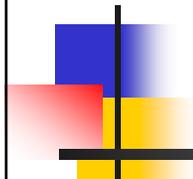


Japan-Russia Energy Cooperation and Regional Energy Security



2009 Japan-Russia Energy and Environmental Dialogue in Niigata

November 10th, 2009

Dr. Ken Koyama

Director

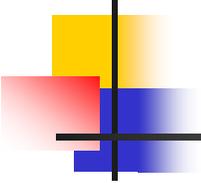
Institute of Energy Economics, Japan

©2009 Institute of Energy Economics, Japan

All rights reserved

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved



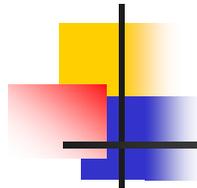
Presentation Topics

- **Introduction**
- **Energy Security Challenges in Asia**
- **Russia in Global Energy Market**
- **Japan-Russia Energy Cooperation**

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Introduction



- **Why “Japan-Russia Energy Cooperation” attracts attention?**
 - Complement “Energy Supply Security” and “Energy Demand Security”

- **Needs to have discussion based on new/emerging realities in global energy market, as well as political, economic and energy market development both in Japan and Russia**
 - Energy security and climate change challenges, and growing importance of Asia in this context
 - Impacts of financial crisis
 - Overall political and economic relation between the two countries and in the region
 - Prospects for regional cooperation (APEC, etc.)

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

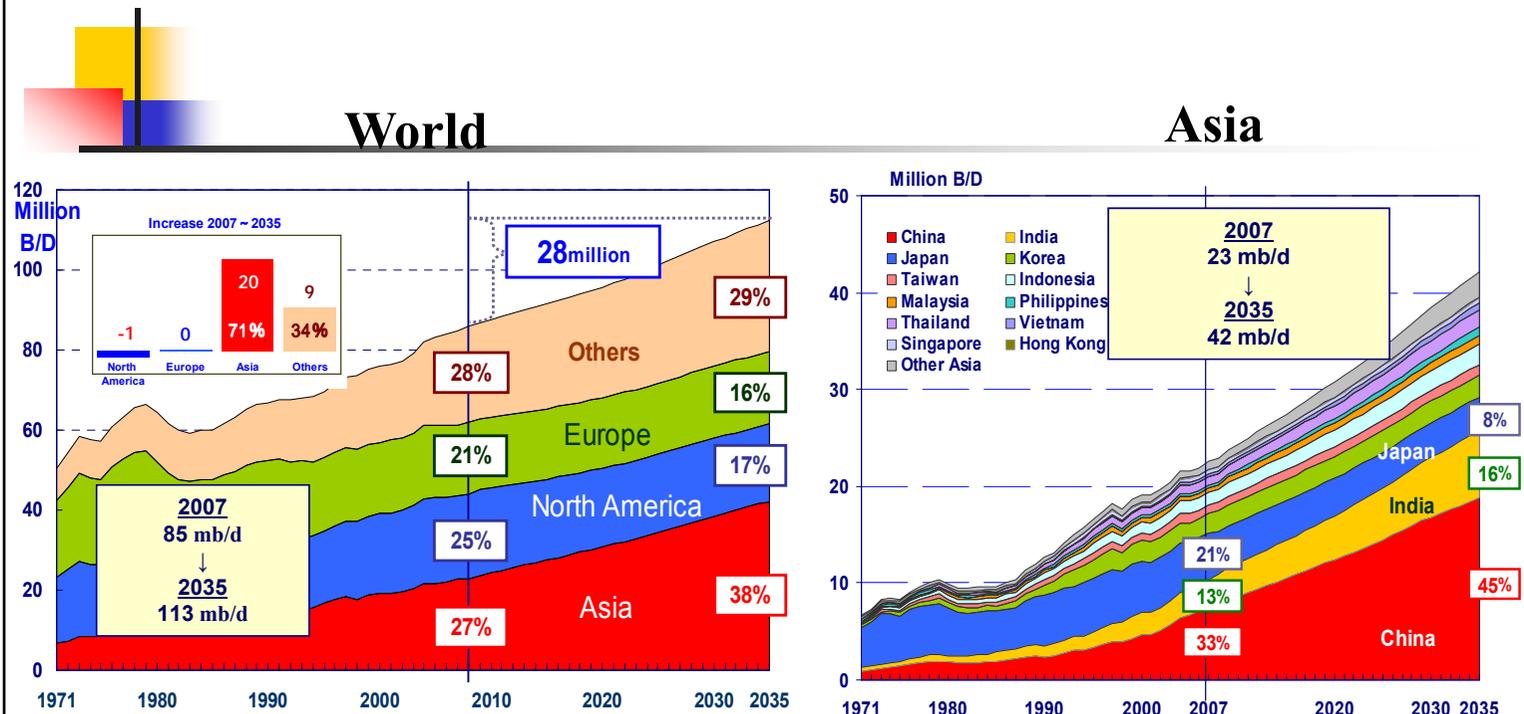
Emerging landscape with regard to global energy security/sustainability

