

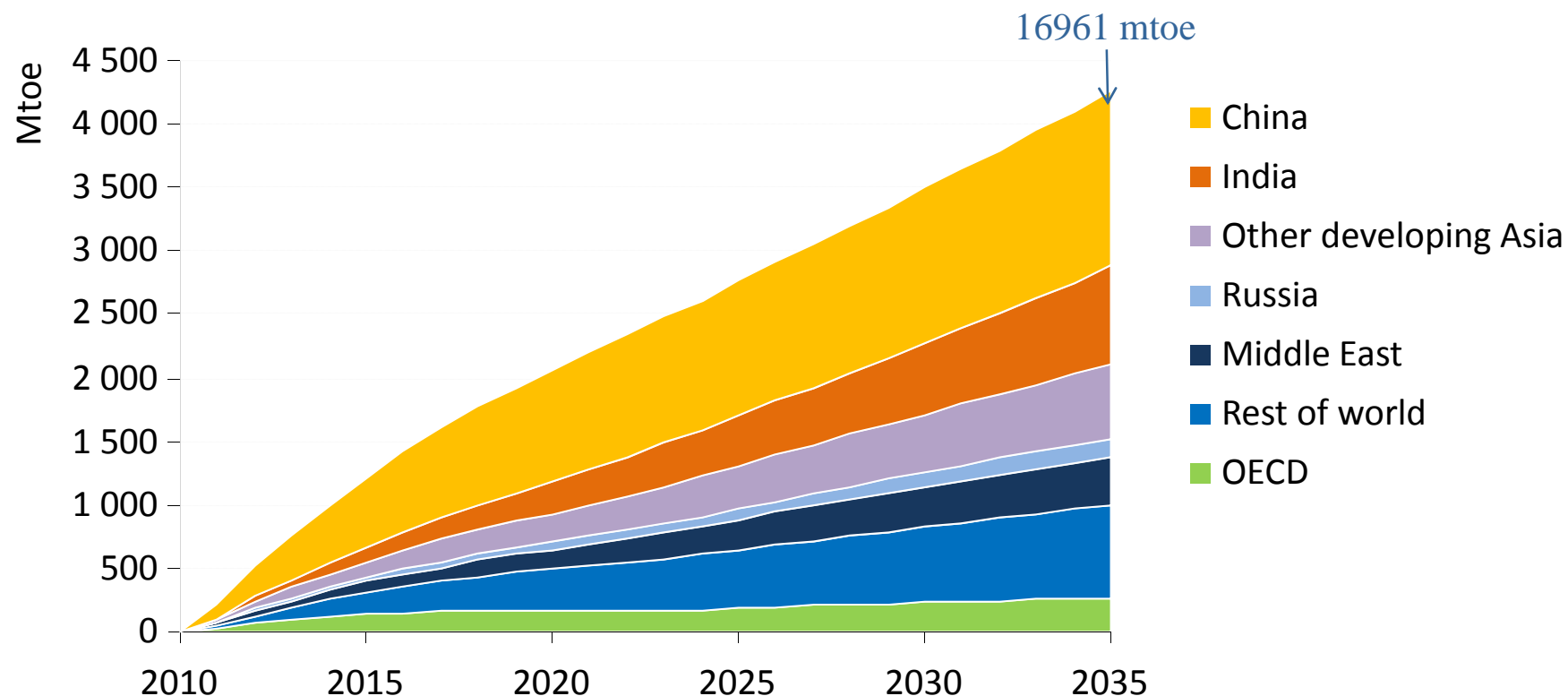
World Energy Outlook Russie et Energie

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International Energy Agency
GEP - AFTP
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Emerging economies continue to drive global energy demand

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Growth in primary energy demand - by region

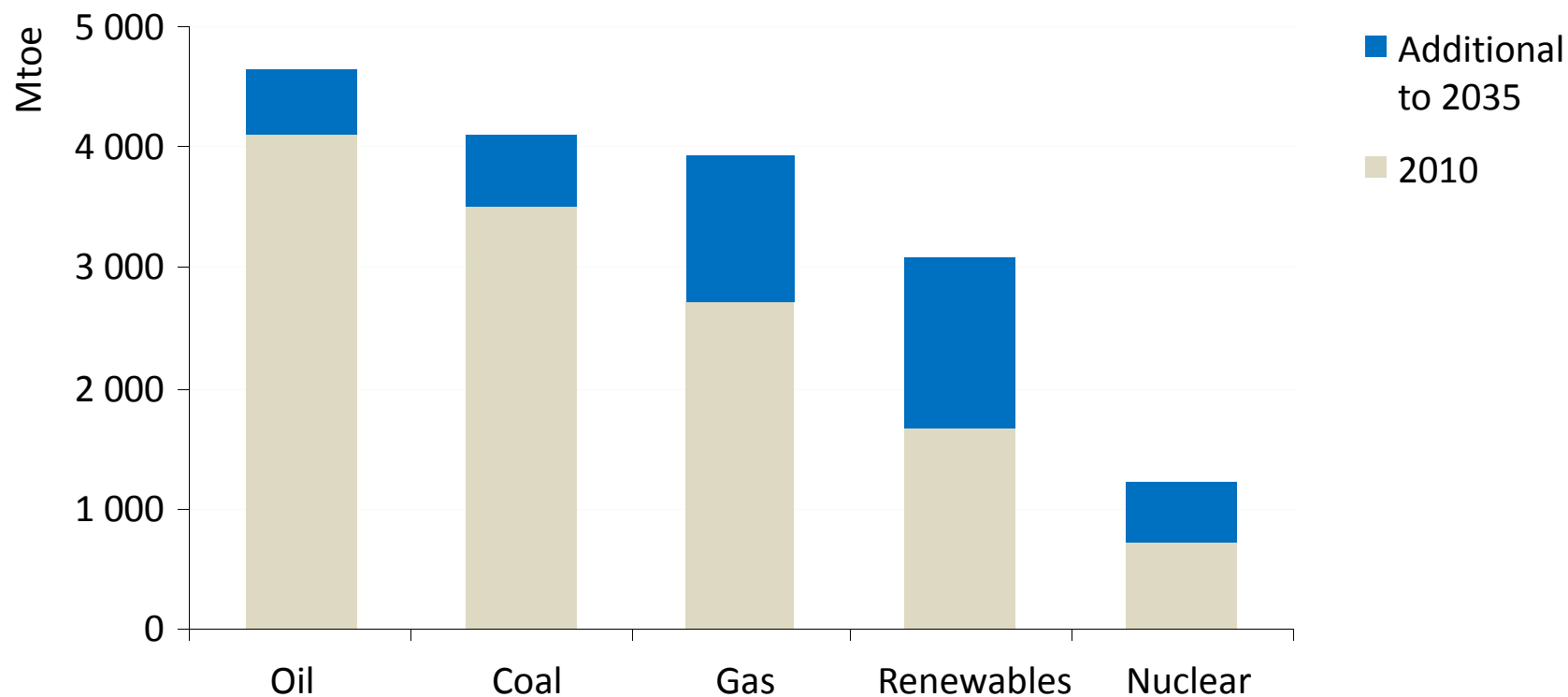


Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth

Natural gas & renewables become increasingly important

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World primary energy demand – by energy source

