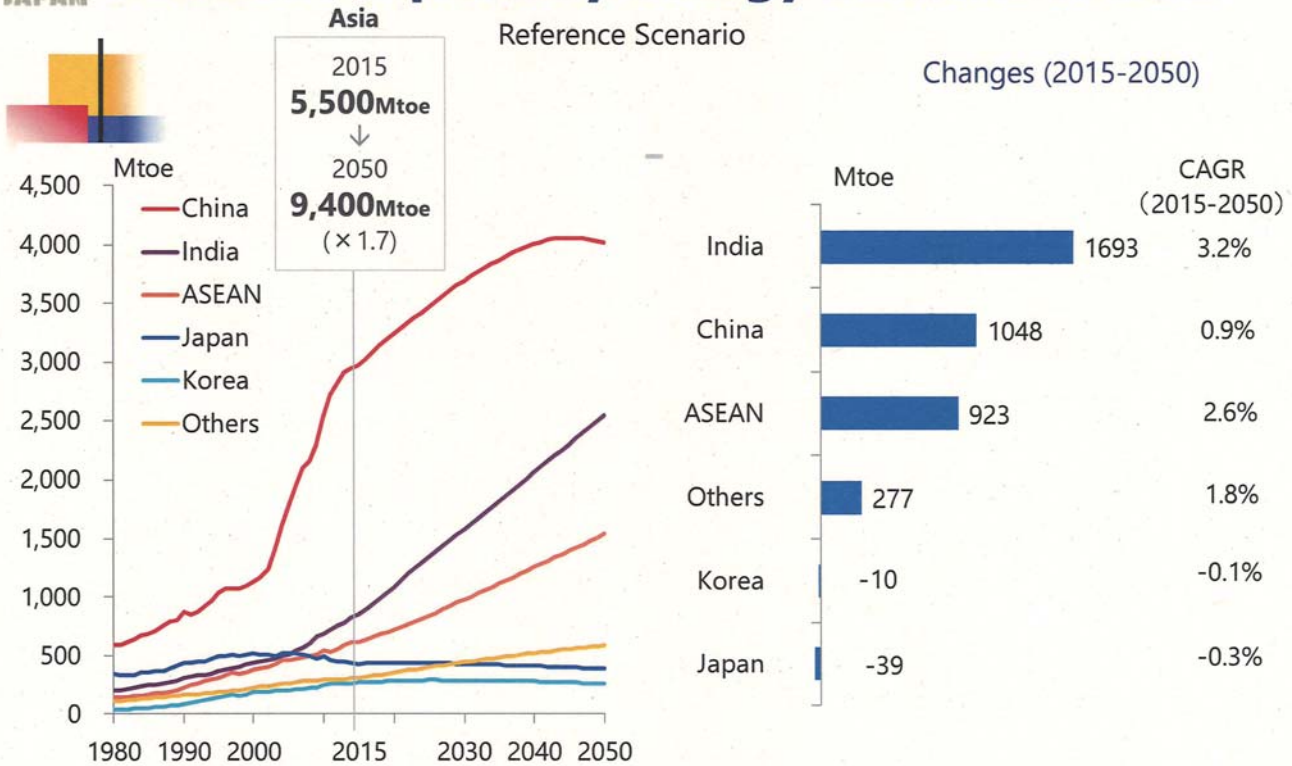
Asia's Challenges for "3E+S"

- Rising import dependence and energy security
 - High oil import dependence. Gas import dependence rising
 - High Middle East dependence, Sea-lane dependence
- High coal dependence and environment loads
 - Challenges for both climate change and pollution problems
- Need for energy market reform
 - Japan leads the way. Reform for both energy market and NOCs
- Challenges for nuclear power program
 - Impacts of Fukushima. Ambitious nuclear power program in China, India, etc, with challenges for safety and public acceptance