- **Historic volatility in global energy prices**
- **Growing energy demand in Asia and its implication to global energy security**
- **Emerging concerns for energy supply constraints**
 - Geopolitical risks, resource nationalism and issues of market power
 - Lack of timely investment in resource development
 - Importance of stability of energy transportation
- **Environmental challenges for sustainability**
 - Climate change and global environmental problems
 - Local and regional environmental problems

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Outlook of World Oil Demand



* Others include international bunker fuel

Oil demand in China will boost from 7.4 million B/D in 2007 to 18.8 million B/D in 2035, due mainly to its increasing vehicle stock.

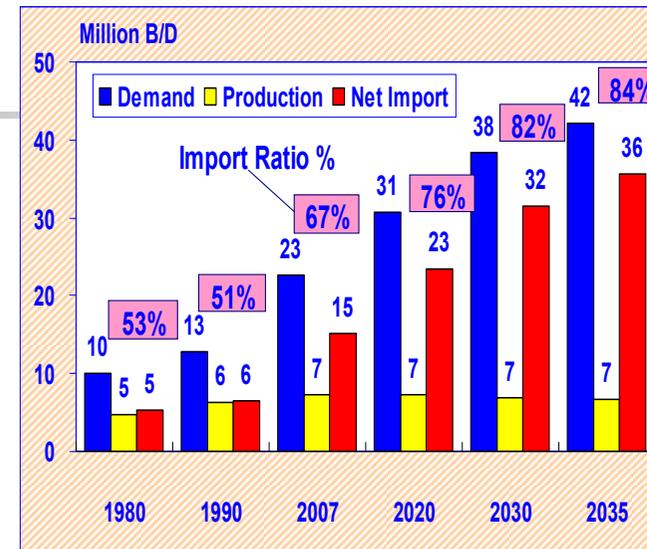
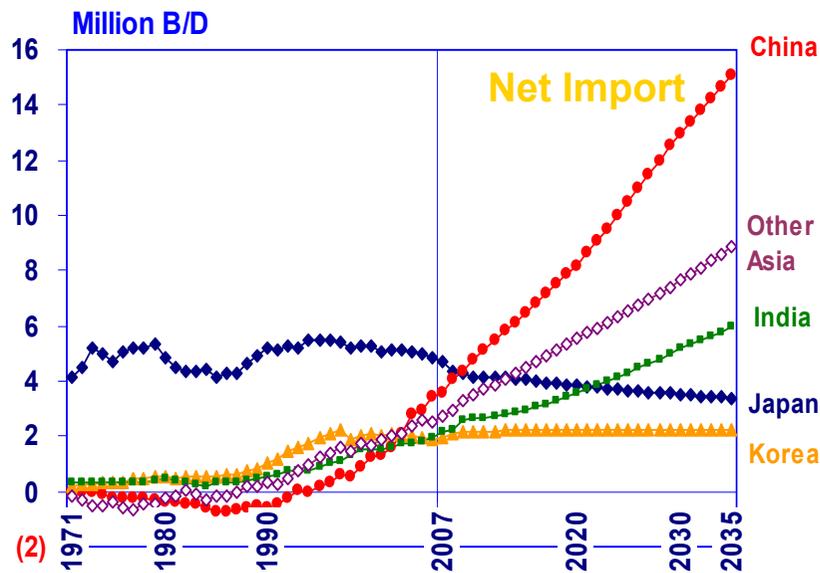
The oil demand share of China and India in Asia will grow from 46% in 2007 to 61% in 2035.

