



INTERNATIONAL ENERGY AGENCY

World Energy Outlook 2004

Russia Presentation



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Background



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World Energy Outlook 2004

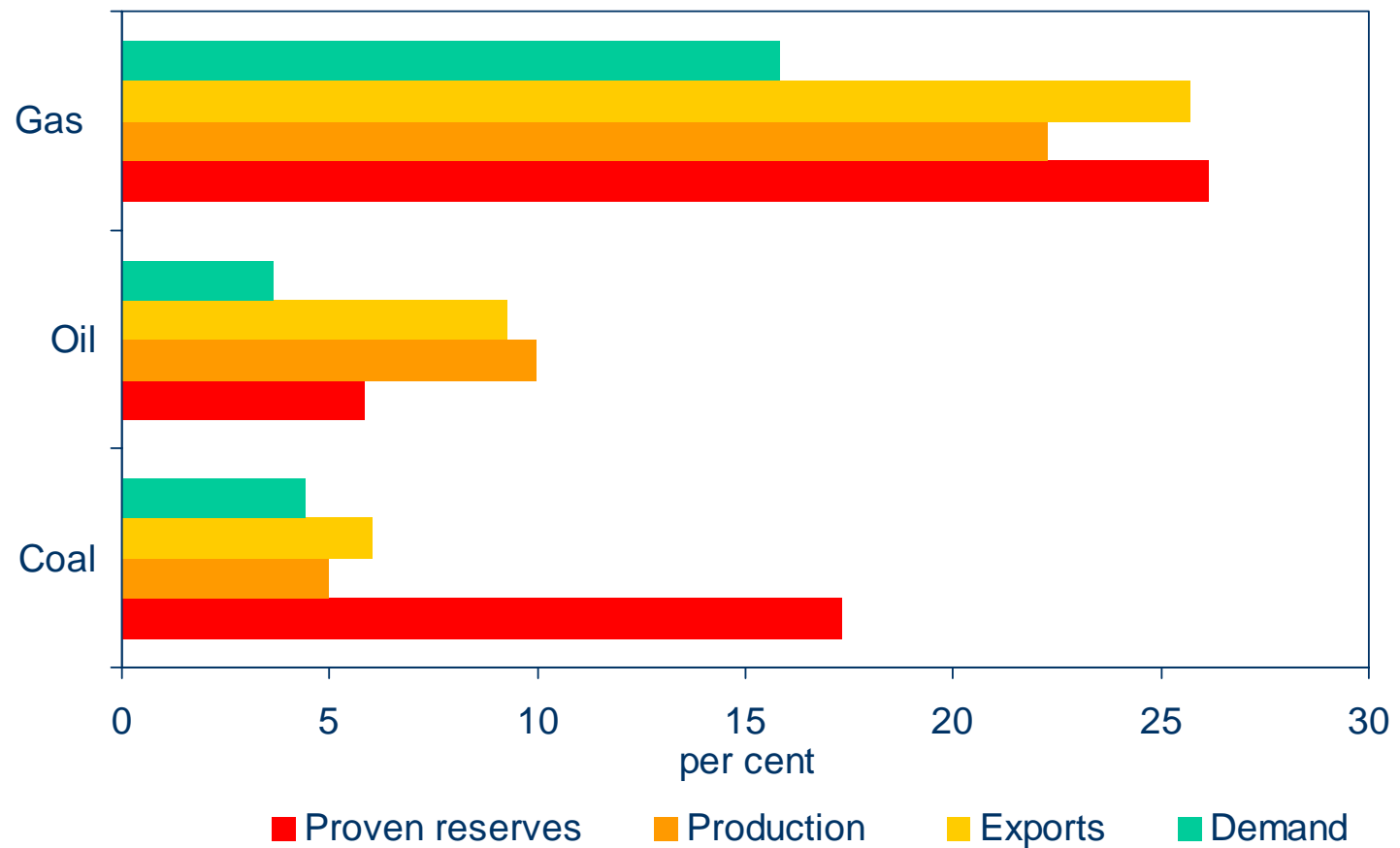
- Exhaustive energy statistics and projections by fuel and region to 2030
- Special features of 2004 *WEO*:
 - *In-depth study of Russian energy supply and demand prospects*
 - An alternative policy scenario for a more sustainable energy world
 - Analysis of the high-oil price phenomenon and the reliability of oil reserves data
 - An analysis of the links between energy and development



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Share of Russia in World Energy, 2002



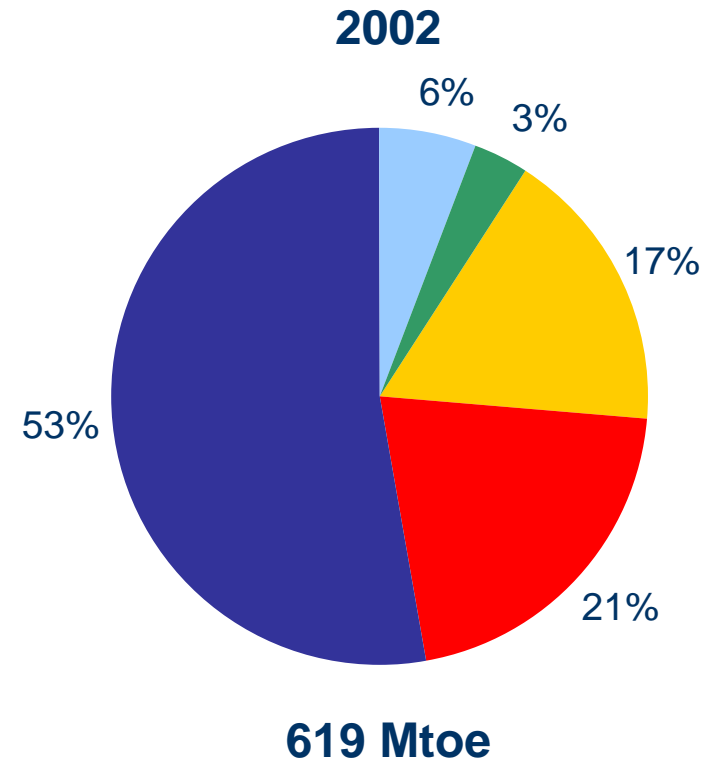
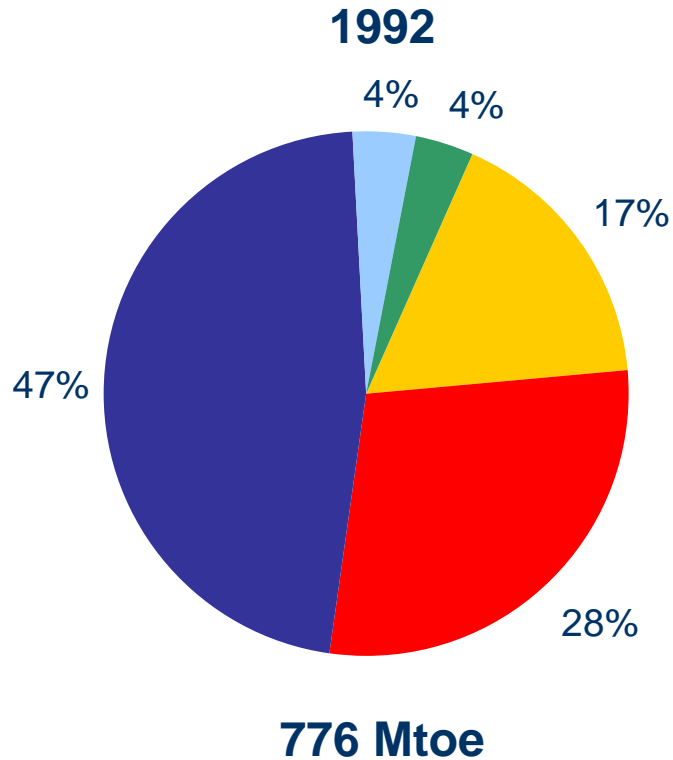
Russia's energy production remains low relative to its reserves of coal and gas, but is high for oil



