



## **Russia-Japan vector of Russia's energy policy: a long way from research to implementation**

**(Based on the materials of joint research of Energy Systems Institute SB RAS  
with Scientific institutions and Energy companies of Japan)**

***B. Saneev,  
Energy Systems Institute SB RAS, Irkutsk***

***Presentation at the International Conference  
“Japan-Russia Energy and Environment Dialogue in Niigata”, November 17, 2008***

### **Plan of the Report**

- **Eastern vector of Russia's energy policy (basic concepts)**
- **State-of-the-art in implementation of the eastern energy policy of Russia**
- **Russia-Japan studies on the problems of energy cooperation between Russia and NEA countries**
- **Conclusions**



## **EASTERN VECTOR OF RUSSIA'S ENERGY POLICY**

- **National interests of Russia require intensification of its mutually beneficial cooperation with Japan, China, Korea and other countries in Northeast Asia**
- **Creation of new energy centers in East Siberia and the Far East will increase energy security of Russia, restore and strengthen broken fuel and energy ties between the regions and solve many important federal, interregional and regional problems**
- **Fast and large-scale development of energy sectors in these regions and penetration to the energy markets in Japan, China, Korea and other countries of Northeast Asia should be considered as a primary means of timely ensuring the appropriate positions of Russia in this strategically important region of the world**
- **Creation in the East of Russia and in Northeast Asia of a developed energy infrastructure in the form of interstate gas-, oil pipelines and transmission lines will decrease the cost of energy carriers, enhance reliability of energy and fuel supply to consumers in different countries and make easier the solution of environmental problems**



**STATE-OF-THE-ART IN IMPLEMENTATION OF THE  
CONCEPT OF RUSSIA'S EASTERN ENERGY POLICY**

# **1. Construction of the oil pipeline East Siberia – Pacific Ocean**

**(Resolution of the Government of the RF  
of 31.12.2004, №1737-P, Operator JSC “AC  
Transneft”)**



## **STATE-OF-THE-ART IN IMPLEMENTATION OF THE CONCEPT OF RUSSIA'S EASTERN ENERGY POLICY**

**2. The Government of the RF approved the Program of creating the unified system of gas production, transportation and gas supply in East Siberia and the Far East in terms of potential gas export to the markets of China and other APR countries**

