



CURRENT STATUS OF AND PROSPECTS FOR ENERGY RESOURCES AND INFRASTRUCTURE DEVELOPMENT IN RUSSIA

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THE ROLE OF FUEL AND ENERGY COMPLEX IN THE ECONOMY OF RUSSIA

Indices	Fuel and energy complex share, %			
	Years			
	1999	2000	2005	2006
Industrial production volume	23.1	29.5	31.5	31.3
Tax proceeds to the federal budget	36.0	40.0	57.9	50.5
Export	52.0	52.6	63.9	64.9
Investments in fixed assets	24.0	25.7	28.4	31.4



ELECTRIC POWER INDUSTRY

Installed capacity of power plants in Russia is 219.2 million kW, <i>of with</i> :	219.2
Thermal power plants	149.6 (68.3%)
Hydro power plants	45.9 (20.9%)
Nuclear power plants	23.7 (10.8%)
Length of transmission lines of all voltage classes, thousand km	2600
Including voltages of 220 kW and higher	154

In 2006 Russia produced 993 billion kWh of electricity or 5.2% of world production (ranking third in the world after the US and China)

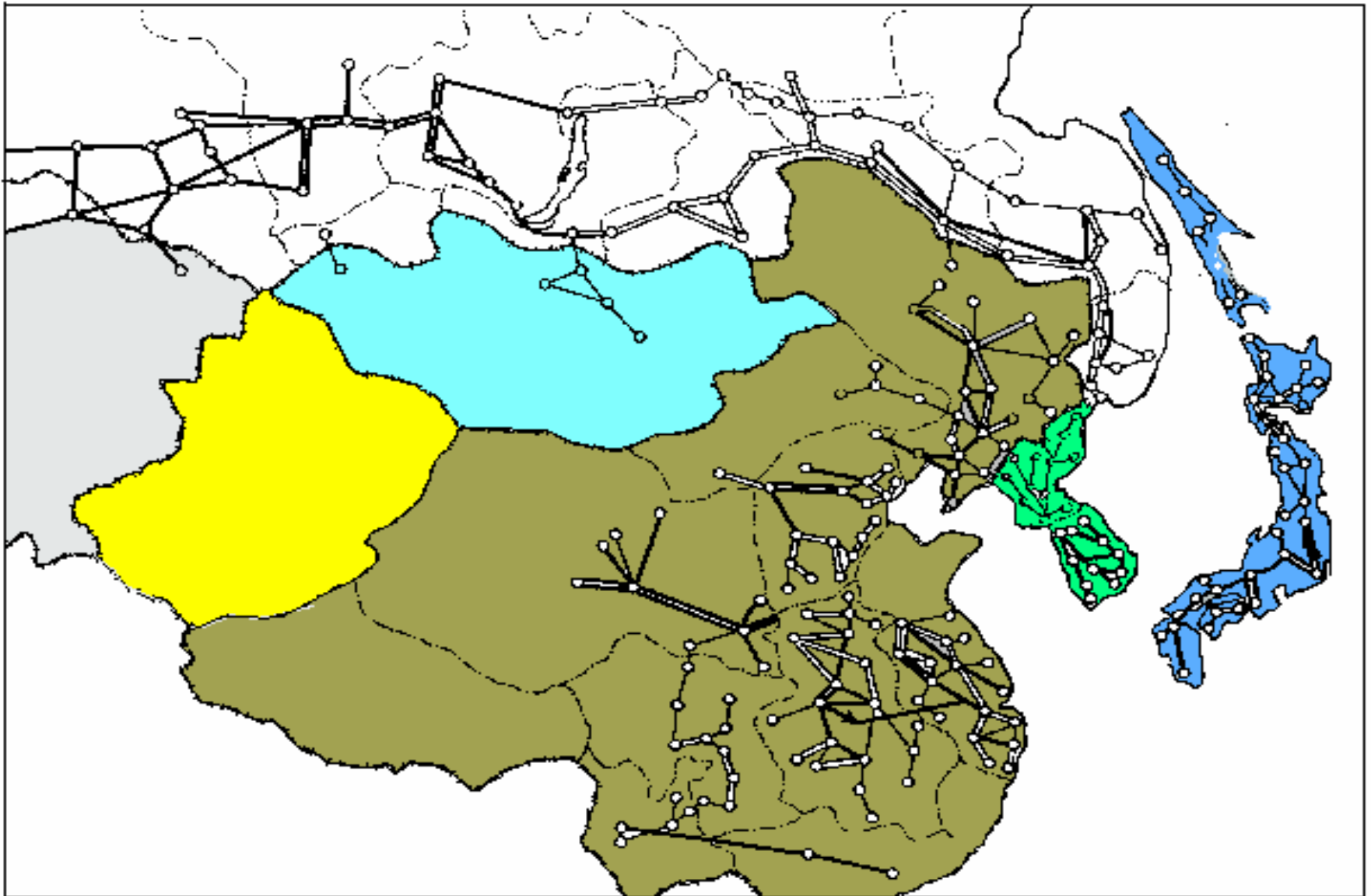


ELECTRIC POWER INFRASTRUCTURE IN RUSSIA AND CENTRAL ASIA



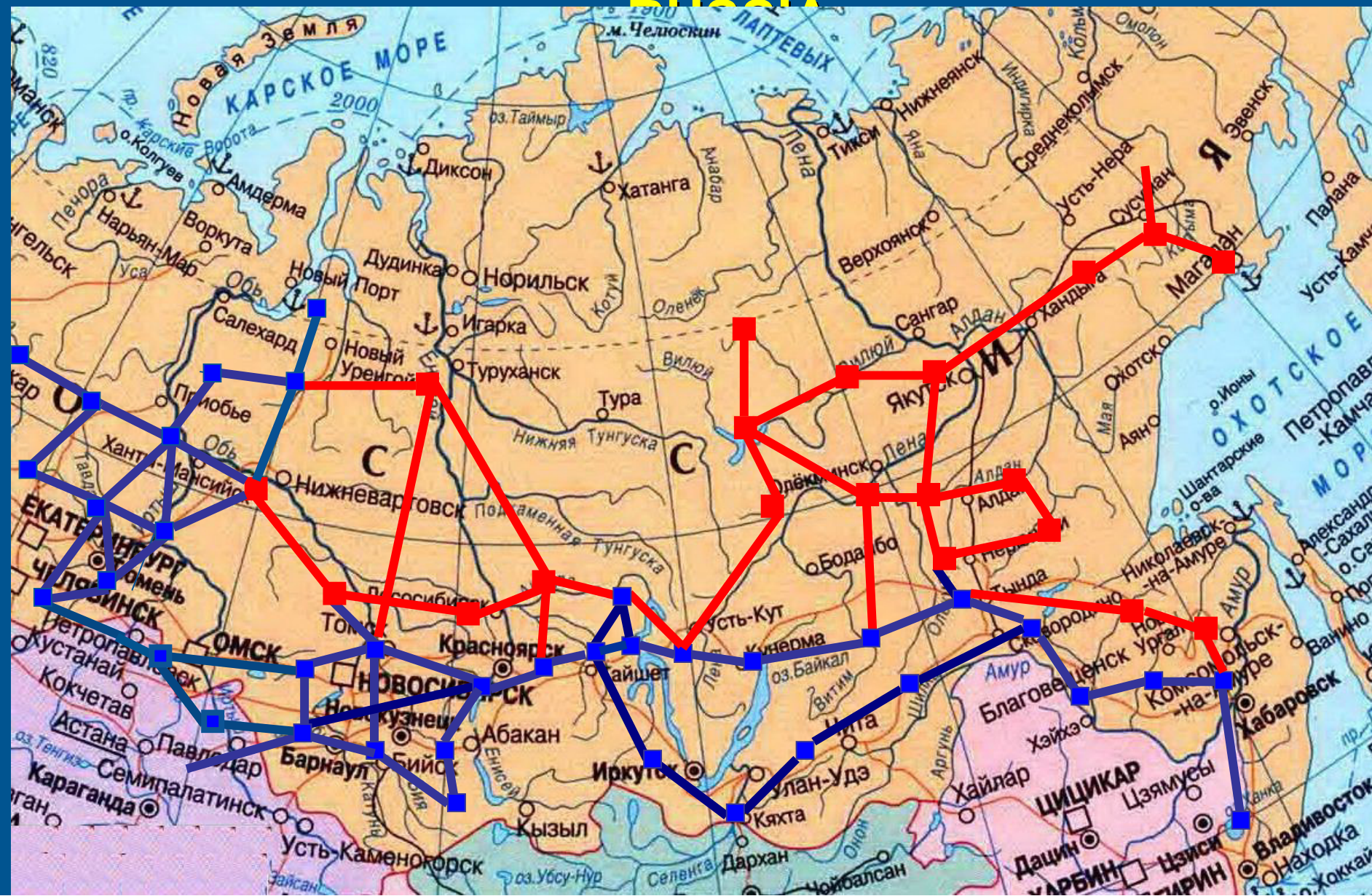


ELECTRIC POWER INFRASTRUCTURE IN THE EASTASIAN COUNTRIES AND REGIONS





POSSIBLE ELECTRIC NETWORK INFRASTRUCTURE OF EASTER PART OF





BLOCK DIAGRAM OF NORTHEAST ASIAN INTERCONNECTED POWER SYSTEM





COAL INDUSTRY

*The geological coal reserves in Russia are estimated at **157 billion t or 17.3%** of the world geological reserves of coal (ranking second in the world after the US)*

Number of coal mines and open-pit mines	212
Total capacity of coal mines and open-pit mines, million t/year	330

In 2006 Russia produced 309 million t of coal or 5% of the world production (ranking third in the world after China and the US)



OIL INDUSTRY

*The geological oil reserves in Russia are estimated to be **10.9 billion t or 6.6%** of the world geological oil reserves (ranking sixth in the world after the Middle East countries such as Saudi Arabia, Iraq, Iran, etc.)*

Number of operating oil well stock, thousand	152.6
Length of main oil pipeline, thousand km	49
Length of main oil product pipelines with branches, thousand km	20
Number of main oil refineries	27
Totals capacity of main oil refineries, million t/year	253

In 2006 Russia produced 480 million t or 12.3% of the world oil production (ranking second in the world after Saudi Arabia)



POSSIBLE WAYS OF OIL TRANSPORTATION IN ASIA





GAS INDUSTRY

*The geological natural gas reserves in Russia are estimated at **47.7 trillion m³ or 26.3%** of the world geological reserves of natural gas (ranking first in the world)*

Number of operating gas well stock in JSC “Gazprom”, thousand

7.7

length of main gas pipelines in JSC “Gazprom”, thousand km

155.1

In 2006 Russia produced 656 billion m³ or 21.4% of the world natural gas production (ranking first in the world)