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Russian Primary Energy Demand by Fuel



■ Coal ■ Oil ■ Gas ■ Nuclear ■ Renewables

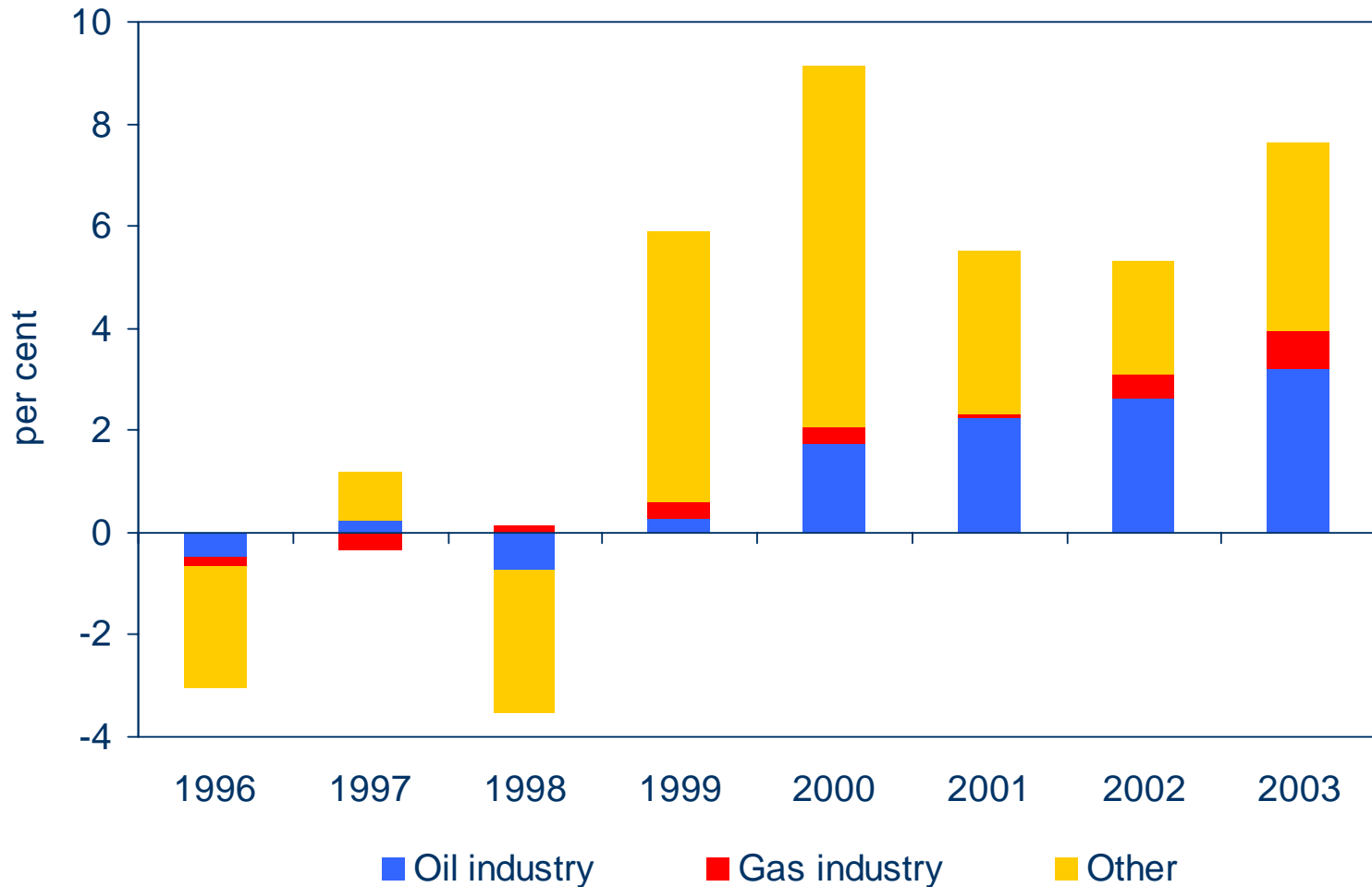
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Growth in Industrial Production in Russia



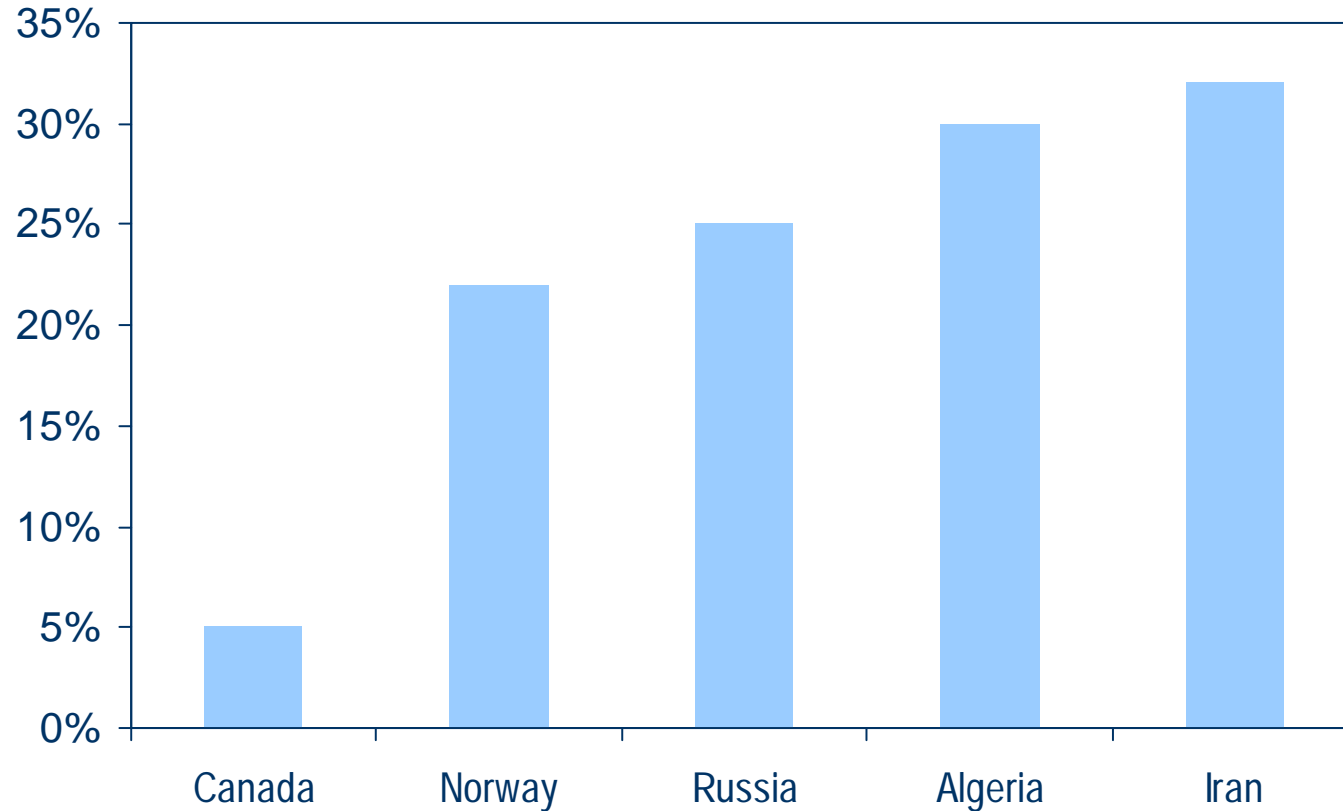
Oil & gas sector contributed more than half of the increase in Russia's industrial production in 2002 and 2003



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Contribution of Oil & Gas Sectors to GDP, 2002



Importance of oil & gas sector in the Russian economy has grown sharply in recent years, approaching that of some OPEC countries



