Russian Oil Industry Development: the Role of Business and Technology

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Moscow

Outline

1. Review of the global oil market

2. Short-term and long-term global oil market developments

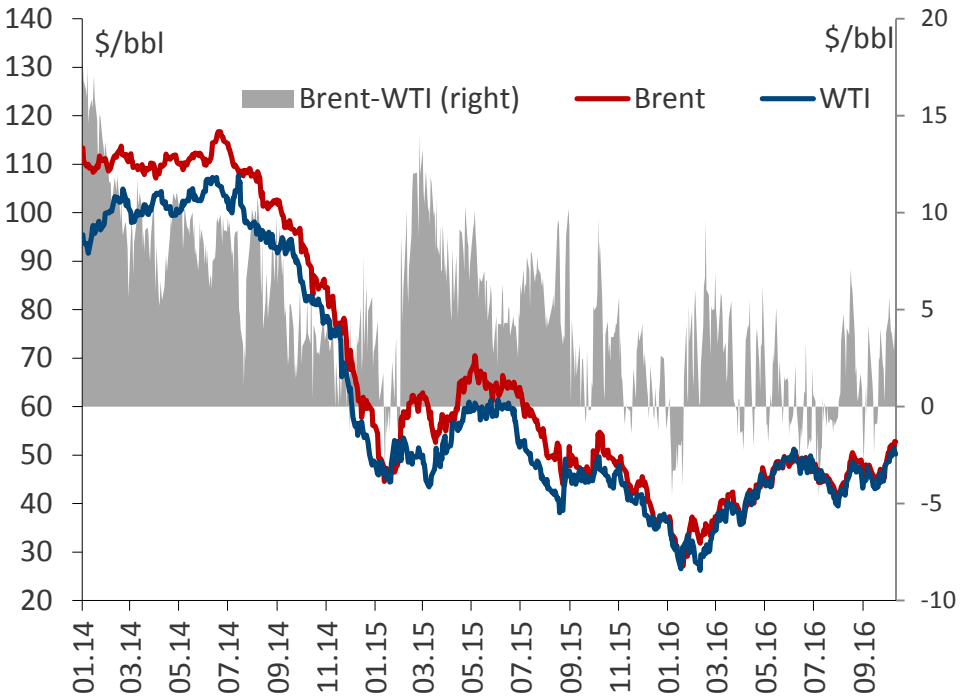
3. Russian Oil Industry: facts and figures

4. Russian Oil Strategy up to 2035

5. The role of technologies and business

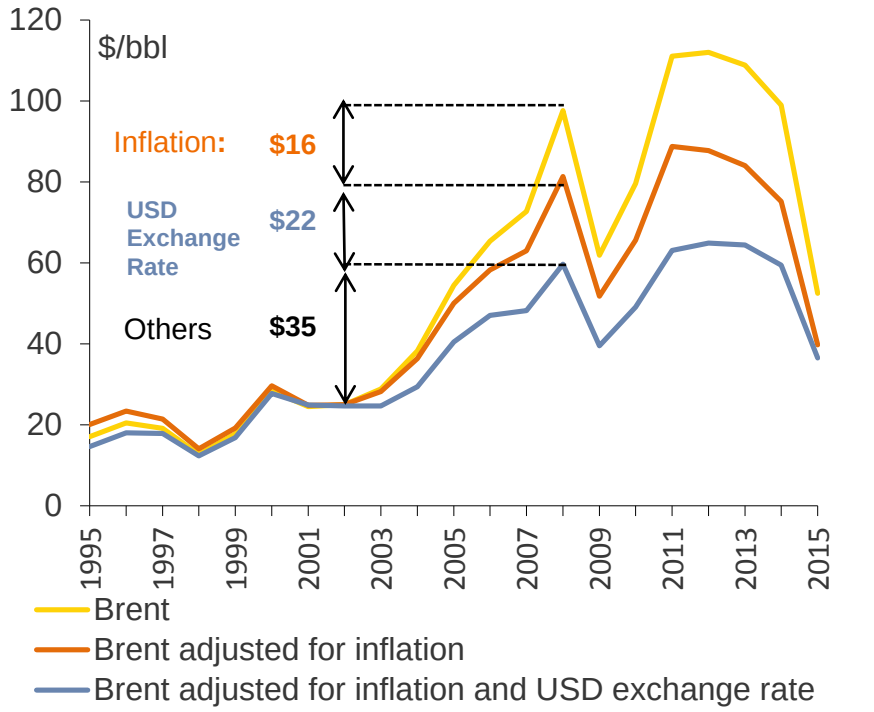
Oil prices are waiting for decisions of producers

Oil prices, July 2014 - October 2016



Source: Bloomberg

The contribution of different drivers in the oil price (based on the analysis of the 2008 price peak)

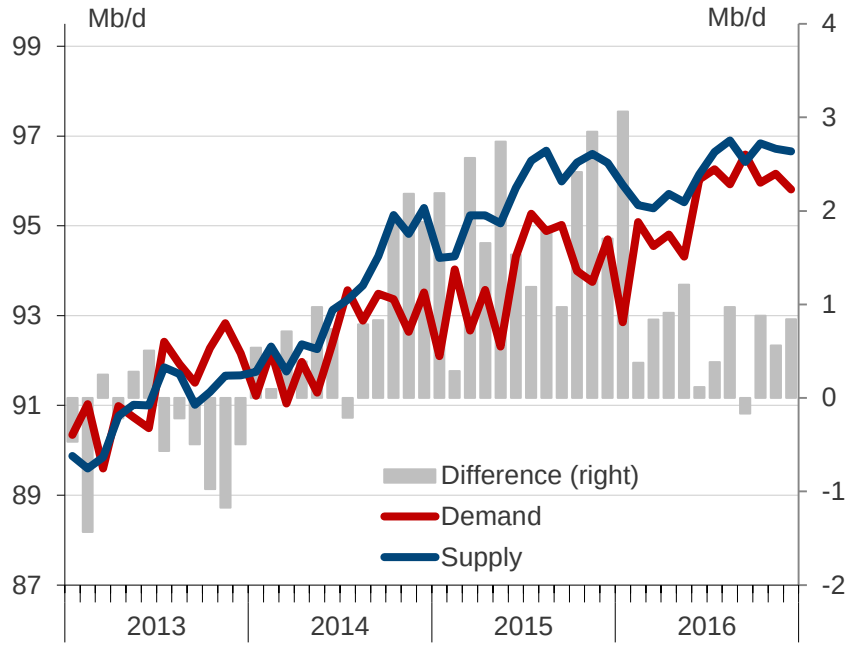


Sources: U.S. Bureau of Labor Statistics, Bloomberg

- After the shock of the fall 2014 and the turbulence on the global oil market of late 2015 - early 2016, global oil prices today are kept in a reasonable market price range of $50-52 per barrel.
- Further dynamics of oil prices will largely depend on reducing the "gap" between the behavior of the market and fundamentals.

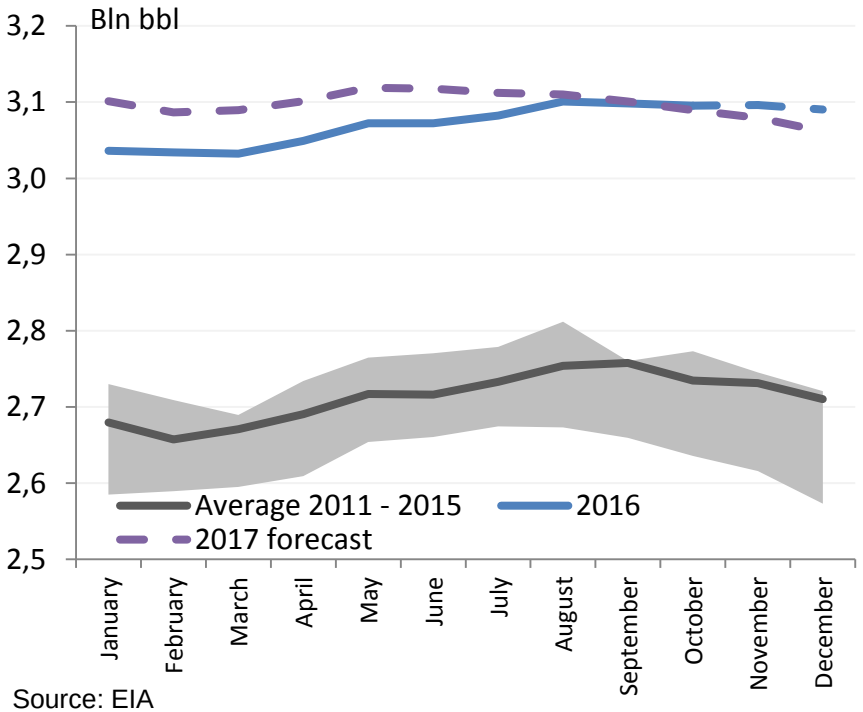
The current dynamics of demand, supply and stocks of liquid hydrocarbons