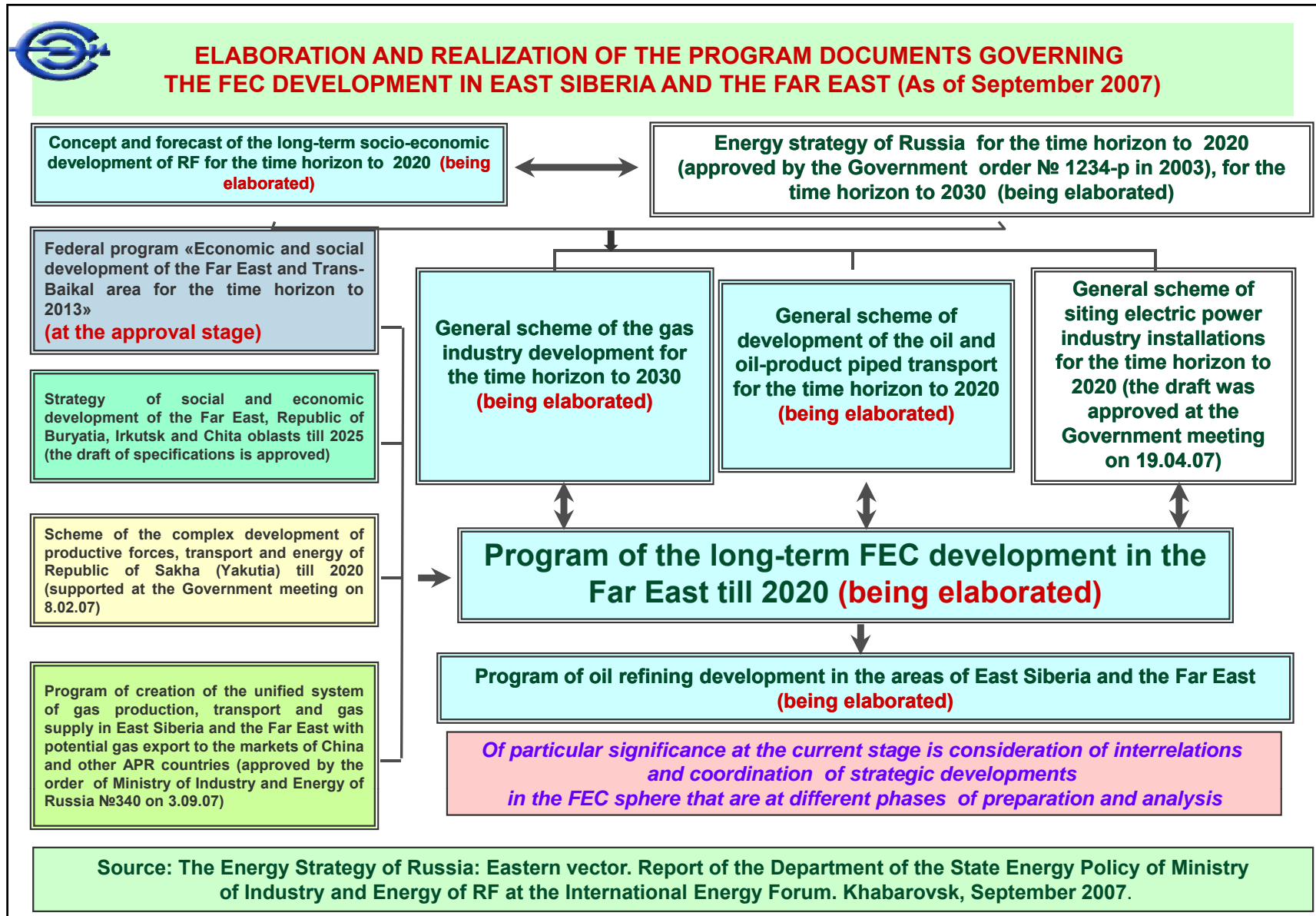
**(Developers Ministry of Industry and Energy of the RF, JSC “Gazprom”) Approved by the order of Ministry of Industry and Energy of the RF of 03.09.2007, № 340**



**STATE-OF-THE-ART IN IMPLEMENTATION OF THE  
CONCEPT OF RUSSIA'S EASTERN ENERGY POLICY**

**3. Feasibility studies on the most preferable  
option of the large-scale continental electricity  
export from East Siberia and the Far East to  
China**

**(Customer RAO “EES Rossii”, Developers Research  
and Design Institutes)**





**MASTER PLAN OF ENERGY DEVELOPMENT IN EAST SIBERIA AND THE FAR EAST TILL 2010-2015 TAKING INTO ACCOUNT THE EXPORT OF RUSSIA'S ENERGY RESOURCES TO THE APR COUNTRIES**

**From Russia:**

**Participants of the project**

**From Japan:**

- Energy Research Institute, RAS, Moscow
- Siberian Energy Institute, SB RAS, Irkutsk