POSSIBLE WAYS OF GAS TRANSPORTATION IN ASIA





PERSPECTIVE GAS PRODUCING CENTERS IN EAST SIBERIA AND THE FAR EAST

Total reserves C_1+C_2 –
7145 billion m^3

Krasnoyarsk center
reserves C_1+C_2 –
1352 billion m^3

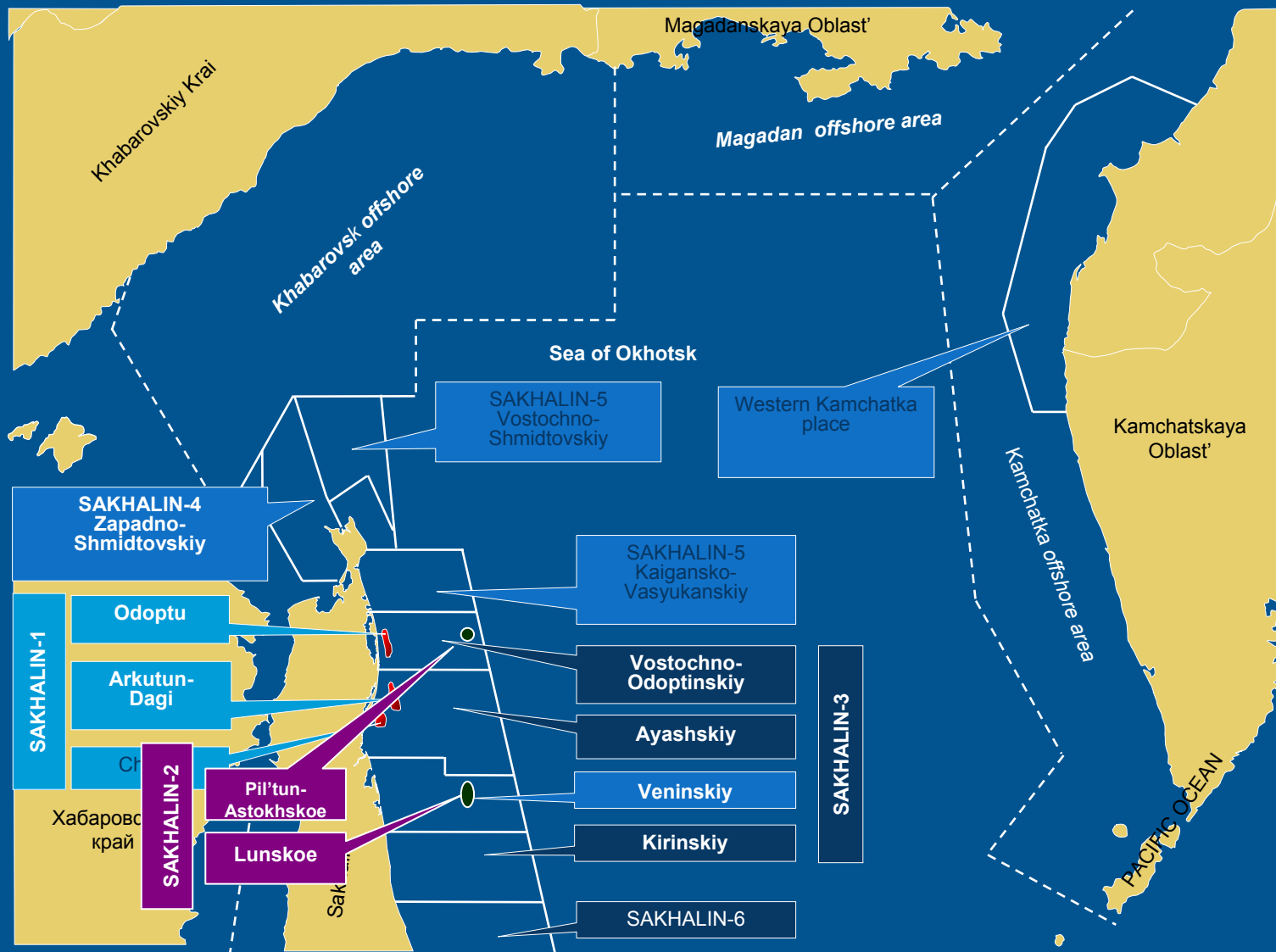
Yakutia center
reserves C_1+C_2 –
2278 billion m^3

Sakhalin center
reserves C_1+C_2 –
1252 billion m^3

Irkutsk center
reserves C_1+C_2 –
2263 billion m^3

Source: Program of constructing a unified system of gas production, transportation and supply in East Siberia and the Far East taking into account potential gas export to the markets of China and other APR countries (main provisions) – JSC “Gazprom”, 2005

