Russian Energy Sector: On The Crossroad

Dr. Tatiana Mitrova
Head of Oil and Gas Department
Energy Research Institute of the Russian Academy of Sciences

Moscow
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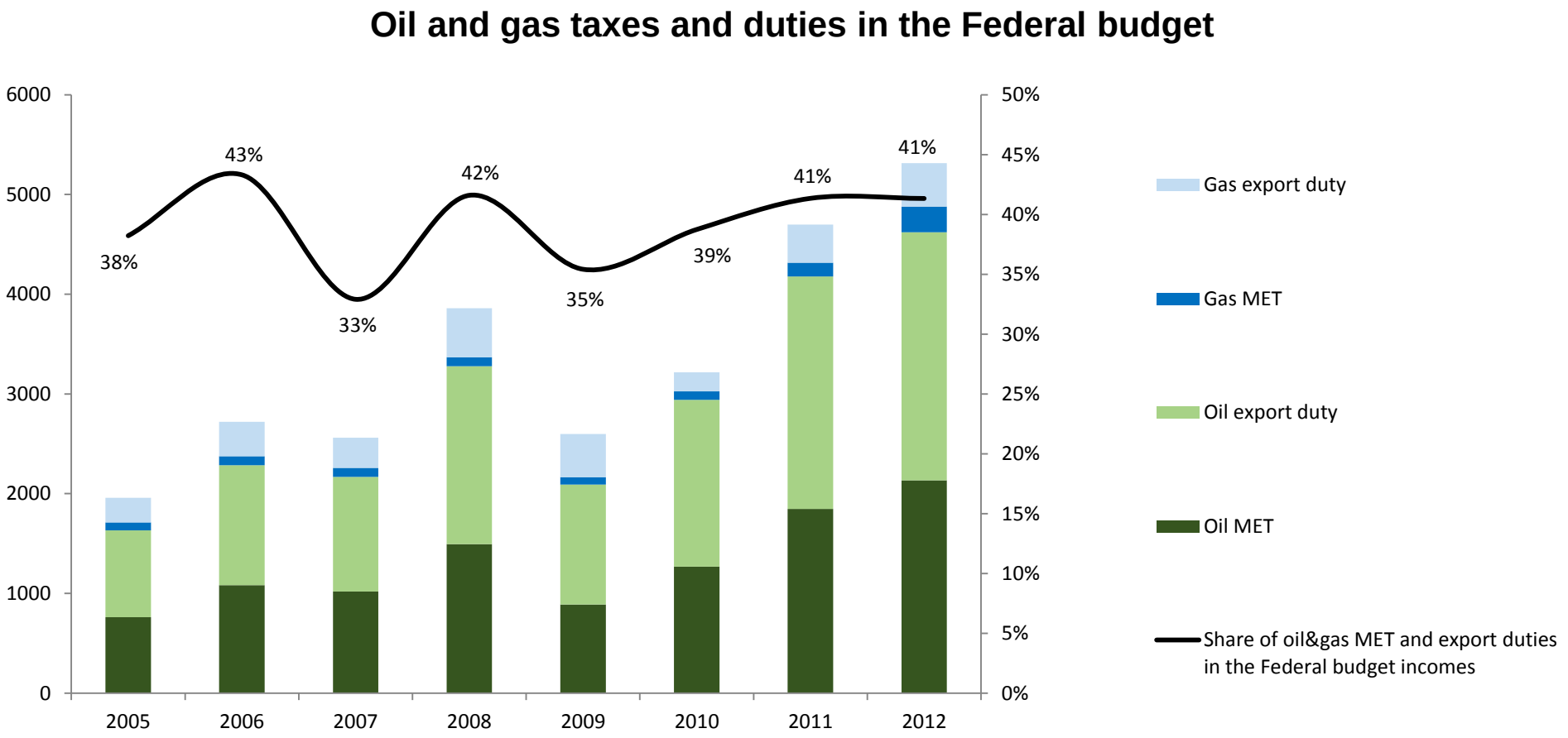
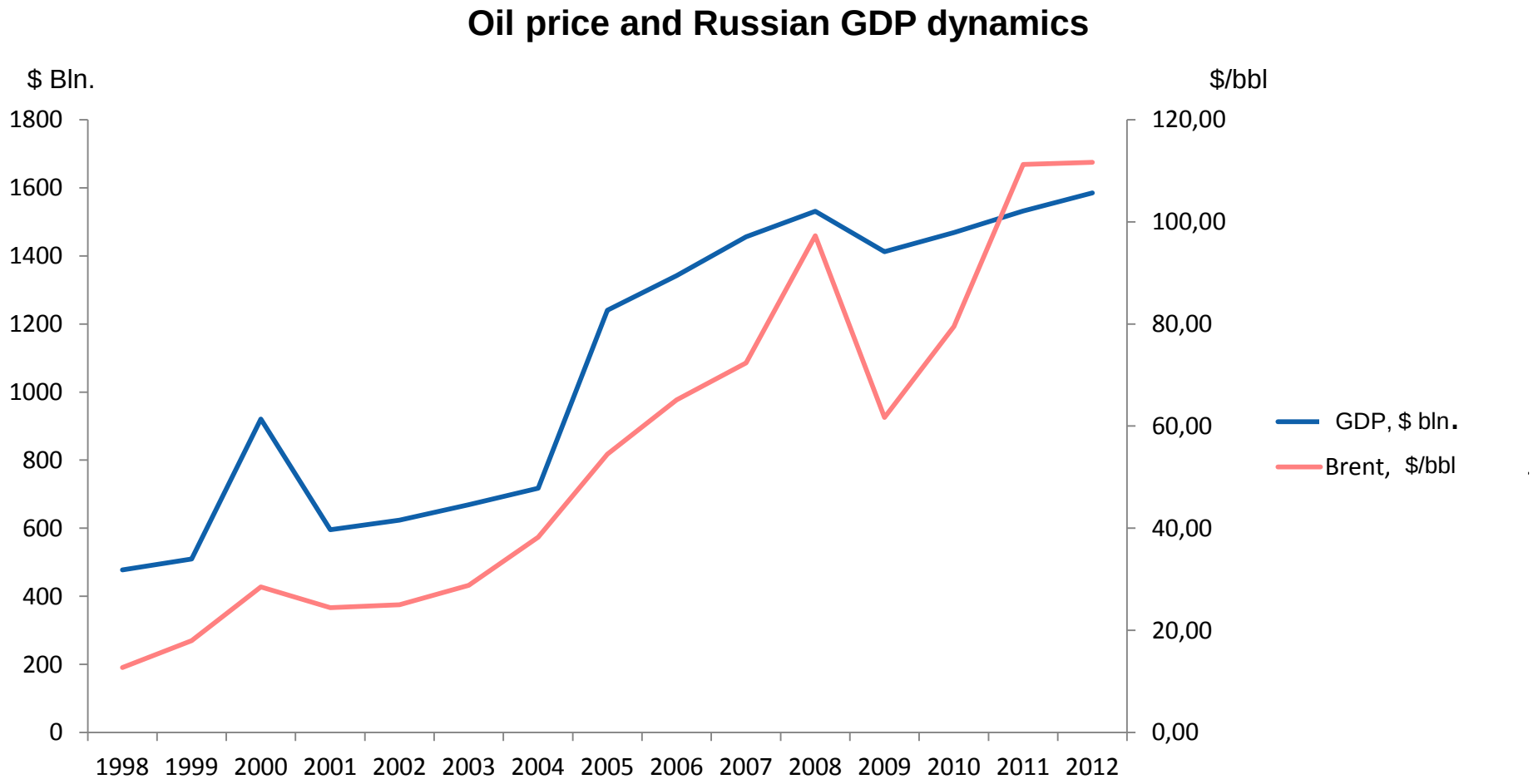
The role of oil and gas for the Russian Federal budget is huge



Source: http://www.roskazna.ru/reports/fb.html

Not only energy sector, but the whole Russian GDP growth is based on the oil prices



