

Presentation

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## Three viewpoints for promoting Japan–Russia collaboration in energy sector

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### Three viewpoints for promoting Japan–Russia collaboration

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- Stability (Predictability from private sector)
- Russia as a matured country
- Strengthening information-exchange in the private level for mutual understanding beyond the language barrier

## Stability (Predictability from private sector)

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### Stability (Predictability from private sector)

The biggest issues of the investment to Russia for Japanese companies are “instable exchange rate” and “instable politics and social situation”



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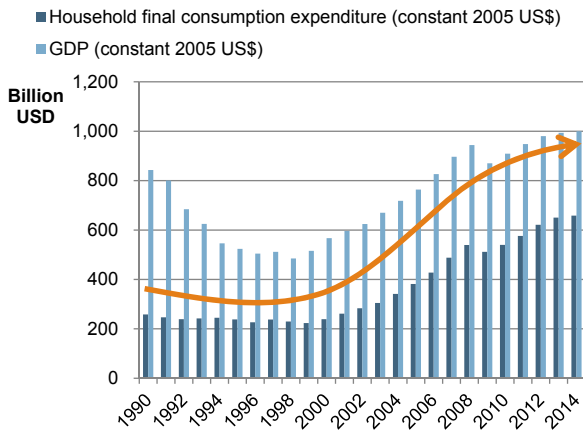
Source: JETRO (2013, 2014) Zai Rosia Nikkei Kigyo Jittai Chosa

Stability (Predictability from private sector)

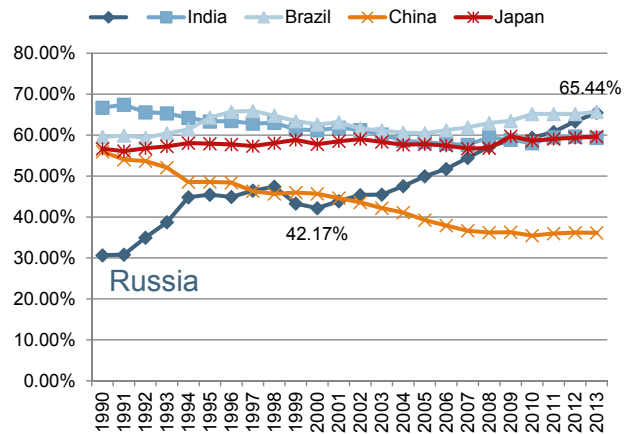
**Russian ratio of household final consumption to GDP is higher than that of Japan. It suggests the robust economic from size perspective.**

- Since 2000, Russian economy has been supported by domestic household consumption (from 42.17% in 2000 to 65.44% in 2013)
- The higher consumption ratio in the domestic economy aspect means that there is the downward rigidity of GDP against economic fluctuation
  - Relatively fewer saving and it suggests less potential capability of investment in the future, but real potential investment capability results from primary commodity price in the resource country because the major national income source is mainly from resource selling.
  - From the viewpoint of the stability of the economic size, than Russian economy is stronger than that in China against economic collapse.

Household final consumption and GDP in Russia



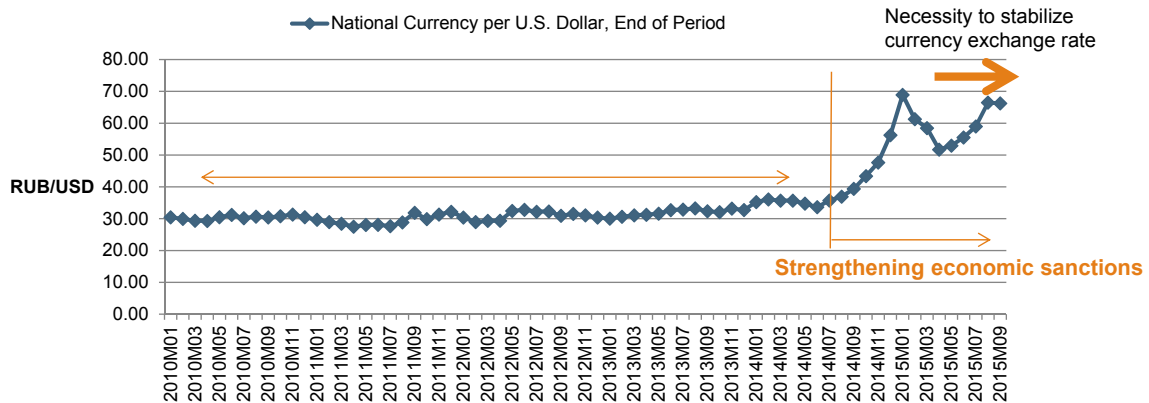
Ratio household final consumption to GDP in Russia



