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Preparing to Decrease Carbon Emission: Russia

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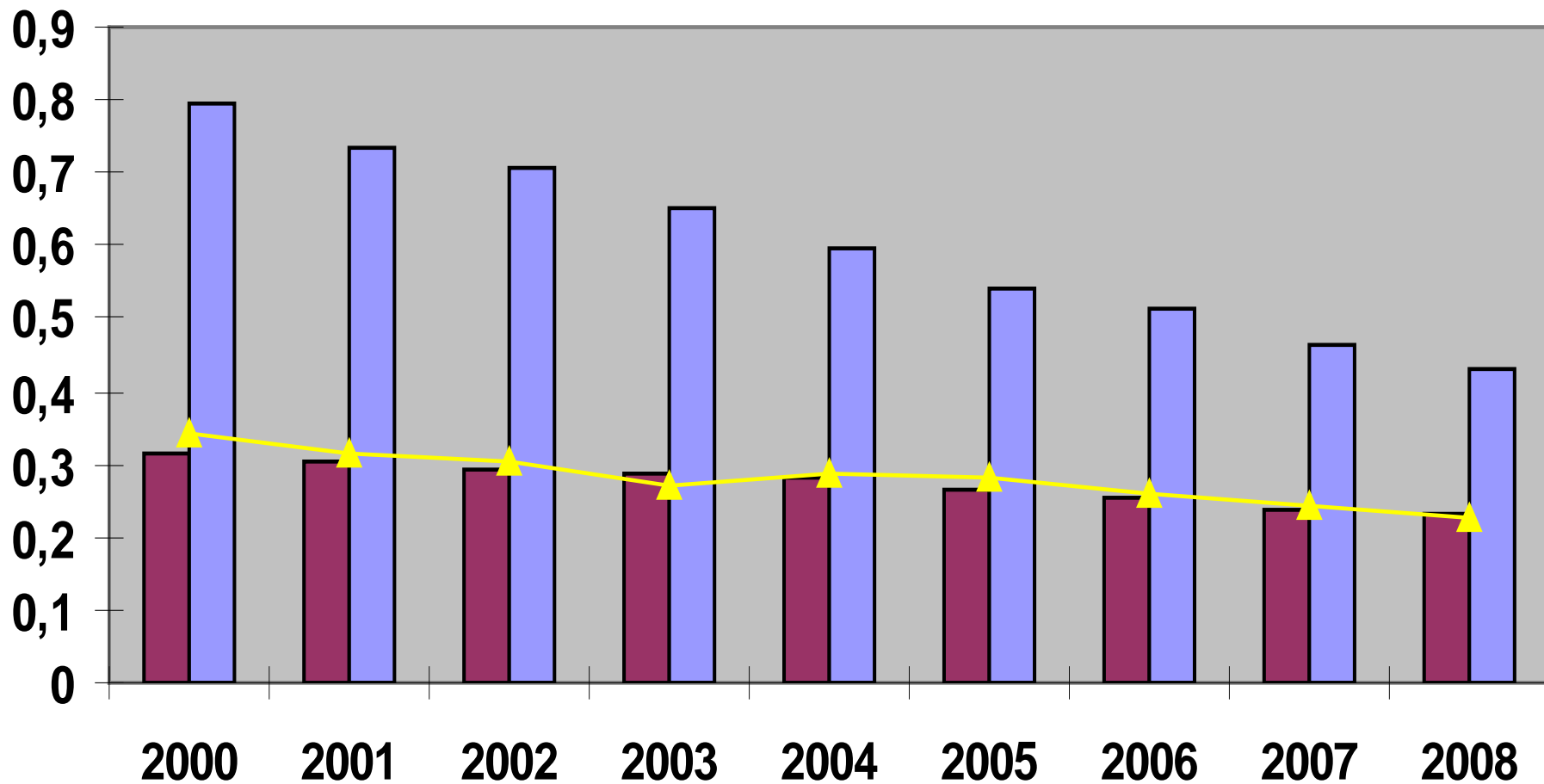
How To Achieve Low Carbon Future?

- **1. Decreasing of the World Power Consumption**
- **2. Decreasing of the Main Energy Consuming Economies' Power Consumption**
- **3. Changing the Energy Resources' Structure in the World Economy**
- **4. Implementing New Energy Producing Technologies**
- **5. Implementing Effective Energy Saving Technologies**

Main Sources of Energy in the World

	1980	2006	2030	Annual Growth,2006-2030,%
Total (mln. tons of Oil Equivalent)	7224	11730	17014	1,6
Share, %				
Coal	24,8	26,0	28,8	2,0
Oil	43,0	34,3	30,0	1,0
Gas	17,1	20,5	21,6	1,8
Nuclear	2,6	6,2	5,3	0,9
Hydropower	2,0	2,2	2,4	1,9
Biomass	10,4	10,1	9,8	1,4
Other Renewables	0,2	0,6	2,1	7,2