Source: IEEJ (Asia/World Energy Outlook 2009)

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Outlook for Net Oil Imports in Asia



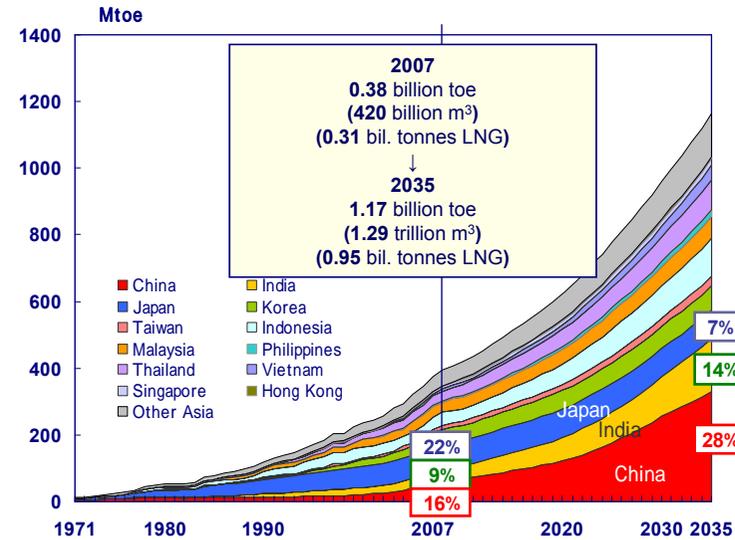
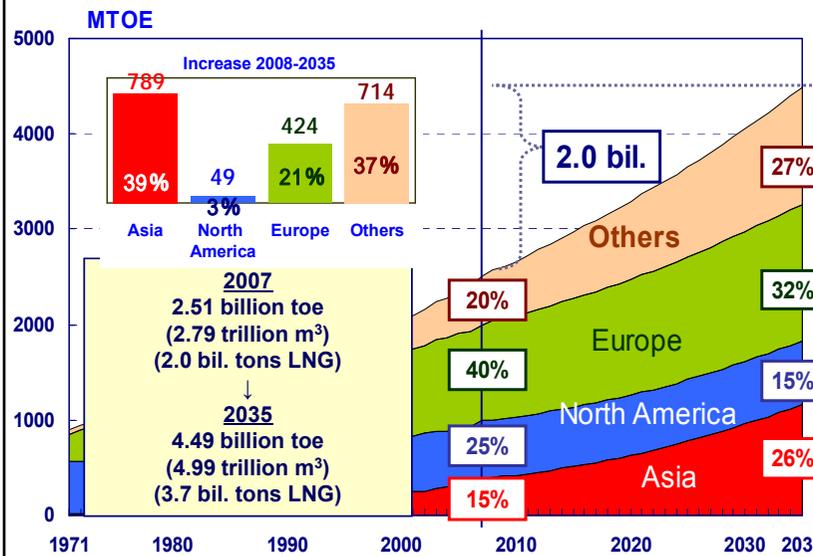
China became a net import country in 1993. The amount of oil import is projected to grow from 3.6 million B/D in 2007 to 15.1 million B/D (4.2-fold increase) in 2035 reflecting expansion of demand mainly by growth of vehicle ownership and by stagnation of domestic oil production due to the aging of main oil fields such as Daqing and Shengli.