Global oil supply and demand balance, 2013-2016



Source: EIA

Total commercial crude oil and petroleum products stocks in OECD countries

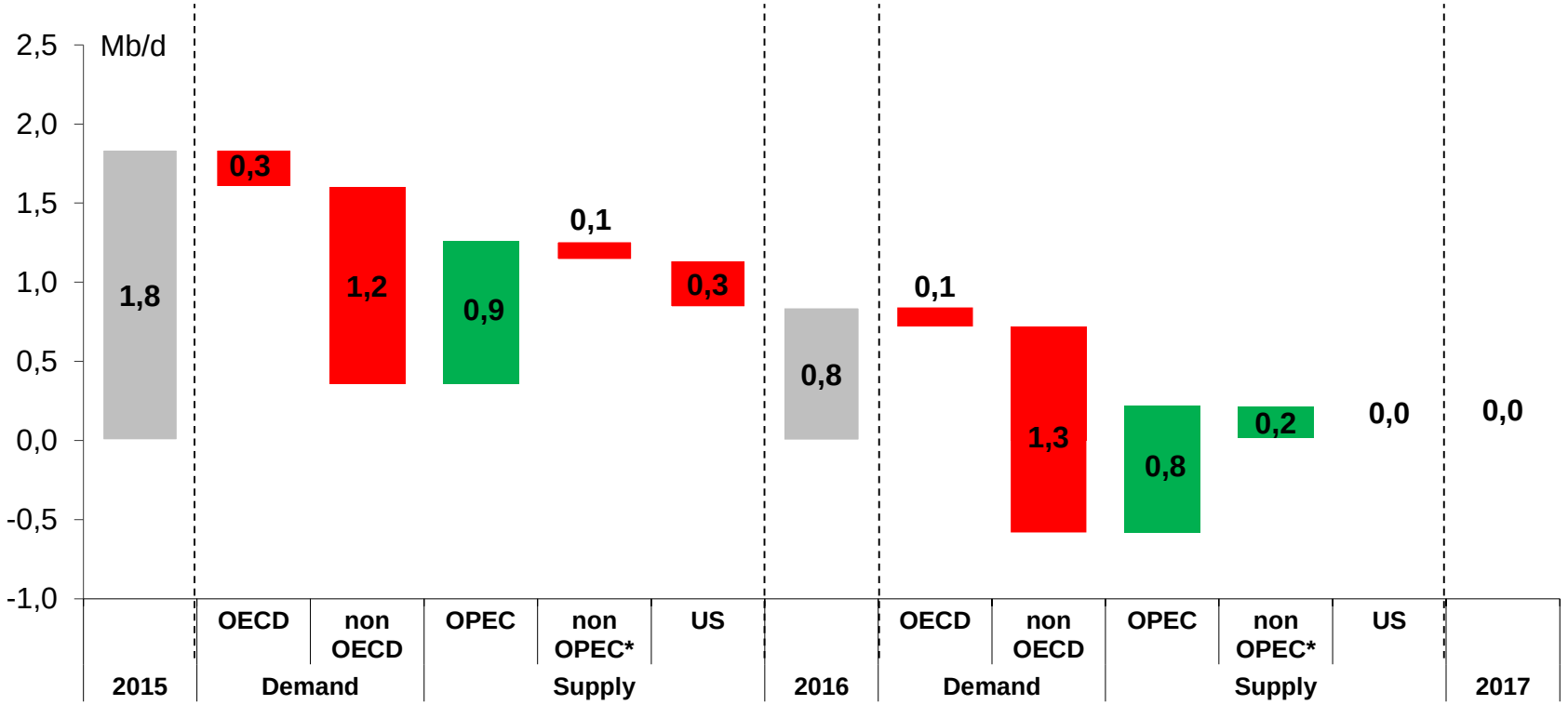


Source: EIA

- Surplus of the global supply of liquid hydrocarbons still remains. In 2016, the average surplus can reach 0.7-0.8 Mb/d.
- Commercial crude oil and petroleum stocks still remain at their maximum level above 3,1 bln bbl

Prospects for reducing the imbalance in the oil market in 2016 - 2017

One of visions for the dynamics of reducing the excess of liquid hydrocarbons (LHS) in the Oil Market, 2016-2017



**Excluding US*

Source: IEF based on EIA

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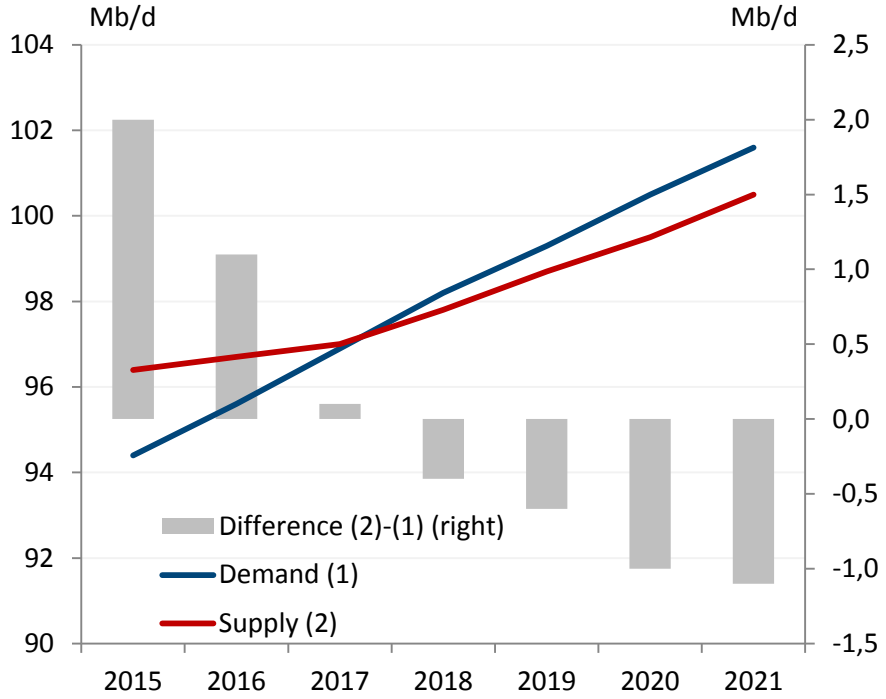
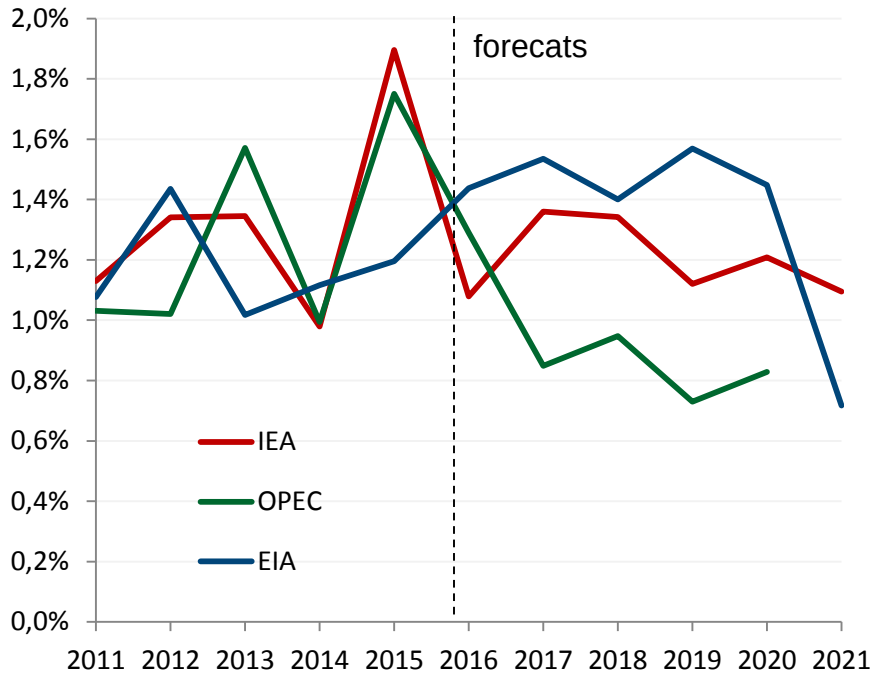
Risks of high volatility "behavior" of the oil market remain …

Outlook for supply and demand balance for liquid hydrocarbons, 2015-2021



Sources: IEF based on IEA

Average growth rates of global oil demand

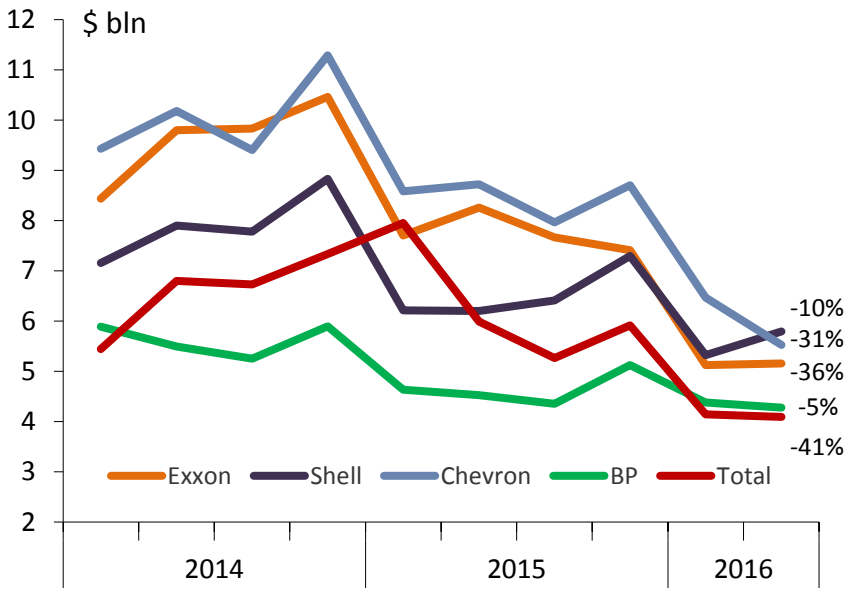


Sources: IEA, EIA, OPEC

- IEA expects a steady demand-supply gap for 4 years after you reach balance in 2017.
- Before 2020 EIA and IEA expect the stabilization of the growth rate in global oil demand at the level of 1.2-1.4% per year.
- There is a risk of the future's demand-supply gap due to the significant drop in investment for oil production in 2015 – 2016