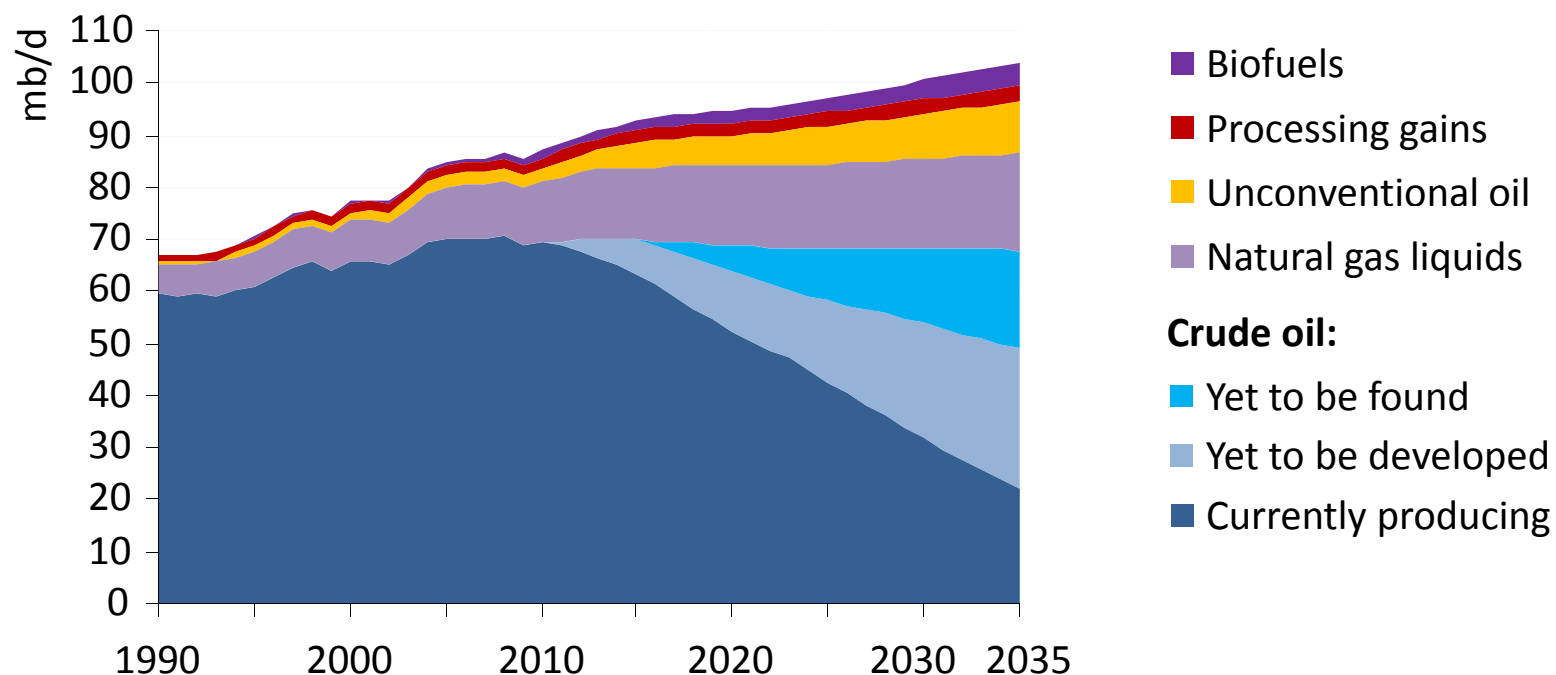


Renewables & natural gas collectively meet almost two-thirds of incremental energy demand in 2010-2035

Most new oil production capacity is needed to offset decline

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World liquids supply by type in the New Policies Scenario

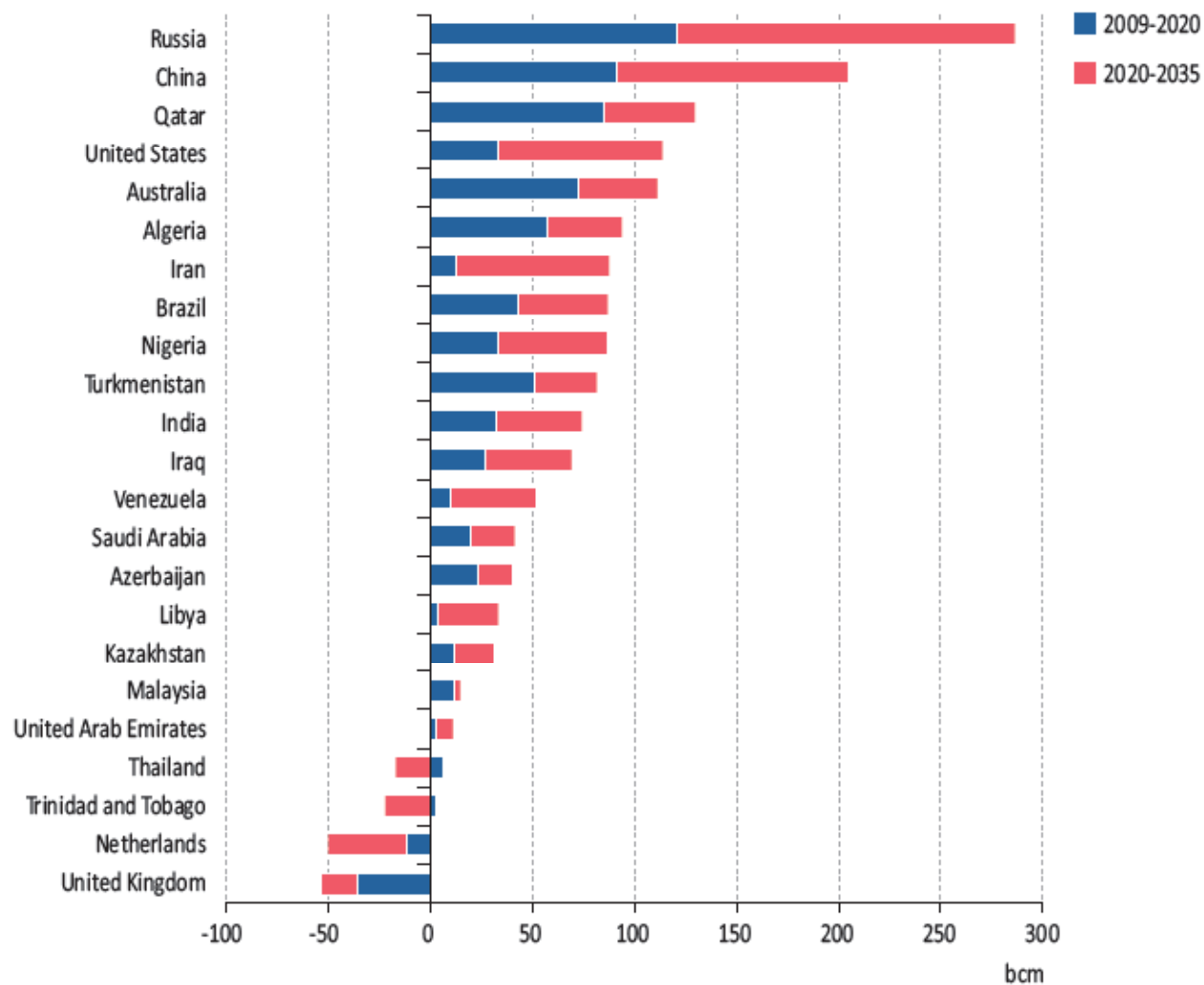


Decline at existing conventional fields amounts to 47 mb/d, twice current OPEC Middle East production; NGLs and unconventional production are the main sources of growth