- Institute of Energy Economics, Tokyo

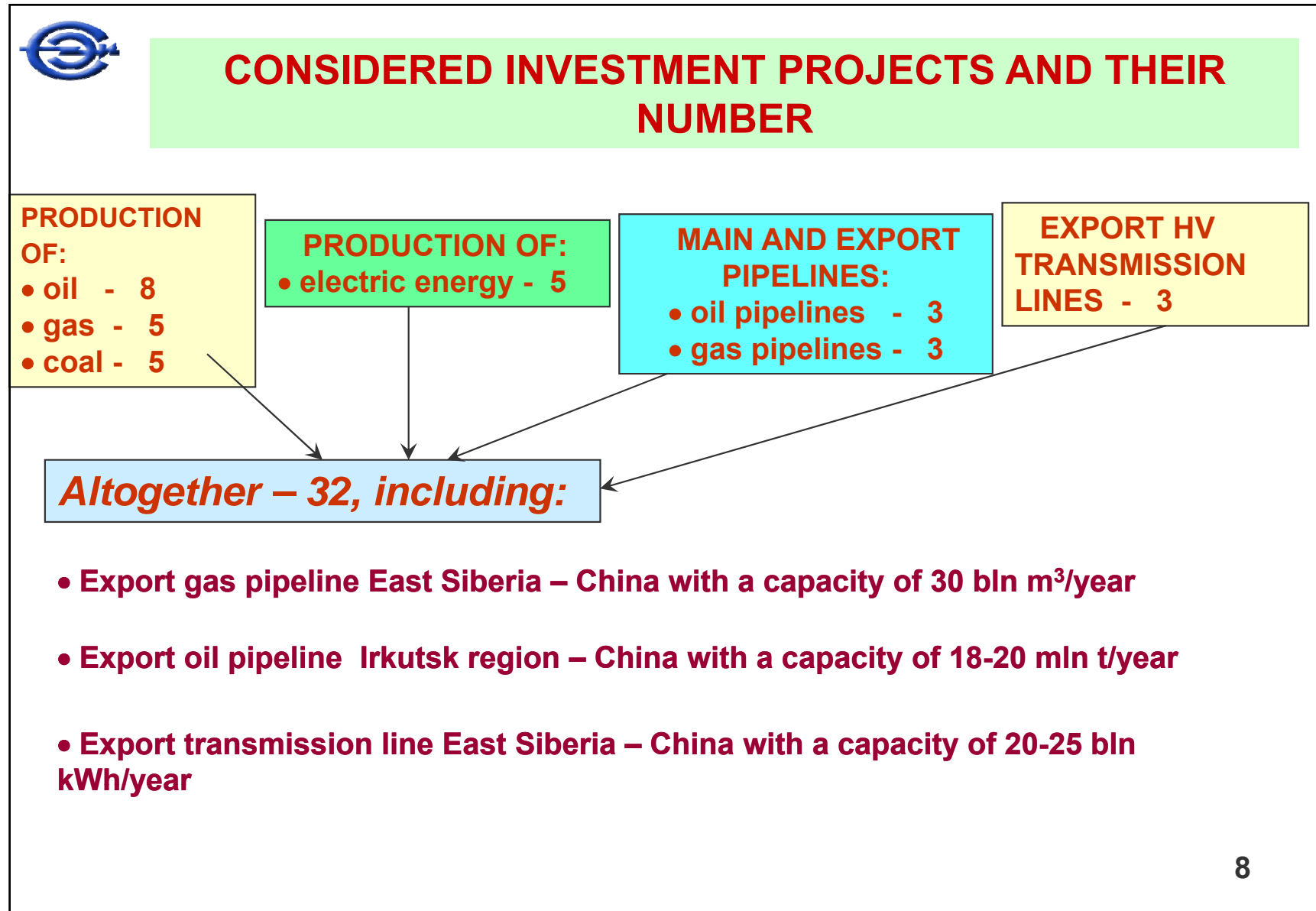
**STAGE 1**  
**(1993-1994)**

**Main parts of the project**

**STAGE 2**  
**(1994-1995)**

- Comprehensive study of the current state and prospects for development:
  - energy consumption and energy saving
  - resources
  - Asian energy market

- Development of a comprehensive plan:
  - regional fuel and energy mixes
  - formation of a portfolio of investment projects, including inter-country projects
  - financial and economic assessment of investment projects
  - *formation of measures and initiatives to facilitate implementation of the projects*