Stability (Predictability from private sector)

**The stable exchange rate and political relation between Russia and Japan are expected.**

- After Lehman Shock, the exchange rate has been almost stable until Ukraine issues.
- During weaker rubles, there are good investment opportunities. However, volatility of exchange increases in poor outlook of investments to Russia
  - Stability of exchange, not weaker exchange, is important for the investment from abroad because the prospect of business risk become much clearer even though economic sanction continues.
  - It is necessary not to increase new political concerns for stable exchange.



## Stability (Predictability from private sector)

Russia is one of the countries with government commitment to promote more business transaction. International exchange by government and private together makes the stability of business environment.

- Government of Japan actively diplomacy to countries with resource rich countries with high country risk.
- Turkmenistan, Uzbekistan, Iran and so on which is high country risk and are difficult for private companies to expand the business by themselves are recent objective countries.

Necessity of commitment by the government

Country	Import of crude oil (Mt/y)	Production (Mt/y)	OECD Country risk (2015.7)	Friendship level (M of Foreign Affairs HP)
Iran	8	178	7	Diplomatic relations
Iraq	2	162	7	Diplomatic relations
Venezuela	0	134	7	Diplomatic relations
Russian Federation	13	534	4	Construction of appropriate Japan-Russia relations as partners in the Asia Pacific Ocean region
Saudi Arabia	57	567	2	Traditionally, good relations between the two countries
Qatar	18	98	3	Relations between the two countries is steadily developing
United Arab Emirates	40	183	2	Joint Statement on Strengthening of the comprehensive partnership
Angola	1	84	5	Diplomatic relations
Kuwait	13	154	2	To build a comprehensive partnership relationship
Nigeria	0	116	5	Basically good

Country	Import of natural gas (Mt/y)	Production (Mt/y)	OECD Country risk (2015.7)	Friendship level (M of Foreign Affairs HP)
Iran	0	141,469,150	7	Diplomatic relations
Russian Federation	8,449,489	474,371,339	4	Construction of appropriate Japan-Russia relations as partners in the Asia Pacific Ocean region
Qatar	16,136,366	145,269,530	3	Relations between the two countries is steadily developing
Indonesia	5,747,334	60,157,514	3	Friendly and cooperative relations is, in recent years, even closer
Turkmenistan	0	56,779,323	6	Diplomatic relations
Pakistan	0	34,438,927	7	Friendly relations since the establishment of diplomatic relations
Argentina	0	29,048,152	7	Traditionally, good relations between the two countries
Algeria	743,776	68,278,689	3	Diplomatic relations
Nigeria	4,765,316	31,621,425	5	Basically good
Uzbekistan	0	46,959,515	6	Relations between the two countries is good progress

## Russia as a matured country

Russia as a matured country

Regeneration of ageing oil wells and development of deeper parts of existing gas wells are also big challenges for the sustainable regional development

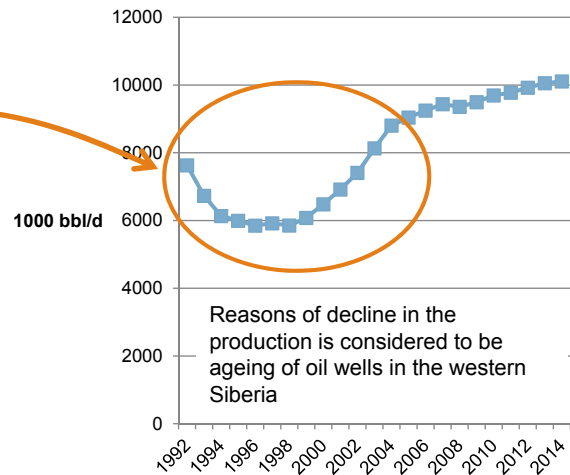
- Big challenges of regeneration of ageing oil wells in the western Siberia oil field with long history.
  - Oil production is gradually expanding, but still old wells' issues are remained in the western Siberia oil field
  - Shifting from “Farther (Eastern Siberia, Northern poll sea)”, “Smarter (Shale oil in West Siberian Bajenofu layer)” to “Deeper (Condensate layer development, further development gas fields deep oil layer)” (source: JOGMEC)