Gas production – Russia leads the way

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Incremental gas production



Russia Energy Outlook

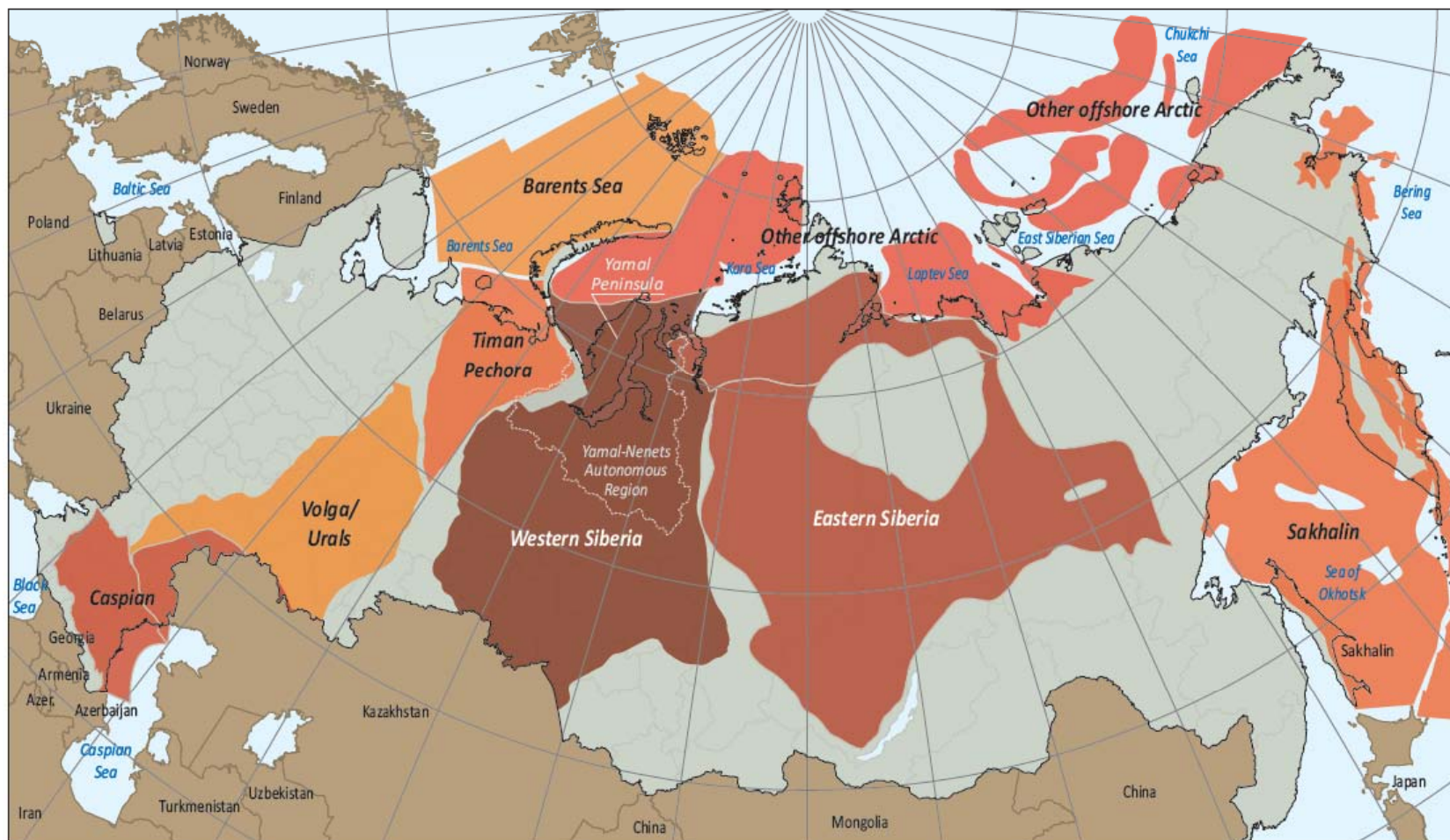
A Russian energy outlook: some key assumptions

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- **Three main scenarios (Current Policies, New Policies, 450), as well as multiple case studies**
- **GDP and population:**
 - *4.3% average annual GDP growth 2009-2015; 3.6% average for 2009-2035*
 - *Population decline slows, but not reversed, reaching 133 million in 2035*
- **Energy Strategy to 2030 provides guidance on policy, supplemented by sector programmes, policy measures and targets for energy efficiency**
- **Energy prices: average industrial gas prices reach ‘netback parity’ in 2020; more gradual real increases in residential gas and electricity prices.**

Supply projections not limited by energy resources

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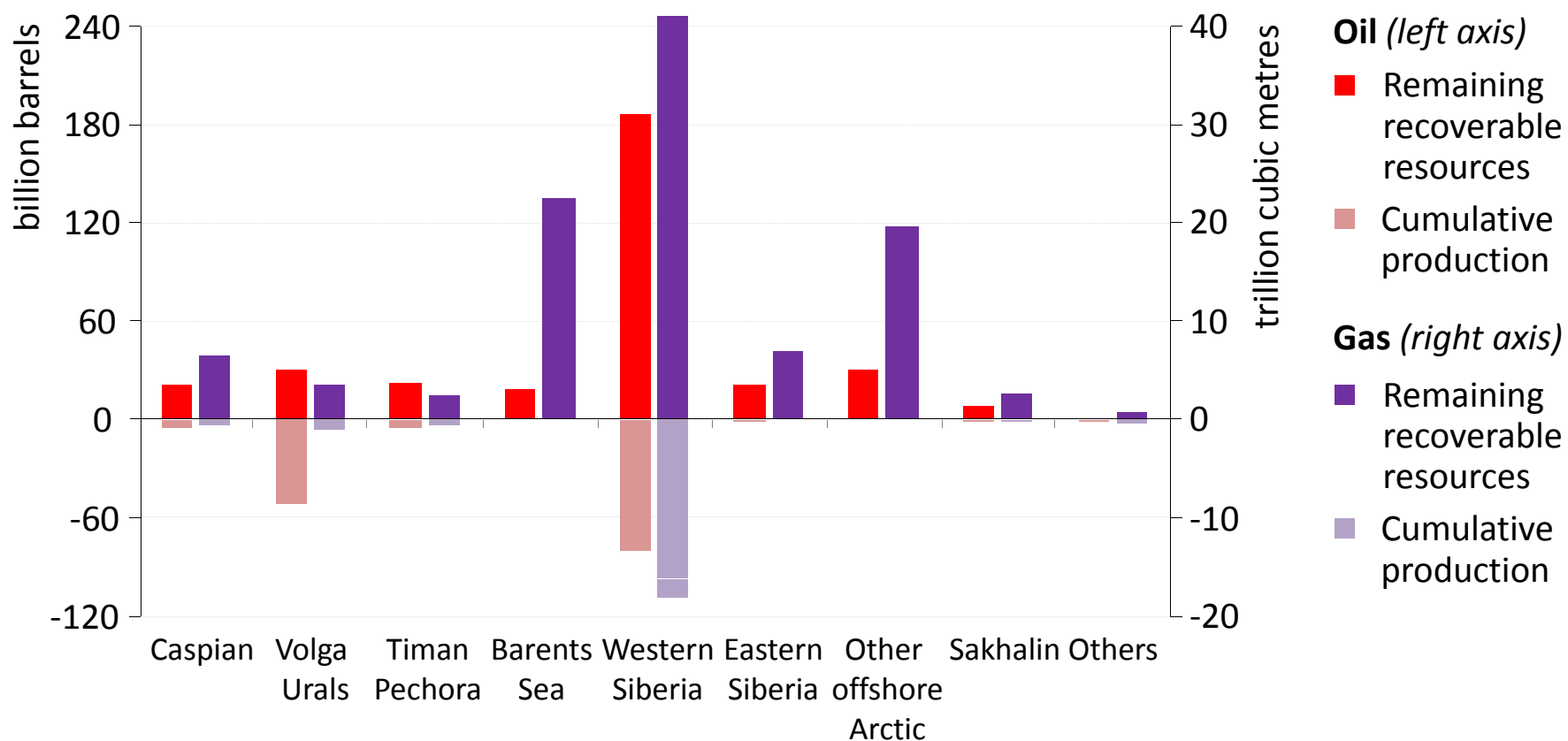


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Russia's resources are sufficient to underpin its continuing role as a major producer and exporter throughout the period to 2035 and beyond.