## MAIN RESULTS OF THE RUSSIA-JAPAN PROJECT 1993-1995

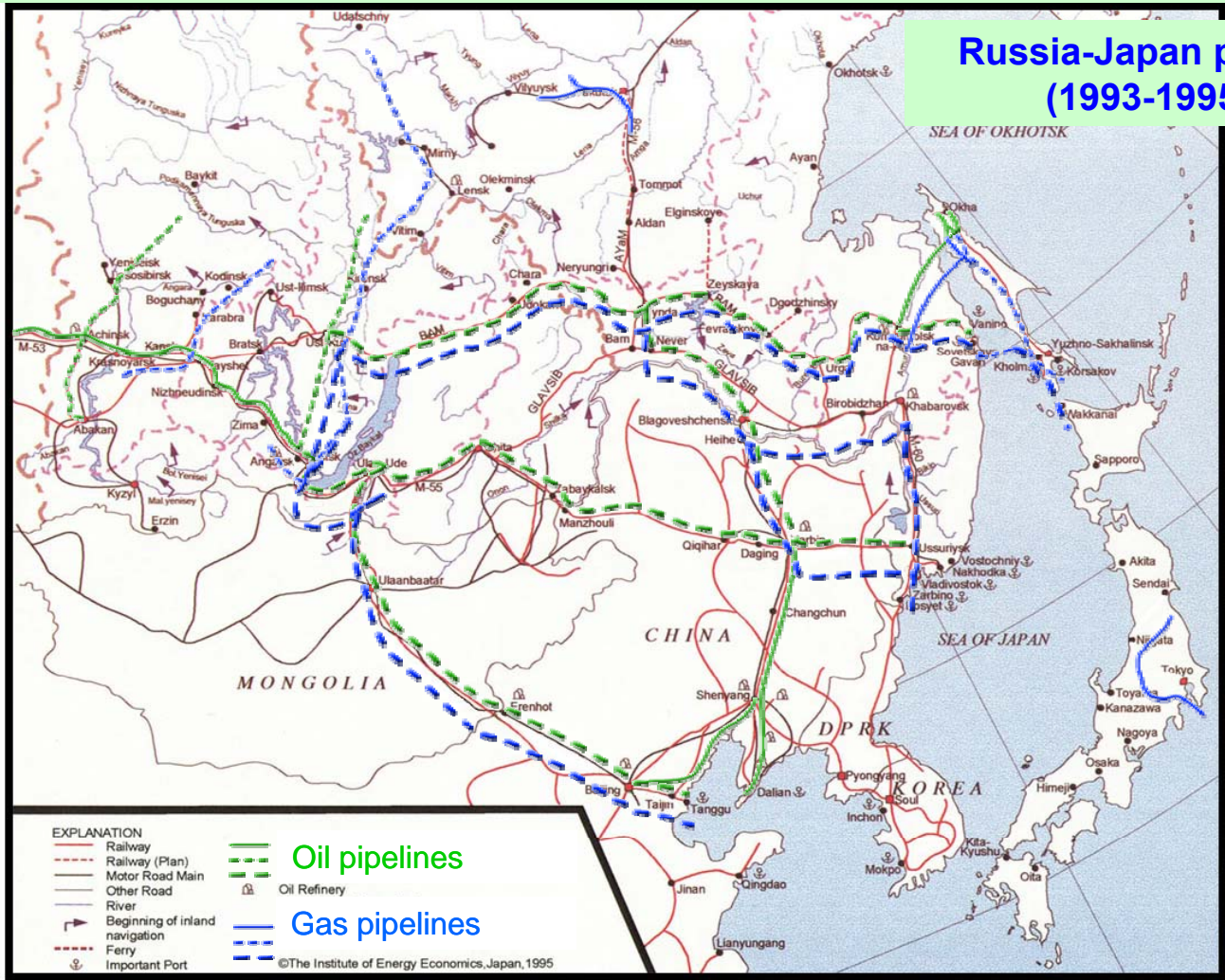
1. Development of oil and gas resources in East Siberia and the Far East to meet internal demands and to supply surplus hydrocarbons to the markets of NEA countries is the strategic priority of socio-economic development of Russia's eastern region and provision of energy security in NEA.
2. The fundamental scheme of oil-, gas pipeline network and export oil-, gas pipelines in Russia's East is suggested.  
*The scheme of the gas pipeline network and export pipeline system in Russia's East was later specified in the framework of joint studies between the Russian research society "Rosaziagaz" and the Northeast Asian Gas and Pipeline Forum, Japan (NAGPF project).*
3. Promising coal deposits that are attractive for the Japanese market, potential electricity sources for Russian electricity export to Japan, China and other NEA countries are presented.
4. The mechanisms for implementation of the suggested measures on strengthening the energy cooperation in NEA are proposed.

The results of the Russia-Japan project were discussed in December 1996 in Moscow at the Russia-Japan round table organized by the Ministry of Economy, Ministry of Energy of the RF and Ministry of International Trade and Industry of Japan.