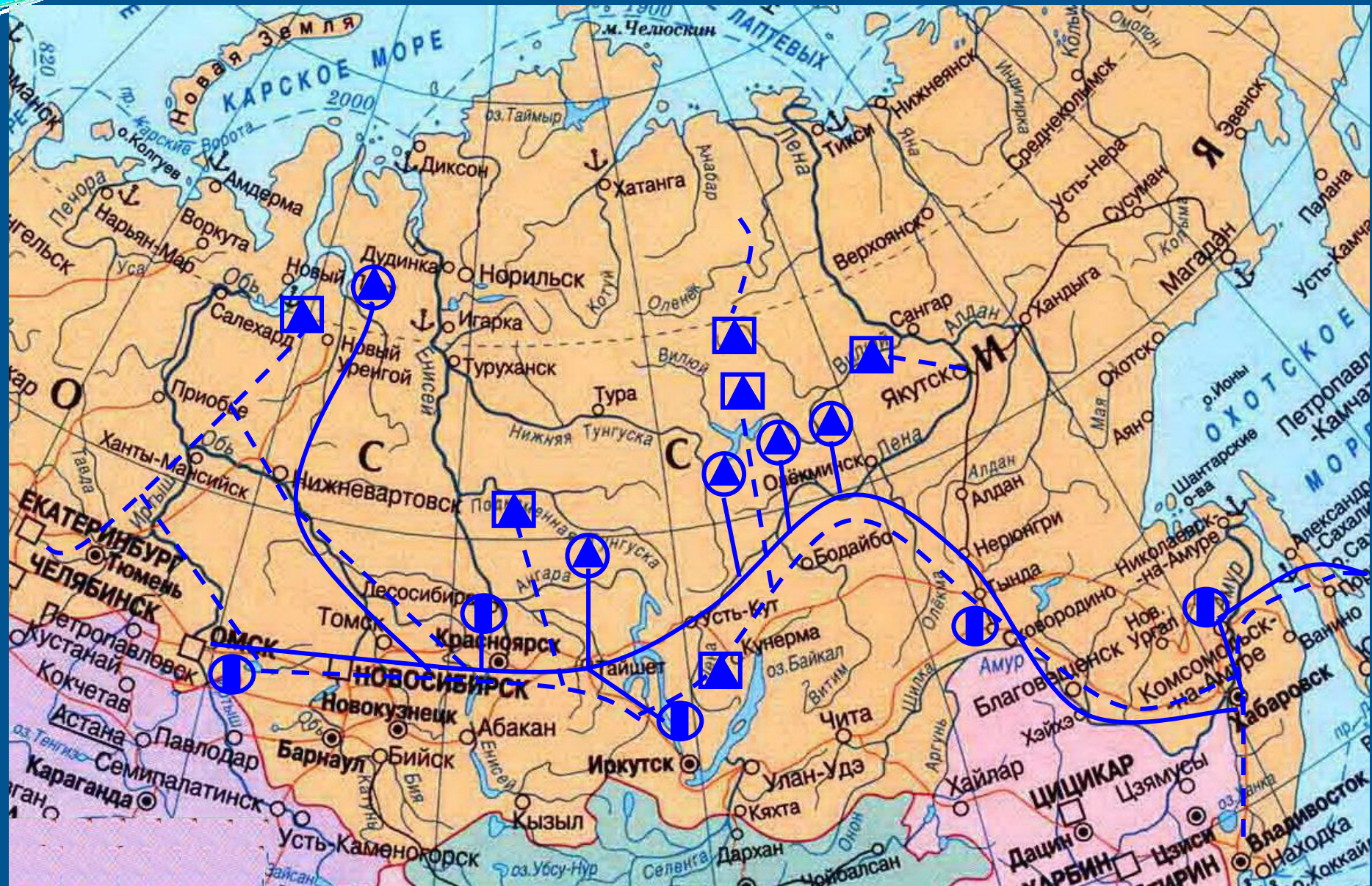
RFE'S OFFSHORE OIL & GAS PROJECTS





OIL AND GAS INFRASTRUCTURE OF SIBERIA AND THE

(— oil pipeline, - - gas pipeline; ● oil production, ▲ refinery, ○ gas production)



POTENTIAL LARGE-SCALE ELECTRICITY EXPORT FROM RUSSIA TO CHINA

(60-70 billion kWh of electricity in 2015-2020)



Source: R.Gulidov, A.Ognev. The power Sector in the Russian Far East. Resent Status and Plans. – 2007 Asian Energy Security Project Meeting. "Energy Futures and Energy Cooperation in Northeast Asia Region". Tsinghua University, China, October 31 – November 2, 2007



EXPORT OF ENERGY RESOURCES FROM RUSSIA

Index	2005 fact.	Forecast		
		2010	2020	2030
Export, million tce, total	770	860-870	910-950	900-950
including:				
<i>Oil and oil products, million t</i>	327	356	330-325	300-290
of which oil:	265	285	266-259	243-240
Western direction	249	247	195-197	170-172
Eastern direction	16	38	71-62	73-68
<i>Natural gas, billion m³</i>	207	240	290-320	315-330
Western direction	207	218	225-230	237-240
Eastern direction	-	14-15	65-90	78-90
Coal, million t	77	100-110	110-120	125-130
Electricity, billion kWh	13	21-25	30-85	48-105
Western direction	12.3	17	20-25	23-25
Eastern direction	0.7	4-8	10-60	15-80

Source: Substantiating materials to "The Energy Strategy of Russia till 2030"; authors' estimates



CONCLUSIONS

Perspective energy development in East Siberia and the Far East till 2030 requires huge investments. The estimated cost of such a strategy is \$200-250 billion, \$80-85 billion should be invested in development of oil and gas production and main oil and gas pipelines.

Such a strategy of energy development in East Siberia and the Far East will not be realized probably without attraction of foreign investments. This is the next specific feature of Russia as a player at the energy markets of NEA countries

The necessity to elaborate an integrated scientifically grounded strategy of energy development in the Northeast Asia countries taking into account import of Russian energy resources has become urgent



**Thank you very much for your
attention**