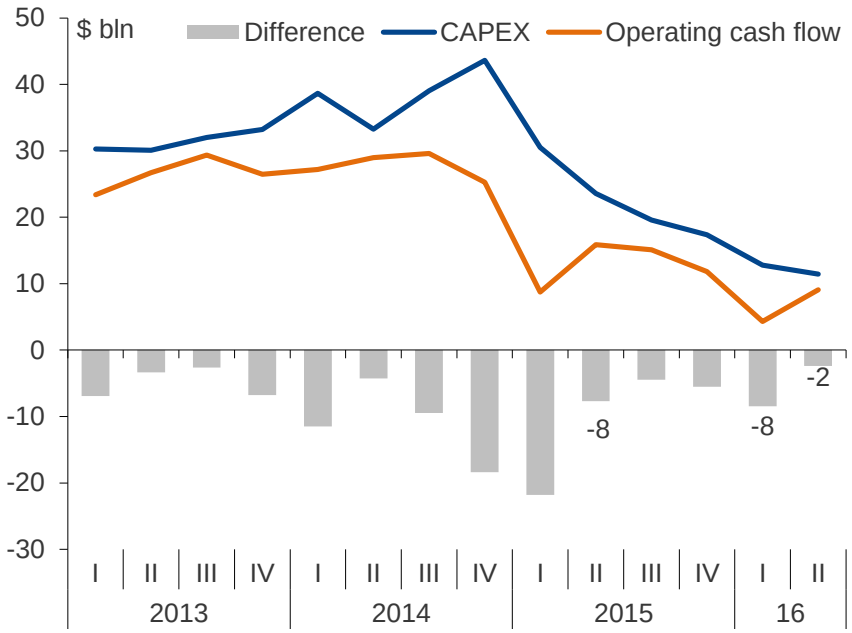
Excessively low oil prices reduce the investment activity in the oil industry…

Investments of the largest international oil companies (IOCs)



Source: IEF based on Company's data

Investments and operating cash flow of Northern America independent producers

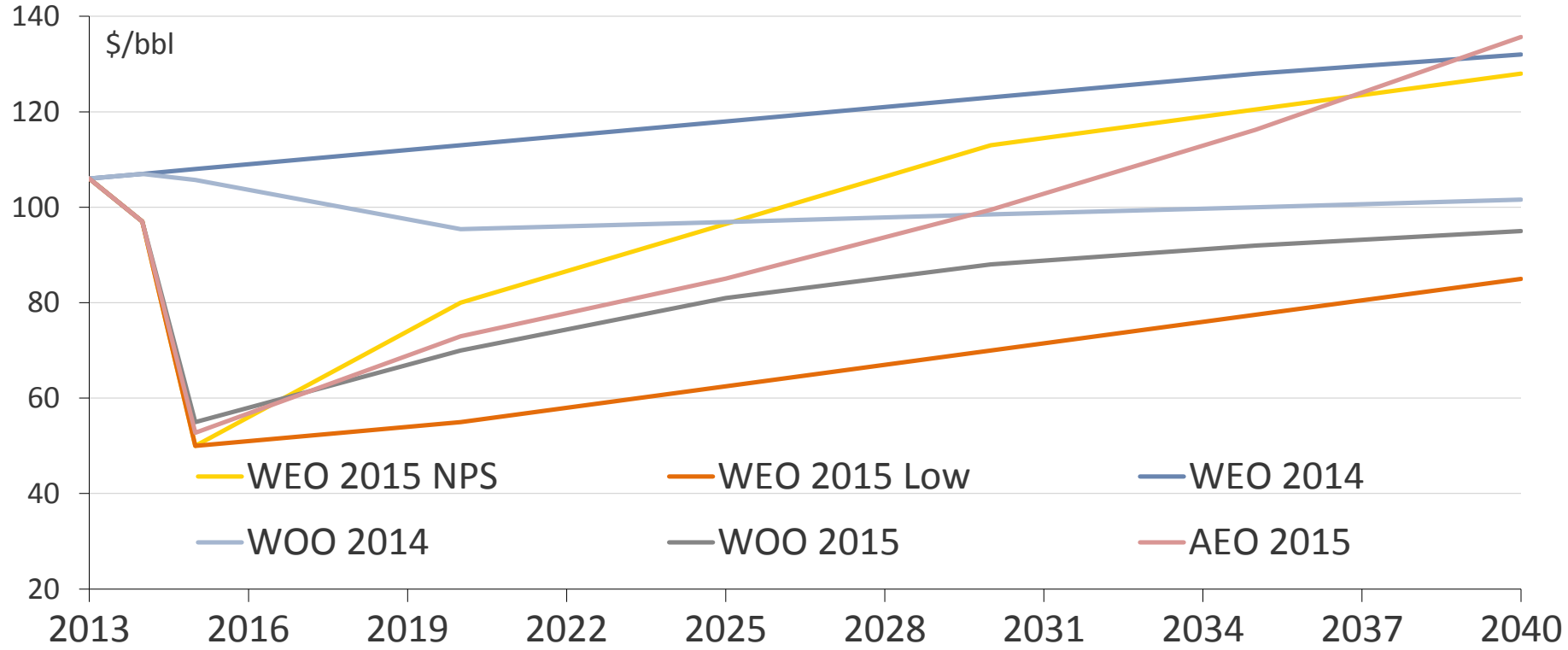


Source: IEF based on Company's data

- Total investments of TOP5 IOCs in H1 2016 dropped by 27% YoY to $50.3 bn
- Investments of independent producers of Northern America were decreasing for the 6th quarter in a row: to $11.4 bn in 2Q2016 (-52% YoY)
- Large drop in investments will affect the industry state and the energy prices during the next 3-5 years

But energy agencies are expecting growth of oil prices in mid-term and long-term

Forecasts for oil prices in real terms*

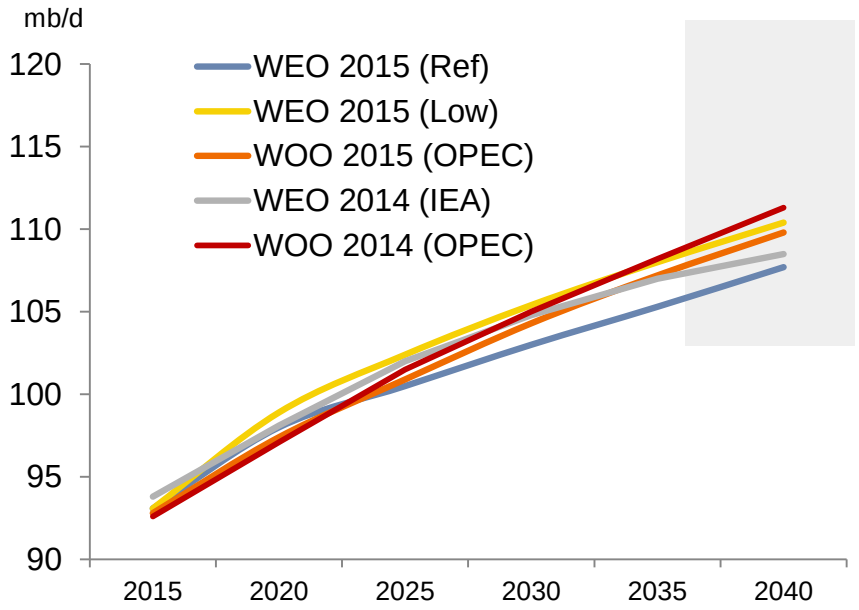


*(for reviews of 2014 and 2015, subject to the prices of 2013 and 2014, respectively)

- Despite some correction of the long-term price projections for 2015-2016, energy agencies suggest that after 2016 will begin a slow rise of global oil prices
- However, the growth rate of oil prices and their possible levels will be determined by the multidirectional action of the different drivers (fundamental, technological, geopolitical and financial)

Price increase will be conditioned by growing demand and the need to produce more high-technology oil…

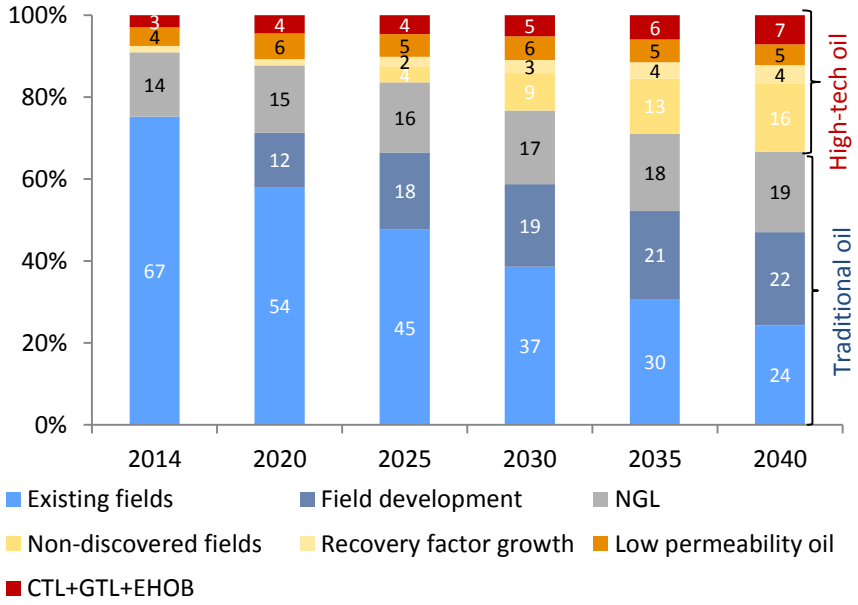
Forecasts on global demand for liquid hydrocarbons



Sources: EIA, IEA, OPEC

- Long-term demand for LHS will grow from current 95,8 mb/d to 109-112 mb/d up to 2040
- The share of the LHS in the global energy mix will be at least 20-25% by 2040.