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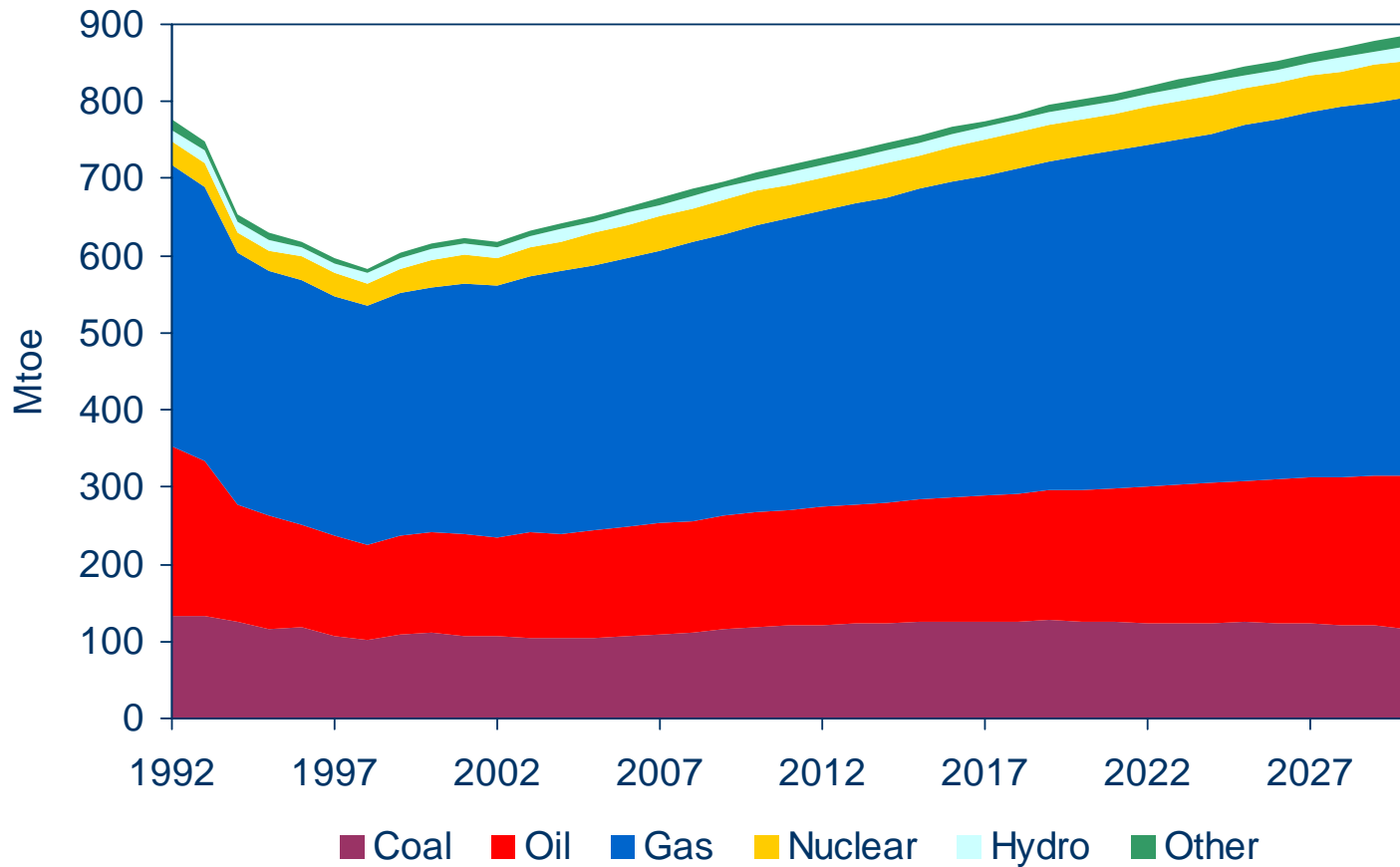
Russian Energy Trends: Reference Scenario



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Outlook for Russian Primary Energy Demand by Fuel



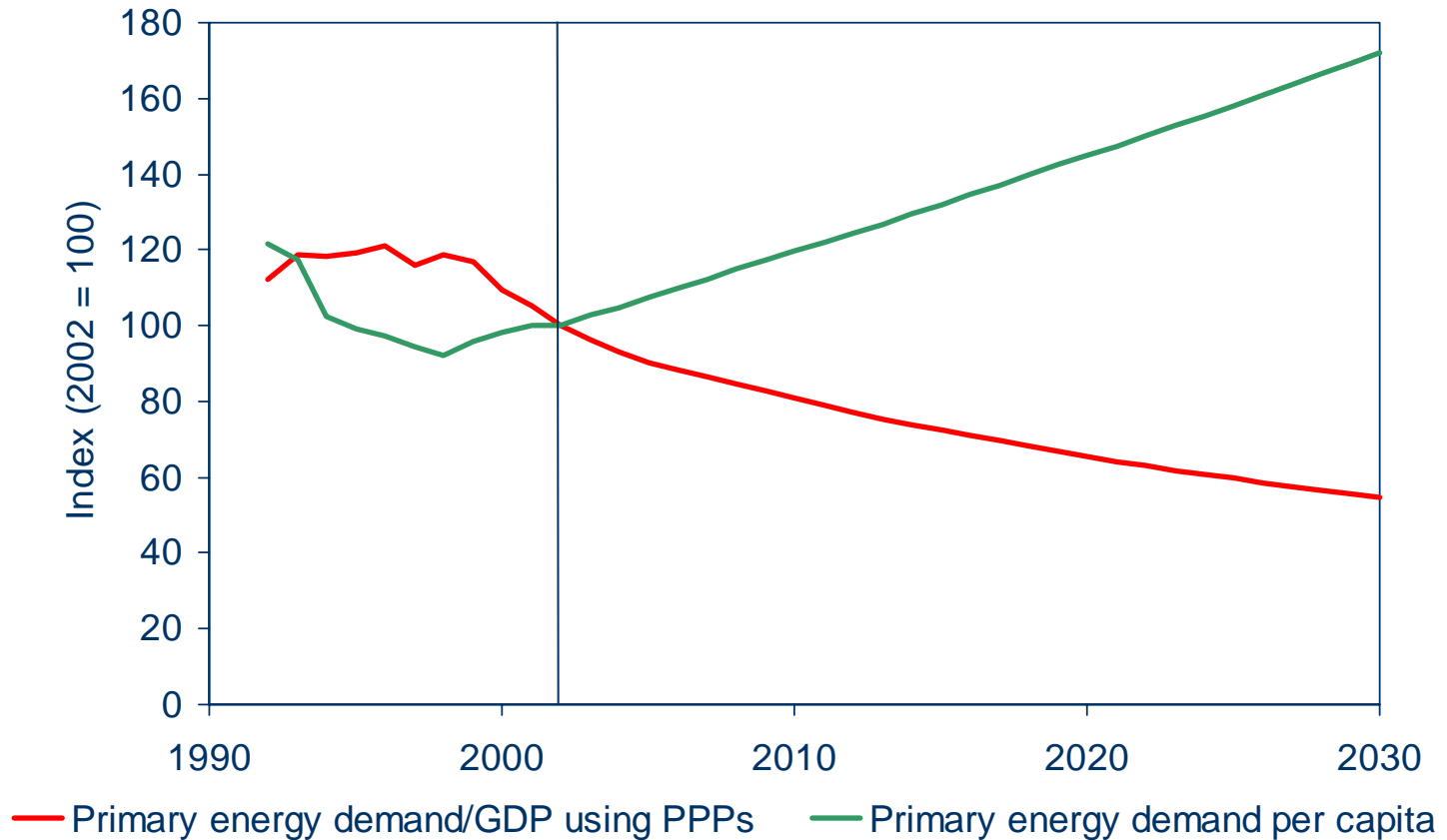
Russian energy demand is projected to grow steadily, with natural gas remaining the dominant fuel



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Energy Intensity Indicators in Russia