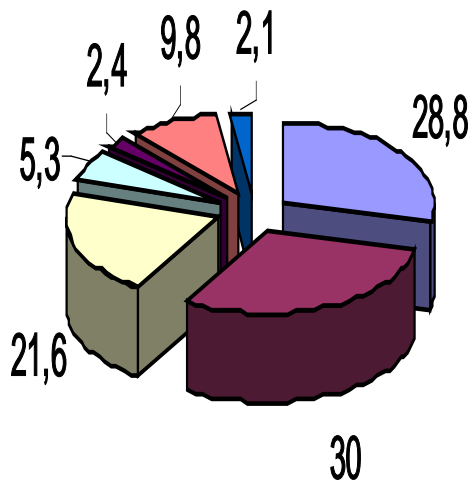
Power Consumption, th.TCE/\$1000 of GDP



World Russia Russian Far East

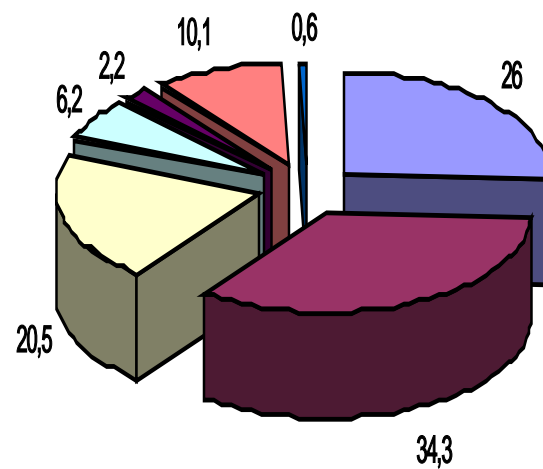
Main Sources of Energy in the World, %

2030



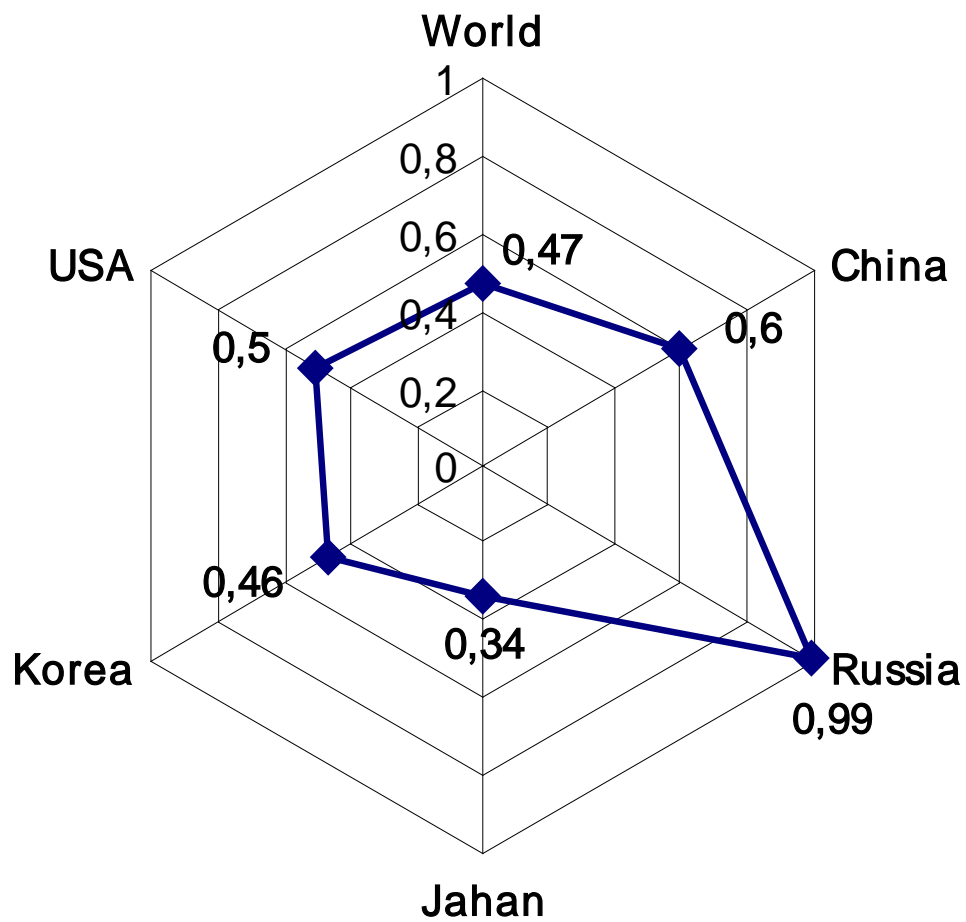
■ Coal ■ Oil □ Gas □ Nuclear ■ Hydro ■ Bio ■ Other Renewables