Major Russian oil basins



Source: IEA

Production of Crude Oil including Lease Condensate



Source: IEA

Reasons of decline in the production is considered to be ageing of oil wells in the western Siberia

Russia as a matured country

How about to explore the possibility of joint research of aging oil well reproduced as a Japan–Russia energy cooperation

- JOGMEC accumulated the oil recovery technologies, but due to the lack of experimental fields, some of technologies still needs more researches.
- Russia has the field for the experiments, so that Japan and Russia may collaborate in this topic

Technology	Outline of technologies	Developer	References
<b>Carbon dioxide floods</b>	<ul style="list-style-type: none"> <li>● Injecting the CO2 emissions from coal-fired power plants to the aging oil wells</li> </ul>	<ul style="list-style-type: none"> <li>● Mitsubishi Heavy Industry</li> </ul>	<a href="http://www.jogmec.go.jp/oilgas/technology_004.html">http://www.jogmec.go.jp/oilgas/technology_004.html</a>
<b>Low Salinity Water Flooding: LSWF</b>	<ul style="list-style-type: none"> <li>● The press-fitting the low salinity water than oil layer water in oil layer.</li> <li>● Cheaper operating costs as compared to the chemical attack method and also impact on the environment is low.</li> <li>● Demonstration in the field (field) has not yet been carried out.</li> </ul>	<ul style="list-style-type: none"> <li>● JOGMEC</li> </ul>	<a href="http://www.jogmec.go.jp/oilgas/oilgas_10_000002.html">http://www.jogmec.go.jp/oilgas/oilgas_10_000002.html</a>
<b>Microbial methane conversion with CO<sub>2</sub> sequestration in depleted oil fields</b>	<ul style="list-style-type: none"> <li>● CO2 emitted by the combustion of fossil fuel is press-fitted into the reservoir of oil field and then CO2 is stocked in underground.</li> <li>● At the same time, the reservoir layer is seen as a high-pressure reactor and exercising hydrogen-producing bacteria and CO2 reduction methanogenic archaea within the same layer to promote the regeneration of natural gas deposits by converting the CO2 to methane..</li> </ul>	<ul style="list-style-type: none"> <li>● INPEX CORPORATION</li> <li>● Chugai Technos</li> </ul>	<a href="http://www.jseb.jp/jeb/08-01/08-01-017.pdf">http://www.jseb.jp/jeb/08-01/08-01-017.pdf</a>
<b>Microbial flooding</b>	<ul style="list-style-type: none"> <li>● Form the impermeable layer to permeation layer and the oil layer by microorganisms the CJF-002 to maintain and recovery of oil recovered amount of oil field group which reaching the end of the water flooding</li> <li>● There are some variations</li> </ul>	<ul style="list-style-type: none"> <li>● JOGMEC-TRC</li> <li>● Chugai Technos</li> <li>● Prof. Sugai and University of Kyusyu</li> </ul>	<a href="http://oilgas-info.jogmec.go.jp/pdf/0/466/200207_038a.pdf">http://oilgas-info.jogmec.go.jp/pdf/0/466/200207_038a.pdf</a>