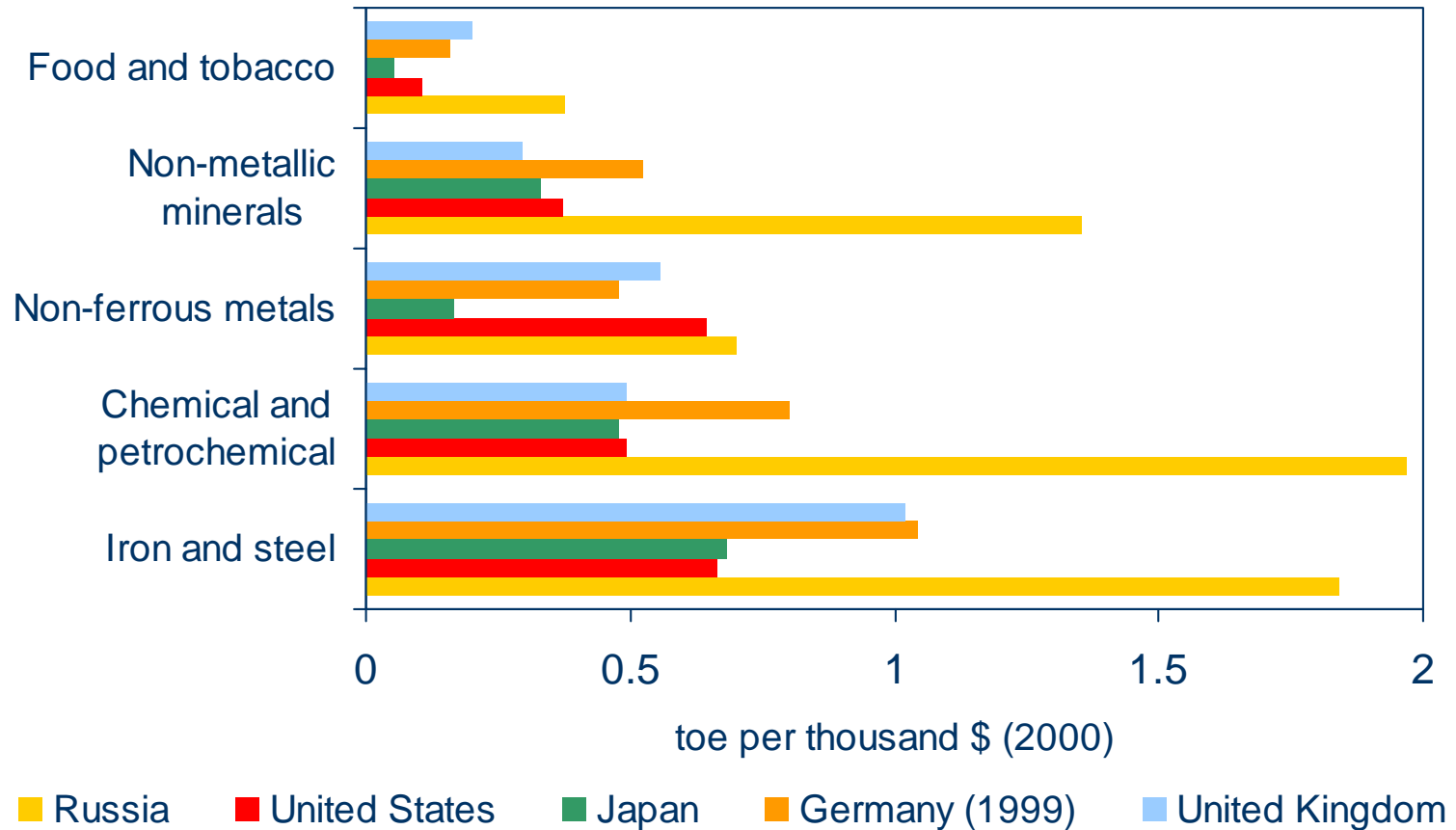
There is considerable scope for reducing energy intensity & improving the efficiency of energy use in Russian industry



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Energy Intensity of Industrial Production in Selected Sectors



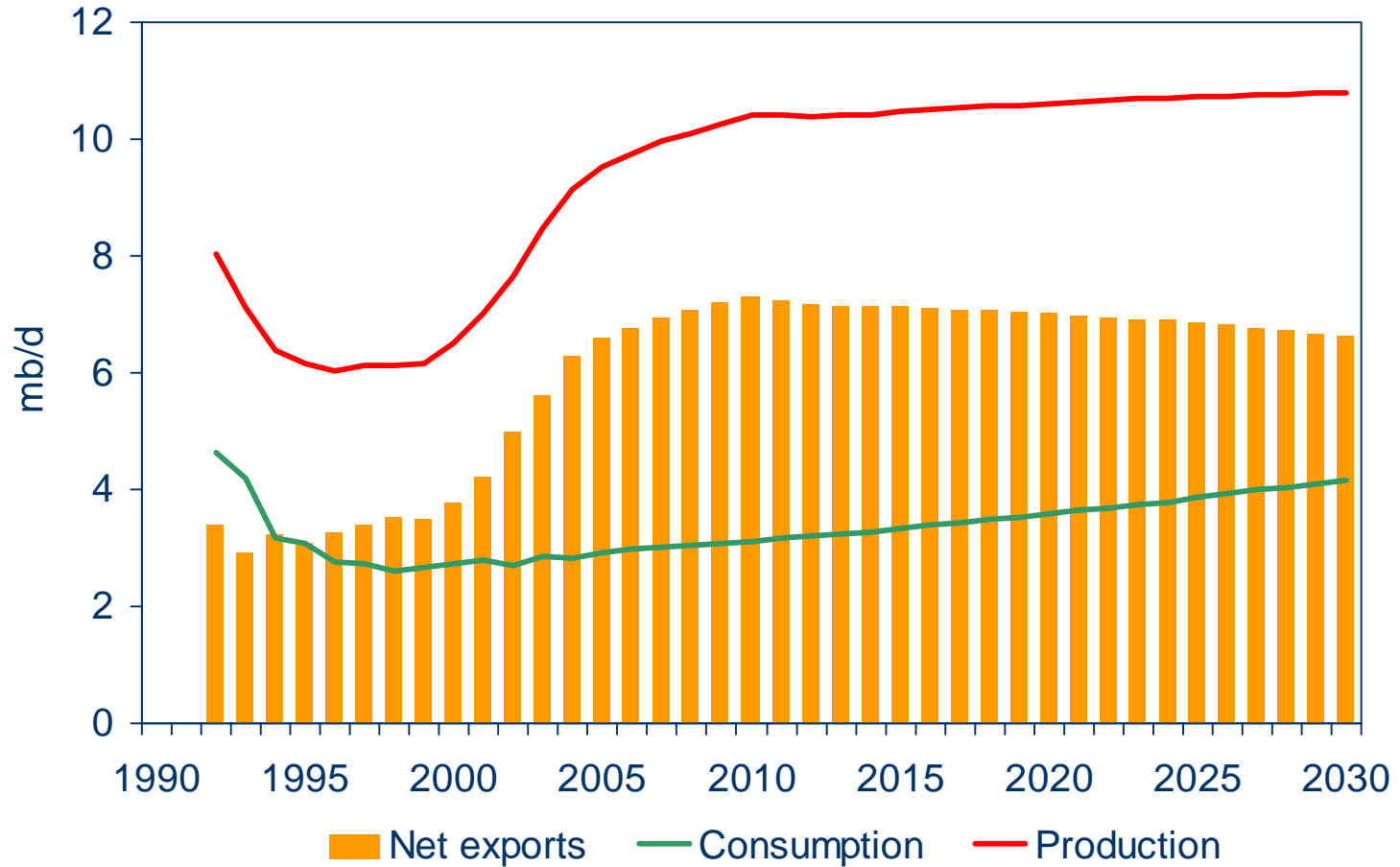
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Russian Oil Balance



Production is projected to slow, causing exports to peak by around the end of the current decade



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Russian Oil Production Prospects



Capacity additions will have to come more from new greenfield developments in W. Siberia & other, less mature basins