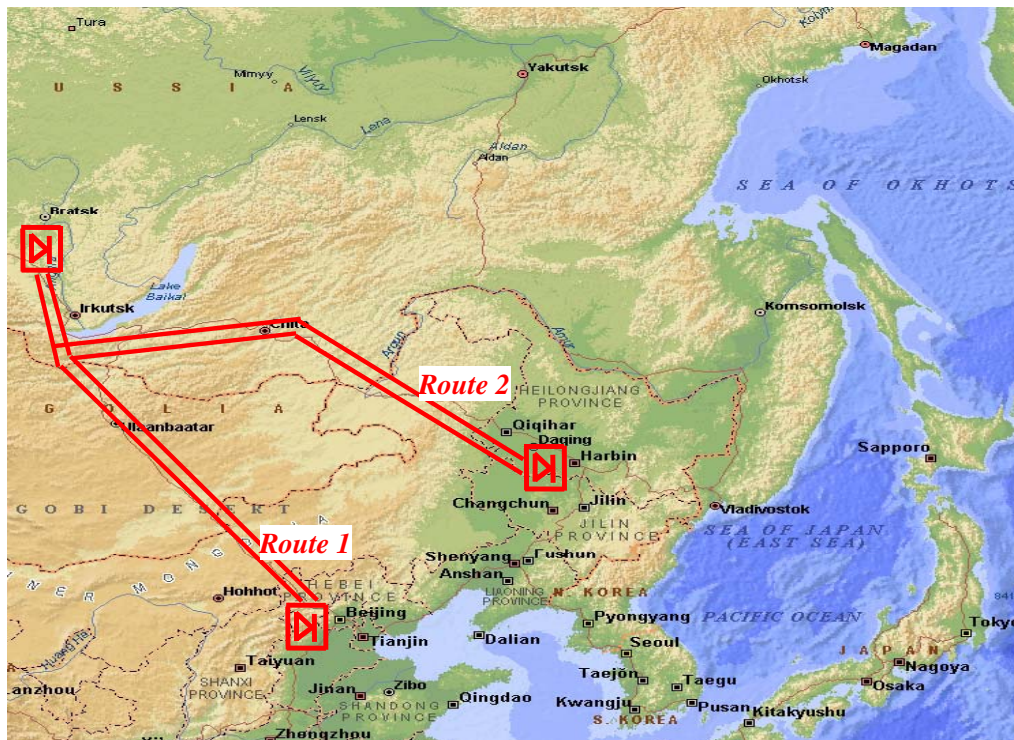
**SCHEME OF OIL-, GAS PIPELINE NETWORK AND EXPORT OIL-, GAS PIPELINE IN RUSSIA'S EAST**

**Russia-Japan project  
(1993-1995)**





## EXPORT DC TRANSMISSION LINE EAST SIBERIA – NORTH CHINA

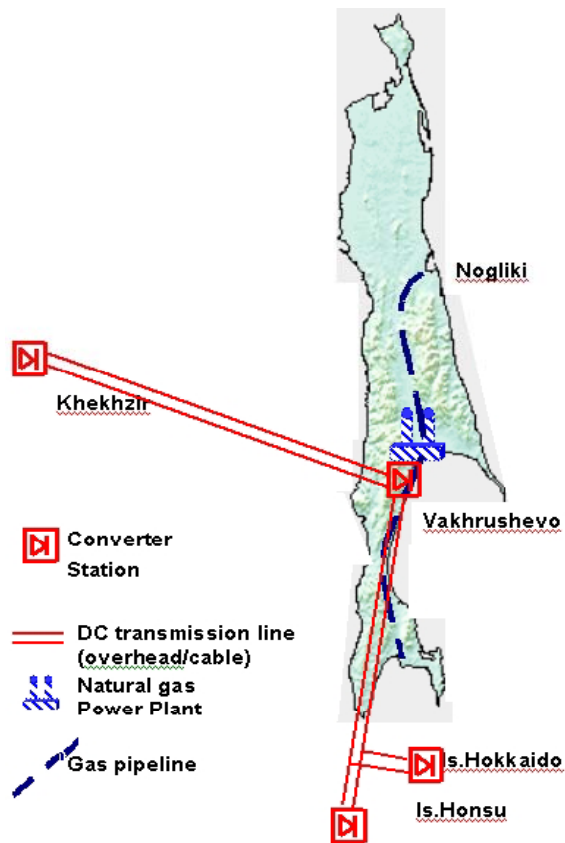


Transmission length, km	2600
Capacity, MW	2000-3000
Electricity export, bln kWh	15-18
Construction period, years	3
Total investments, bln USD	1.5
Input electricity price, c/kWh	2.2-2.4