2006



■ Coal ■ Oil □ Gas □ Nuclear ■ Hydro ■ Bio ■ Other Renewables

CO₂ Emissions, 2006, kg/\$1000

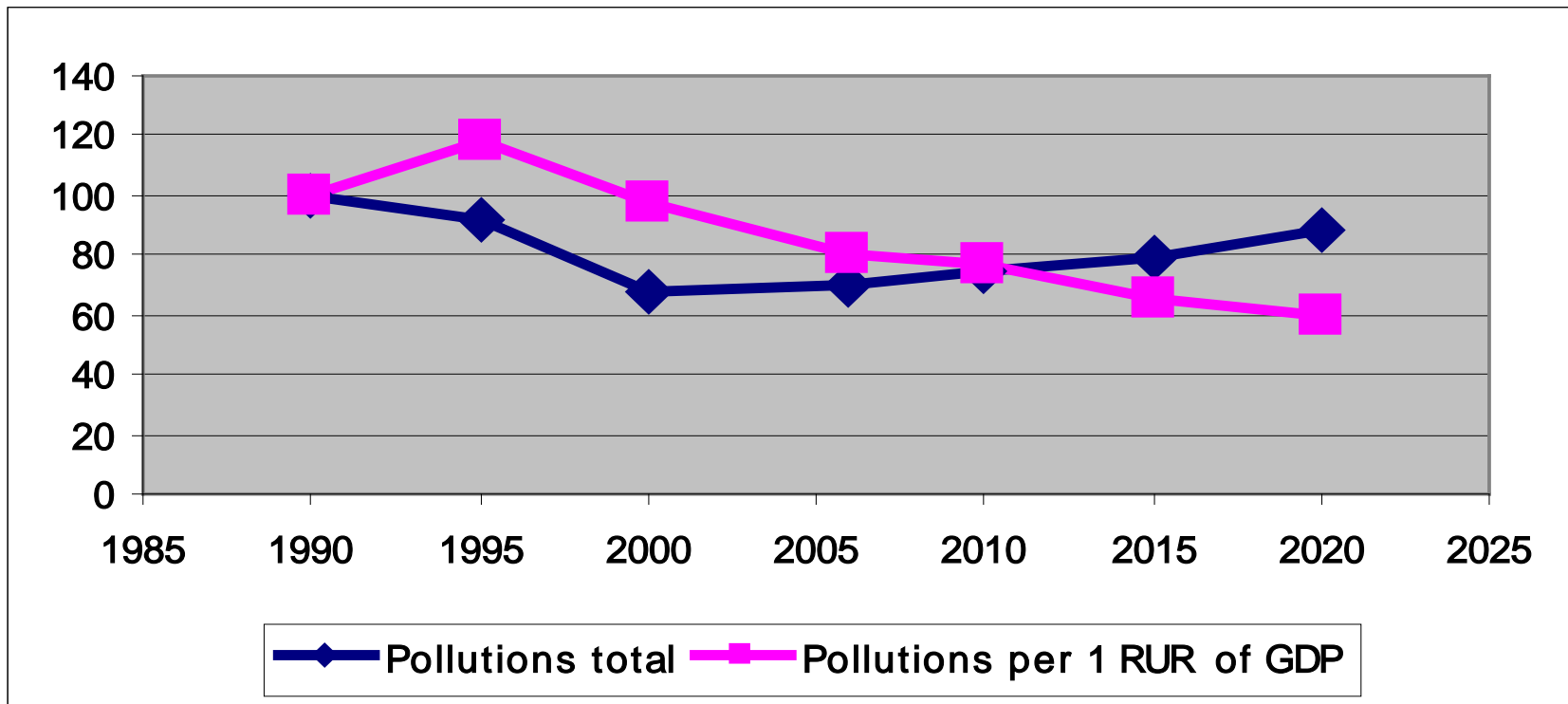


Targets of the Russia' Energy Strategy to 2030

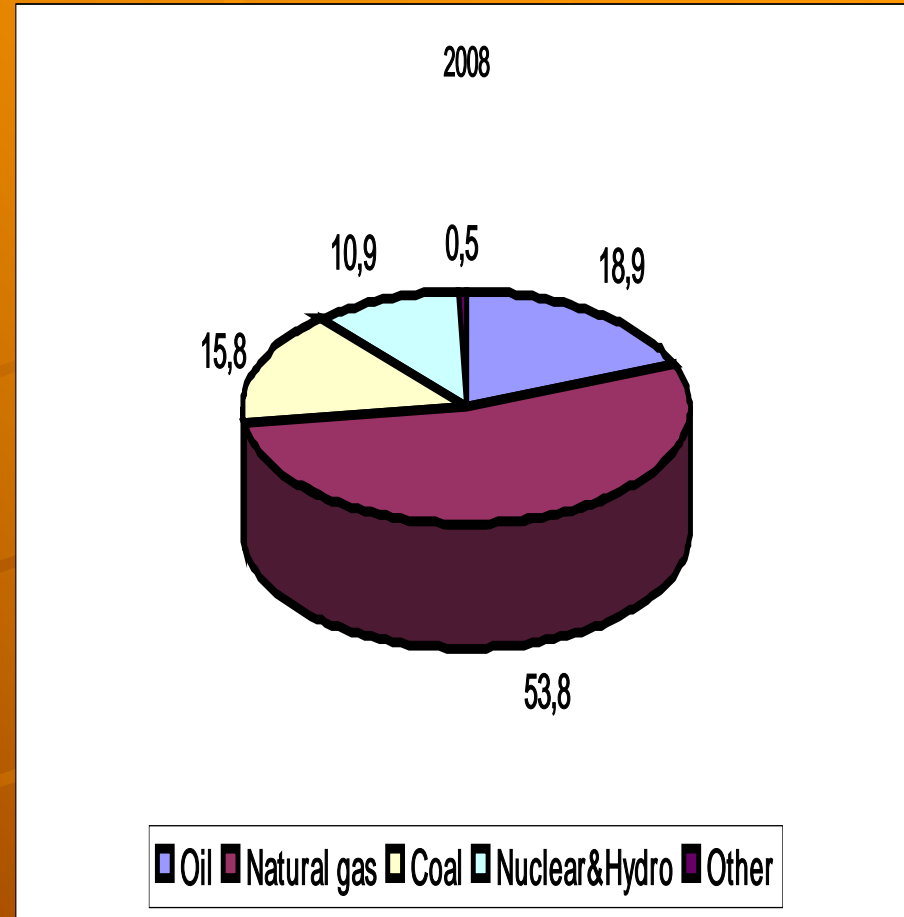
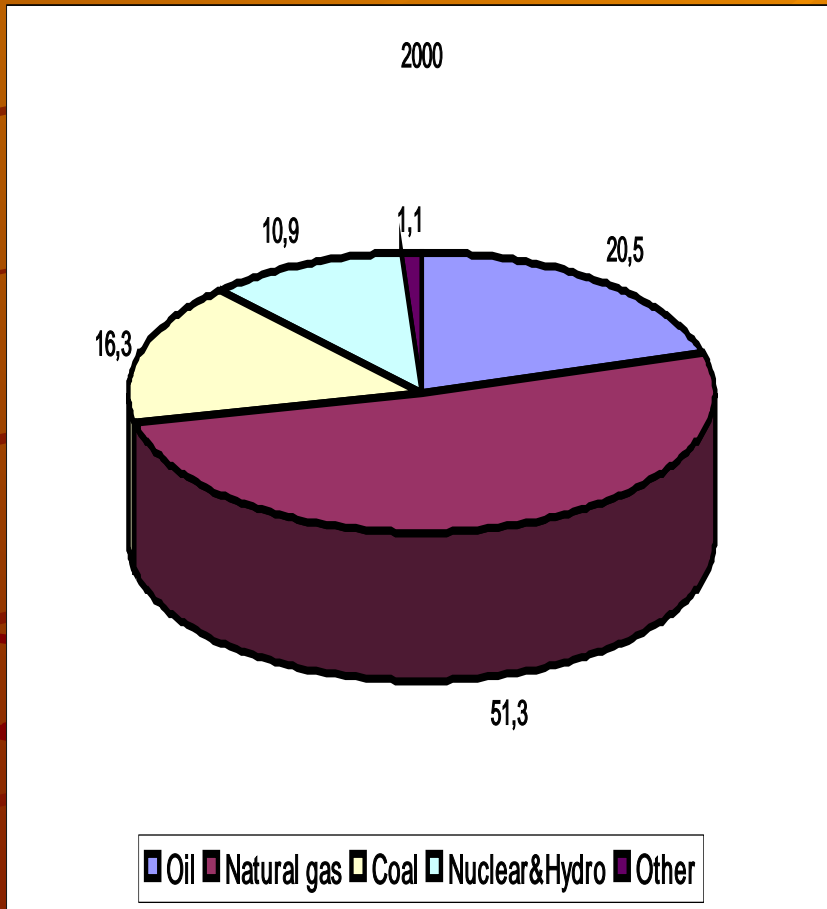
- 1. Decreasing of the Energy Sector' Share in GDP 1,7 times.**
- 2. Decreasing of the Energy Resources Export' Share in National Export 1,7 times.**
- 3. Decreasing of the Energy Resources Export Share in GDP 3 times.**
- 4. The Share of Investments to Energy Sector have to be Decreased 2 times.**
- 5. Domestic Energy Consumption per 1 RUR of GDP have to be Decreased 2 times.**
- 6. Domestic Consumption of Electricity per 1 RUR of GDP have to be Decreased 1,6 times.**