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Russian Oil Market Uncertainties

- Sustainability of production growth
- Impact on upstream investment of:
 - expected fall-back in oil prices on upstream
 - recent tax reforms on investment
- Export infrastructure constraints
- Industry restructuring and role of the state



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Russian Oil Industry Structure & the Role of the State

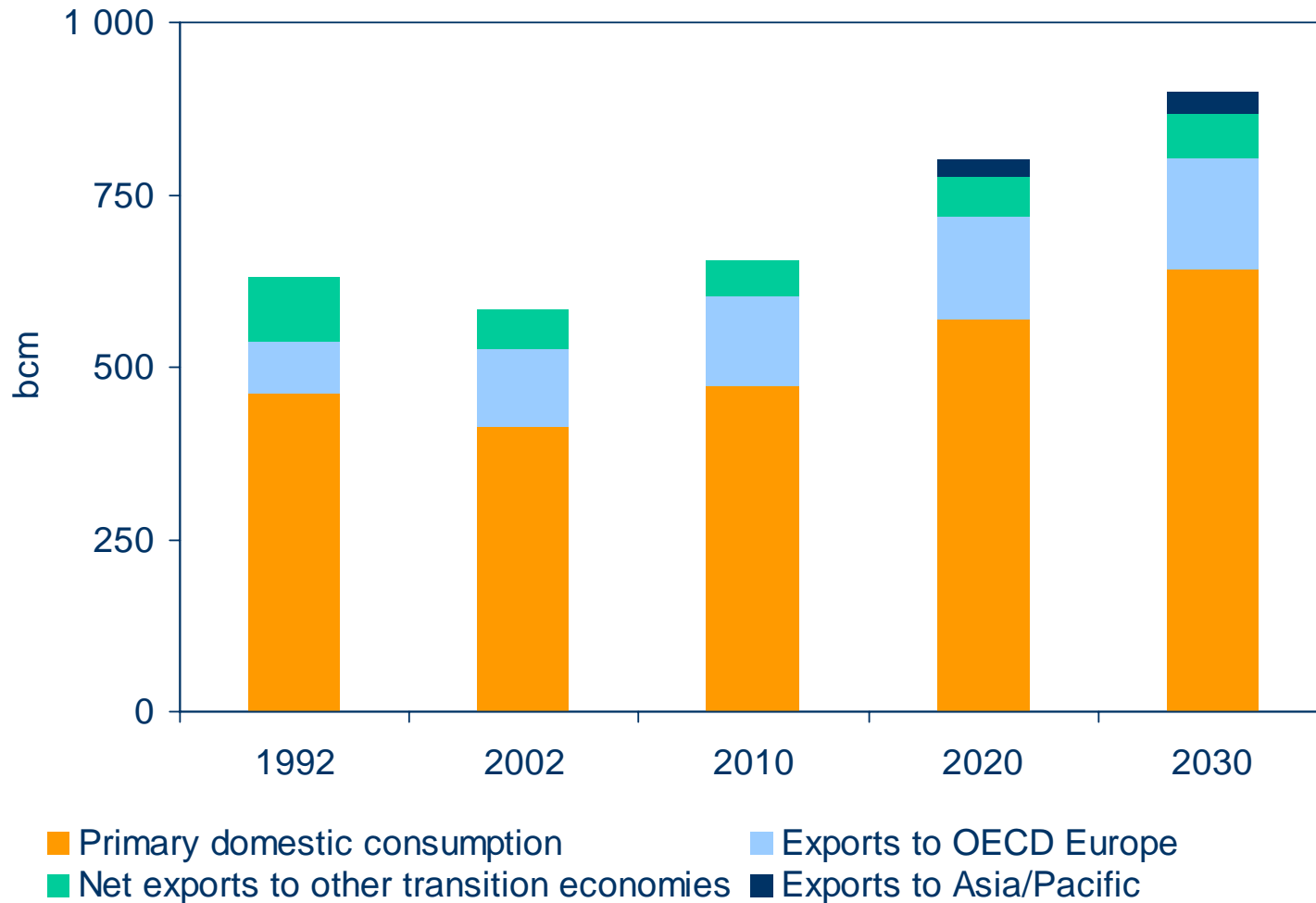
- The government is reasserting state control over the sector
- Private crude oil pipelines will not be permitted
- Transneft, the pipeline monopoly, will remain in state hands
- Taxes on producers are being increased and malpractices being pursued more vigorously
- Big new foreign stakes in Russian companies unlikely
- Back-door privatisation if Gazprom-Rosneft snaps up Yugansk stake



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Russian Gas Production



Higher Gazprom and independent production will meet both rising domestic and export demand



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Russian Gas Production Prospects



Russia will need to bring several new fields on stream to stem the decline from the three old super-giants



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Russian Gas Market Uncertainties

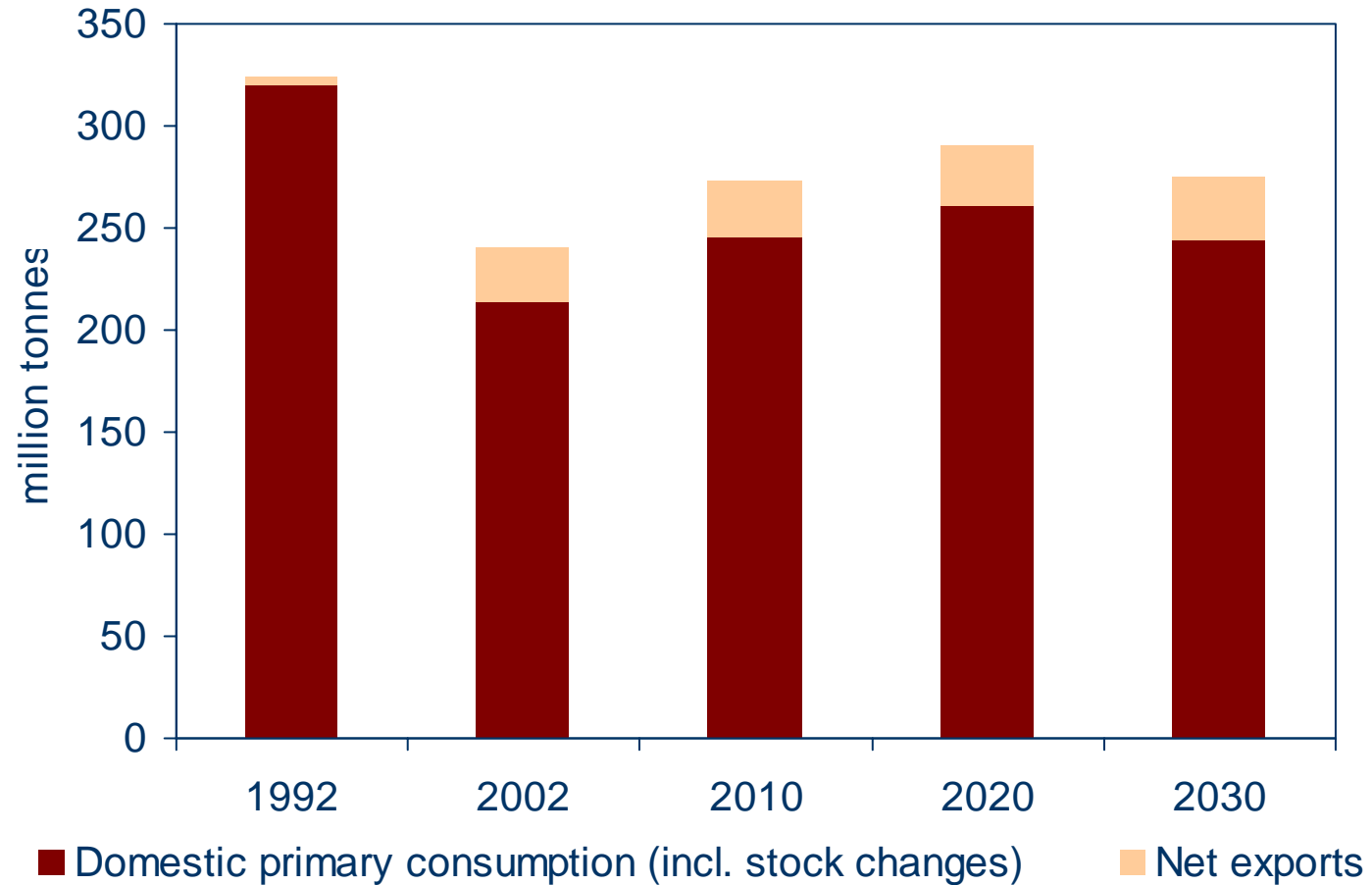
- Market reforms & stable business regime needed to secure the necessary financing and promote competition
- Tariff reform and elimination of subsidies, to raise domestic prices gradually to full-cost levels
- Access for independent producers to the national transmission system operated by Gazprom