Not far to look for the next generation of Russian oil and gas fields

Conventional oil and gas resources in various Russian regions, end-2010

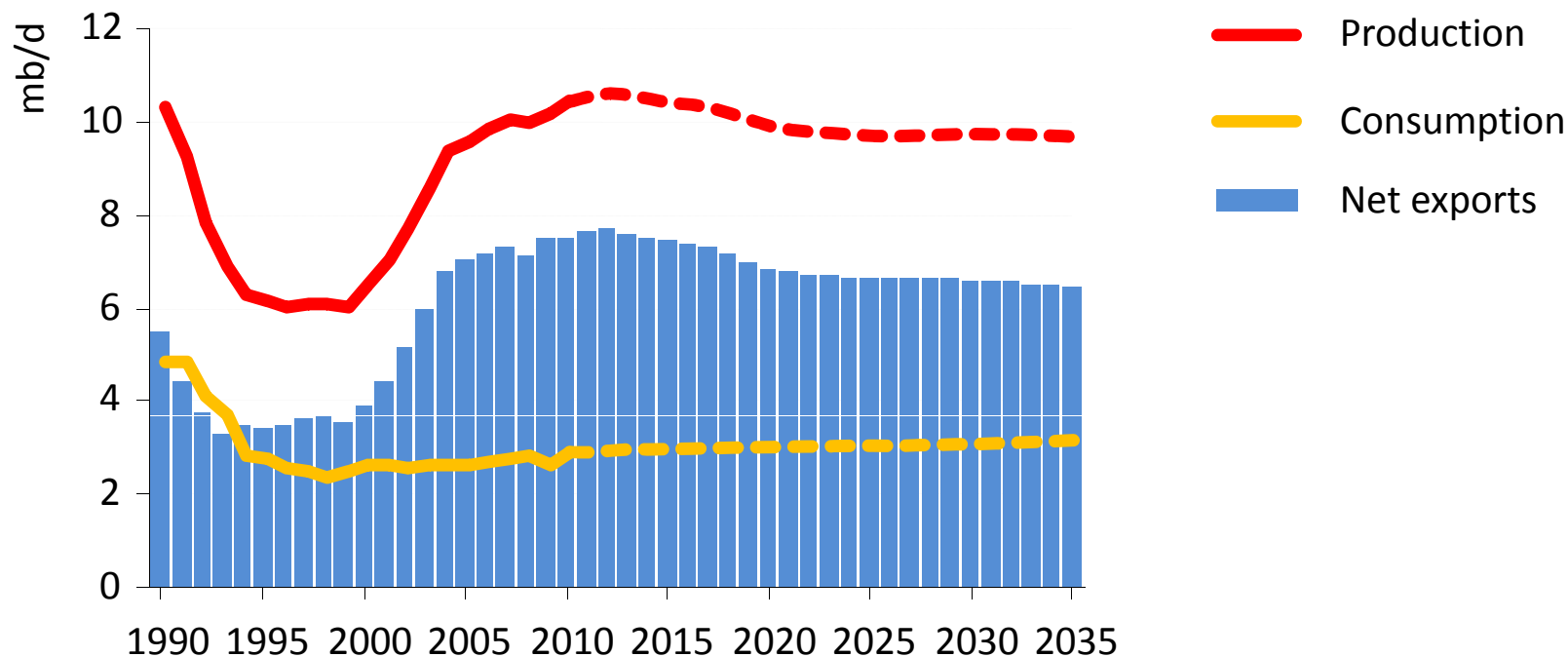


The bulk of Russia's resources are in the core producing region of Western Siberia, but East Siberia, the Caspian, the Barents and other Arctic seas are also very promising

Keeping oil output close to 10 mb/d will require a responsive tax regime

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Russia's oil balance

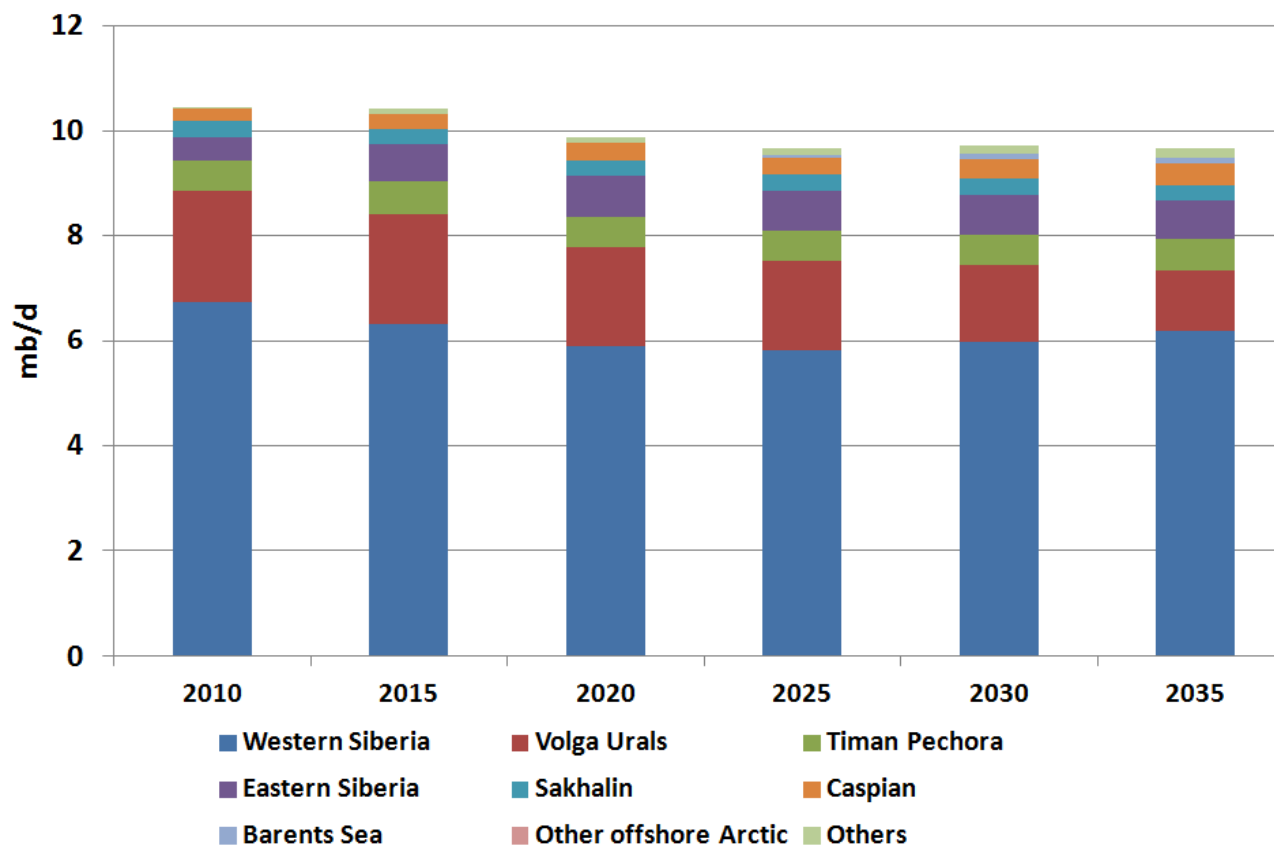


Western Siberia still accounts for two-thirds of production in 2035: output from this area will depend on investment in new, smaller fields and in enhanced oil recovery at existing fields