Forecast structure of global production of liquid hydrocarbons, %



Source: IEA

- Technology development in oil industry will play a key role in securing its competitiveness.
- Share of high-technology oil will grow steadily, reaching 30%-40% in 2040

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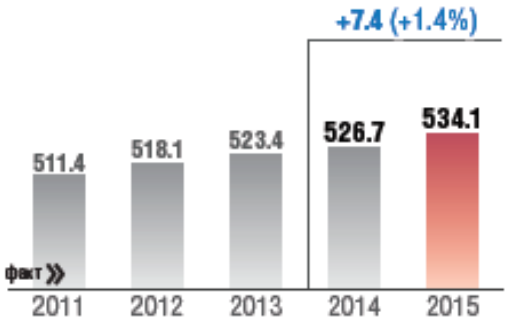
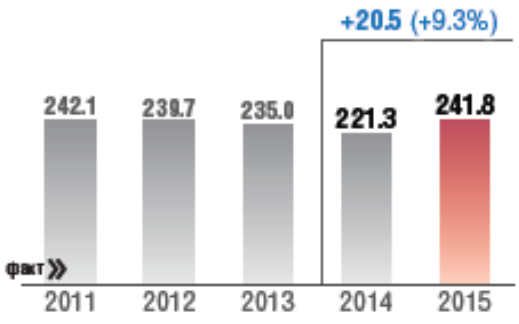
2015 Review: oil production and exports

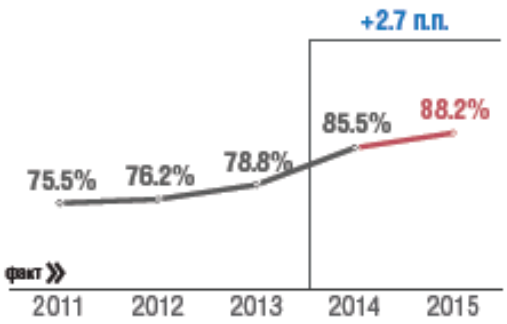
Production of oil and gas condensate, mln t



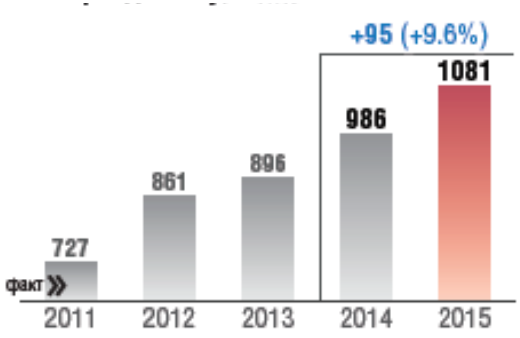
Oil exports, mln t



APG utilization, %

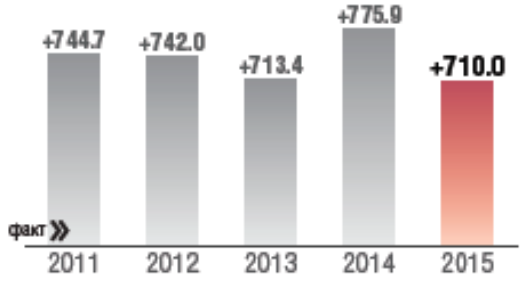


Investments in oil production, bln roubles



Drilling, thousand meters

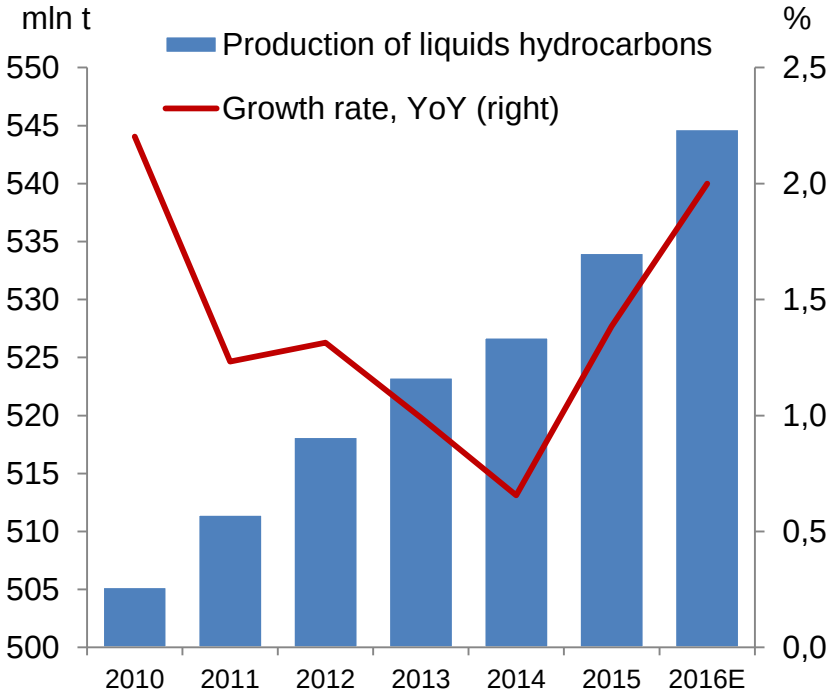
New reserves, mln t



* Sources: CDU TEK, Ministry of Energy of the Russian Federation

The current dynamics of liquids hydrocarbon's production in Russia is positive…

Production of liquids hydrocarbons* in Russia, 2010-2016

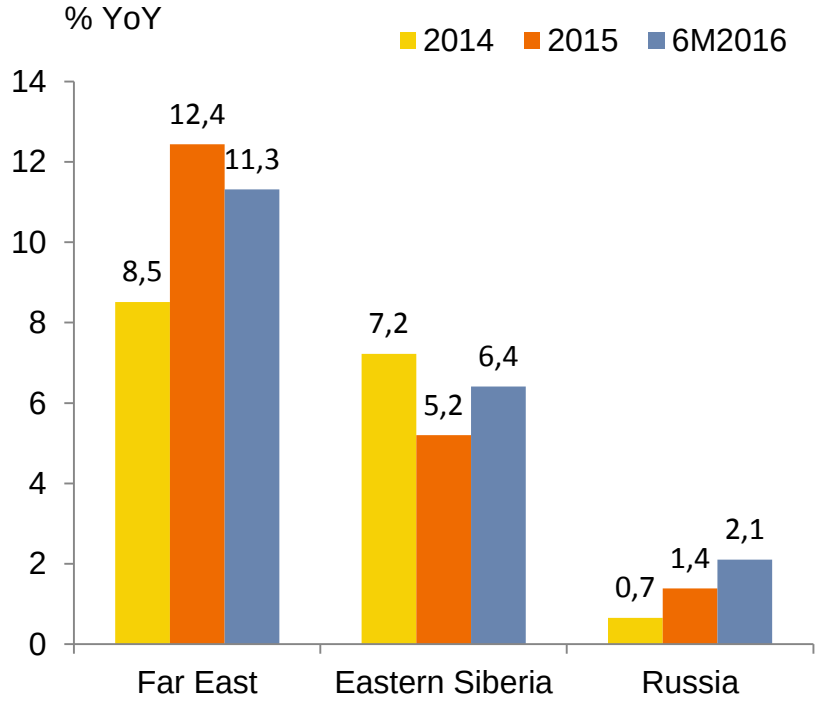


* - crude oil and gas condensate

Sources: CDU TEK, Ministry of Energy of the Russian Federation

- In 2010-2015, the average annual growth rate of liquids production in Russia was 1.1%
- In 2016 the total liquids production in Russia can reach 540-544 mln t (+1.5-2% YoY)

Annual growth rate of liquids hydrocarbons* production (Eastern Siberia and Far East), 2014 – 6M 2016