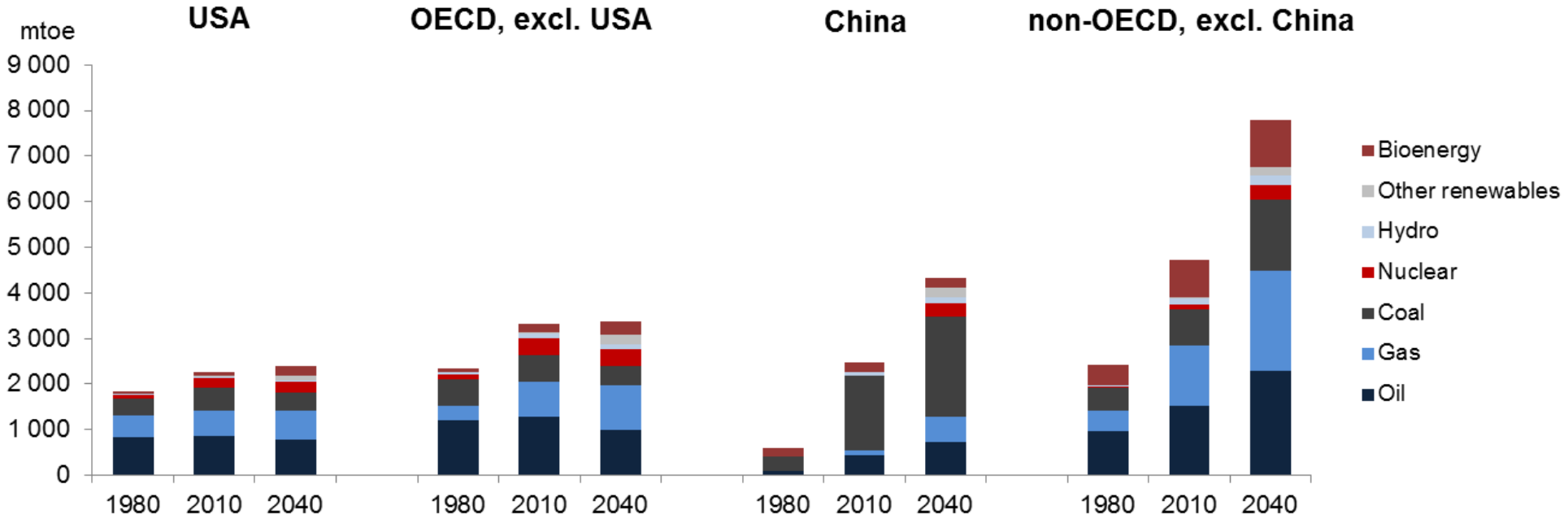
Sources: ERI RAS, BP Statistical Review of the World Energy 2013.

Global markets transformations are unfavorable for Russia

- **Slowing demand** (crises, structural changes, energy efficiency) **and shrinking market niches for the traditional suppliers** (shale revolution, new market participants).
- **Growing supply and increasing competition** with Australia, Brazil, East Africa and North America, which will target Russian core markets in Europe and Asia.
- **Stagnant prices** – shale revolution has already decreased prices in North America and Europe, additional shale oil will limit oil prices growth. In all scenarios oil prices do not exceed 100-130 $/bbl, gas prices stay at the current levels.

Centres of energy consumption will notably change their location

The growth of primary energy consumption by region and type of fuel

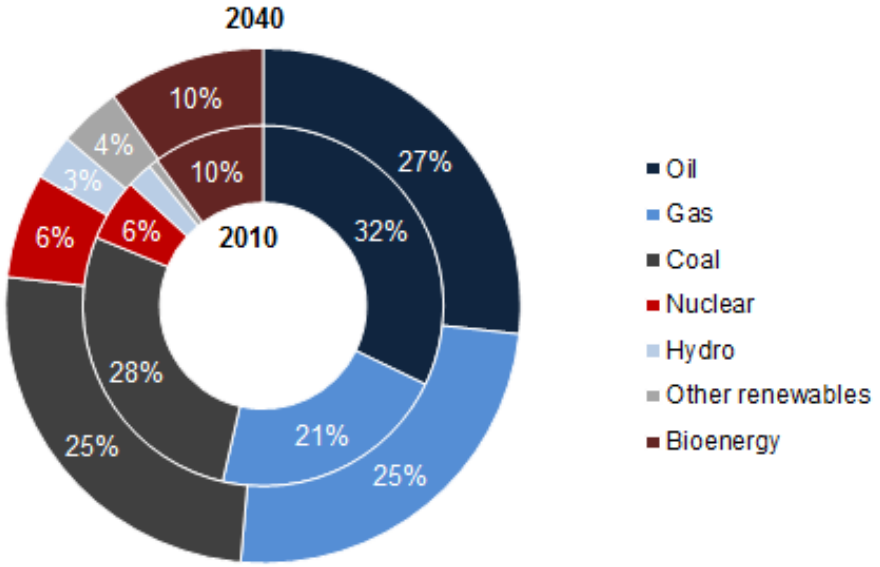


Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

The consumption of primary energy in the world will increase by 1.1% per year on average between 2010 and 2040, which is significantly slower than the growth in energy consumption seen for the last 30 years, while developed countries will only increase their energy consumption by 3% by 2040.

The share of oil and gas in world primary energy consumption will remain practically unchanged: 53.6% in 2010 and 51.4% by 2040

Structure of world primary energy consumption by fuel type in 2010 and 2040



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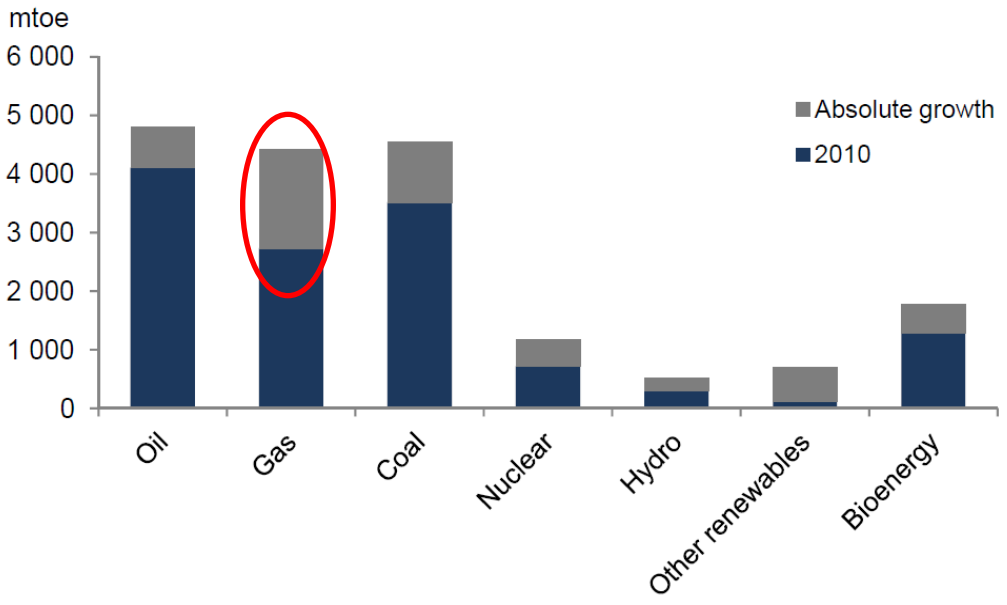
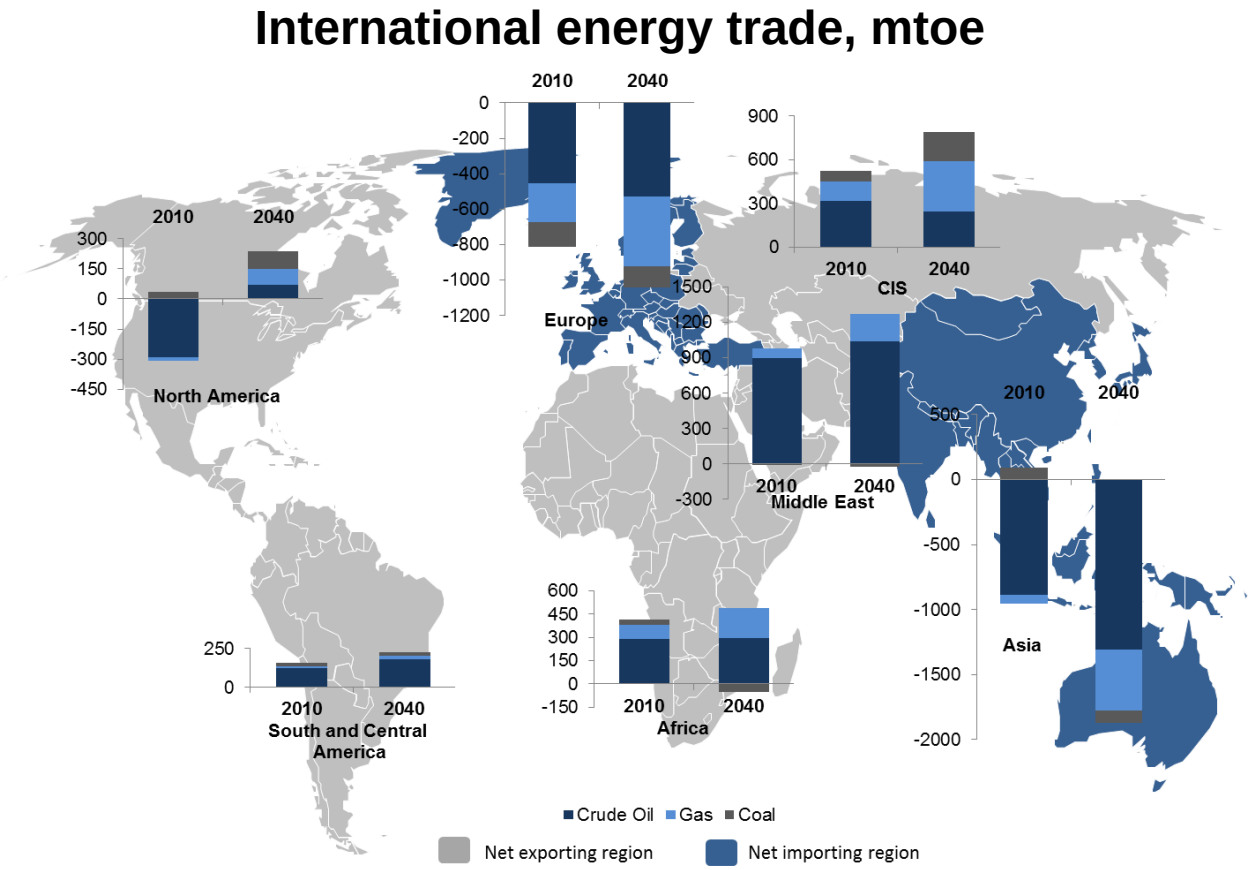


Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

The highest consumption growth rates in the forecast period will be for renewable energy, however, natural gas will take first place in the absolute volumes of consumption growth, and it will have the largest niche in the fuel mix, making it the most demanded type of fuel for the next 30 years.

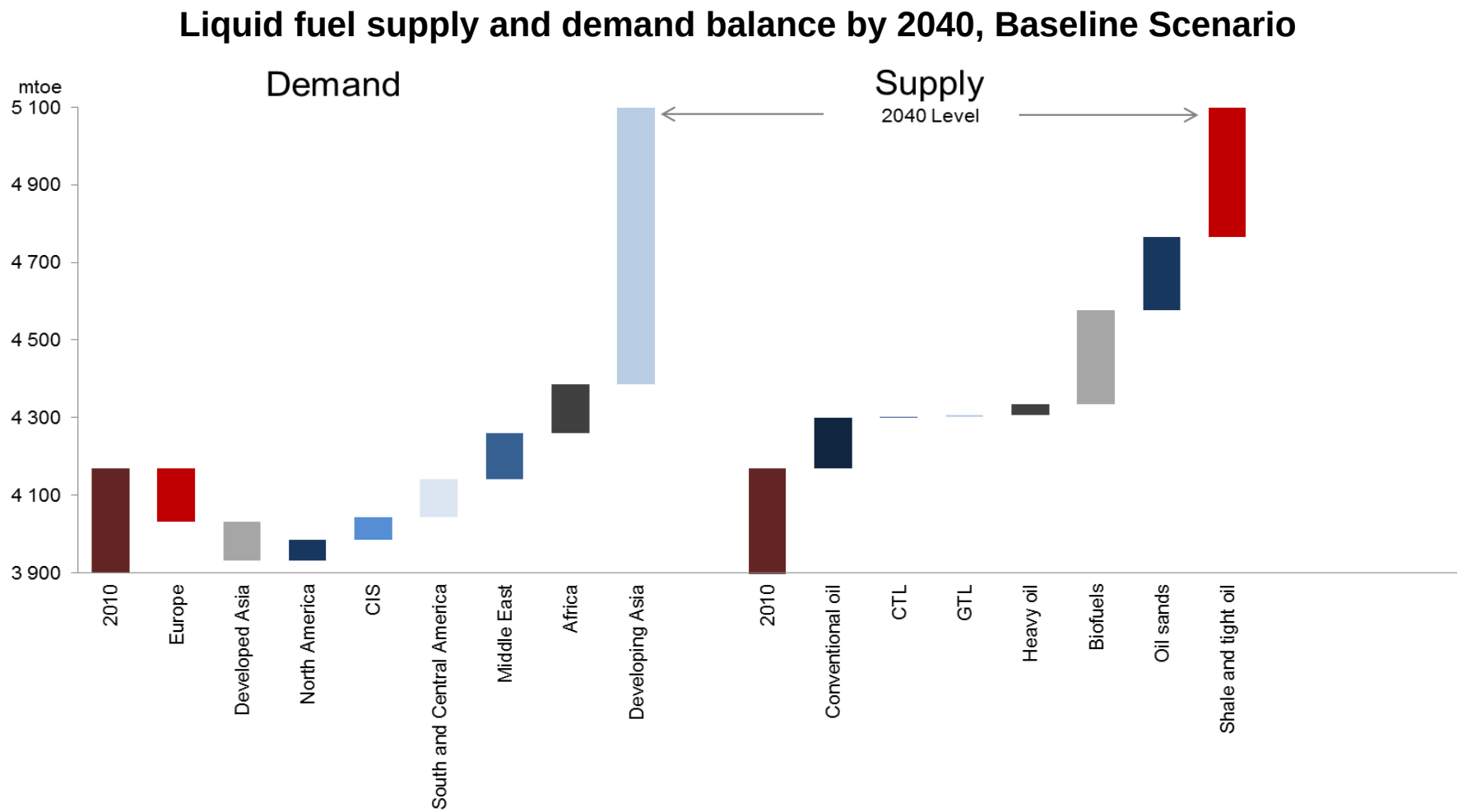
Directions of the international energy trade are changing considerably



Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

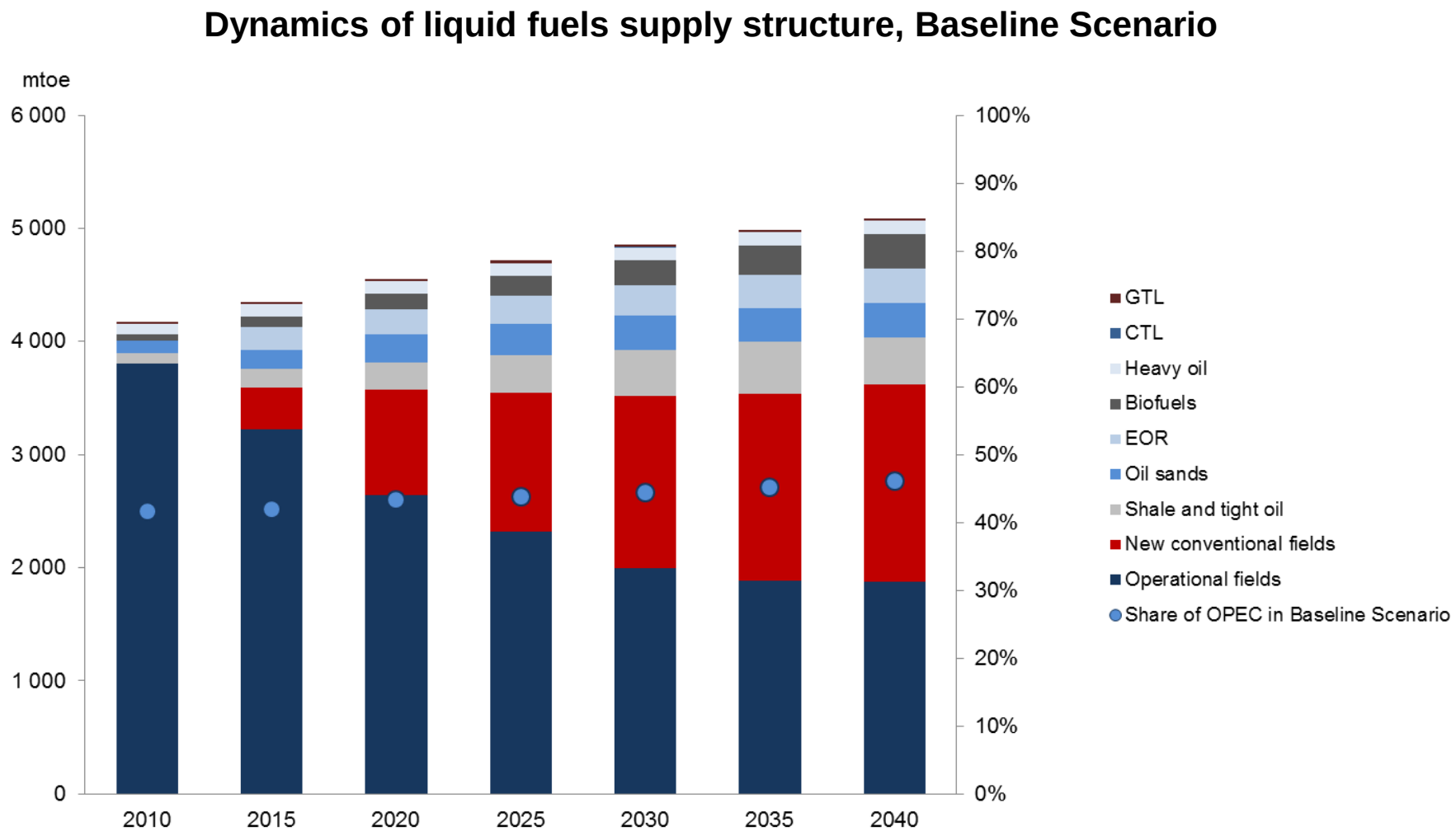
The development of the world's energy trade will continue against the background of North America's growing self-sufficiency, due to unconventional oil and gas resources. A significant increase in supply via the Pacific and Indian oceans will change the directions and volumes of inter-regional energy trade.

Tremendous shifts on the liquid fuels market



Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

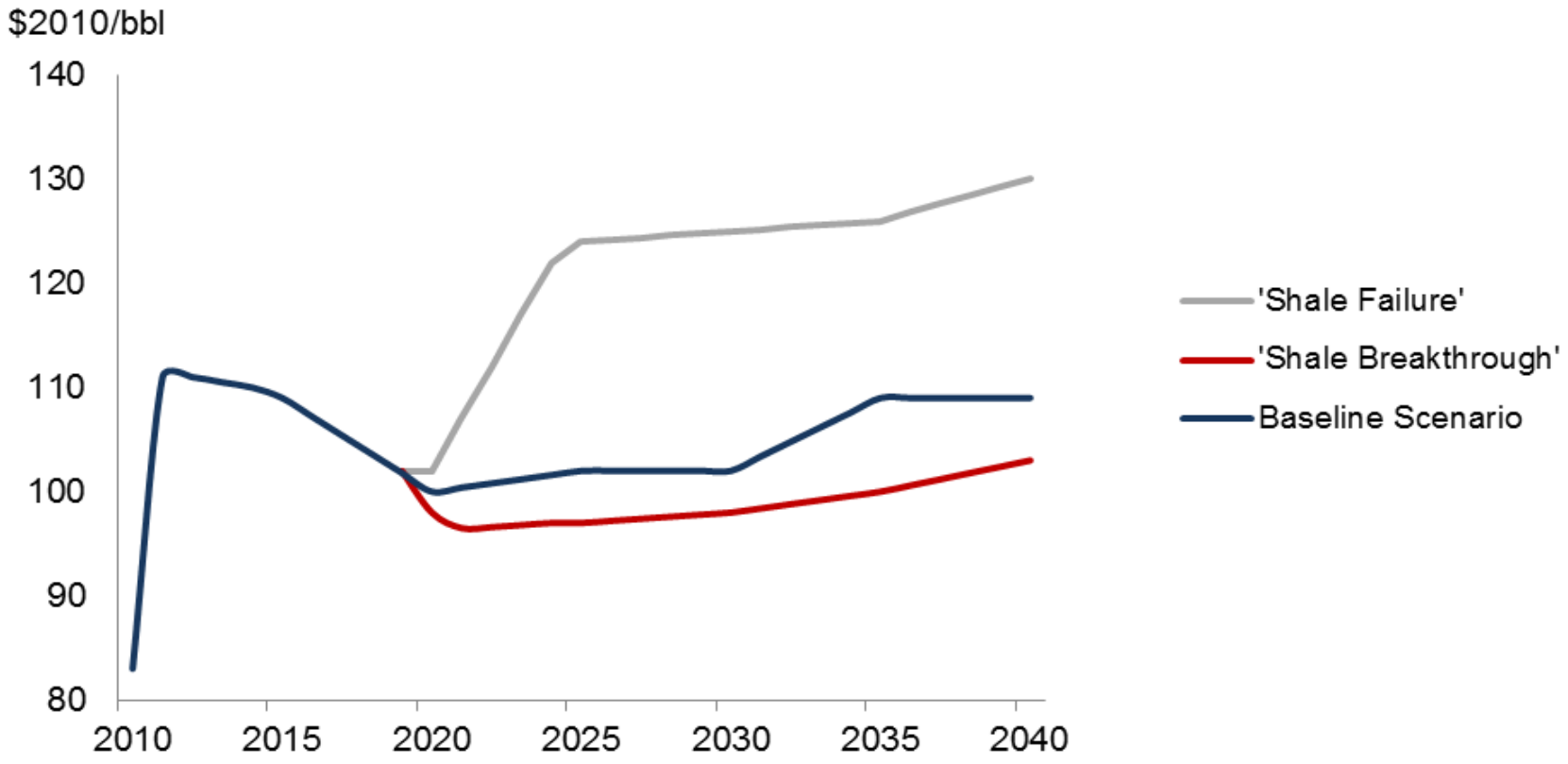
Unconventional oil will reach 16% of total production by 2040



Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

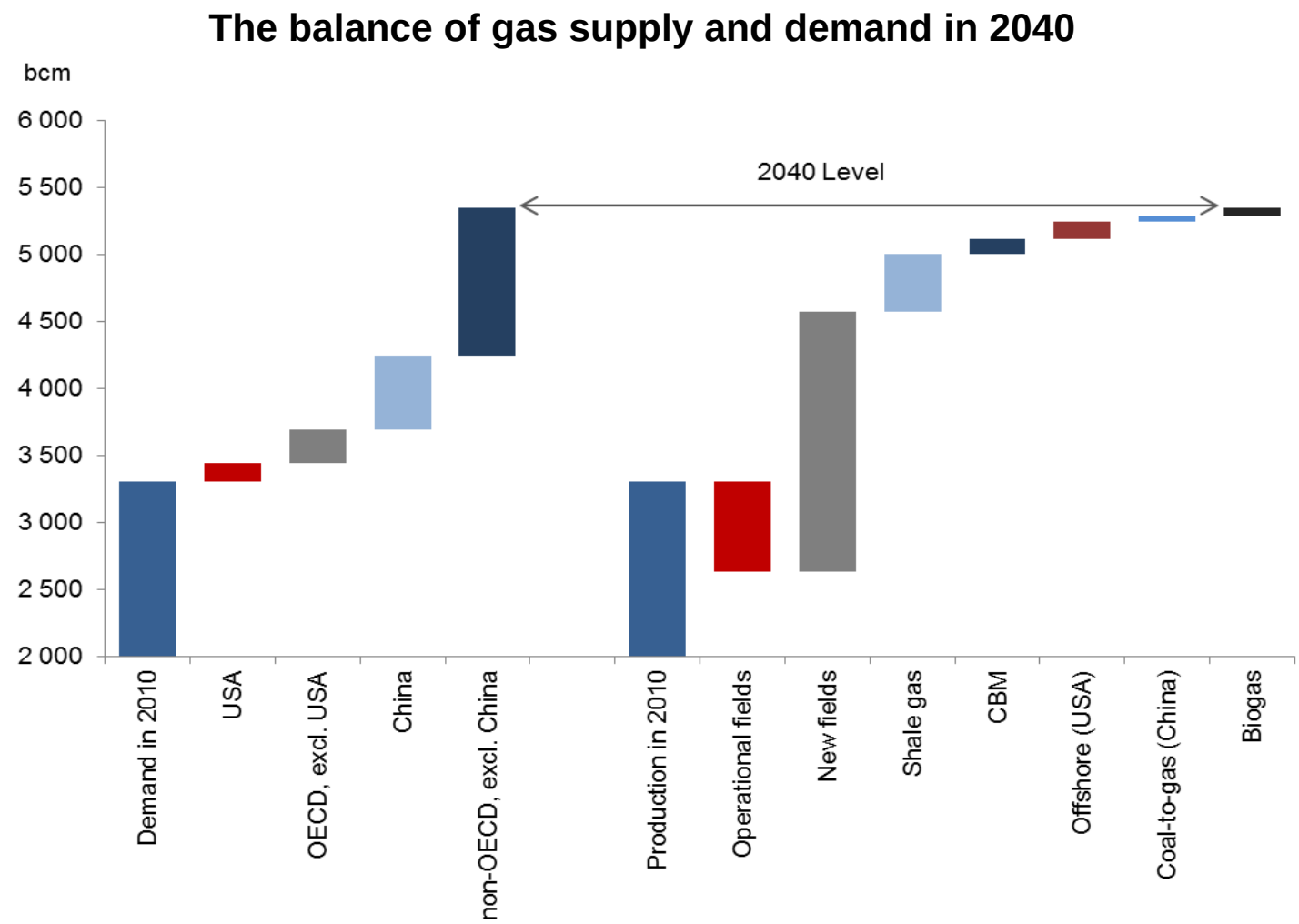
Equilibrium oil prices decrease up to 2020 and afterwards do not exceed 130 $/bbl

Equilibrium oil prices in the three scenarios



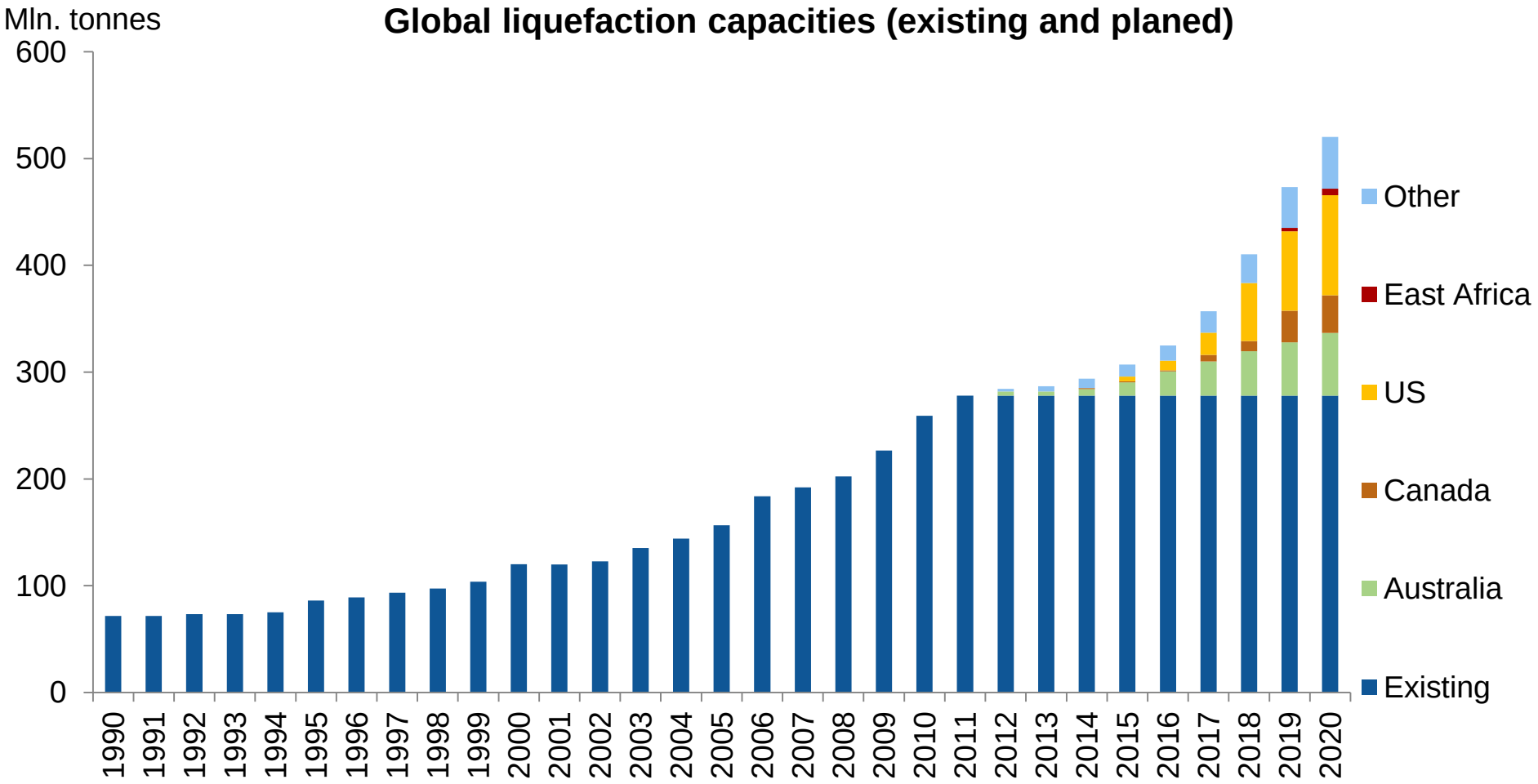
Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