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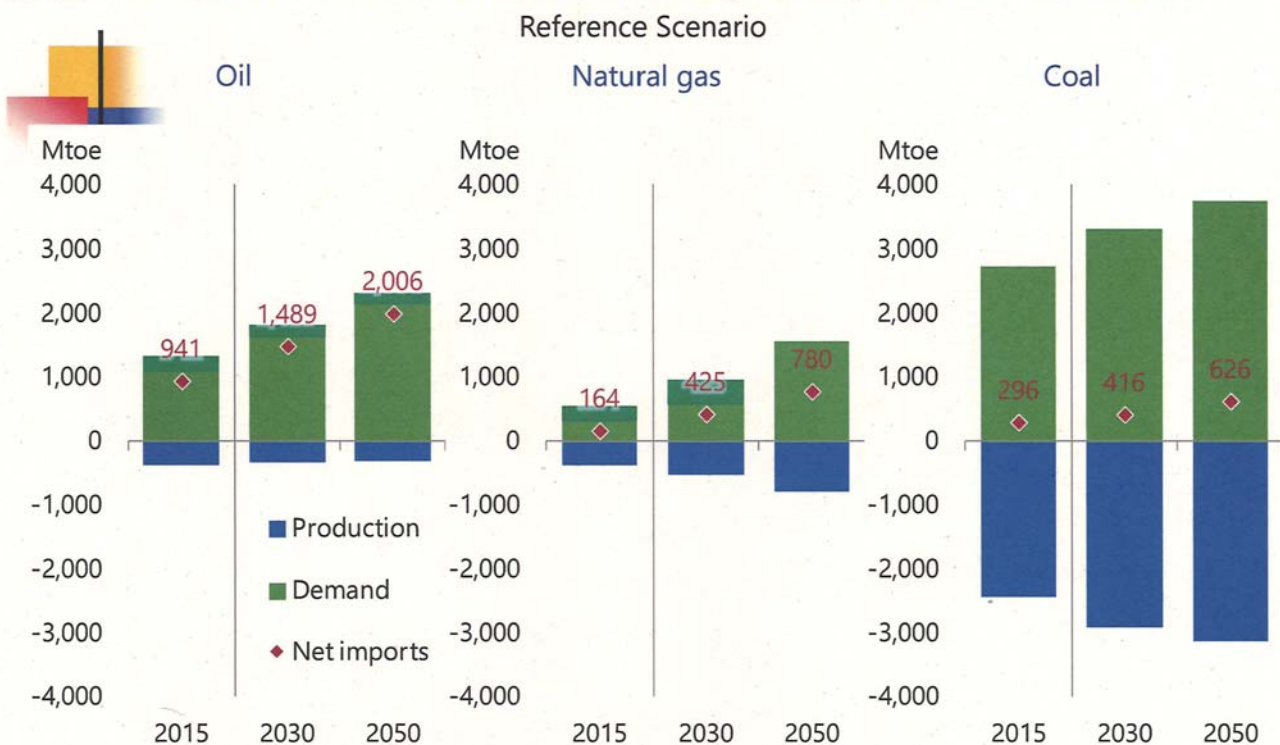
Outlook for primary energy demand in Asia



Source: "IEEJ Outlook 2018" (IEEJ, October 2017)



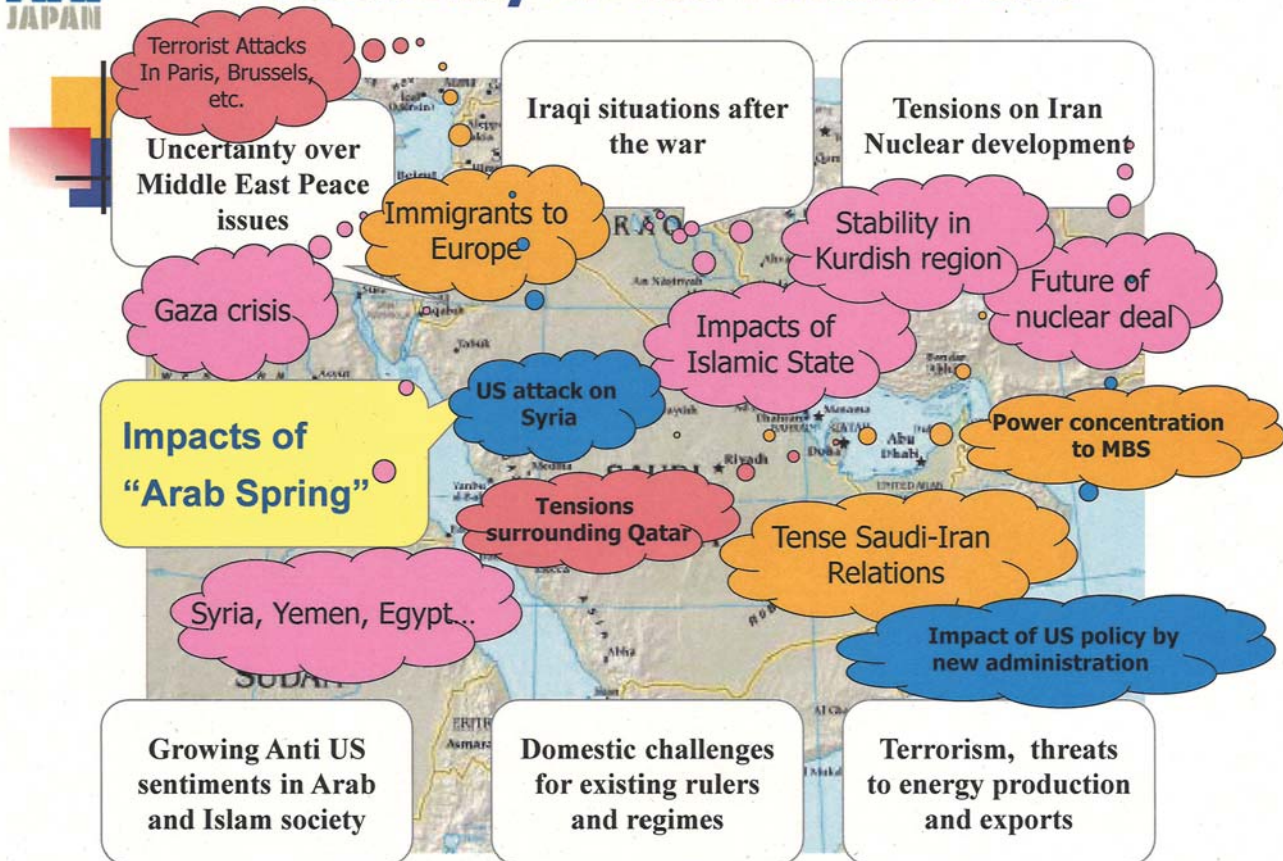
Outlook for fossil fuel S/D balance in Asia