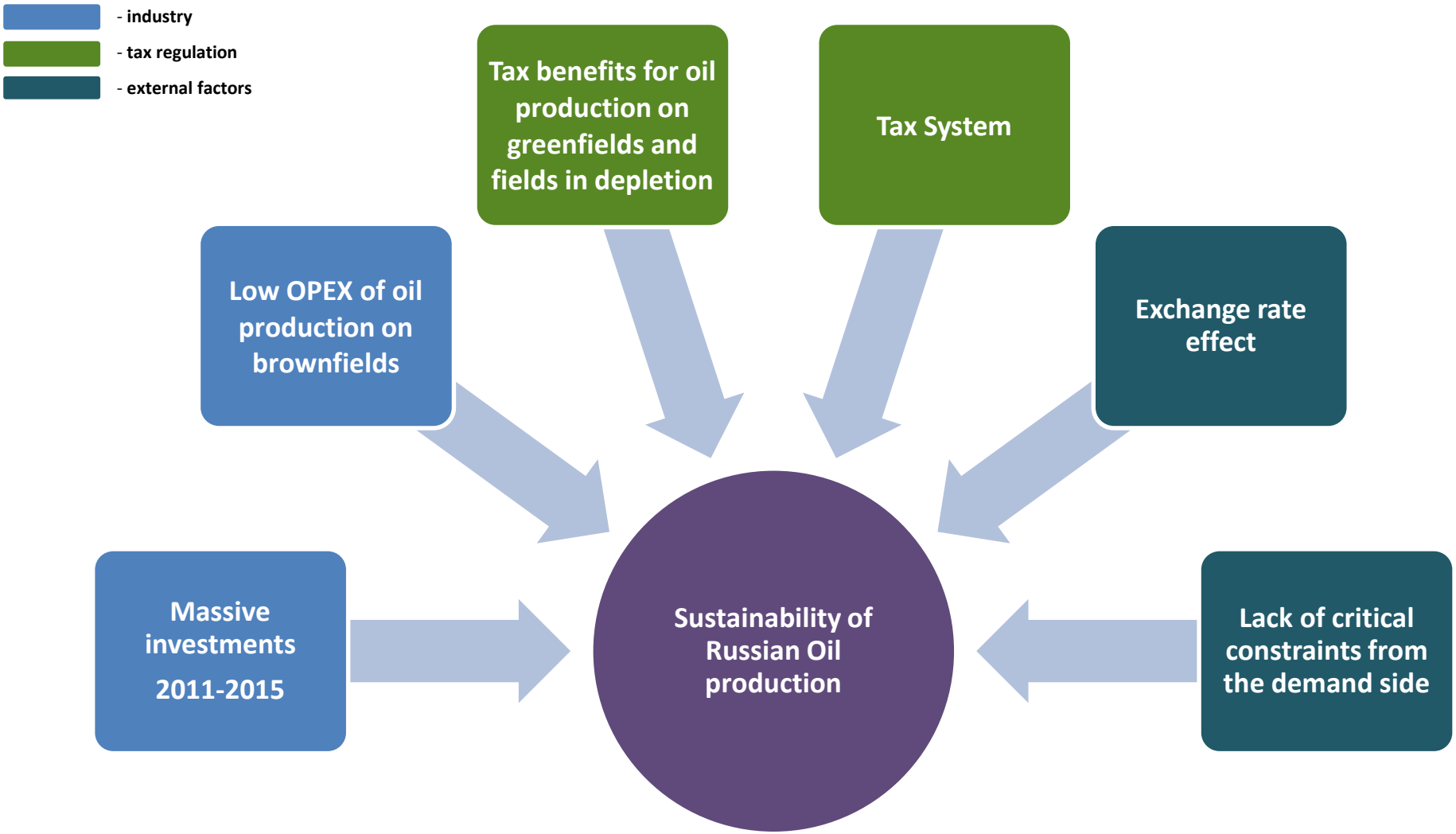


* - crude oil and gas condensate

Sources: CDU TEK, Ministry of Energy of the Russian Federation

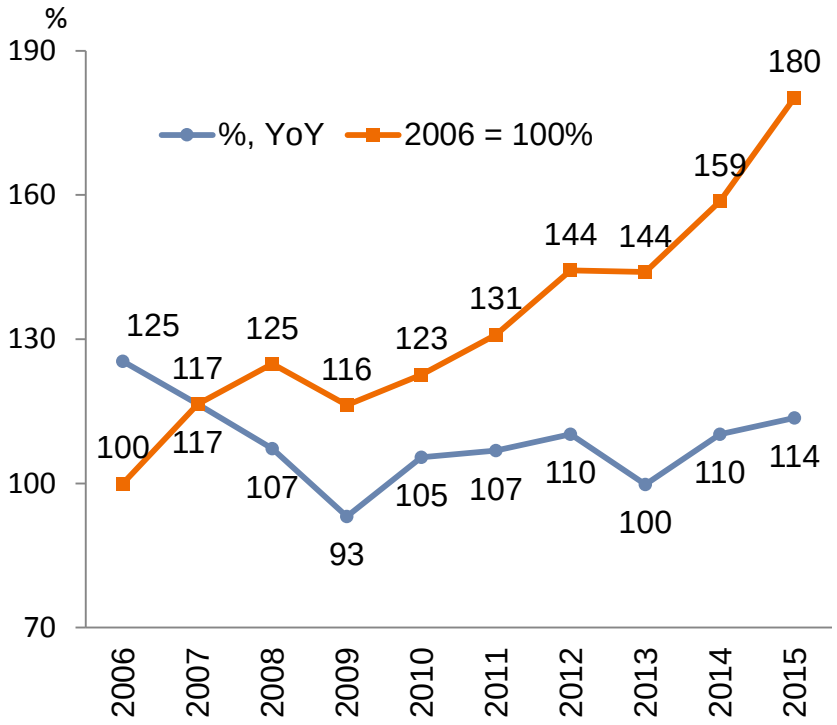
- In 2014-2015 the oil production growth rate in the Eastern regions of Russia was several times higher than the average growth of oil production in Russia
- After 6M 2016 oil production in Eastern Siberia increased by 6.4 %, and in the Far East – by 11%

Key factors of the current stability of the Russian oil production



Russia's investments in oil production are stable and Russian oil projects are profitable even at low oil prices

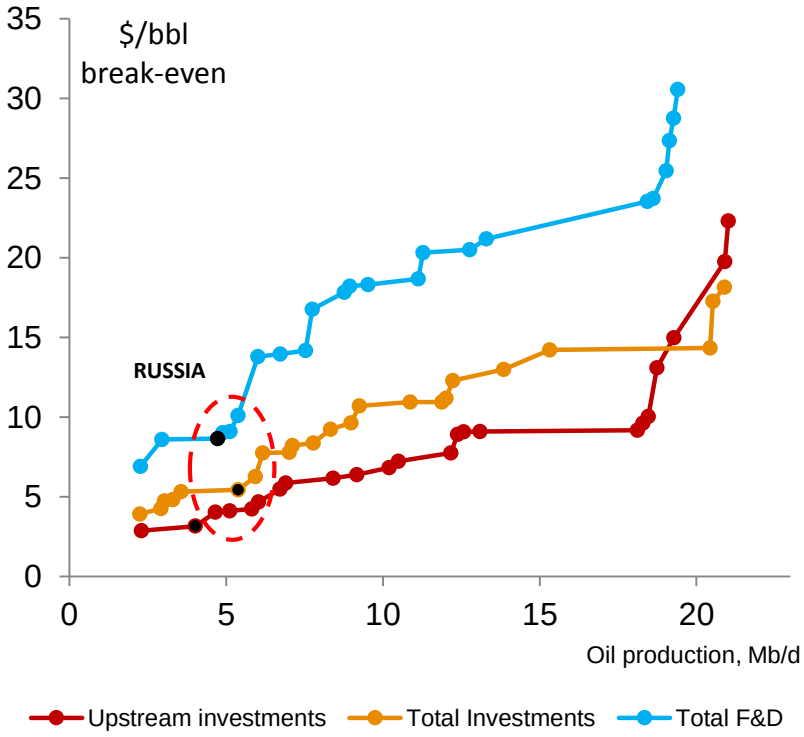
Index of total upstream investments in Russia



Source: Rosstat

- In 2015, investment in the Russian oil sector increased by 14% (YoY) in local currency (in constant prices), which was the highest growth of investment over the last 8 years

Russian oil projects are among the most effective



Sources: Goldman Sachs, Wood Mackenzie

- According to Goldman Sachs, Russia's oil projects generate positive free cash flow even at $10/bbl
- According to Wood Mackenzie, 80% of Russian oil projects will remain profitable even at the price of $20/bbl

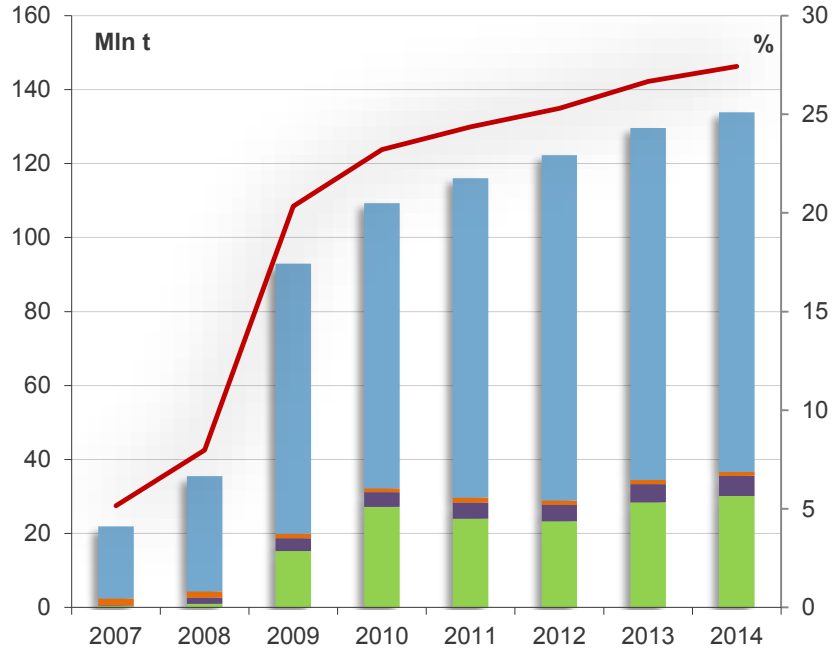
Russia remains attractive for foreign investment in oil production

Company	Project (%)
ExxonMobil	Sakhalin-1 (30%), Exploration on Arctic Offshore
Shell	Sakhalin-2 (27,5%), Salym oilfield (50%)
BP	Equity Stake in Rosneft (19,75%), TAAS-Yuryakh Neftegazodobycha (20%), Ermak Neftegaz (49%)
Total	Kharyaga PSA (20%)
Eni	Exploration on Arctic Offshore
Statoil	Kharyaga PSA (30%), Exploration on Arctic Offshore and Okhotsk Sea
Wintershall (BASF)	Equity Stake in Severneftegazprom (25%) and in Volgodeminoil (50%)
E.ON	Equity Stake in Severneftegazprom (25%)
CNPC	Vostok Energy (joint venture with Rosneft)
Sinopec	Equity Stake in Udmurtneft (51%), Venin Block of Sakhalin-3 (25,1%)
ONGC	Sakhalin-1 (20%), Equity Stake in Vankorneft (15%)
Oil India Ltd, Indian Oil Corp. Ltd, Bharat PetroResources Ltd	Equity Stakes in Vankorneft (23,9%) and TAAS-Yuryakh Neftegazodobycha (29,9%)
JAPEX, Marubeni и др.	Sakhalin-1 (30%)
Mitsui	Sakhalin-2 (12,5%)
Mitsubishi	Sakhalin-2 (10%)