Estimation of Changing Carbon Emissions in Russian Economy, %, 1990=100

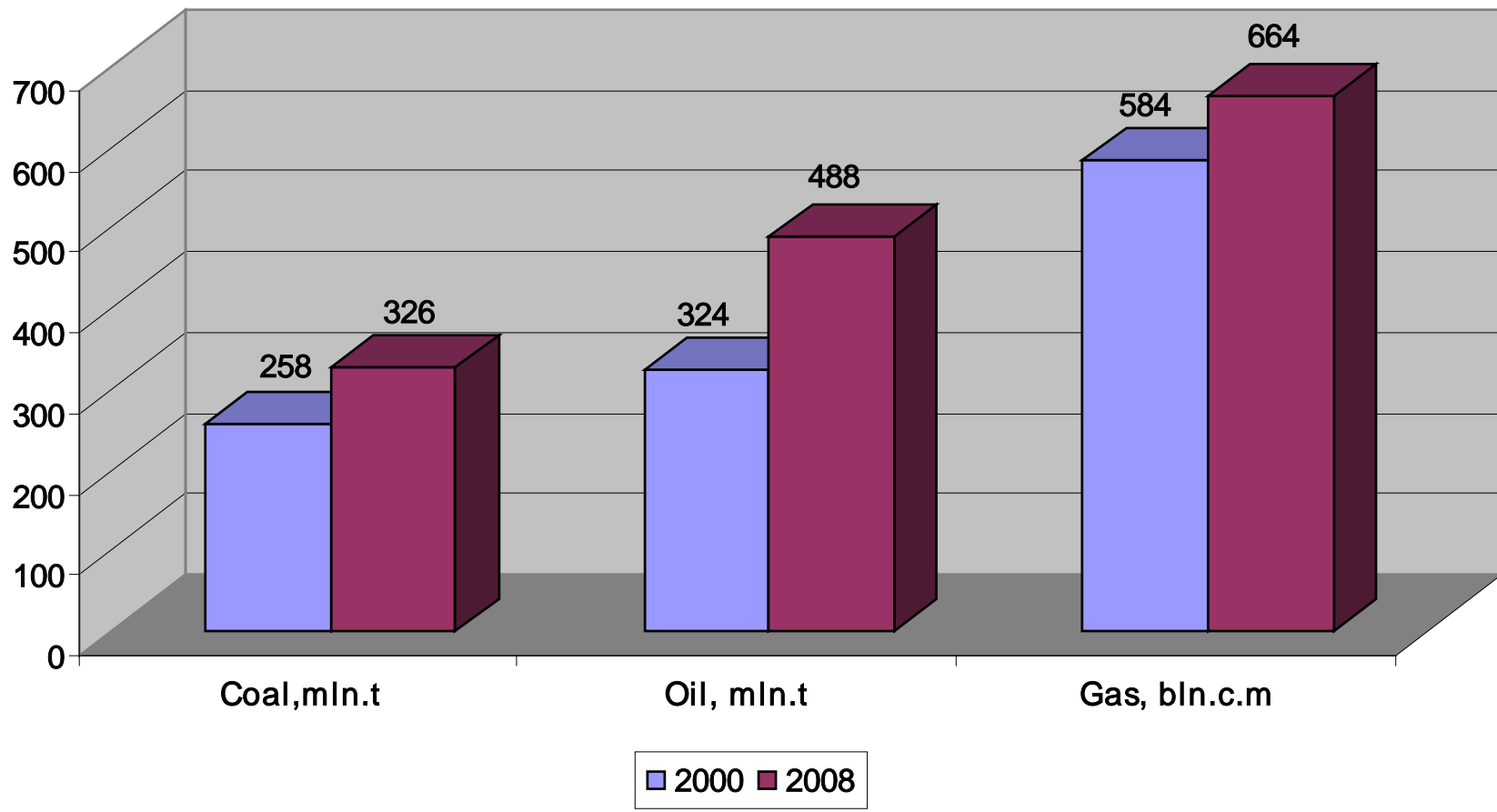
Dynamic of Carbon Emission in Russia is connecting greatly with:
1) GDP Growth Rate; 2) Changing of the Industrial Production Structure; 3) Energy Prices Trends; 4) Technological Innovations and New Technologies Implementations; 5) Realization of Political Measures which are encouraging economic agents and householders to decreasing emissions.