*JSC “Irkutskenergo” and “North China power grid” Feasibility study, 1998*



## CONSTRUCTION OF POWER PLANT AND EXPORT TRANSMISSION LINE SAKHALIN – JAPAN



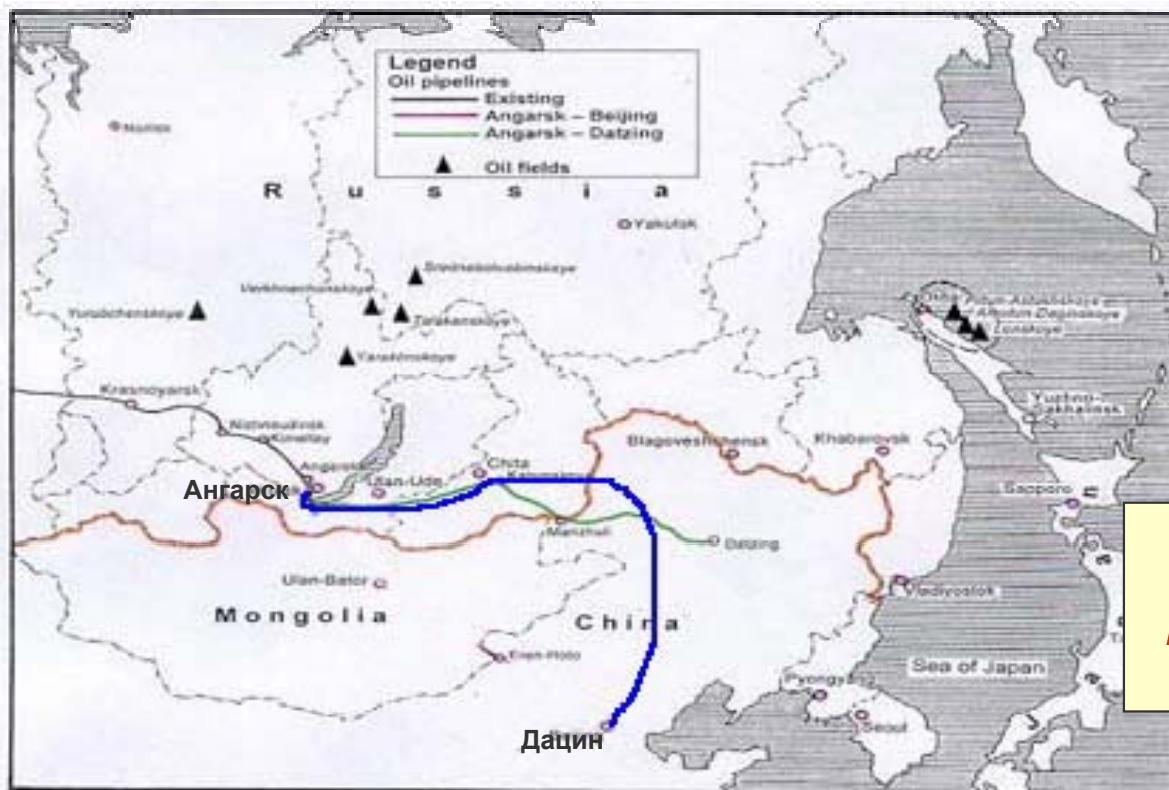
Installed capacity, MW	4000
Electricity production, bln kWh	23
Construction period, years	8
Total investments, bln USD	9-10
Electricity price at Japan border, c/kWh	5-6

*JSC "EES Rossii" and Marubeni Corp.  
"Russia-Japan Power Bridge",  
Feasibility study 1999*