Source: IEEJ (Asia/World Energy Outlook 2009)

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Outlook of World Natural Gas Demand



World gas demand will increase by 1.9-fold from 2,790 bcm in 2007 to 4,990 bcm in 2035.

Asia's gas demand will increase by 3.1-fold from 420 bcm in 2007 to 1,290 bcm in 2035.

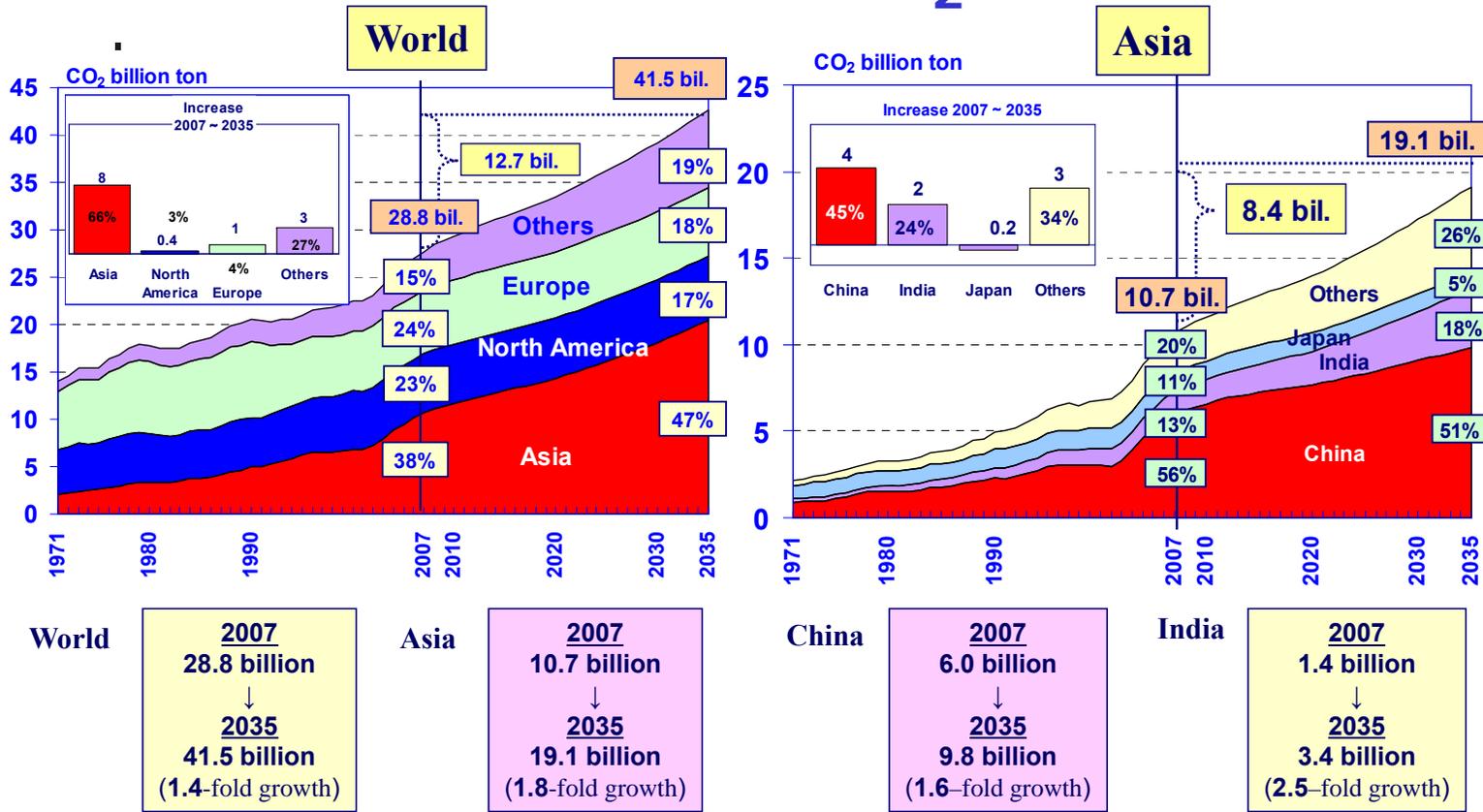
Gas demand in China will increase by 6% annually, backed by growth in power generation use, residential use in urban areas and preference to cleaner fuels. Gas demand in India will also increase by 6% as well