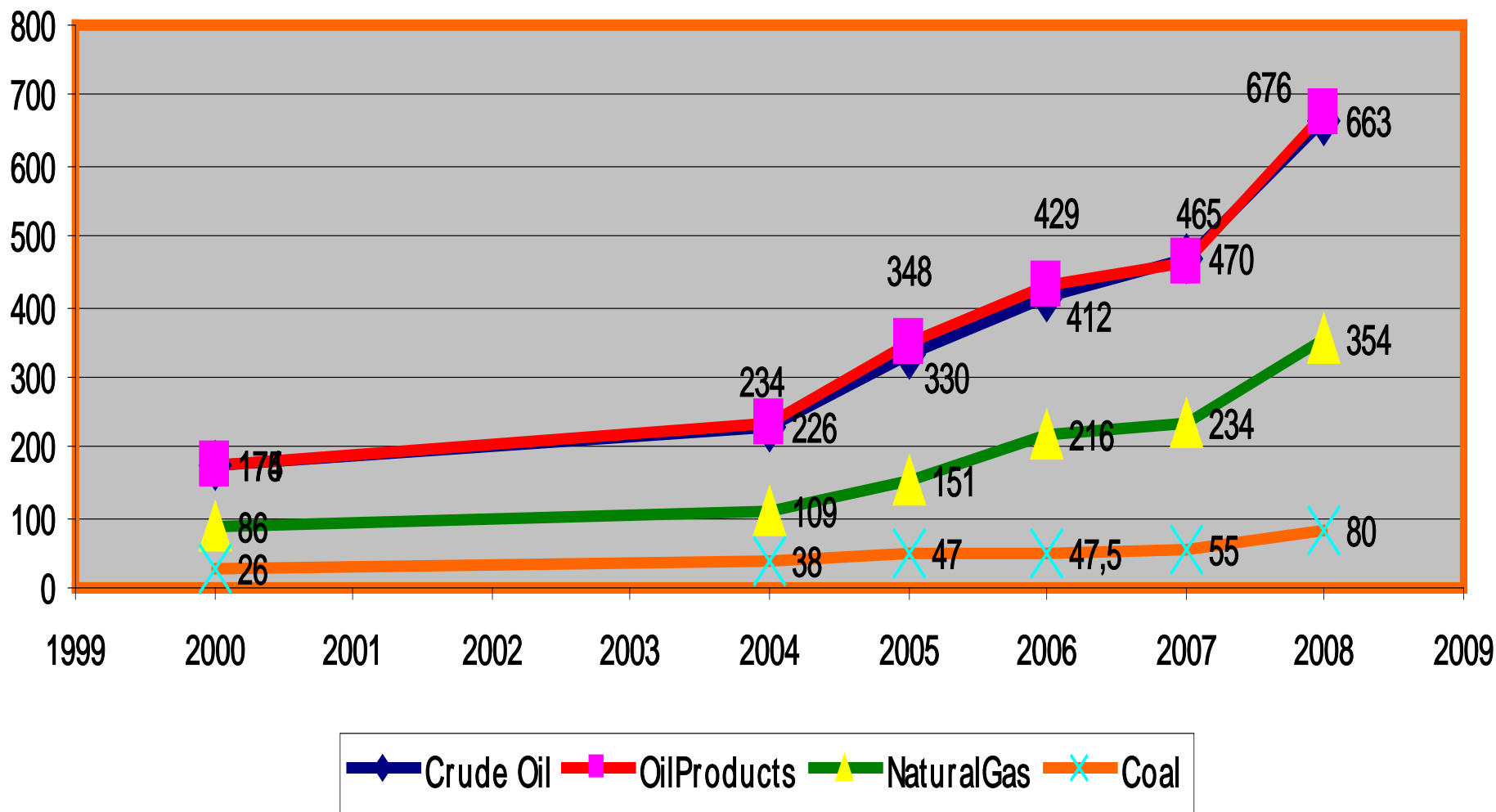
Main Sources of Energy in Russia



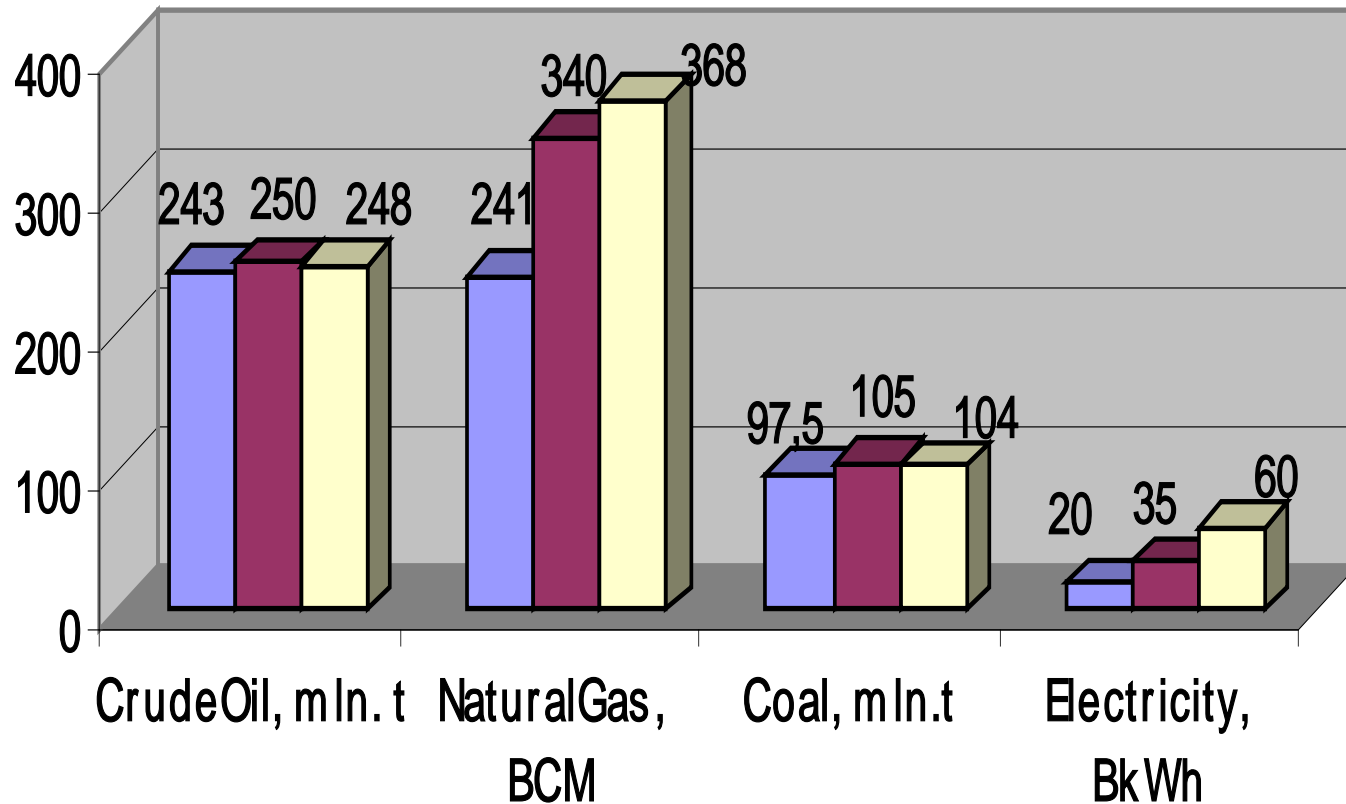
Russian Energy Resources Production



Average Export Prices, US\$ per 1 t/1000c.m.

