

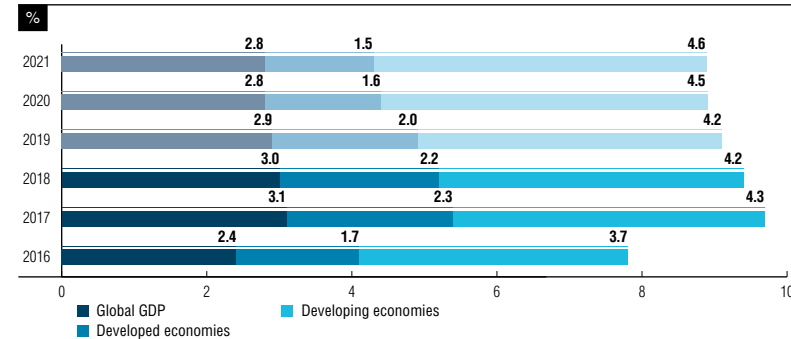
MARKET OVERVIEW

Macroeconomic overview

Global markets were highly volatile throughout 2018 due to the political decisions of a number of major economies: the United States, the United Kingdom, China, North Korea, and European Union countries. Despite ongoing negotiations on most issues, tensions remained fairly high as far as global trade issues are concerned. This situation, combined with the concerns of major investors about the growth prospects for the global economy, contributed to a decline in world stock market prices. The appreciation of the U.S. dollar, greater volatility on financial markets, and growing export-import risks led to increased capital outflow and foreign exchange pressure in emerging markets. Significant price fluctuations were seen on energy and metal markets over the course of 2018. As a result, prices for many commodities were down at the end of the year, which caused problems for export-oriented countries.

The World Bank estimates that GDP growth slowed to 2.2% on average in developed economies and to around 4.2% in developing economies in 2018. A number of countries with heightened current account deficits experienced considerable pressure on their own financial markets in 2018, which triggered a slowdown in business activity within these countries. The World Bank predicts that global GDP will grow by 2.9% in 2019 and by 2.8% in 2020–2021, with the Russian economy expanding by 1.5% in 2019 and 1.8% in 2020–2021.