Russian oil production slightly declining

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Russian oil production

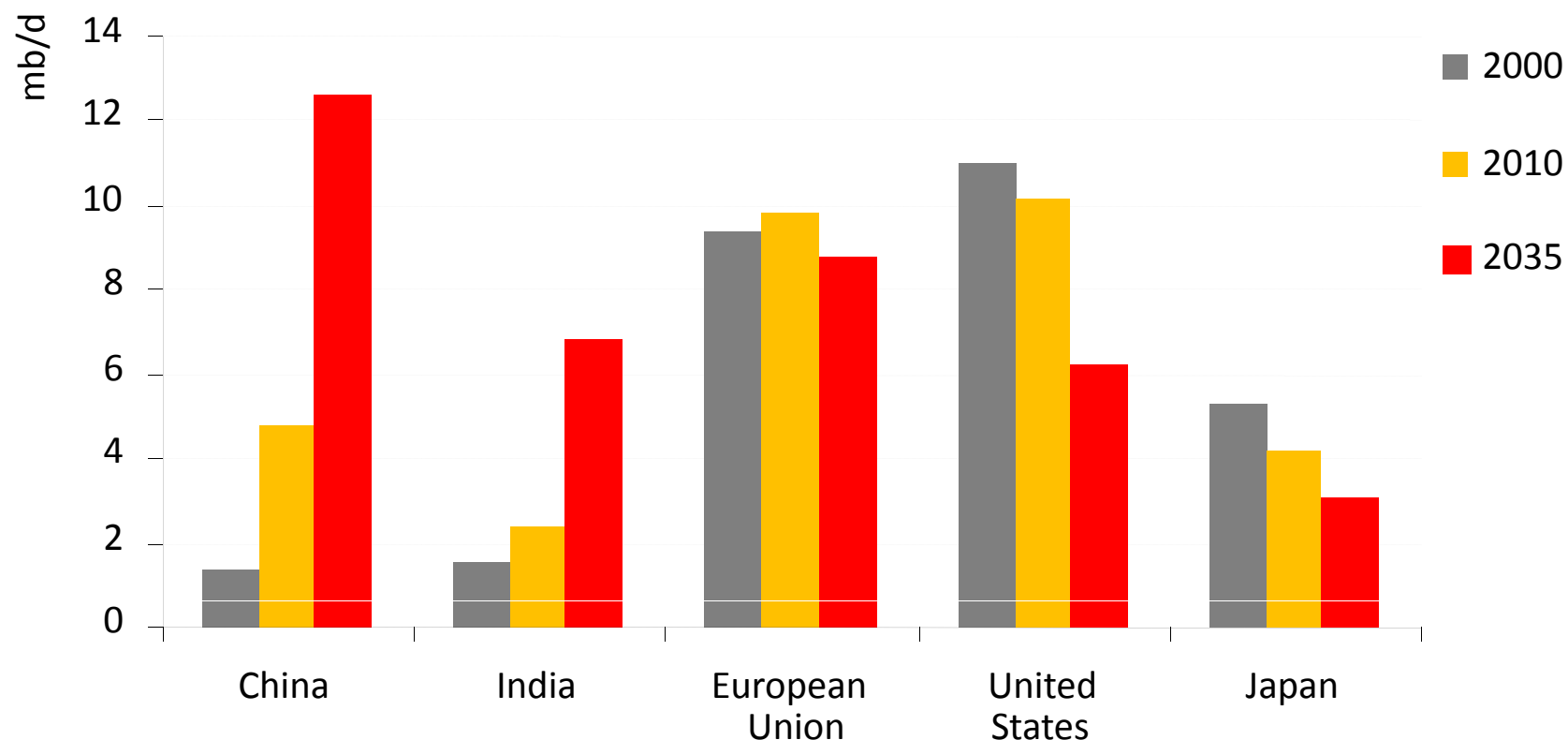


Western Siberian production remains buoyant, while Eastern Siberia and the Caspian basin realise their potential for significant production increases

Changing oil import needs point to a new balance in Russian oil exports

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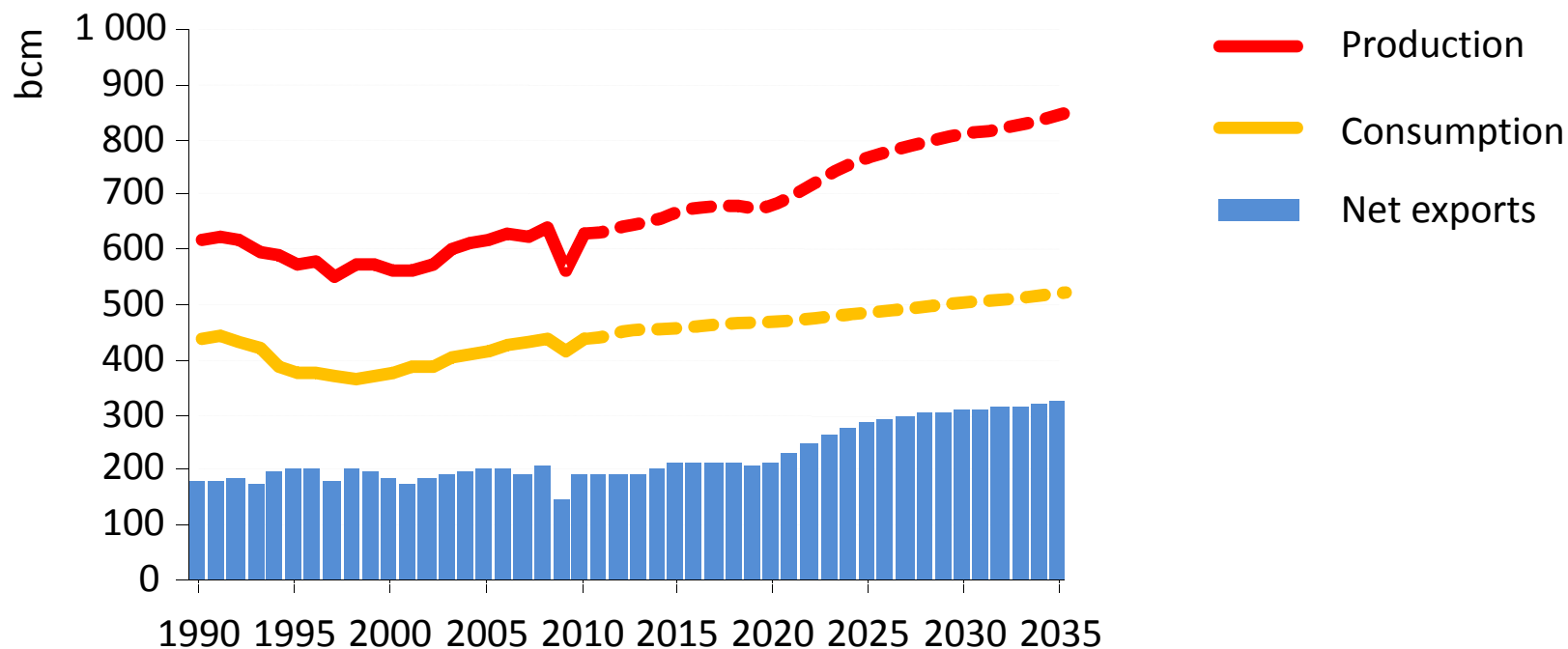
Net imports of oil



Even as Russian oil exports decline from 7.5 mb/d in 2010 to 6.4 mb/d in 2035, new routes create a more diverse and flexible oil export system with direct access to Asian markets