Source: IEEJ (Asia/World Energy Outlook 2009)

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Outlook of World CO₂ Emissions



Increase in Asia will account for 66% in the world .

CO₂ emissions of China and India will steadily increase driven by coal consumption. The share together accounts for 70% in Asia.

Source: IEEJ (Asia/World Energy Outlook 2009)

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Russian Energy Resources and the World

The importance to the world energy market

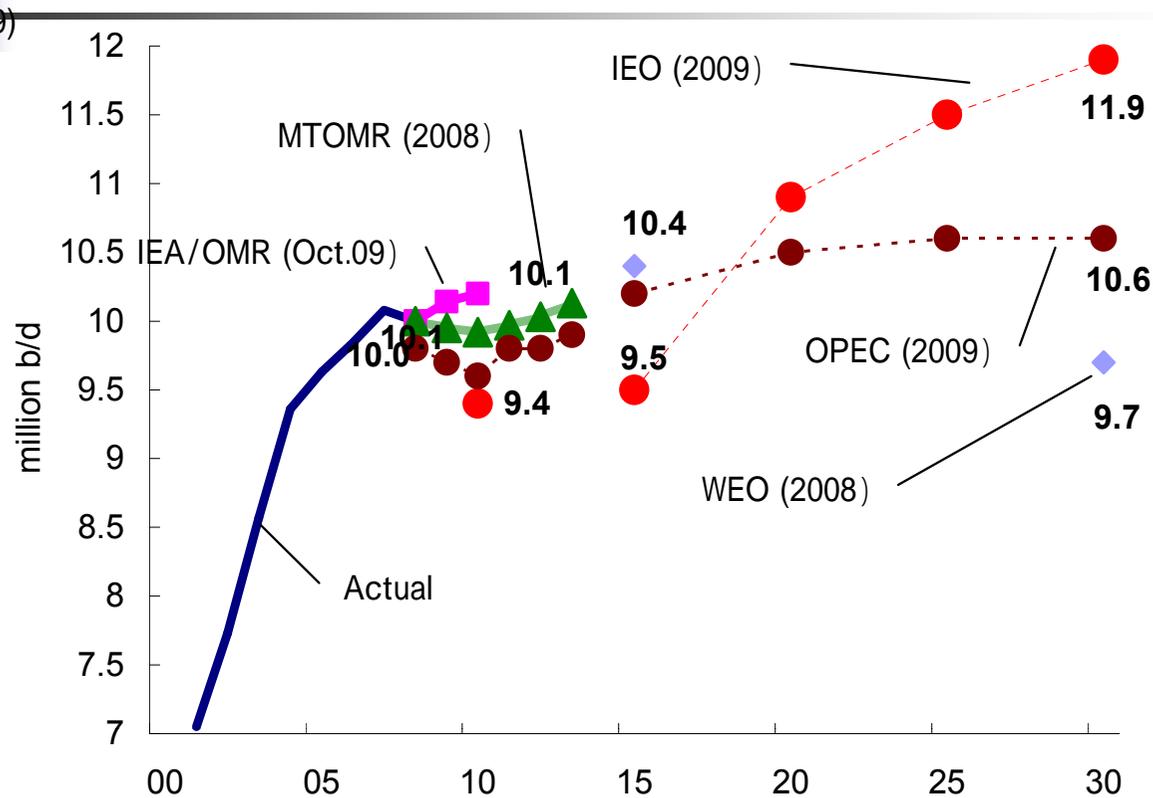
- Huge resource potential, possible to meet global energy demand growth in the future
- Slow growth in oil and gas production in recent years
- In particular, production from existing major oil and gas fields showed stagnation/decline
- Importance of supply growth in new/frontier fields/areas
- Long term supply growth possible, but uncertainty remains
- Role of central Asian energy resource for Russia
- Importance of “Demand security” in Europe and expectation for Asian market as a new and growing market