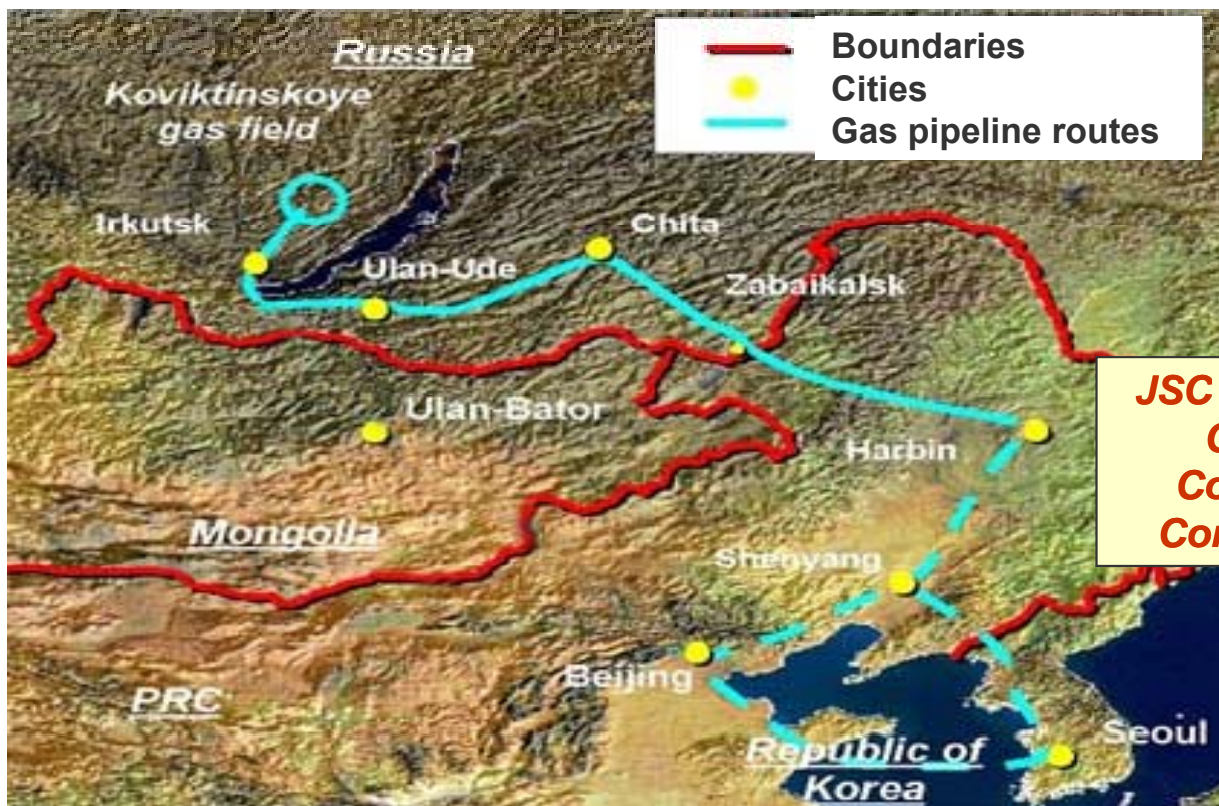
## EXPORT OIL PIPELINE RUSSIA - CHINA



**OC «YuKOS», China National Oil Company Declaration of Intentions, 2000**



## EXPORT GAS PIPELINE IRKUTSK REGION – CHINA – KOREA



*JSC «RUSIA Petroleum»,  
China National Oil  
Company, Korea Gas  
Company. Project 2003*





## RUSSIA-JAPAN STUDIES 1998-2001

**1. A series of studies on development of master plans for gasification of large industrial centers in East Siberia and the Far East (the cities of Krasnoyarsk, Irkutsk, Angarsk, Ulan-Ude, Chita, Blagoveshchensk, Khabarovsk, Vladivostok, Petropavlovsk-Kamchatsky)**

### *Developers*

**Energy Systems Institute  
SB RAS**

**Institute of Energy Economics Japan**

### *Financial support and assistance*

**JSC “Irkutskenergo”**

**Toyo Engineering Corporation**

**JSC “Vostokenergo”**





## RUSSIA-JAPAN STUDIES 2005-2006

**The study on potential coal production and consumption in East Siberia and the Far East and its export**

### *Developers*

**Energy Systems Institute  
SB RAS**

**Institute of Energy Economics Japan**

### *Financial support and assistance*

**JSC “SUEK”**

**NEDO**

**JSC “Yakutugol”**

**Japanese Coal Energy Center (“JCOAL”)**

**JSC “Sakhalinugol”**



## BASIC CHARACTERISTICS OF THE TUGNUISK OPEN-PIT MINE (REPUBLIC OF BURYATIA)

Design capacity – 10 mln t/year

Coal:

- hard of rank Д;
- moisture content – 10%;
- ash content – 18.3%;
- calorific value – 5200-7600 kcal/kg;
- sulfur content – 0.3-0.5%;

Coal mining in 2006 – 5.4 mln t

Coal supplies for export  
in 2006 – 3.5 mln t





## BASIC CHARACTERISTICS OF THE ELGINSK DEPOSIT (REPUBLIC OF SAKHA (YAKUTIA))

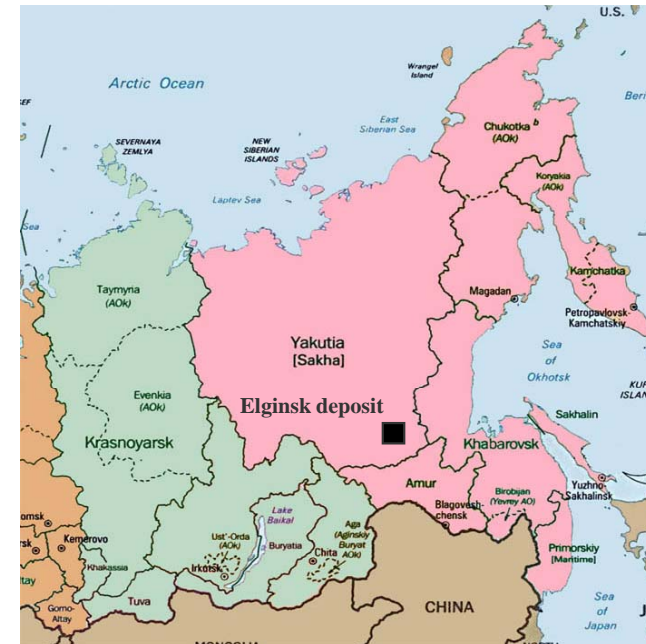
- Estimated resources - 14 bln t
- Proved reserves for surface mining - 2.1 bln t  
(North-Western section)

### Coal:

- hard of rank 2Ж, 2ГЖ
- moisture content - 7%
- ash content - 22-35%
- calorific value - 6700-6800 kcal/kg

### Potential coal production and consumption:

- Production capacity of open pit-mine - 30 mln t/year
- Export: - concentrate for coking - 5 mln t/year  
(ash content – 9%)
- Steaming coal - 15 mln t/year (ash content – 14-16%)
- Domestic consumption - 3 mln t/year





## **FIVE REQUIREMENTS FOR MUTUALLY BENEFICIAL COOPERATION IN THE FIELD OF ENERGY**

- 1. Political will and serious intentions of participants to implement a specific energy project mutually beneficial for each country.***
- 2. Coordination of economic and energy policy between the central, regional authorities and business of the countries in development of inter-country energy projects.***
- 3. Comprehensive and system estimation of consequences (effects) of implementation of large-scale inter-country energy projects, particularly under high uncertainty of future development, economic risks and global challenges for the countries, regions and energy companies.***
- 4. Generation of mutually acceptable mechanisms for implementation of inter-country energy projects (organizational, economic, legal and other mechanisms).***
- 5. Development and implementation of the inter-country projects by the international team ( at all the stages: from feasibility study and design works to their realization).***



## CONCLUSIONS

- 1. Elaboration of the science-based strategy of energy cooperation in NEA countries became a necessity.**
- 2. Currently the main outlines of the energy cooperation in NEA are clear enough. The resource base of countries supplying energy resources and the energy markets of consuming countries have been properly studied. Intensive attention should be paid to the implementation mechanisms of coordinated actions of participants (countries, regions, companies) in terms of economic, legislative and other initiatives aiming to implement large-scale inter-country energy projects.**
- 3. The research societies and energy companies of Russia and Japan should stimulate the work in this direction in order to make an appropriate contribution to solution of the problem significant for all the countries of the world.**



**Thank you for your kind  
attention!**