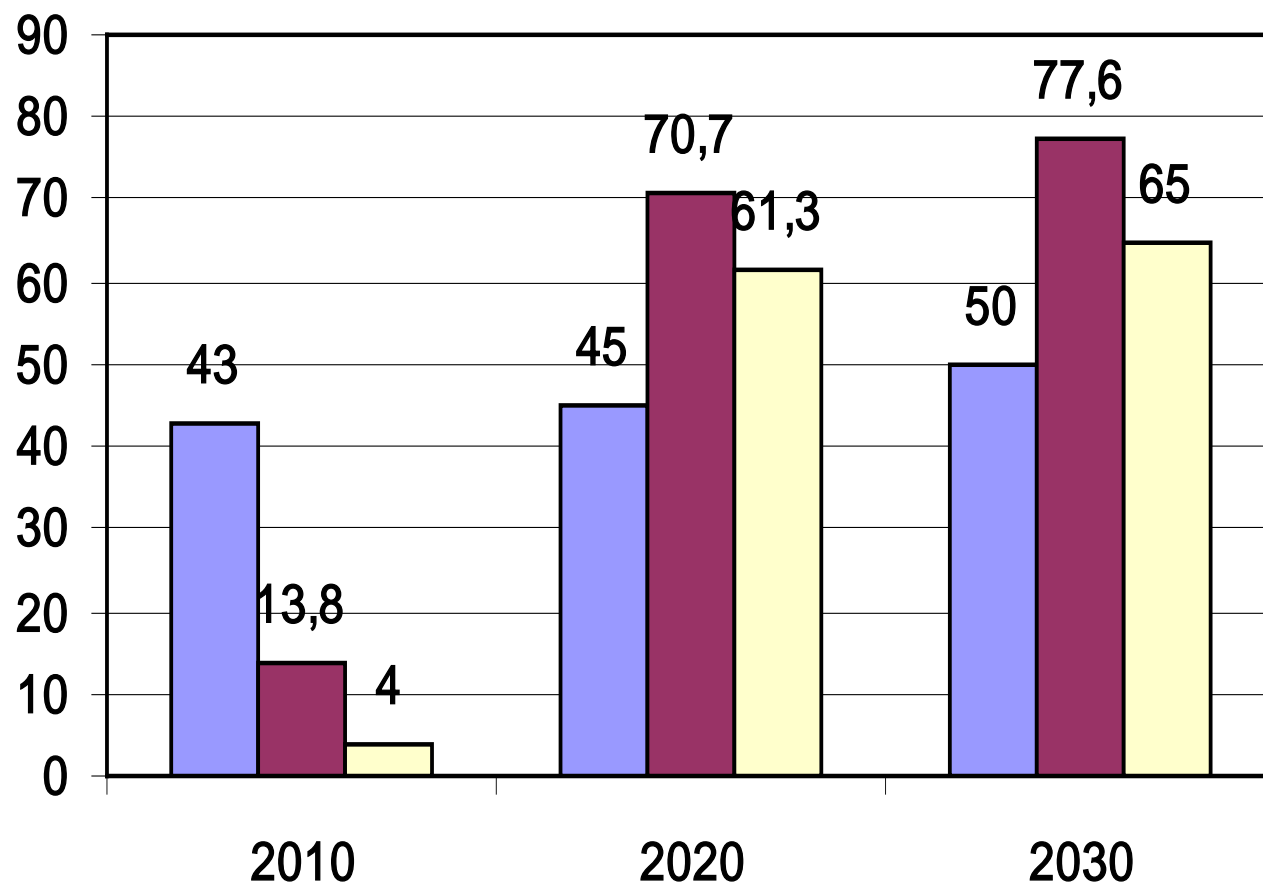


Russian Energy Export



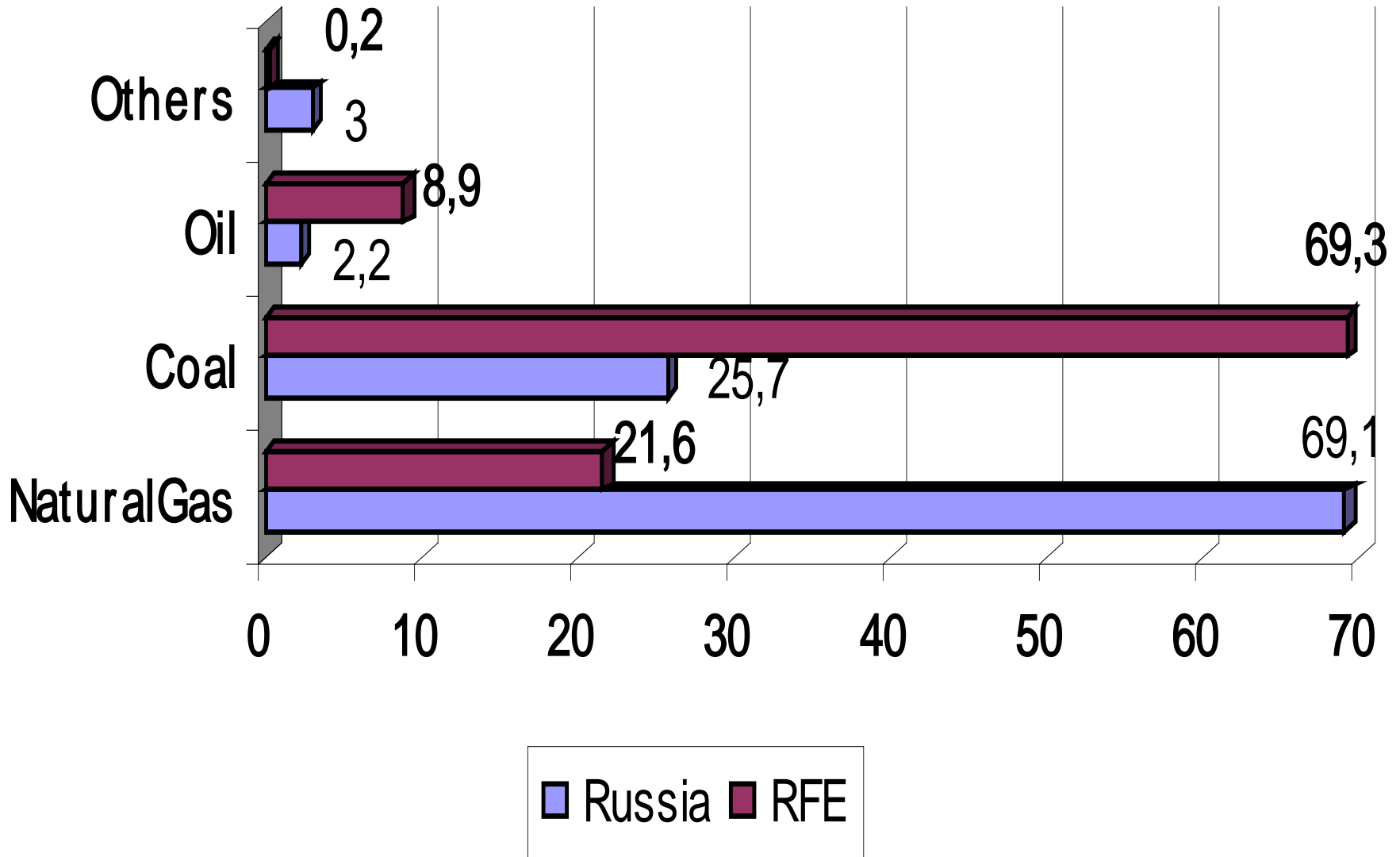
■ 2008 ■ 2020 ■ 2030

Forecasted Export of Energy in Eastern Russia

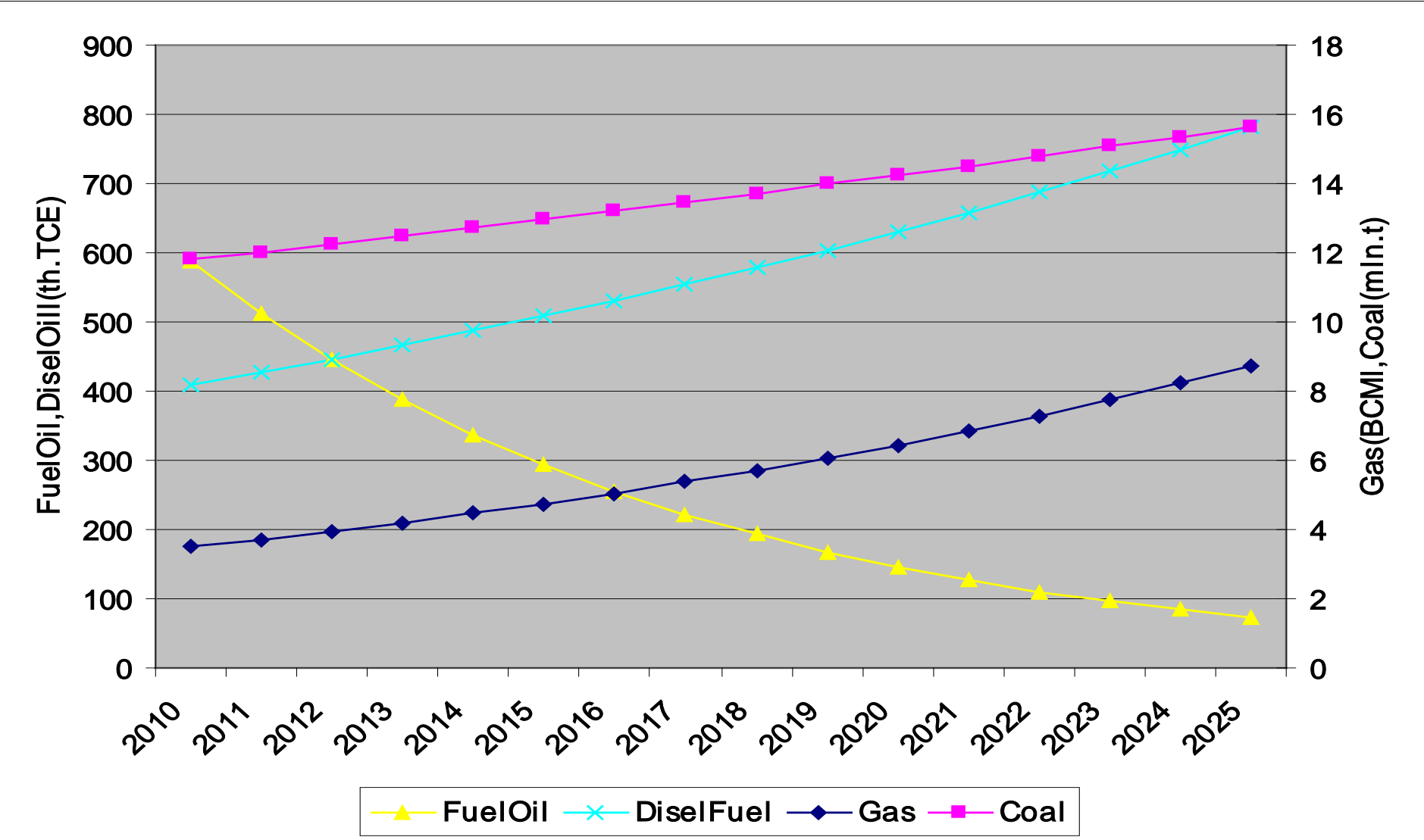


Oil, mln t. Gas, BCM Electricity, bln kWh