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Outlook of Oil Production in Russia

Oil production declined in 2008, uncertainty remains in long term outlook



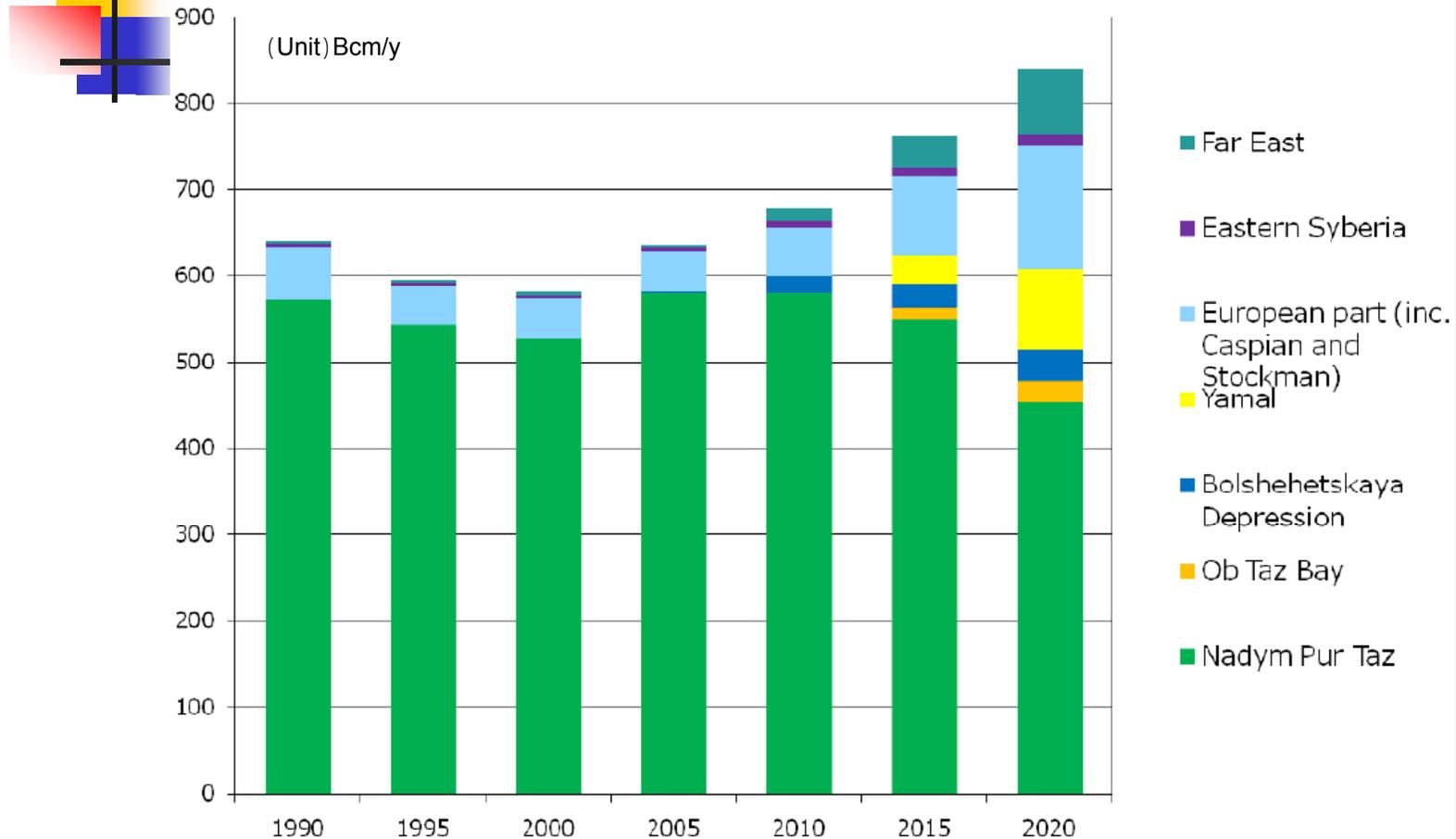
(Source) Prepared from outlook by EIA, IEA, OPEC