Sources: IEF based on company data

Tax regulation effects

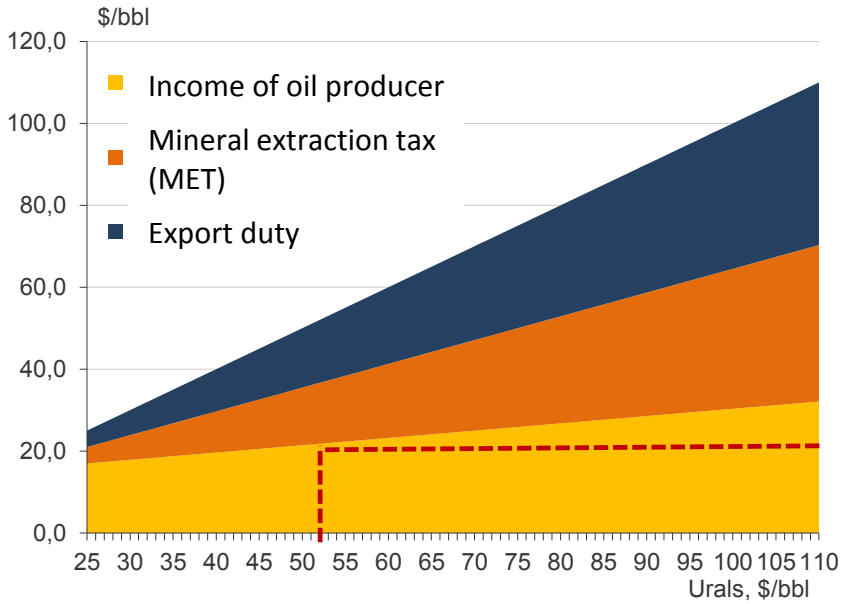
Russian oil production* with tax (MET) benefits



* - crude oil and gas condensate

Sources: CDU TEK, Ministry of Energy of the Russian Federation

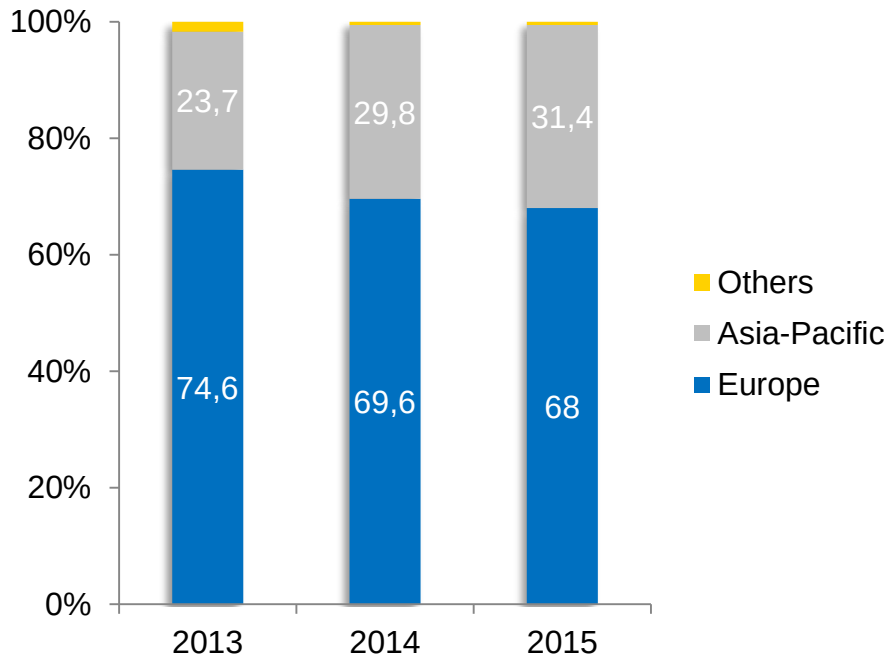
Income from one barrel of oil



- Tax benefits for large range of oil fields supported the oil production growth in the recent years
- The current tax system ensured the stability of oil production in Russia even at low oil prices

Russian oil exports is sustainable

Directions of Russian oil exports, 2013-2015



Source: IEF based on CDU TEK, FTS

- Europe remains the largest importer of Russian oil
- Russia is actively increasing oil supplies to Asia-Pacific

Role of Russian supplies in the international oil trade flows, 2013-2015

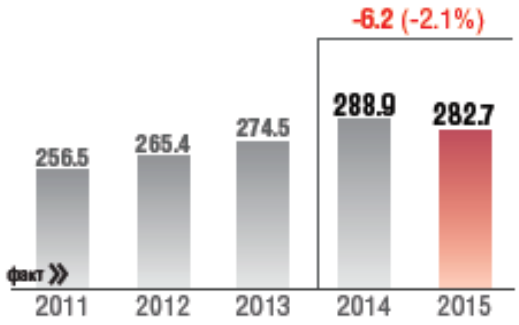
Source: BP Statistical Review of World Energy 2016

- Russian oil exports have proved as resilient to low oil prices
- Russia's share in international oil trade flows remains stable at 12%