Electric Power Stations' Fuel Structure, %, 2008

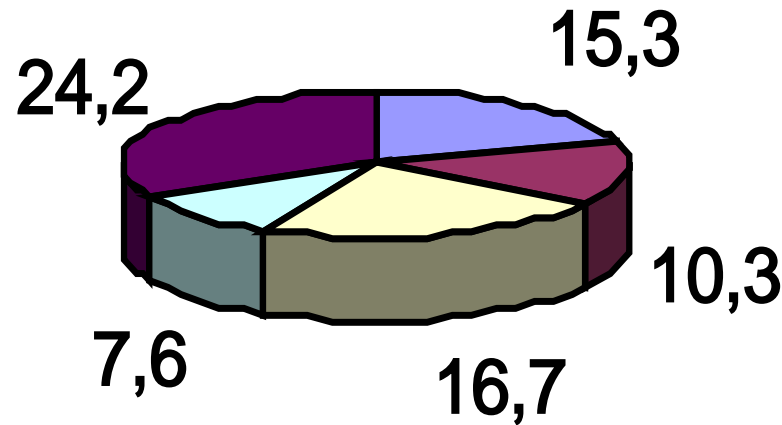


Fuel Consumption by Electric Power Stations, Russian Far East



Ejections into the Atmosphere of Pollutants Caused by Fuel Combustion, th.t, 2008