Russian gas output and exports are poised for further growth

Russia's natural gas balance

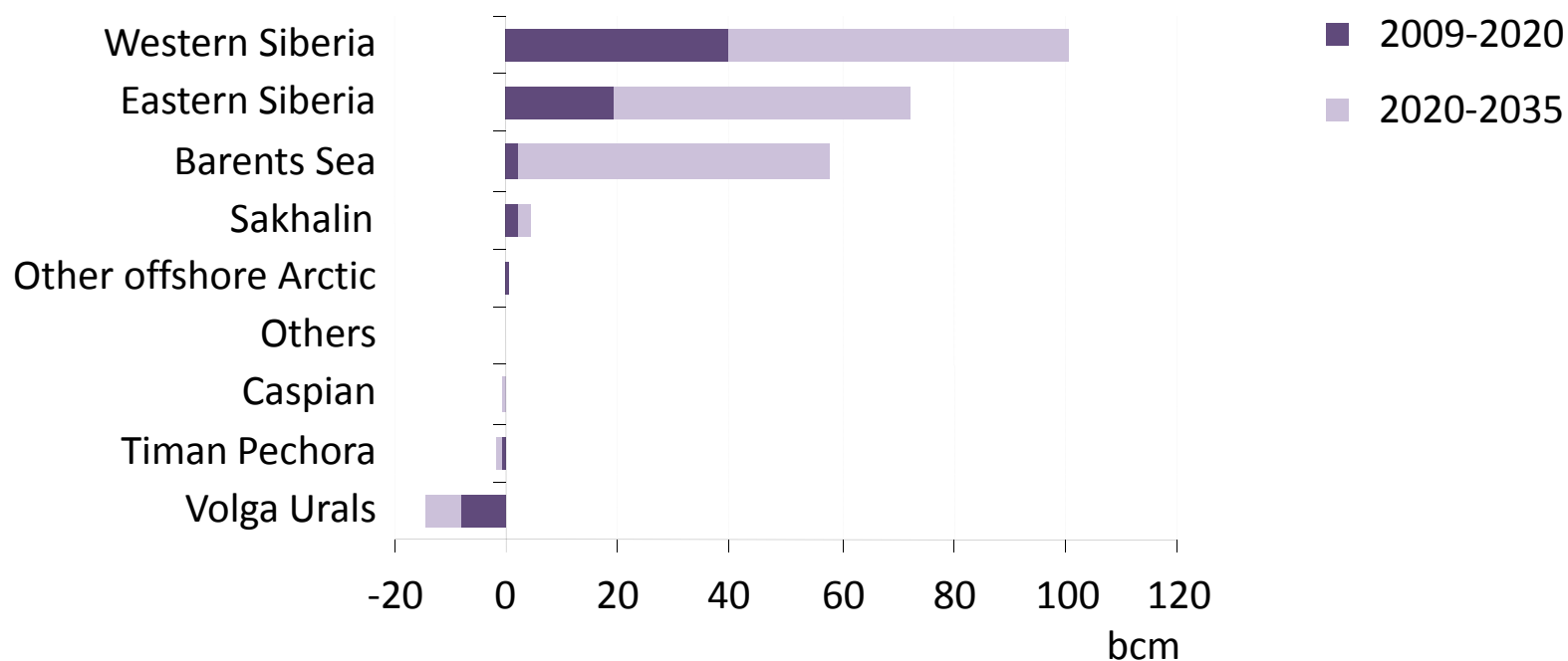


Output increases from 637 bcm in 2010 to 860 bcm in 2035, although the next generation of Russian gas production is higher-cost, more difficult technically and often even more remote

The Yamal peninsula becomes the new anchor of Russian supply

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Change in Russian gas production by region , 2009-2035



Production from Yamal helps to compensate for expected declines elsewhere in Western Siberia, with output pushed higher by developments in the Barents Sea and Eastern Siberia

Prospects for natural gas export flows

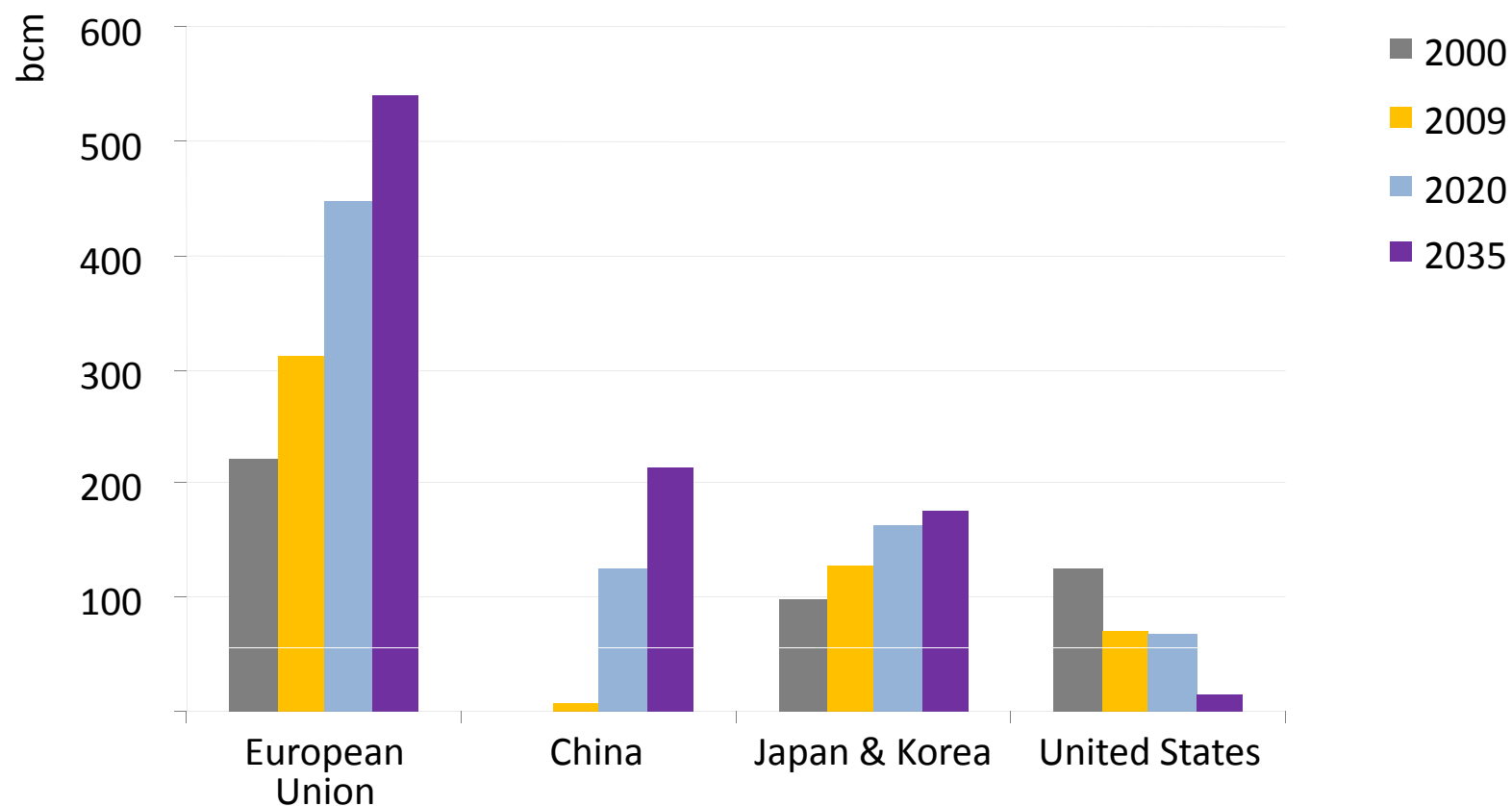
Russian gas fields and infrastructure



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New dynamics of gas markets create openings and risks for Russia