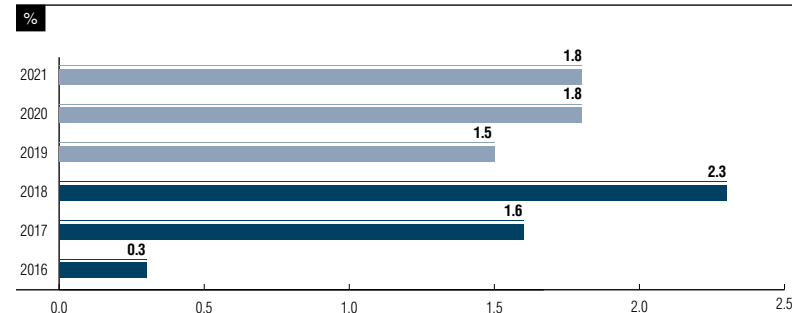
CHANGES IN GLOBAL GDP,



Source: World Bank report, January 2019

Changes in the GDP of the Russian Federation

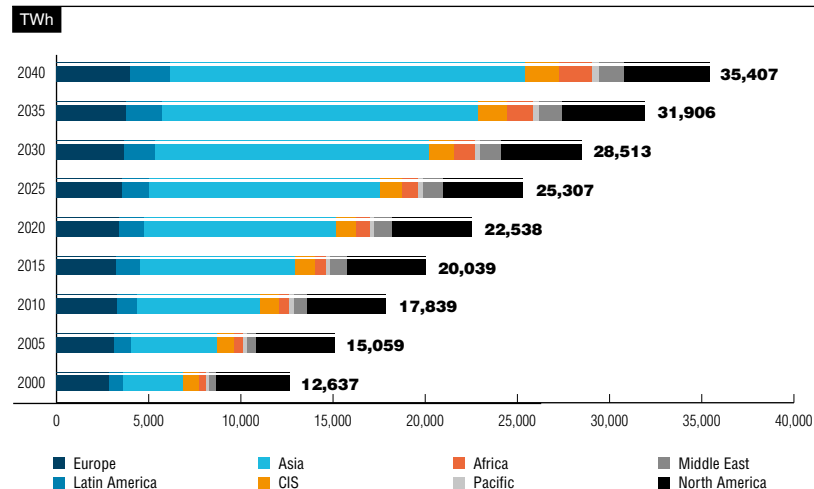
PROJECTED GDP GROWTH RATES IN THE RUSSIAN FEDERATION,



Source: Ministry of Economic Development of the Russian Federation, January 2019, [Electronic resource] <http://economy.gov.ru/minec/about/structure/depMacro/2019120201>. (reference date: March 29, 2019)

According to the Russian Federal State Statistics Service, GDP growth accelerated to 2.3% in 2018 from 1.6% a year earlier, which surpassed both the estimates of the Russian Ministry of Economic Development as well as the market consensus forecast. In terms of different sectors of the economy, industry and construction have become key drivers of economic growth (contributing 0.6 p.p. and 0.3 p.p. to economic growth, respectively). Retail (0.3 p.p.) and the transport industry (0.2 p.p.) also made positive contributions to the changes in GDP.

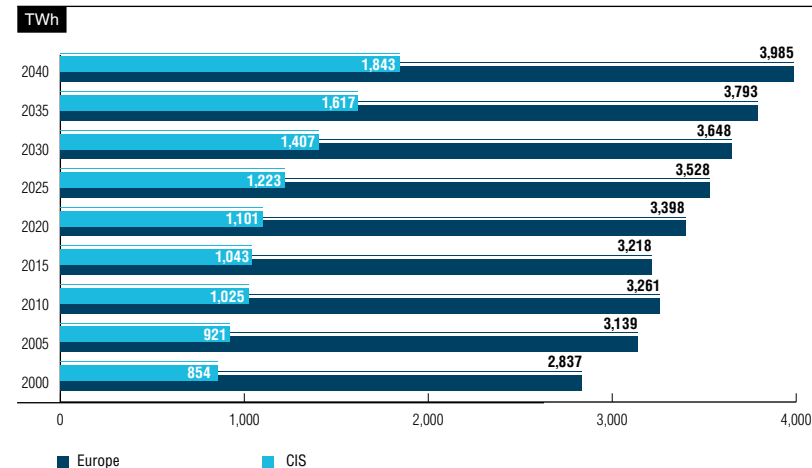
FORECAST FOR THE DEVELOPMENT OF THE ELECTRIC POWER INDUSTRY ON KEY INTERNATIONAL MARKETS



Source: Enerdata, EnerOutlook 2018, 2018 [Electronic resource] <https://eneroutlook.enerdata.net/> (reference date: March 29, 2019)

GLOBAL ELECTRICITY CONSUMPTION COULD GROW BY 40-50% BY 2035 COMPARED WITH THE CURRENT INDICATORS.

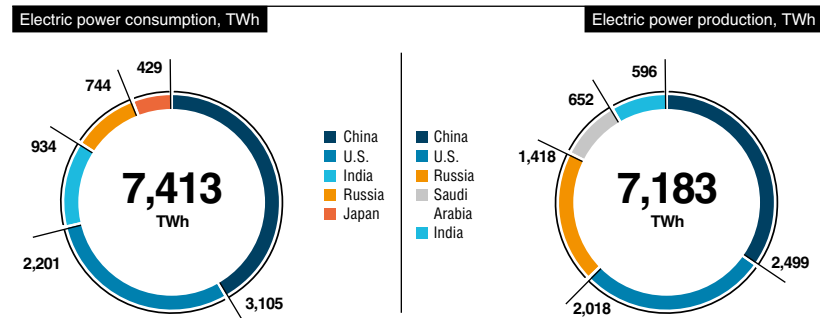
FORECAST FOR THE DEVELOPMENT OF THE ELECTRIC POWER INDUSTRY ON KEY MARKETS WHERE THE INTER RAO GROUP OPERATES