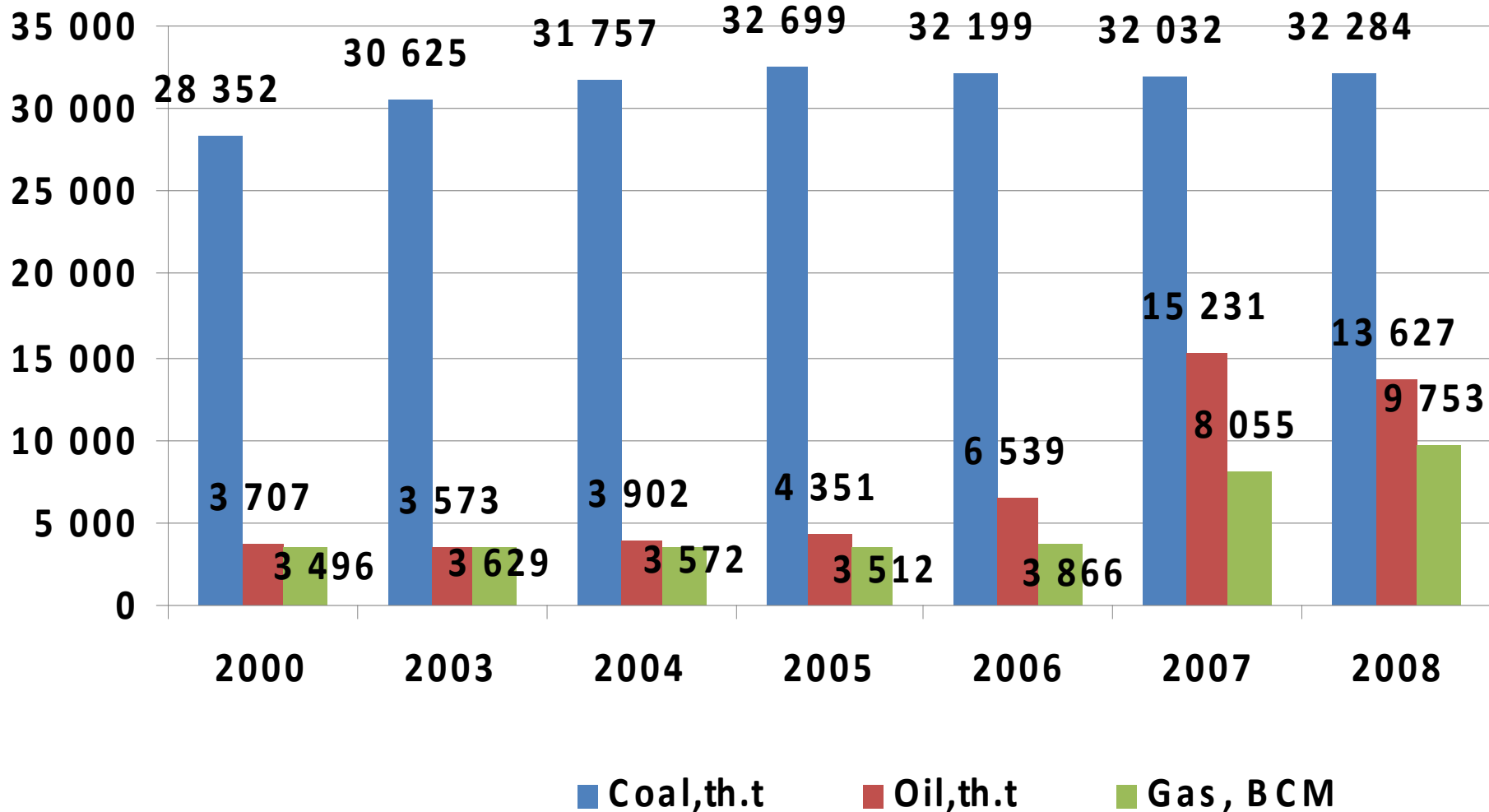
RFE as % of RF



- Solids
- Sulfur Dioxid
- CarbonOxid
- NitrogenOxids
- Hydrocarbons,exluding methan

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Energy Production, RFE



Structure of the Energy Resources' Final Consumption, RFE