Net total imports of natural gas

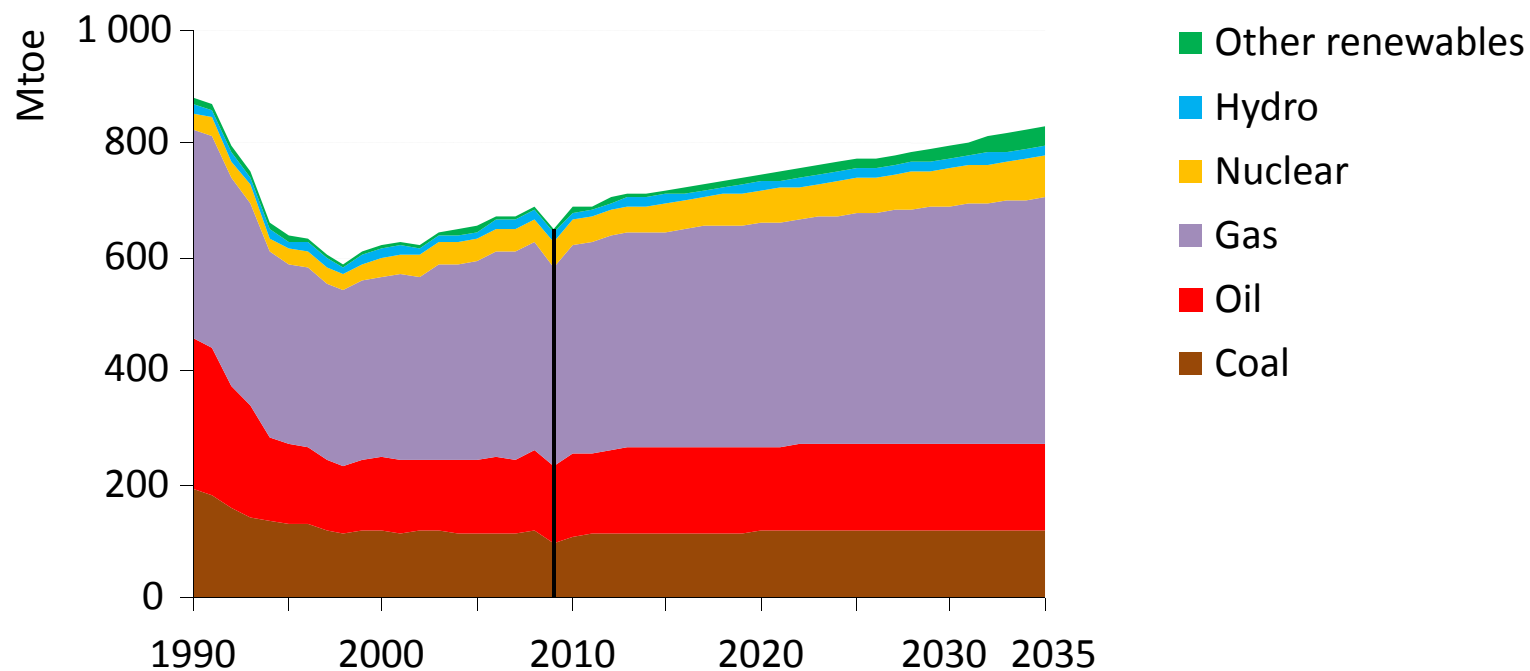


Despite competitive pressures, in 2035 Russia provides more than 30% of the gas imported by the EU (170 bcm) and by China (75 bcm), and 20% of imports to Japan and Korea (35 bcm)

Fossil fuels are set to continue to dominate Russia's energy mix

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Primary energy demand in Russia by fuel

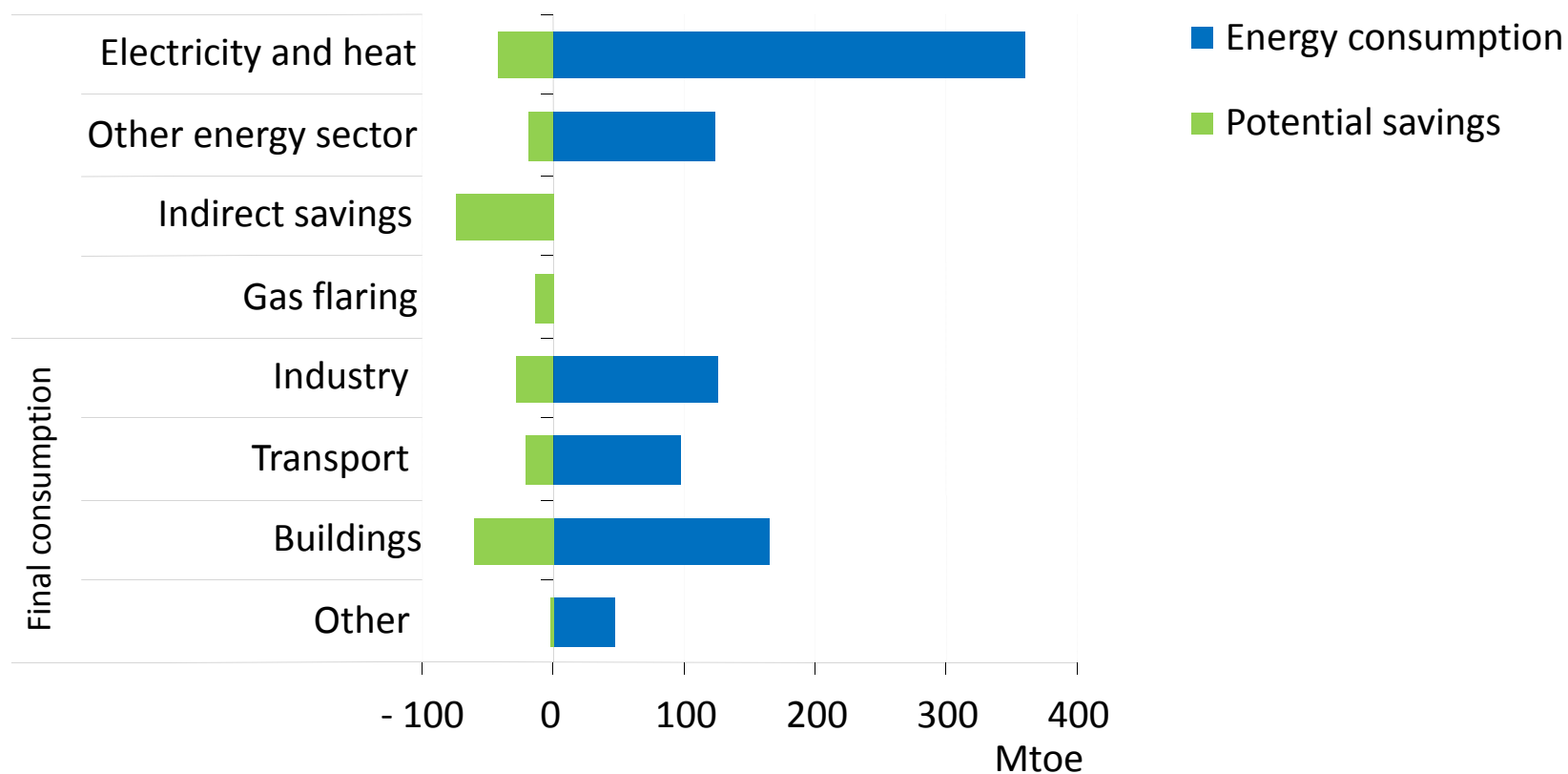


***The share of fossil fuels in the primary energy mix falls from 91% in 2009 to 83% in 2035.
Even with rising domestic prices, natural gas keeps its share above 50%***

Realising Russia's potential for energy savings would have a big impact

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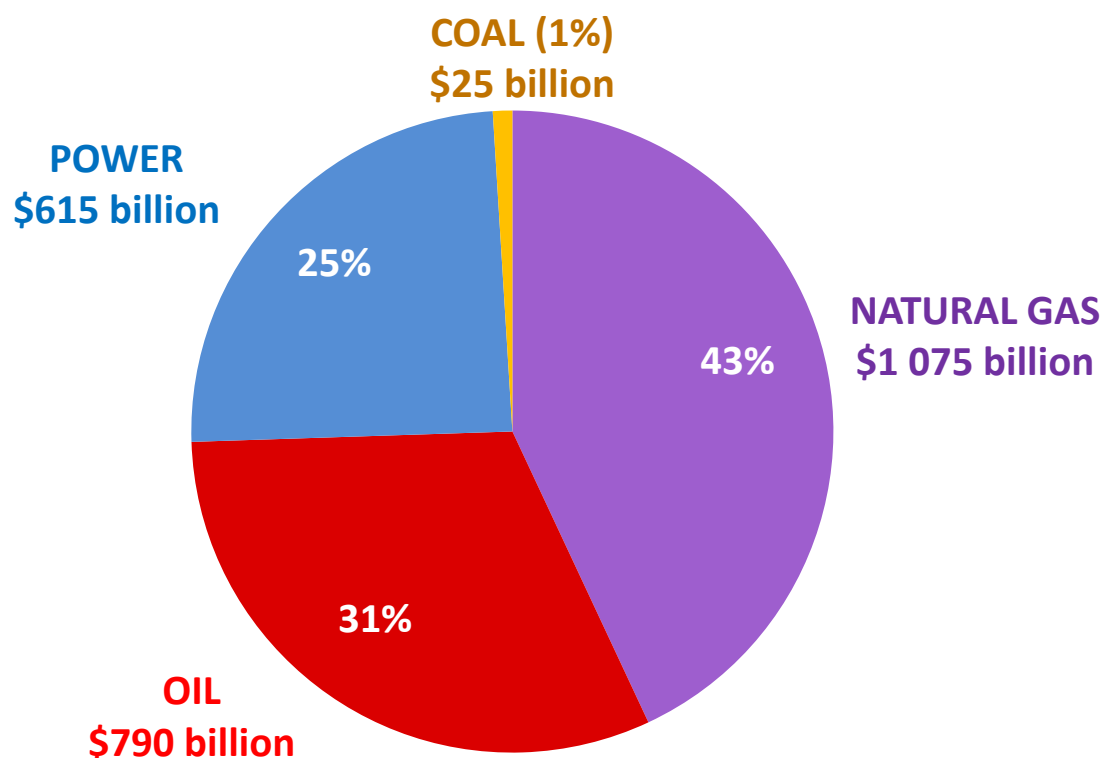
Energy savings from raising efficiency to comparable OECD levels, 2008