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Russian Coal Balance



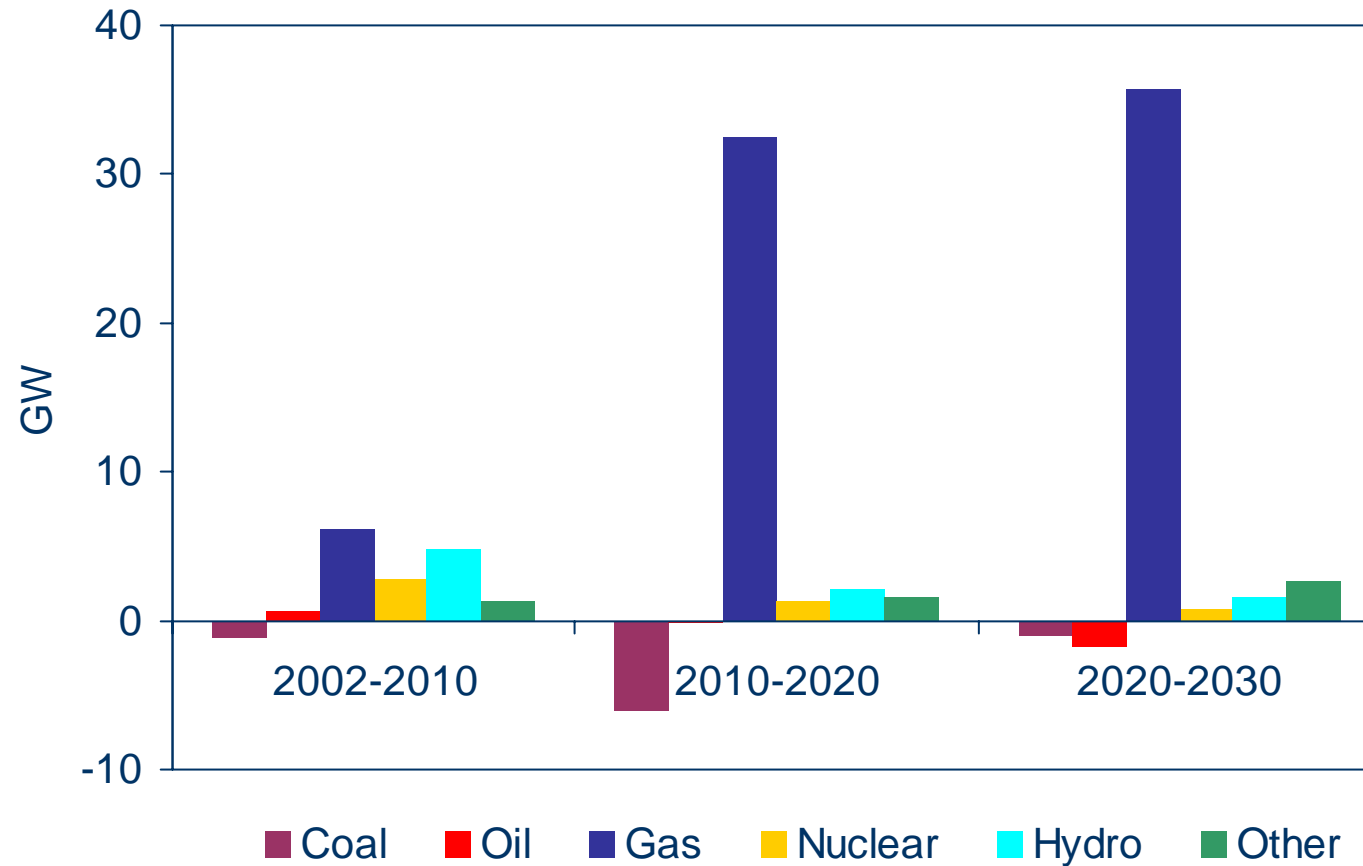
There is considerable scope for reducing energy intensity & improving the efficiency of energy use in Russian industry



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Net Additions to Russian Power- Generation Capacity



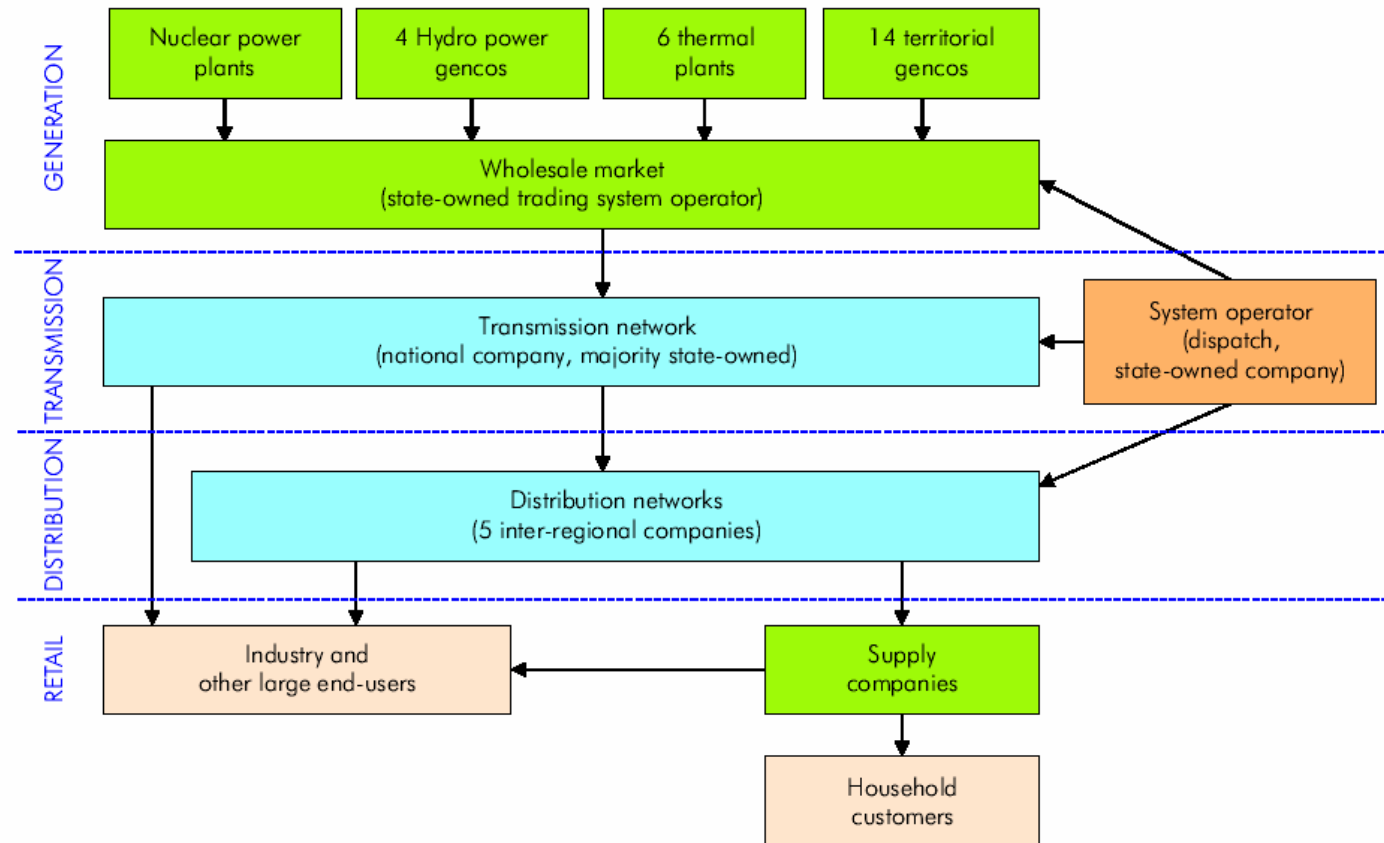
There is considerable scope for reducing energy intensity & improving the efficiency of energy use in Russian industry