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Outlook of Natural Gas production in Russia

Production of existing major fields continues to decline, but new fields/area production (Far East, etc.) is expected to rise



(Source) Russia Academy of Science

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Importance of cooperation between Japan (consumer) and Russia (producer)

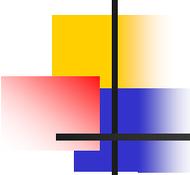
Consumer and producer need each other because:

- **Growing economic and energy relations**
- **Importance of both countries in global economy**
- **Japan (consumer) :**
 - needs energy supply security
 - provides a stable/reliable market
- **Russia (producer) :**
 - needs energy demand security
 - provides stable/reliable supply
- **Both sides need sustainable development, economic growth/diversification**

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

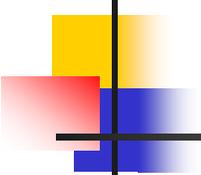
Issues To Be Considered for Japan

- 
- **No.4 energy consumer, No.3 oil consumer in the world**
 - **No. 2 oil importer, No.1 LNG importer in the world**
 - **Matured, but stable/reliable market**
 - **High import and Middle East dependence for oil**
 - **Energy security/climate change is a top policy agenda**
 - **Oil dependence set to decline, and further diversification and upgrading of energy supply structure being pursued by new policy initiatives**
 - **Emphasis put on Asian energy cooperation**
 - **Japan is able to best utilize her accumulated technology and policy know-how after the energy crisis in the 1970s**

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

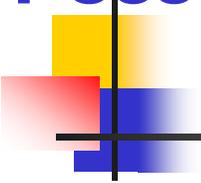
Issues To be Considered for Russia

- 
- **The leading oil and gas producer in the world**
 - **Large energy resource potential to meet energy demand growth in Asia, and its geographical proximity**
 - **Impact of financial crisis in Russian energy sectors**
 - **Stagnant energy demand and imports in Europe and growing need to diversify export market**
 - **Need for long term sustainable economic growth, economic structure diversification**
 - **Importance to enhance regional economic and energy cooperation (APEC, etc.)**

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Possible Areas for Energy Cooperation

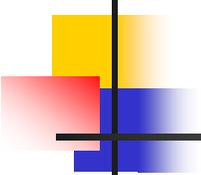


- **Complement “supply and demand security”**
- **Joint Efforts to Increase Energy Supply Capacity**
- **Promotion of Energy Conservation**
- **Cooperation in Alternative Energy Development (renewable energy, nuclear power, etc.)**
- **Cooperation in Environmental Protection**
- **Facilitate and Enhance Mutual Trust and Information Sharing through Improvement in Dialogue**
- **Etc.**

November 10th, 2009 Ken Koyama, IEEJ

©2009 IEEJ, All rights reserved

Summary

- 
- **Energy is essential to human existence, social and economic development and civil life for every country including Japan and Russia**
 - **Emerging multiple and serious risks/threats to global energy security and sustainability**
 - **Growing importance of Asia in the global energy challenges**
 - **Russia, an important energy market players to fill the expected gap between energy supply-demand in Asia and World**
 - **Japan and Russia, facing new/emerging political, economic and energy market realities, can complement each other**
 - **Japan-Russia energy cooperation should be pursued in a way to promote mutual, regional and global benefits, taking into account the surrounding political, economic and energy market realities**