Source: "IEEJ Outlook 2018" (IEEJ, October 2017)



Instability in the Middle East



Source: Prepared by IEEJ



Russian Energy Resources and the World

The importance to the world energy market

- Huge resource potential, possible to meet global energy demand growth in the future
- Production from existing major oil and gas fields face long-term stagnation/decline
- Importance of supply growth in new/frontier fields/areas
- Long term supply growth possible, but uncertainty remains
- Importance of “Demand security” in Europe and expectation for Asian market (Japan, China, Korea, etc.) as a new and growing market
- Various initiatives for enhancing access to Asian market are underway/considered



The time for car electrification has come?

Selected recent movements by governments/assemblies and car makers

Germany
A resolution to ban conventional car sales in the European Union by 2030 was passed by the Bundesrat of Germany (2016)

Norway
The ruling and opposition parties proposed the abolition of conventional vehicles by 2025 (2016)

France
The Government announced that it would ban conventional car sales by 2040 (2017)

United Kingdom
The Government announced that it would ban conventional car sales by 2040 (2017)

India
Minister said that all new car after 2030 would be electric vehicles (2017)

China
Deputy Minister mentioned that the ban on the sale of conventional vehicles was under investigation (2017)

Source: "IEEJ Outlook 2018" (IEEJ, October 2017)



Toyota

The target for FCV sales is more than 30,000/year in 2020 (2015). of full-scale entry into EVs in 2020 (2016)



Volkswagen

Announced the strategy to increase EV share in its total sales to 25% more than 30 models of EVs by 2025 (2017)



Renault-Nissan

Introducing 12 models of EVs by The target of 30% of its total sales as EVs (2017)



Hyundai

The plan to prepare EVs at all line up by 2020 (2015)



Ford

Announced that eco-cars combined with EVs and HEVs will be raised to 70% by 2025 (2017).



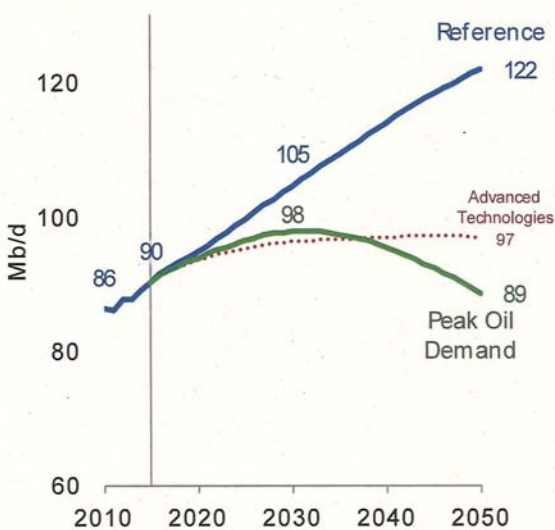
Honda

In 2030, two-thirds of automobile sales will be electrified. EVs will be released in China in 2018 (2017).



Oil demand peaks by rapid penetration of ZEVs

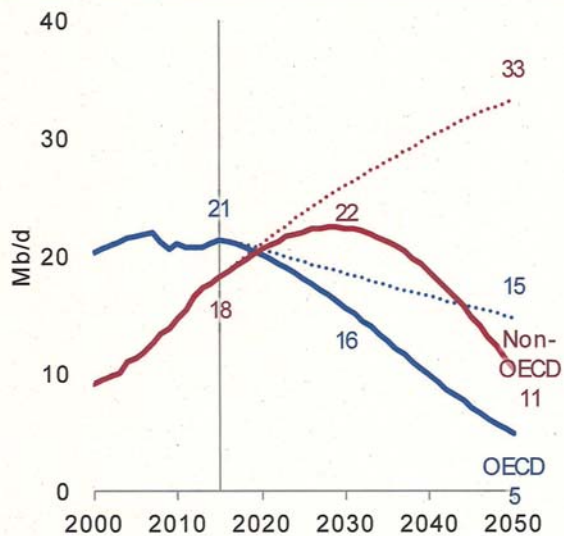
Oil consumption



In the Peak Oil Demand Case, oil consumption hits a peak of 98 Mb/d around 2030 then declines. The reduction from the Reference Scenario is 7 Mb/d and 33 Mb/d in 2030 and in 2050, respectively.