Russian oil refinery: from volumes to quality

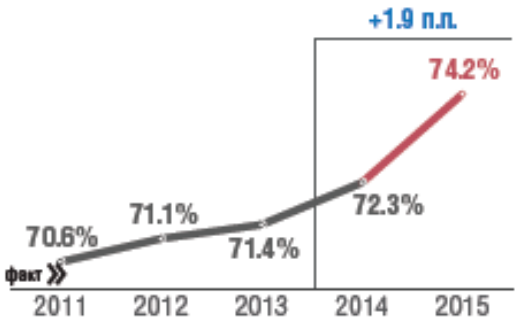
Primary oil refining,

mln t



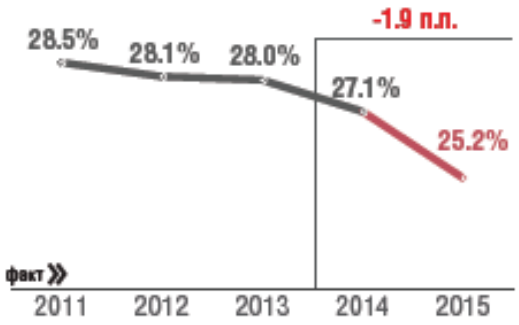
Oil processing depth,

%



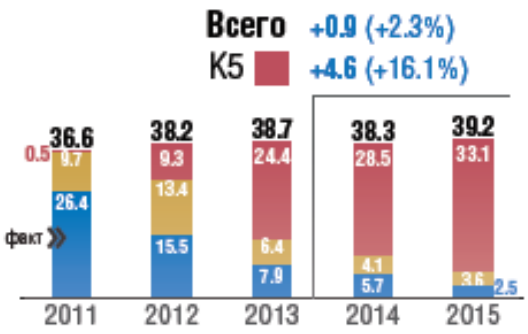
Fuel oil output,

%



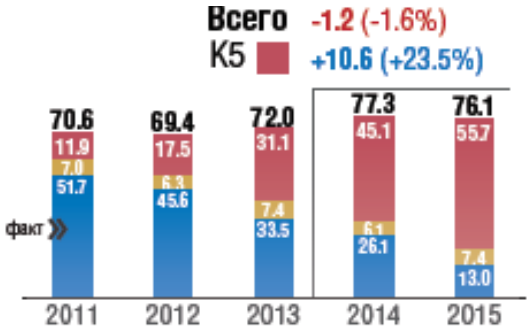
Gasoline production,

mln t



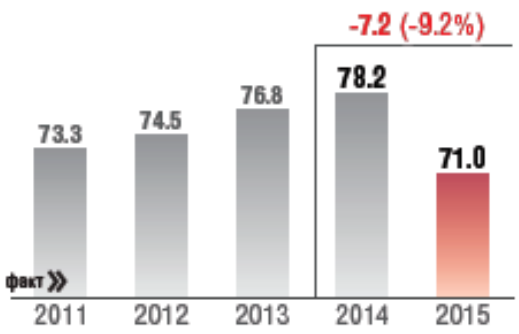
Gasoil production,

mln t



Fuel oil production,

mln t



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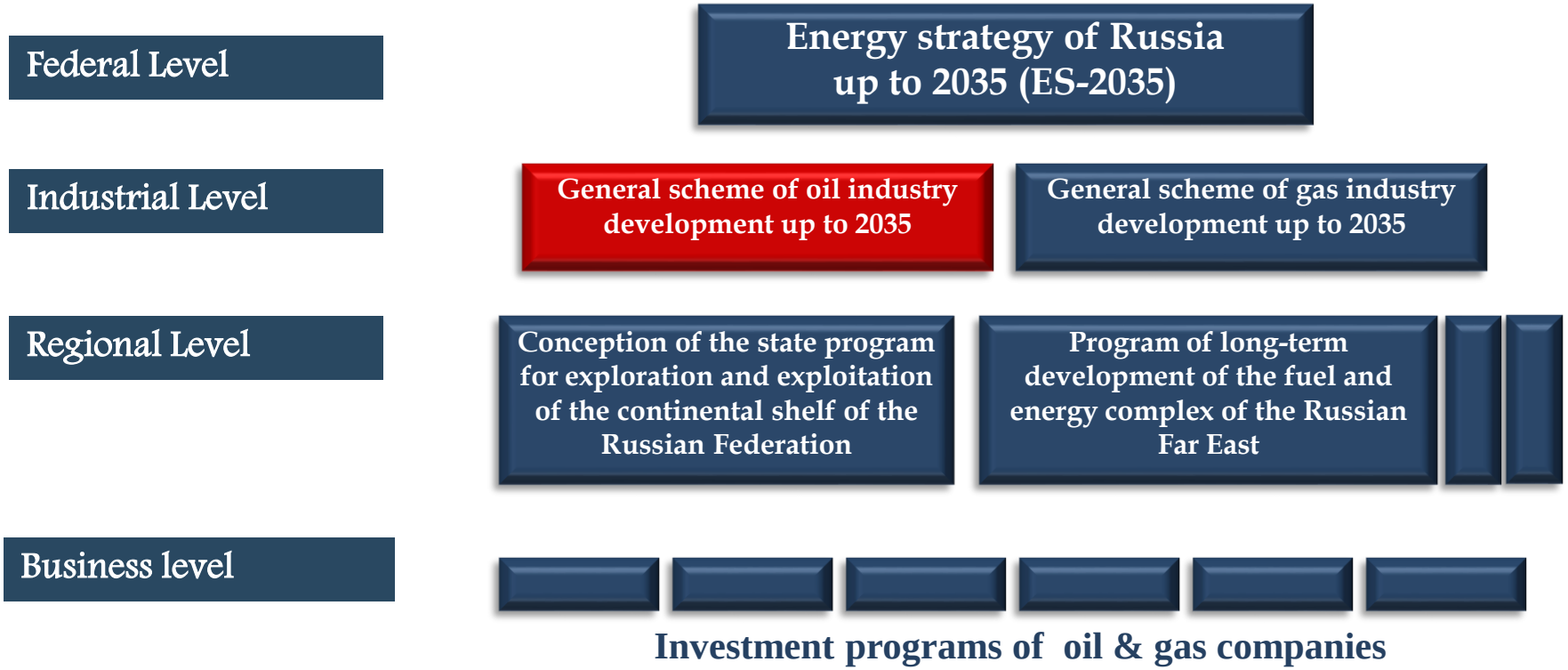
The current system of strategic documents in Russian oil and gas sector



- Energy Strategy up to 2035 is an ideology of development
- General schemes are industry roadmaps of development
- Investment programs are the concrete realization of the development

The main goals of Russian oil industry development up to 2035

Oil industry will remain one of the drivers of the Russian economic development

Creating equal and transparent conditions of doing oil business for all types of companies, including state-owned and private vertically integrated oil companies, small and medium business

The development of the resource potential to ensure a sustainable level of oil production up to 2035

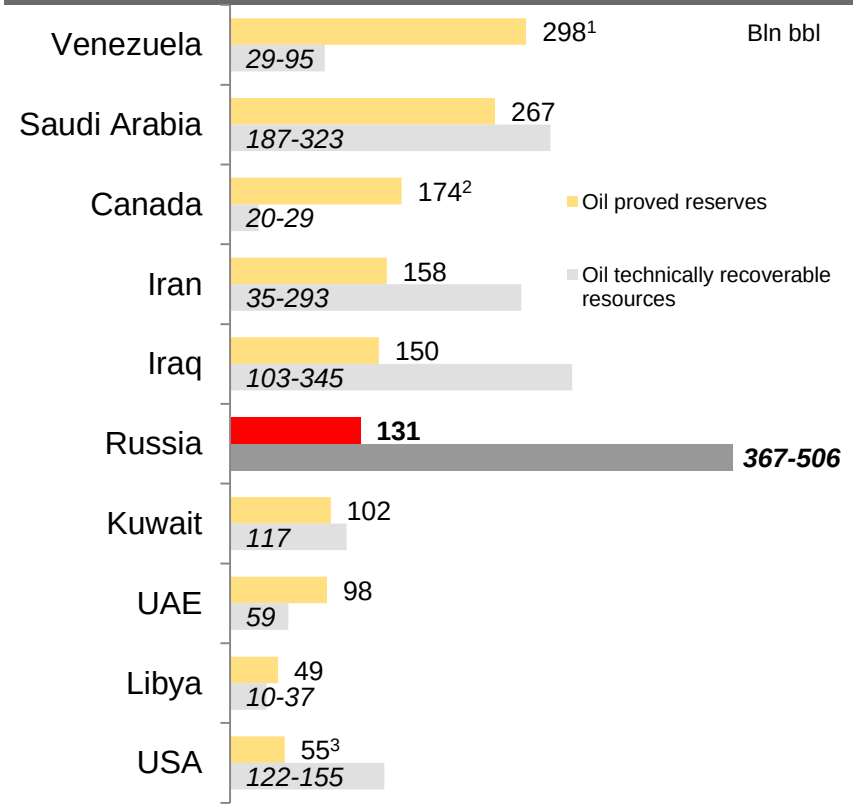
Ensuring sustainable and economically efficient level of Russian oil production

Import substitution of the key technologies in the oil production and refining

Ensuring economically efficient level of oil refining in Russia

Russia has a huge potential to increase future liquid hydrocarbons production

Oil Reserves and resources by countries



Notes:

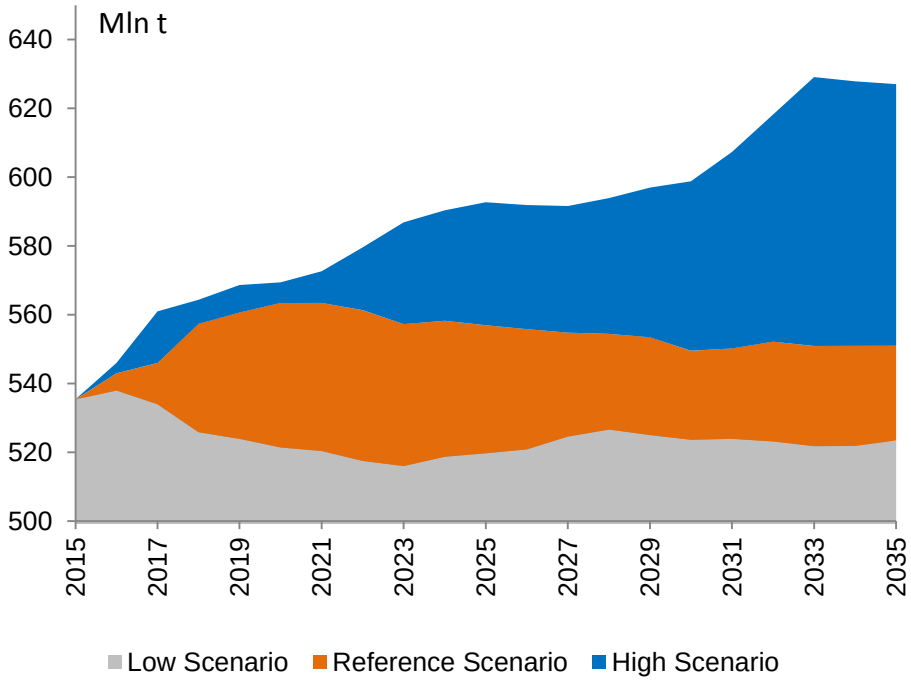
(1) including 257 bln bbl of extra heavy oil

(2) Including 170 bln bbl of bitumen

(3) Including 10 bln bbl of unconventional oil

Sources: *BP, EIA, USGS, Ministry of Natural Resources of the Russian Federation*

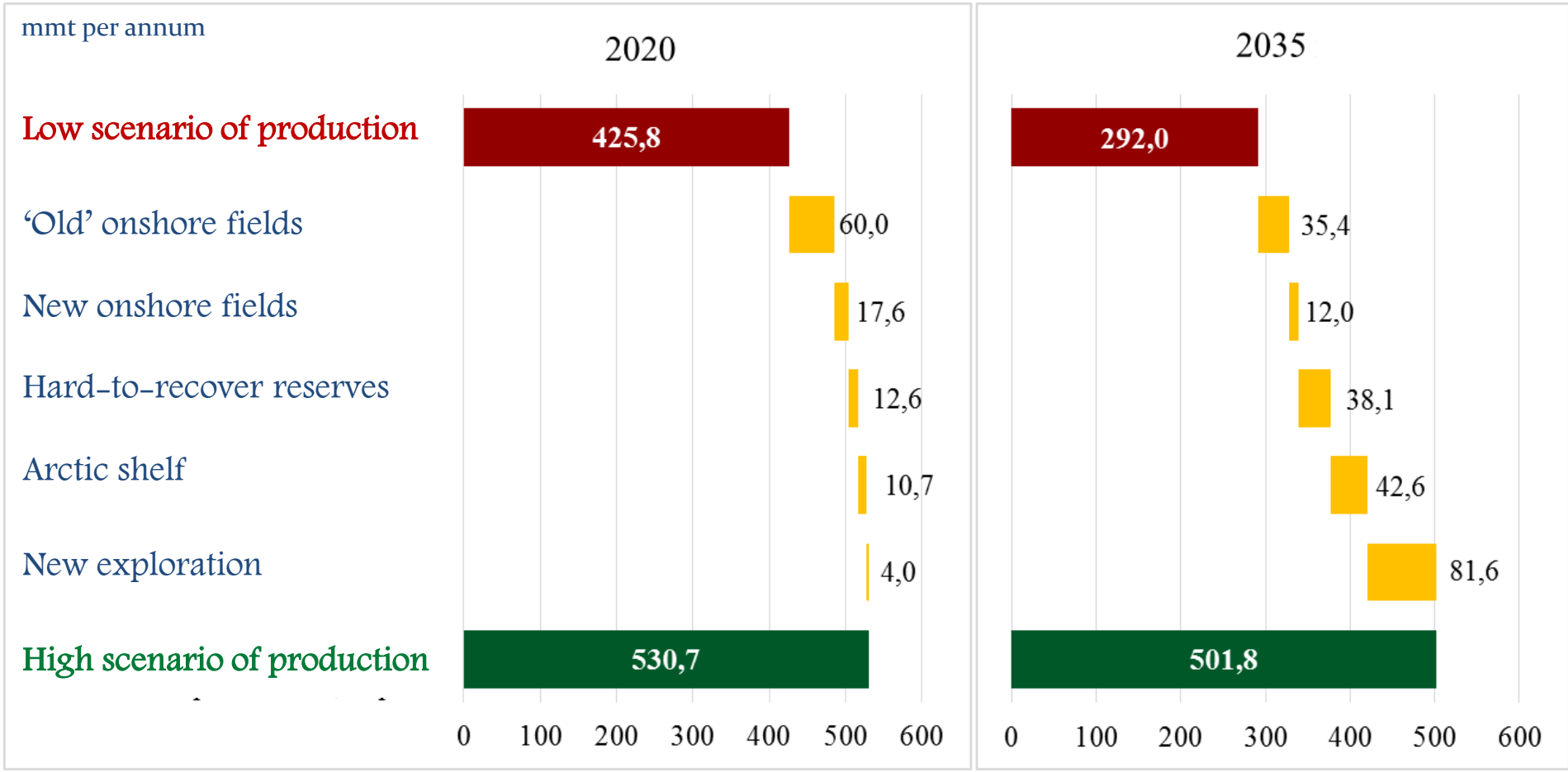
Potential of liquid hydrocarbons total production in Russia, 2015-2035