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Proposed Structure of Russian Electricity Industry after Planned Reforms



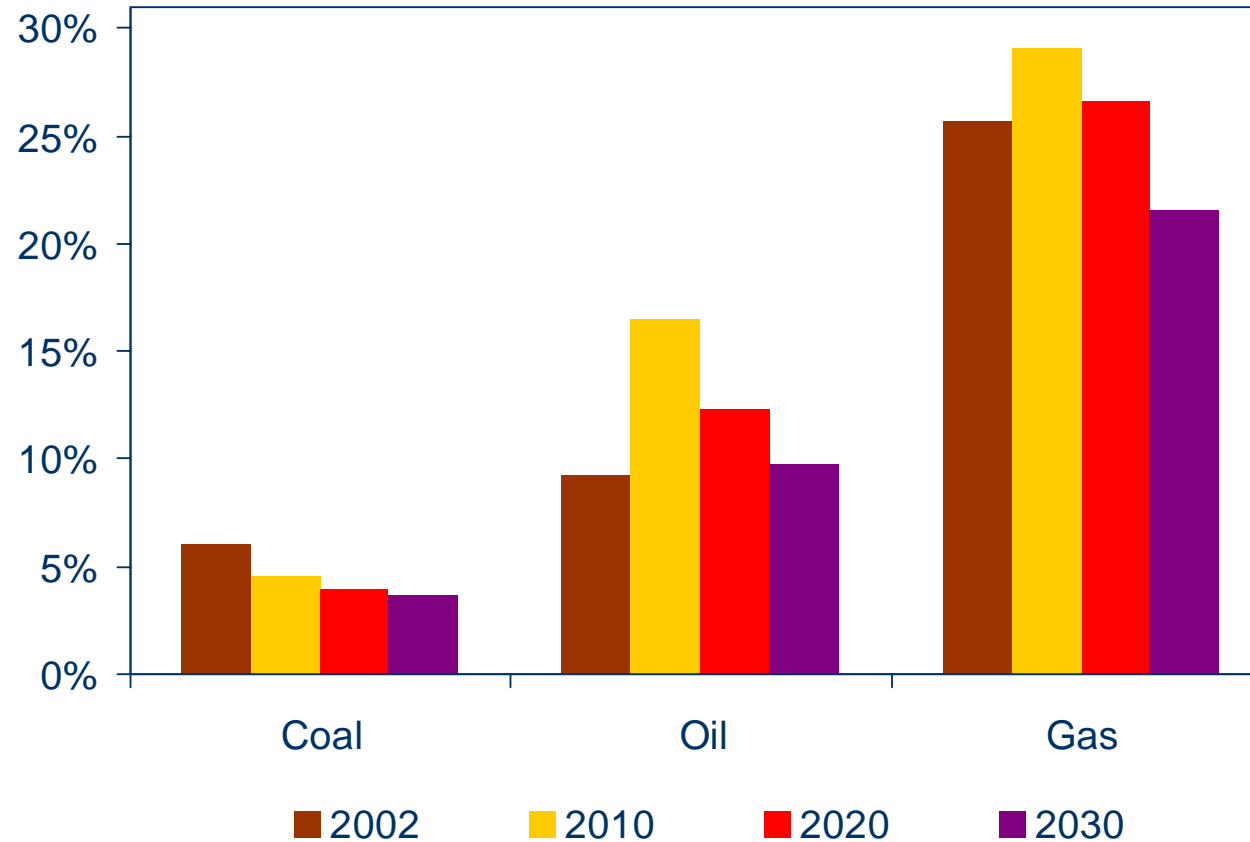
Effective competition in electricity supply is expected to boost system efficiency and attract much-needed investment



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Russian Fossil-Fuel Exports as Share of World Inter-regional Trade



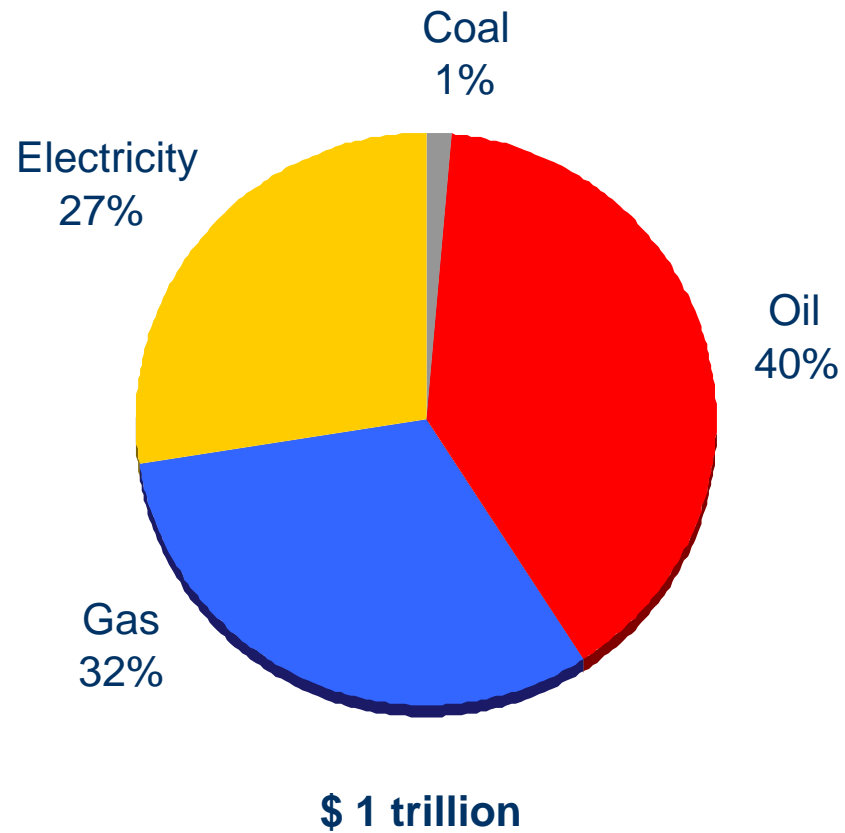
Russia will continue to play a central role in global energy supply and trade, with major implications for energy security



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Energy Investment Needs in Russia, 2003-2030