Source: "IEEJ Outlook 2018" (IEEJ, October 2017)

Oil for Road [Peak Oil Demand Case]



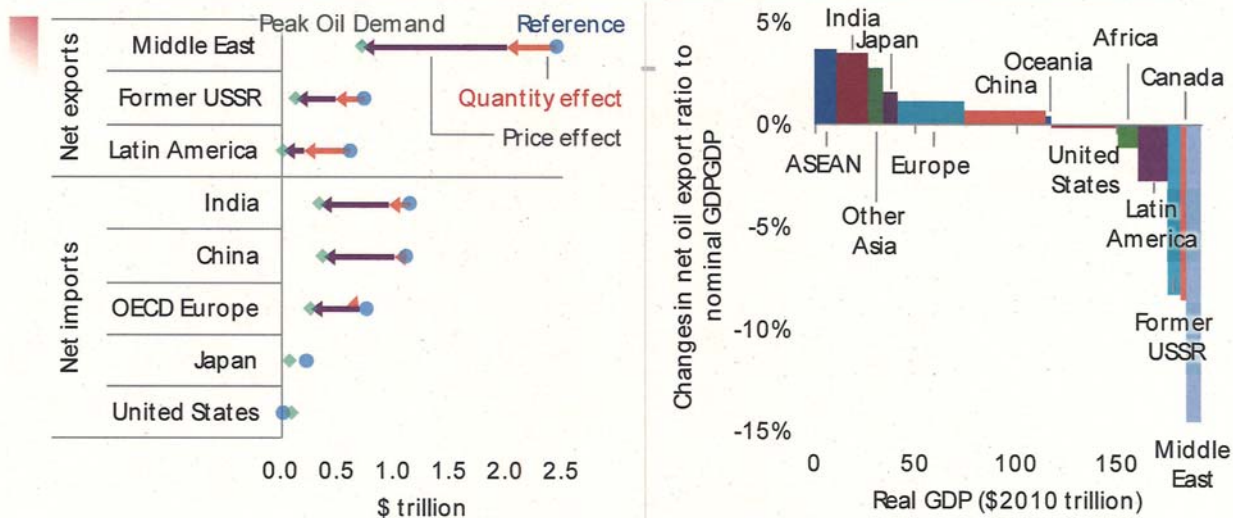
Note: Dotted lines are the Reference Scenario

Oil consumption by cars in Non-OECD, which continues to increase rapidly in the Reference Scenario, also declines from around 2030. It is as much as one third of the Reference Scenario in 2050.



Economic impacts of peak oil demand

Changes in net oil exports/imports and ratios to nominal GDP [2050]



Note: Europe excludes the former Soviet Union

Although the Middle East obtains the relative gain, its net oil export decreases of \$1.6 trillion or 13% of nominal GDP is significant.

On the other hand, the most benefiting country from net oil import decreases is India, the second largest oil consumer, followed by China, which has more car fleet than in any other countries. The United States has little impact despite of its consumption scale since it is almost oil self-sufficient.

Source: "IEEJ Outlook 2018" (IEEJ, October 2017)

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Challenges for Japan's Energy Policy

- Best Energy Mix: How to achieve it?
- Re-start of Nuclear Power
- Energy Market Reform
- Security of Supply for Fossil Fuels
- GHG Emission Reduction Target
- *Revision of "Strategic Energy Plan" underway*

Importance of cooperation between Asian consumers and Russia (as a producer)



Consumer and producer need each other because:

- Growing economic and energy relations
- Importance of both Asian countries and Russia in global economy
- Asian consumers (Japan, in particular) :
 - needs energy supply security, based on new reality after Fukushima
 - may provides a stable/reliable market
- Russia (as a producer) :
 - needs energy demand security, based on new reality in Europe and Asia
 - may provides stable/reliable supply
- Both sides need sustainable development, economic growth/diversification

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Summary

- Emerging uncertainties over the future of global energy landscape
- Asian countries have to address energy challenges
- Russia can fill the expected gap between energy supply-demand in Asia and World
- Asia and Russia, facing emerging political, economic and energy market realities, can complement each other
- Regional energy cooperation can play an important role, taking into account the surrounding political, economic and energy market realities

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