Gas market development



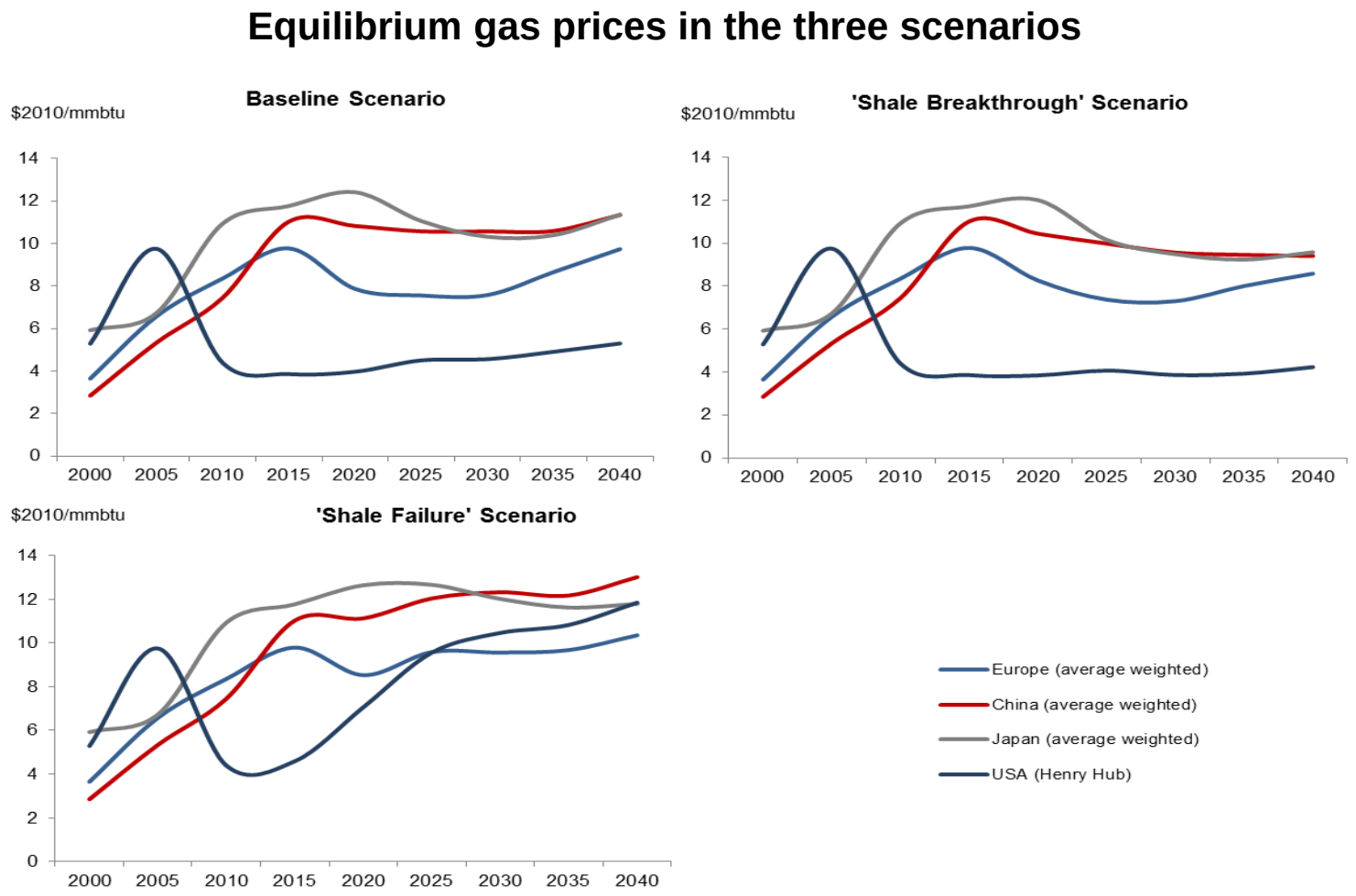
Source: ERI RAS

Global LNG supply is expected to boom during the next decade with a number of new players entering the market



Source: ERI RAS

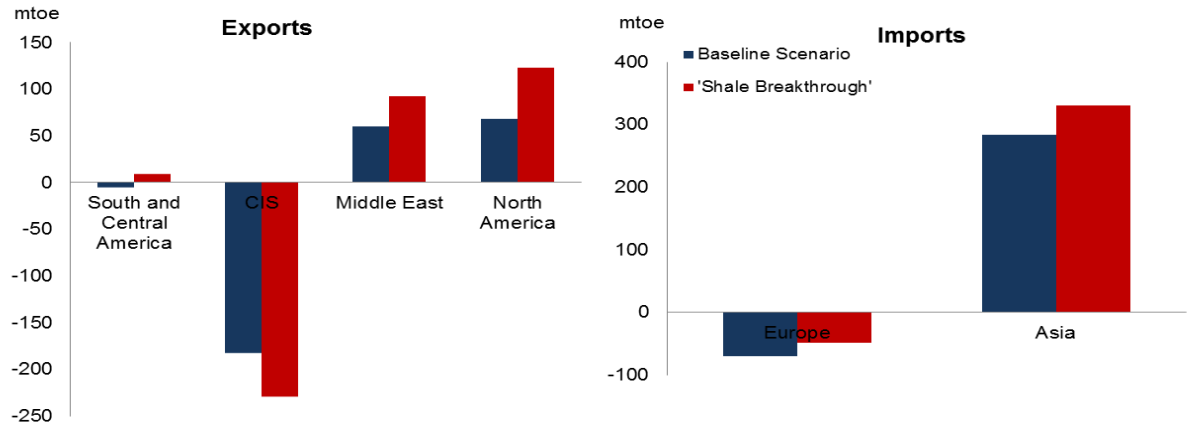
Average weighted regional gas prices are not increasing



Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

Russian export could decrease stronger if there would be new breakthroughs in the shale technologies

Changes of oil net export and import volumes in 2040 relative to 2010, Baseline and 'Shale Breakthrough' Scenarios



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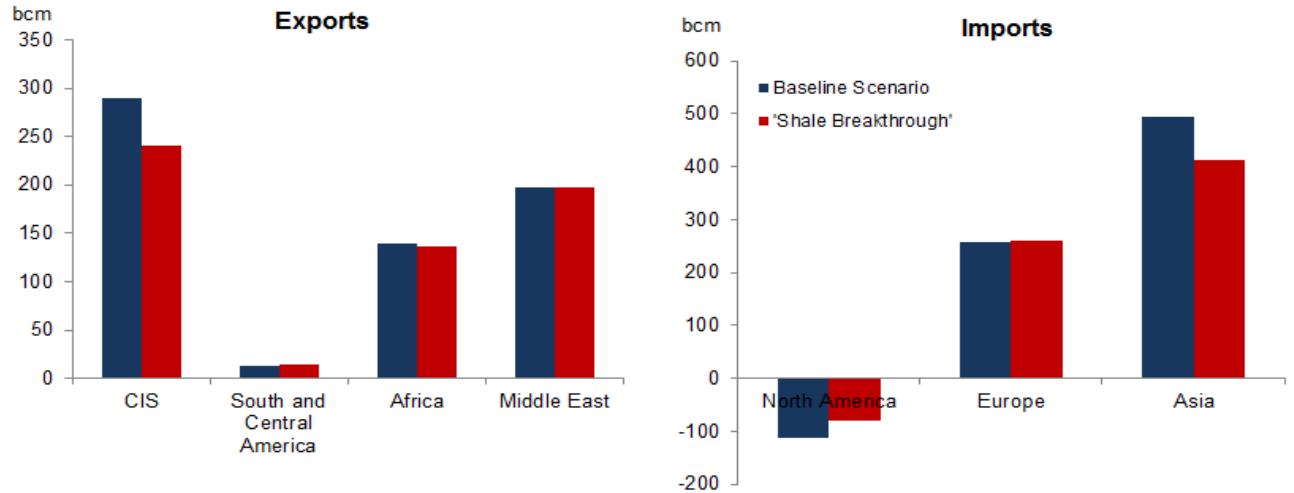


Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

Taking into account global environment changes dramatically expectations for the Russian energy and economy

Official MED scenario and Outlook-2013 scenario of Russian economy and energy development, %