The current international market value of the primary resources that could be saved by deploying more efficient energy technologies is about \$70 billion

Huge investments are needed in Russia's energy sector

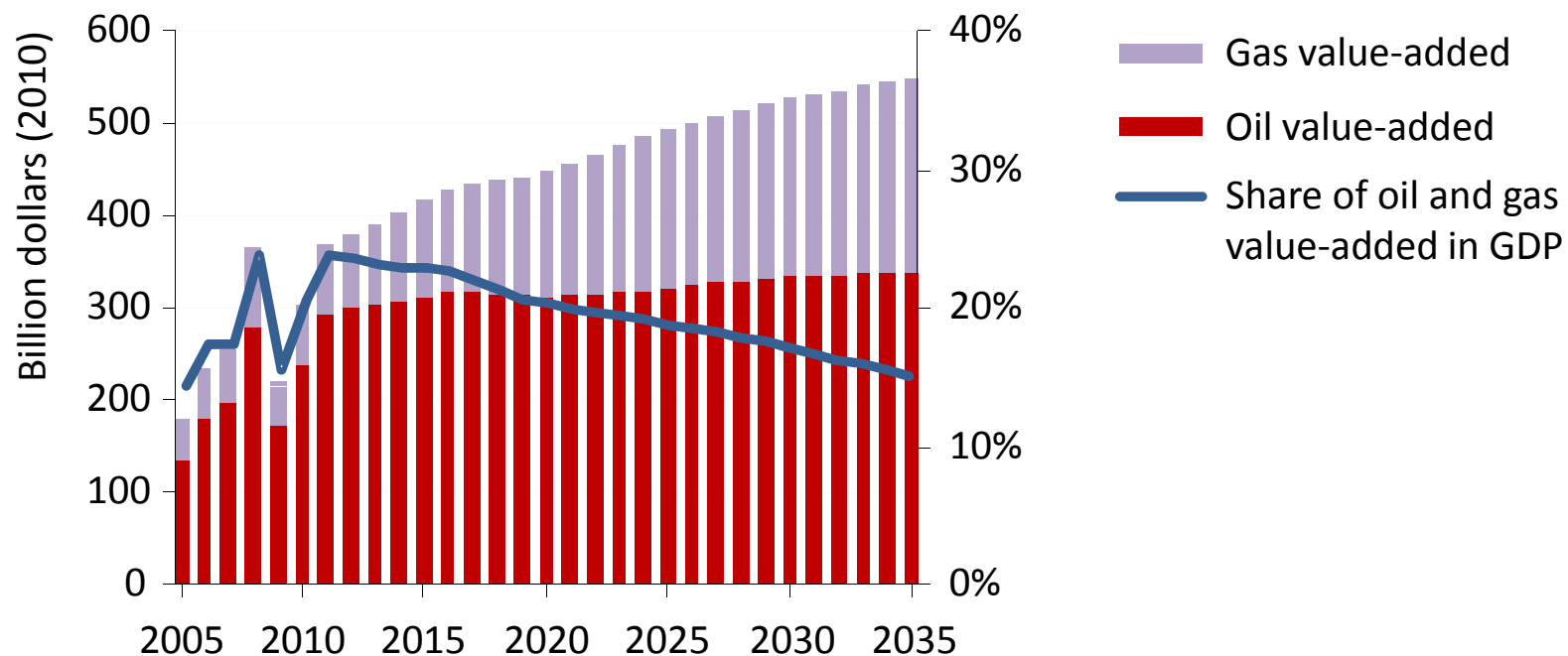
Cumulative investment requirement in Russian energy supply, 2011-2035



Investment needs total almost \$2.5 trillion, or just under \$100 billion per year on average, the bulk of it in the upstream oil & gas sectors

The Russian economy remains dependent on oil & gas

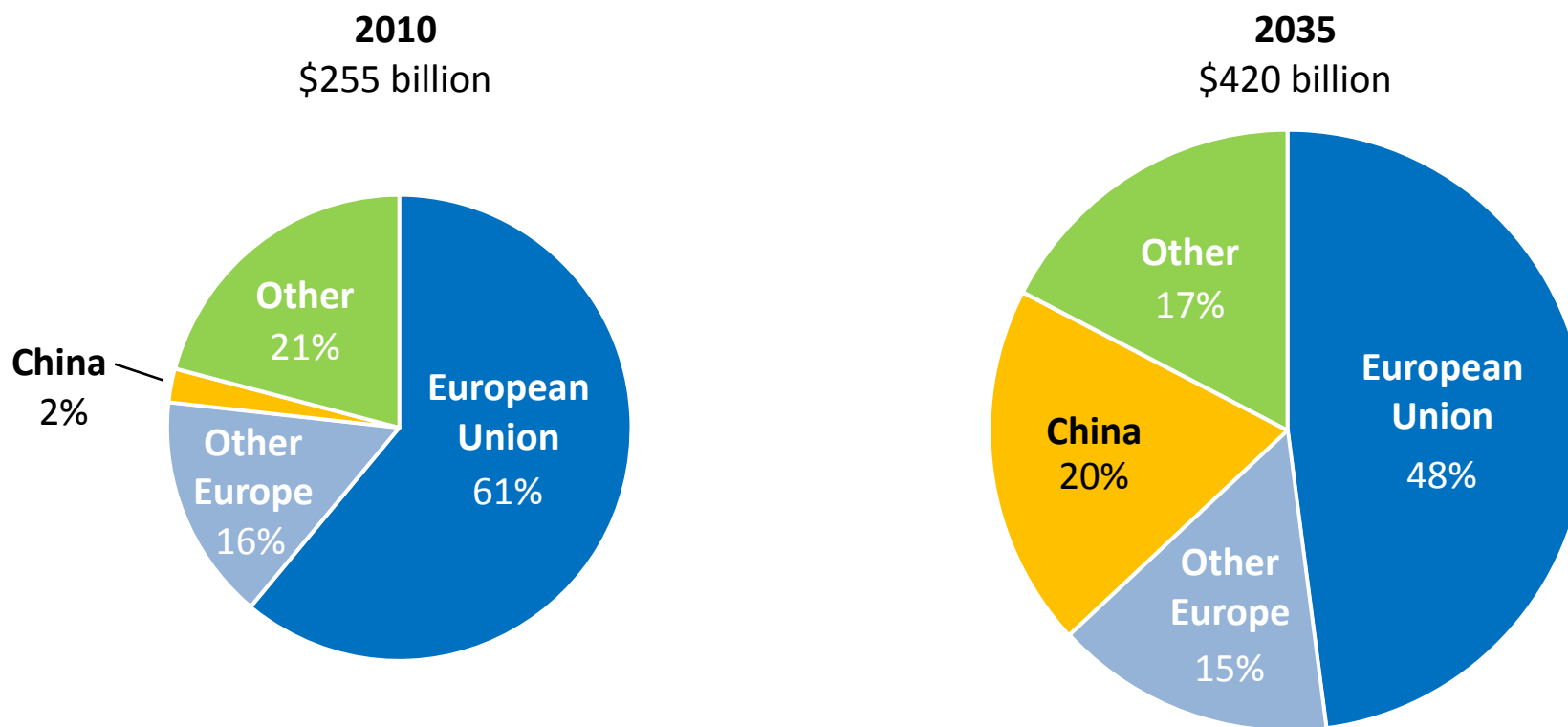
Estimated share of oil and gas in Russian GDP



The contribution of oil & gas to Russia's GDP declines from 24% in 2011 to 15% in 2035, but this gradual decrease means that the economy remains vulnerable to external shocks

Diversity of Russian export markets brings diversity of revenue

Russian revenue from fossil fuel exports



An increasing share of Russian exports go eastwards to Asia, providing Russia with diversity of markets and revenues

Merci de votre attention.

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