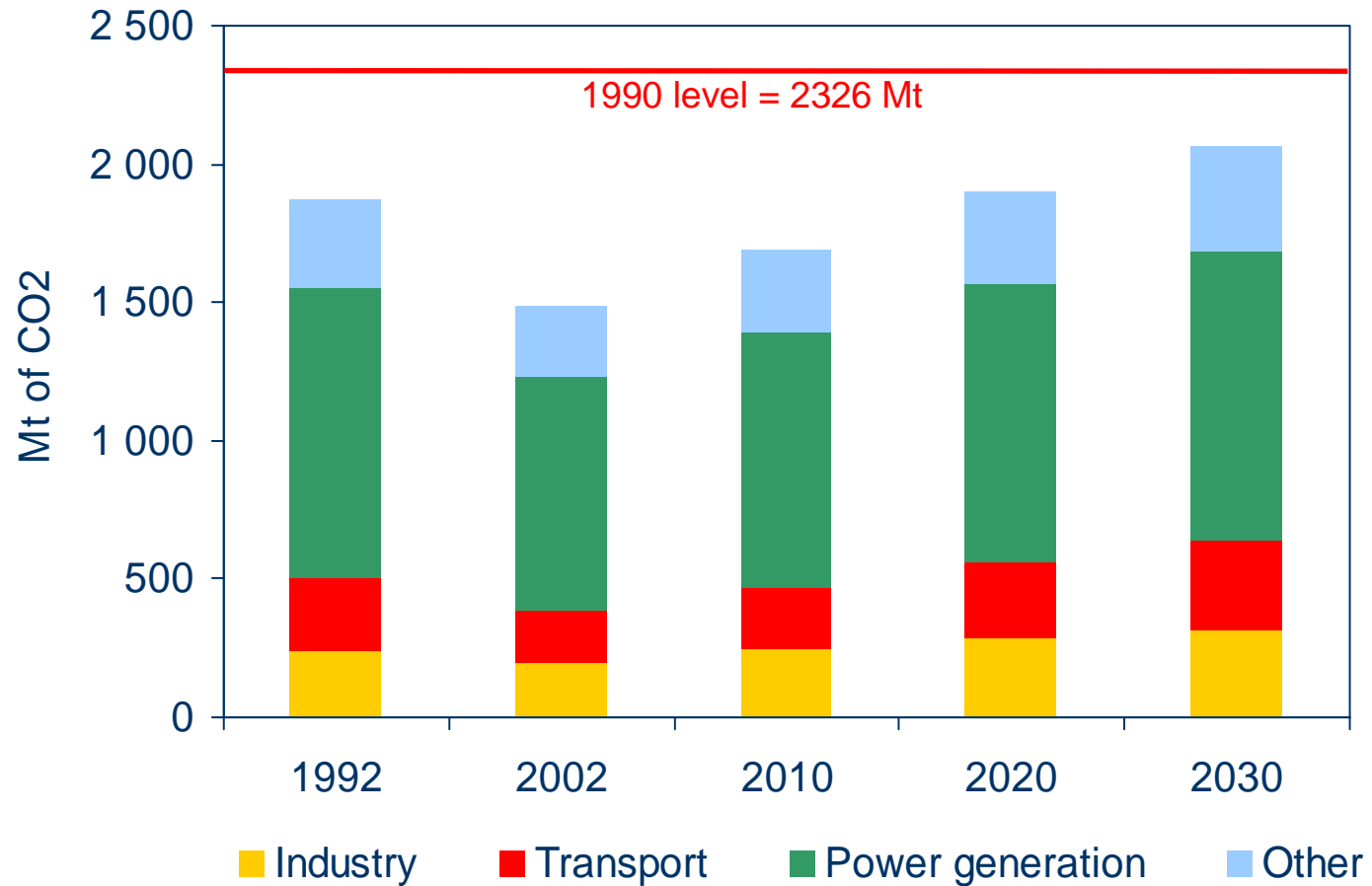
Export-oriented oil & gas projects will be easiest to finance



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Russian Energy-Related CO₂ Emissions



**Emissions increase, but not enough to reach the Kyoto ceiling,
allowing Russia to sell surplus emission credits**



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Russian Energy Trends: Alternative Policy Scenario



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Alternative Policy Scenario

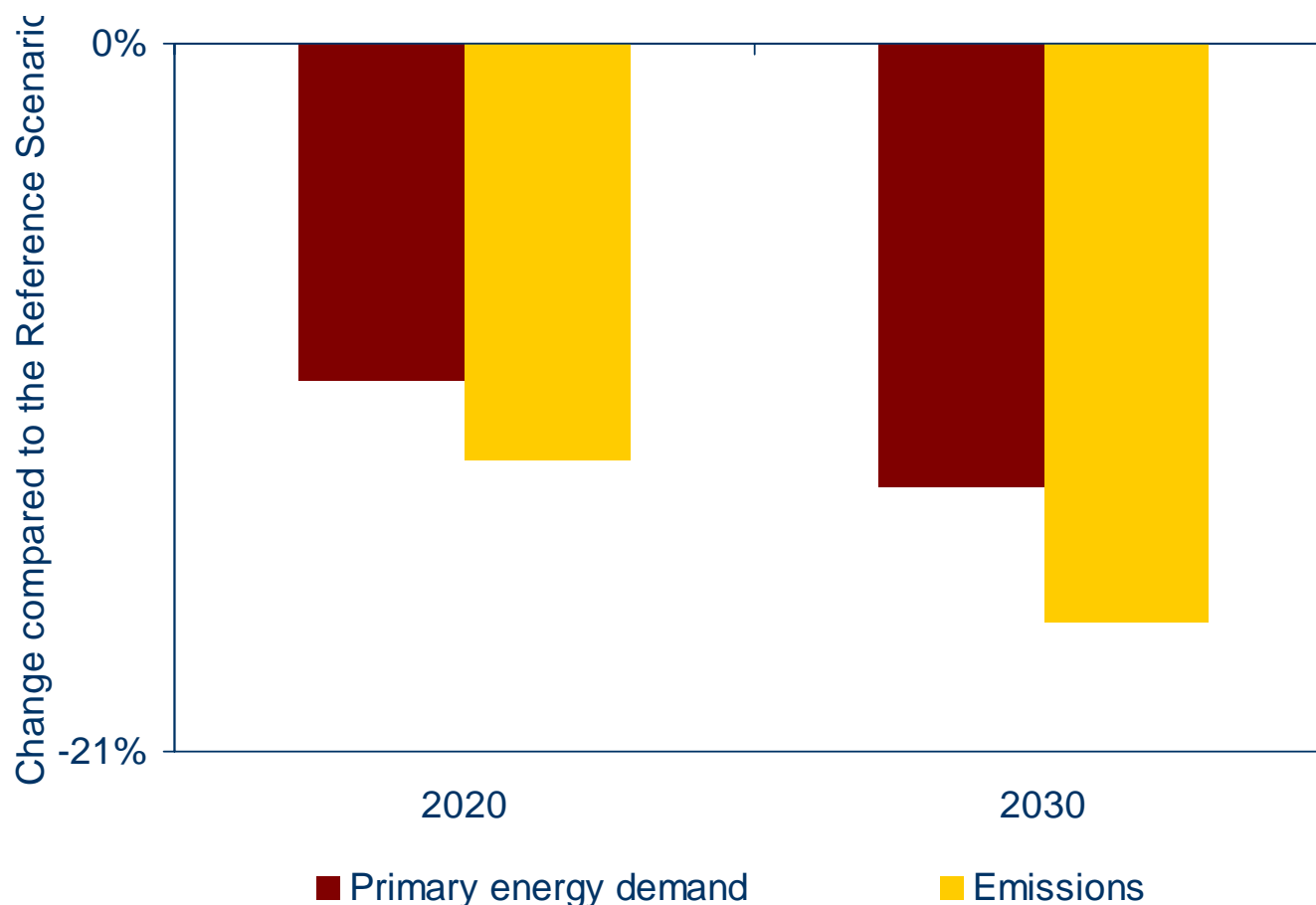
- Analyses impact of new environmental & energy-security policies worldwide
- Key assumptions for Russia:
 - More gas-fired and nuclear power generation, less coal
 - Fewer thermal losses in power generation & transmission
 - Stricter building codes & more efficient industrial equipment
- Basic macroeconomic & population assumptions as for Reference Scenario, but energy prices change



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Change in Primary Energy Use & CO₂ Emissions in the Alternative Scenario



New government policies cut demand and boost the use of lower or zero-carbon fuels, cutting emissions even more



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Summary & Conclusions



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Summary & Conclusions

- Russian economy has become more dependent on the oil & gas industry in recent years
- Russia will continue to play a central role in global energy supply and trade
- The prospects for Russian oil production are very uncertain
- Market reforms crucial to gas and electricity investment and supply prospects
- Energy investment of almost \$700 billion (2003-2030) – more than half for upstream oil & gas
- A stable and predictable business regime will be critical to energy financing