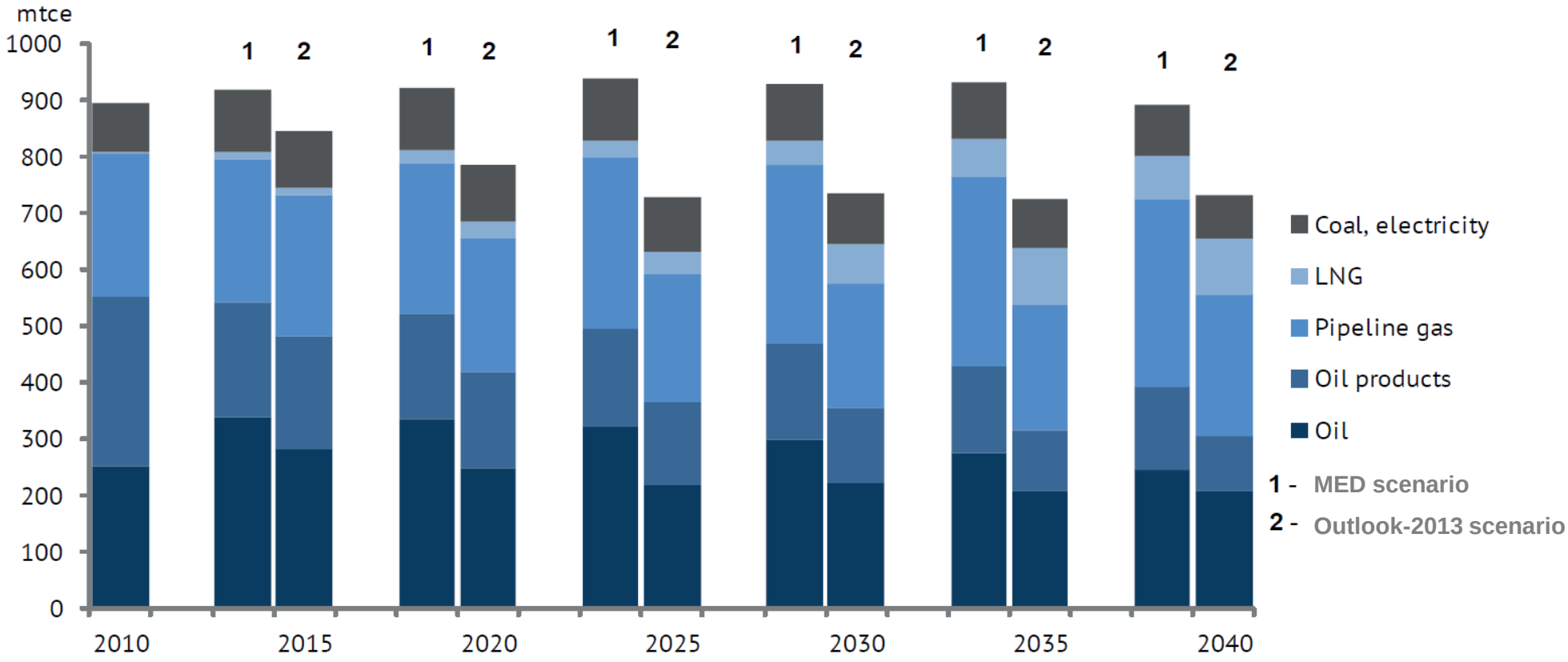
	2010 г.	2015 г.		2020 г.		2025 г.		2030 г.		2035 г.		2040 г.	
		1	2	1	2	1	2	1	2	1	2	1	2
GDP	100	121	119	150	143	185	168	222	192	266	219	316	248
Share of the energy sector in GDP	28,5	25,6	25,5	22,9	23,1	20,0	20,4	18,4	18,8	17,0	17,3	15,6	15,9
GDP energy intensity	100	87	88	74	77	64	69	56	62	49	57	43	52
Energy consumption	100	106	105	112	110	118	115	125	120	131	125	137	129
Energy export	100	103	95	103	89	105	84	104	85	104	86	100	87
Investments in the energy sector as a share of GDP	5,0	5,9	7,2	5,0	4,7	4,5	4,1	4,9	4,8	3,8	3,7	3,4	3,5

1 – official MED scenario, 2 – Outlook-2013 scenario

Source: ERI RAS.

Decreasing competitiveness of the Russian energy resources due to depletion of the old fields and tax system makes Russia most sensitive to the market changes among all the suppliers

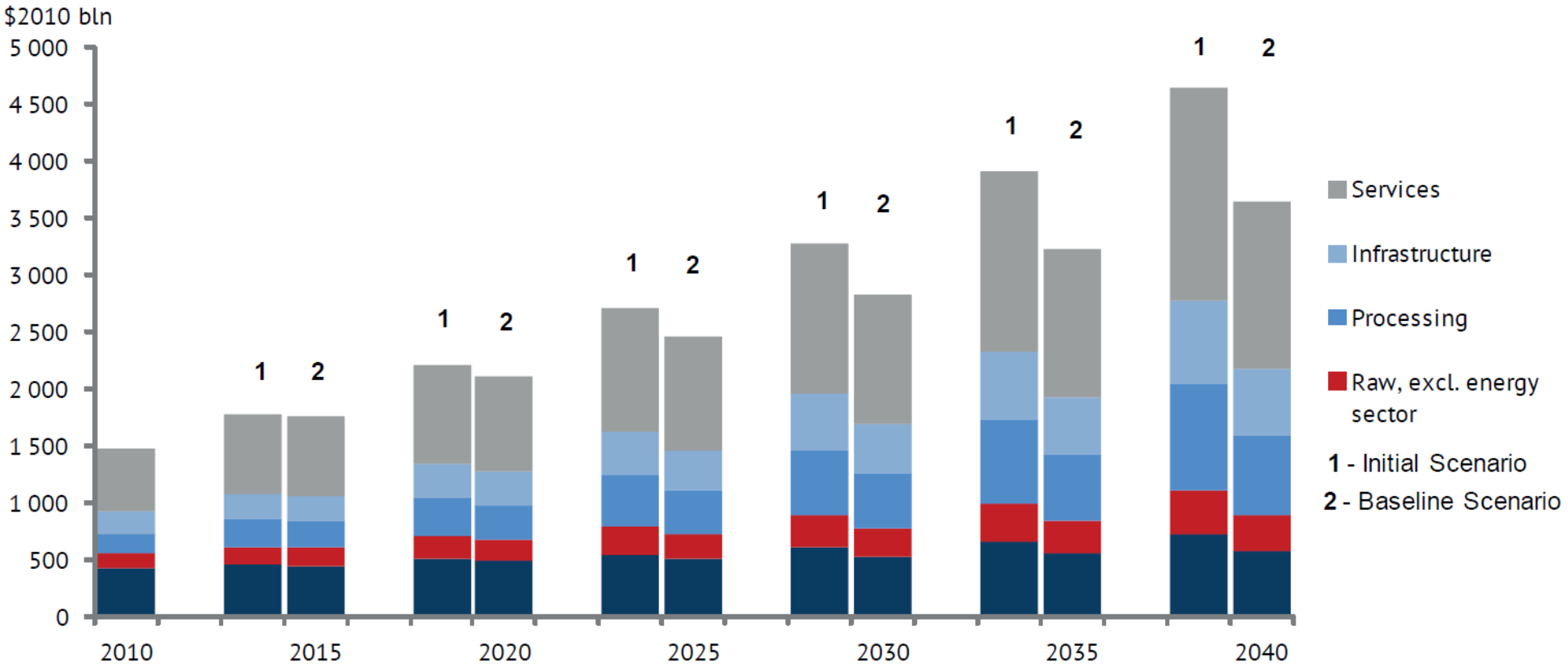
Russian energy export by fuel in the official MED scenario and in the Outlook-2013 scenario



Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

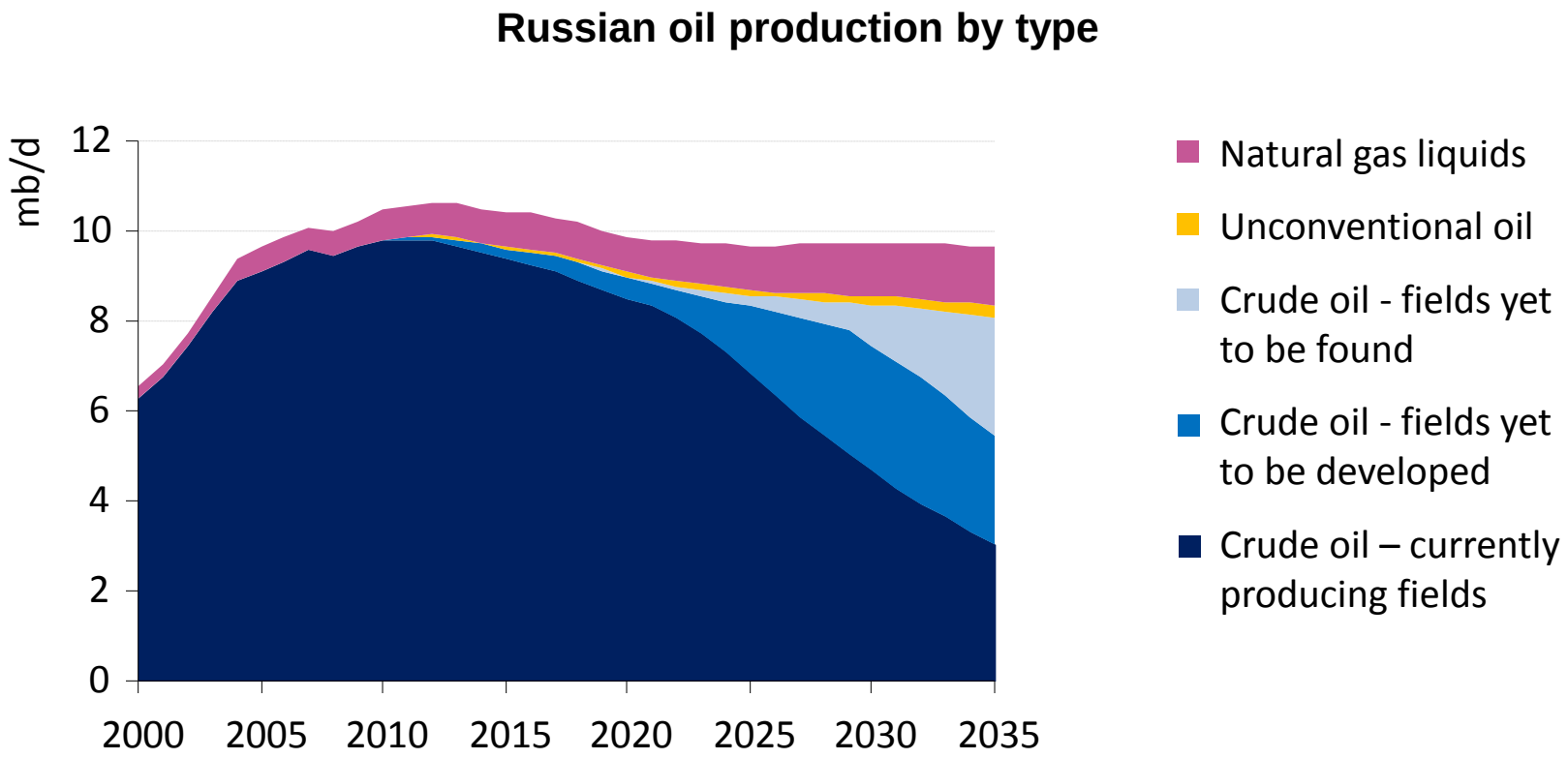
Limited export opportunities decrease Russia`s economic growth by 1% per annum compared to the official scenarios: the economy cannot any longer count on the hydrocarbons-driven growth

Russian GDP in the official MED scenario and in the Outlook-2013 scenario



Source: Global and Russian Energy Outlook up to 2040. ERI RAS-AC. 2013.

Depletion of the Soviet-time giant fields drives the need to develop expensive greenfield projects and new infrastructure



Source: WEO-2011. IEA..

A total of 5 mb/d of conventional capacity needs to be added to replace declining output at existing fields, with one-third of crude output in 2035 coming from fields not yet found

Main measures to support competitiveness of the Russian energy resources

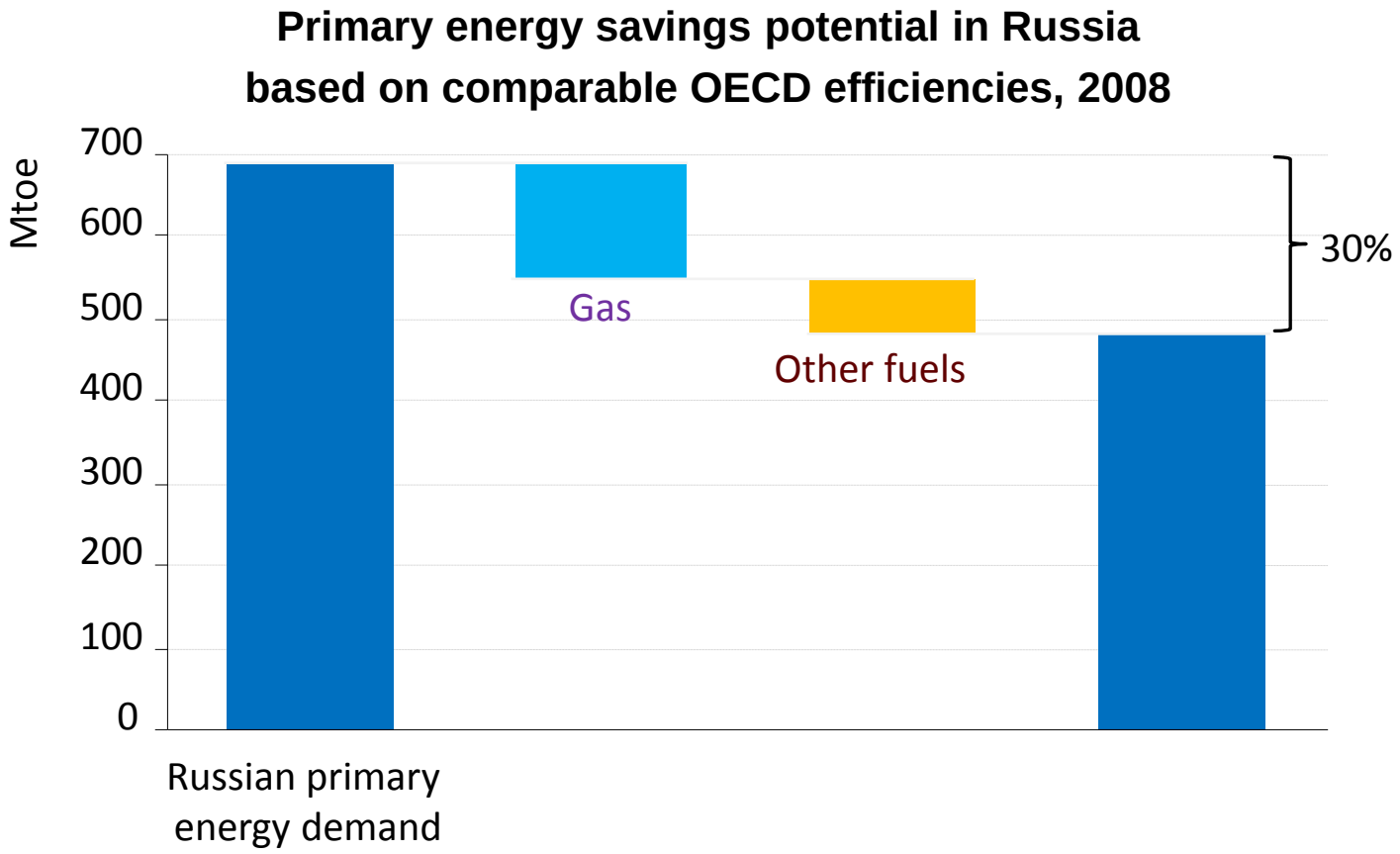
- **Cost control together with a thorough evaluation of cost-effectiveness of the new projects and their potential risks**. It is advisable to rank investment projects and reject or postpone the implementation of inefficient ones. This is confirmed by the results of work done by foreign and Russian experts, who analysed the cost of domestic energy projects, showing that they were typically several times more expensive compared to existing analogous projects found elsewhere, while those projects that were completed were underutilized for years.

- **Taxation system reform**: currently an efficient break-even point for the Russian upstream oil projects is fixed at 25 $/bbl due to outdated volume-based taxation.

- **International consortia development** – attracting foreign partners into the consortia engaged in resource development (this refers especially to the eastern part of the country, the coastal shelf, and deposits of unconventional hydrocarbons). If properly managed, it would enable the country to:
  - attract foreign investment and apply advanced technology;
  - develop types of business activities with potential, under new conditions;
  - ensure tight control over costs and other business results;
  - obtain additional assurances for product sales; and
  - facilitate access to logistics and adapt to the rules of international markets.

- **Energy saving**. Russia has a huge potential, but it is limited by unappropriate regulatory framework and lack of access to finanncing

Russia has huge potential to use energy more efficiently: energy consumption could be decreased by 30%



Source: WEO 2011. IEA.

Raising Russia's energy efficiency to the levels of comparable OECD countries would save the amount of primary energy used in a year by the UK

Contacts

Energy Research Institute of the Russian Academy of Sciences

"Global and Russian Energy Outlook up to 2040"
http://www.eriras.ru/files/Global_and_Russian_energy_outlook_up_to_2040.pdf

Nagornaya st., 31, k.2, 117186, Moscow,
Russian Federation

phone: +7 985 368 39 75
fax: +7 499 135 88 70

web: www.eriras.ru
e-mail: mitrovat@rambler.ru