Sources: IEF

- Russia has a unique resource potential for the development of oil production
- The total production of liquid hydrocarbons in Russia has a potential to increase up to 555-560 mln t by 2020

Future oil production: shift to the new regions, Arctic shelf, hard-to-recover reserves

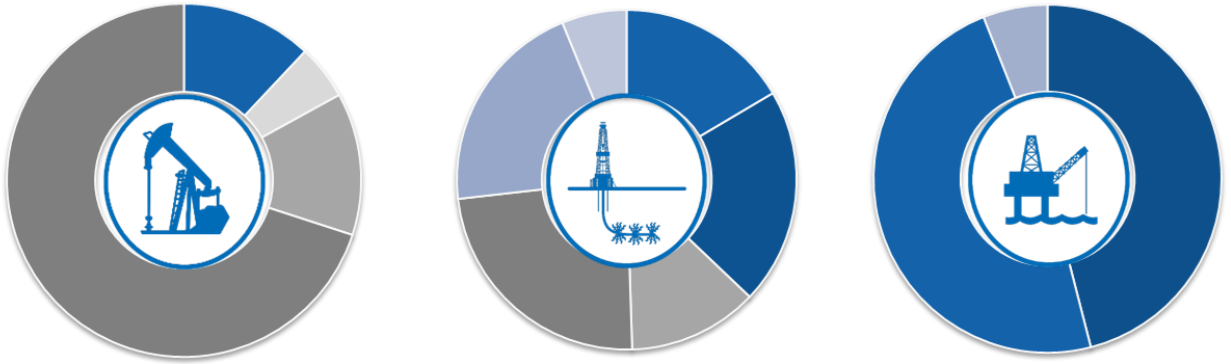


Sources: IEF, Vygon Consulting

To ensure the future oil production, Russia has to reduce the share of technology's import…

	Brownfields	Hard-to recover oil	Offshore projects
The share of imported technologies	**< 20%**	**40-60%**	**80-100%**

CAPEX structure



- Fracking
- Construction of wells
- Commissioning of wells
- Drilling

- Fracking
- Construction of wells
- Commissioning of wells
- Vertical Drilling
- Horizontal Drilling
- Others

- Oil platforms
- Drilling
- Others

Source: Vygon Consulting

Rosneft's Zvezda yard: a good example of technology's localization

- The new top-modern yard will be able produce the full range of oil and gas-related installations, among them up to 350.000 dwt tankers, LNG carriers, ice-protected ships, drilling rigs and production platforms
- The total price tag of the Zvezda project is estimated to more than 145 billion roubles (€2,11 billion) and construction works are to be completed in 2018
- Preliminary production program – construction of, at least, 178 ships and other marine technics up to 2035
- Creation of more than 10 000 new hi-tech working places
- Close partnership with global technological leaders: GE, Keppel Offshore&Marine, MH Wirth, Damen, China Shipbuilding&Offshore Co

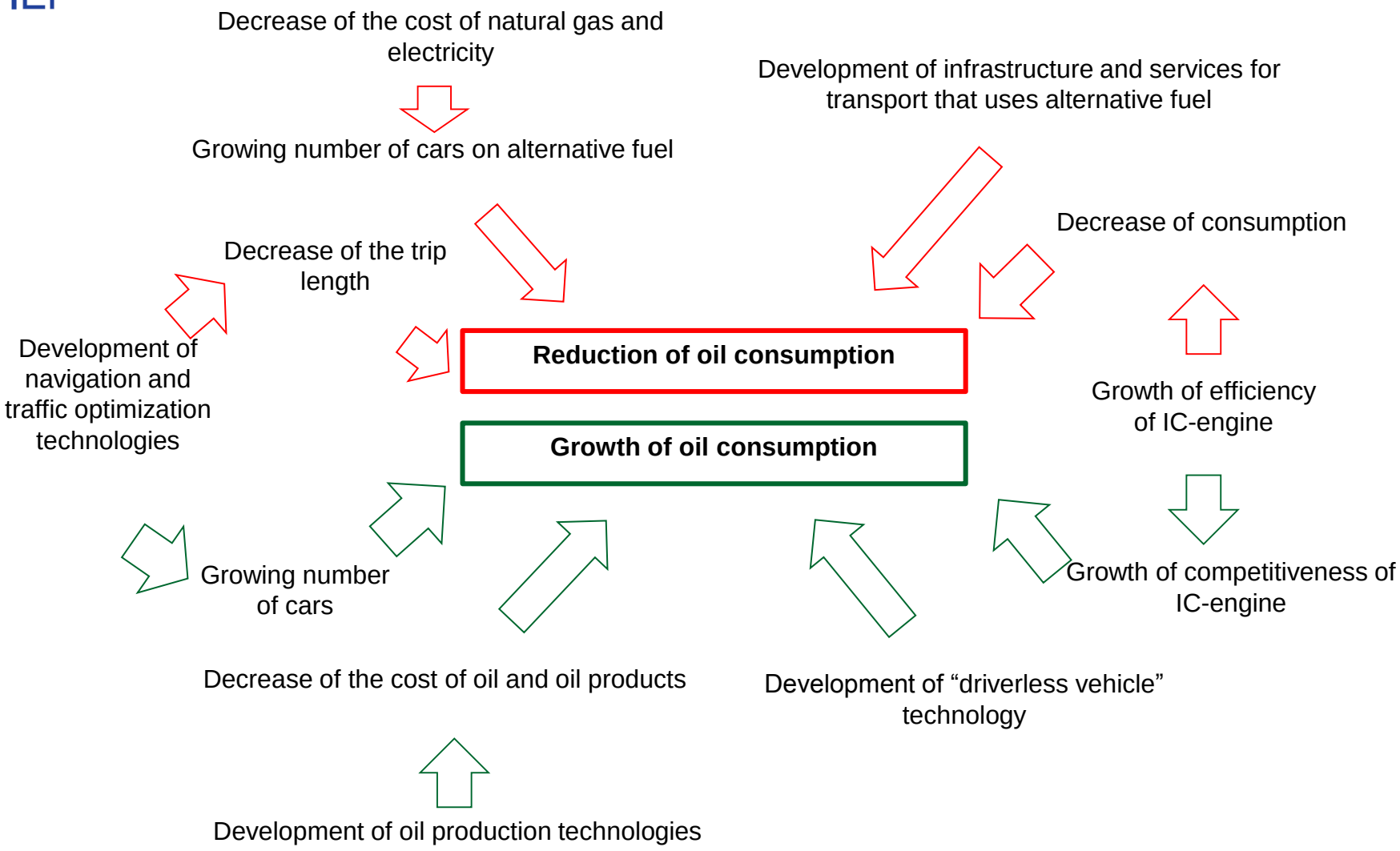
Source: Rosneft

Outline

1. Review of the global oil market
2. Short-term and long-term global oil market developments
3. Russian Oil Industry: facts and figures
4. Russian Oil Strategy up to 2035

5. The role of technologies and business

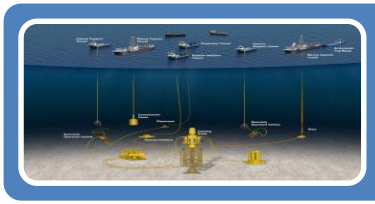
New technologies are both a risk and an opportunity for oil consumption growth



Source: Rosneft based on World Energy Outlook 2015 and other sources

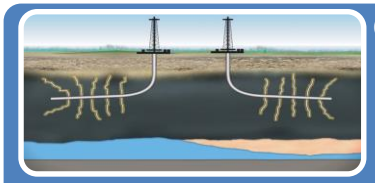
Key technological assumptions

Technologies will define the future price for energy and especially for oil



Supply-side technologies will affect oil prices in the near term

Consumption-side technologies are more important in the long term



Cost of production will be defined by the key technologies needed for hi-tech oil production:

- LTO production technologies progress in North America
- Hard-to-recover production technologies progress outside North America
- Deepwater oil technologies (including Arctic offshore technologies)

Long-term oil demand and breakeven prices can be shaped by the new transportation technologies:

- Increase of conventional engine fuel efficiency
- alternative fuel and Electric vehicles developments
- New mobility's technologies (autonomous vehicles)

International business partnership in energy technologies is needed for Russia

Possible areas of cooperation for technology's localization

Hi-tech oil production (supply-side technologies)

- Fracking & Horizontal Drilling
- Deepwater/Arctic offshore platforms
- Engineering Services

Energy efficiency & road transportation (demand-side technologies)

- Energy efficiency technologies
- Conventional engine efficiency
- Alternative fuels
- Electric Vehicles (including hybrid vehicles)