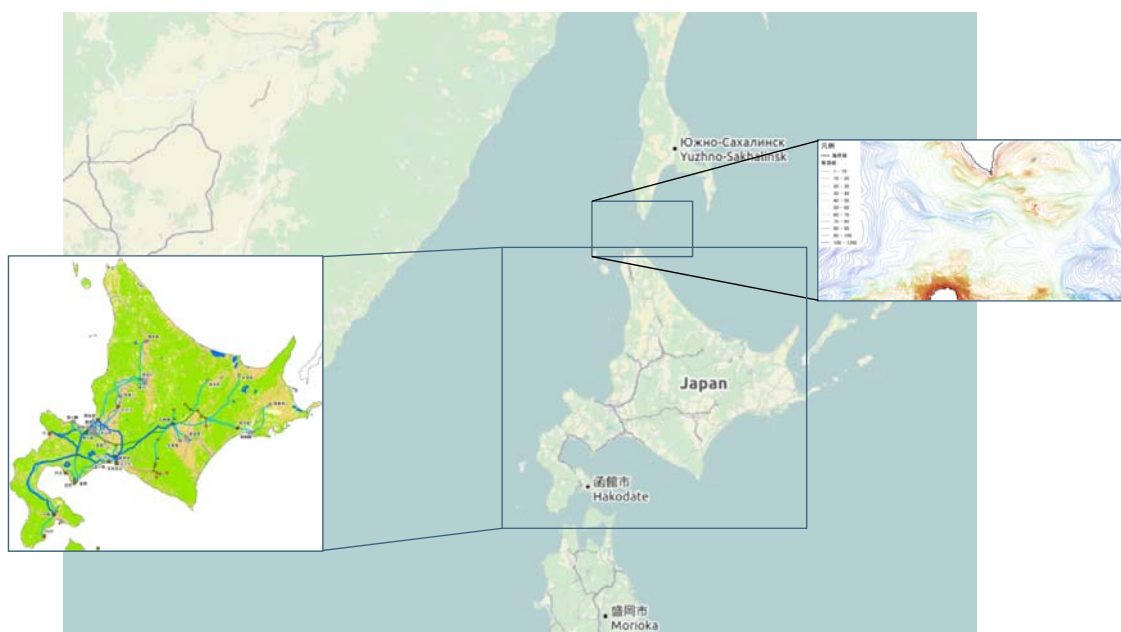
## Strengthening information-exchange in the private level for mutual understanding beyond the language barrier

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Strengthening information-exchange in the private level for mutual understanding beyond the language barrier

### Necessity of the proposal based on the actual Japanese situation to promote Japan-Russia cooperation

- In order to study the economic feasibility of Japan-Russia international electricity transmission line development, the international cooperation based on sharing information of both countries is necessary.



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Strengthening information-exchange in the private level for mutual understanding beyond the language barrier

## It is necessary to develop the solutions/countermeasures together on the known issues and concerns of Japan-Russia energy cooperation project

Known issues/concerns	Contents
Supply disruption risk	<ul style="list-style-type: none"> <li>● Risk on the disruption of the stable electricity supply by international transmission line</li> <li>● To avoid the disruption of stable electricity supply, alternative power supply capacity should be stood by and it will reduce the merit of the development of international transmission line.</li> </ul>
Preparation of international dispute resolution method	<ul style="list-style-type: none"> <li>● Dispute resolution method on the dispute of international electricity transmission line is decided in EU and NAFTA. On the other hand, there are Shanghai Cooperation Organization, Greater Tumen Initiative, and APEC as the frameworks of multilateral energy cooperation, but no concrete and dedicated dispute resolution mechanism.</li> <li>● Strong bilateral dispute resolution or third party arbitration framework is necessary.</li> </ul>
Revision of the Electricity Business Act	<ul style="list-style-type: none"> <li>● It is necessary to introduce the framework of the protection of submarine cable.</li> <li>● The definition of power importer is also necessary in the electricity business act.</li> </ul>
Enhancement of domestic transmission system	<ul style="list-style-type: none"> <li>● In case that landing point of international transmission line is at Hokkaido, it is necessary to strengthen the domestic transmission line from Hokkaido to Honsyu as a big consumption area.</li> <li>● Currently, the development cost of transmission line is owed by the beneficiary. In case that the specific wholesaler would buy the power through the international transmission line, the wholesaler should also have to pay the development cost of increasing the capacity of domestic transmission line. In case that anybody would buy the imported electricity at the trade market, the new cost-allocation system should be developed.</li> </ul>

Source: Institute of Energy Economics (2014) Heisei 25 nendo Denryoku Keito Kanren Setsubi Keisei tou Chosa Jigyo (Kokusai Renkei ni kansuru Chosa Kenkyu) , Agency of Natural Resources and Energy

## Summary

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