Source: Source: Enerdata, EnerOutlook 2018, 2018 [Electronic resource] <https://eneroutlook.enerdata.net/> (reference date: March 29, 2019)

THE BULK OF THE GROWTH WILL BE CONCENTRATED IN ASIAN COUNTRIES, WHILE MODERATE INCREASES OF 15-20% ARE PROJECTED ON THE INTER RAO GROUP'S PRIMARY MARKETS – THE CIS AND EUROPE

RUSSIA IN THE GLOBAL ELECTRIC POWER INDUSTRY



Source: Enerdata, The Global Energy Statistical Yearbook, 2018, [Electronic resource] <https://yearbook.enerdata.net/> (reference date: March 29, 2019)

Changes in the Russian electric power industry

Electricity consumption within the Unified Energy System of Russia amounted to 1.056 trillion kWh in 2018, or 1.5% more than in 2017. Electricity production within the Unified Energy System of Russia came to 1.071 trillion kWh, a 1.6% increase from 2017. The structure of electricity generation has changed significantly in recent years as the share of thermal power plants has declined in the UES of Russia, while electricity production at nuclear power plants has increased. In 2018, nuclear power plants (branches of Rosenergoatom) produced a record amount of electric power – 204.3 billion kWh, or 0.7% more than in 2017. As of the beginning of 2019, the share of nuclear power generation in the overall energy balance amounted to roughly 19% of total electricity generation in the country. A total of 4.5 GW of capacity were put into operation in 2018, with nuclear power plants (NPP) and thermal power plants (TPP) each accounting for 2.2 GW.

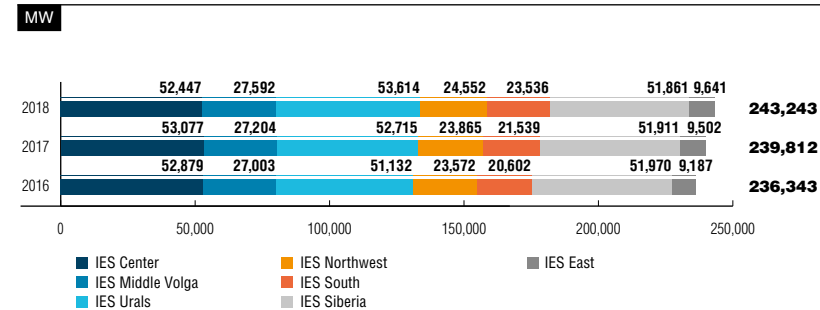
According to the forecast for the baseline development of the Russian economy, industrial production will grow by an average of 3% per year in 2018-2024. No significant changes are expected in the structure of industrial production in the medium term. Operational stability is projected to continue in the fuel and energy sector.

Based on the projected trends for the development of the country's economy, electricity production is expected to amount to 1.129 trillion kWh by 2021. Electricity consumption on the domestic market will increase to 1.118 trillion kWh (an increase of 3.1% versus 2017). By 2024, electricity production is projected to total 1.163 trillion kWh, as electricity consumption on the domestic market will increase to 1.194 trillion kWh (growth of 6.5% compared with 2017). Even though thermal power plants will continue to account for the bulk of electricity production in 2021, their overall share in the structure of electricity production will decrease from 64.4% in 2017 to 63.1% in 2021.¹

The main systemic problems hindering the development of the electric power industry are the high depreciation of fixed assets, the existence of cross-subsidies between consumer groups, and the lack of a competitive thermal power market.

The installed capacity of UES of Russia power plants increased by 13.6 GW in 2016–2018² due to the commissioning of new generating equipment at power plants as well as the modernization of existing equipment. Generating equipment with total capacity of 7.2 GW was decommissioned at UES of Russia power plants over the same period.

INSTALLED CAPACITY



Source: System Operator of the Unified Energy System [Electronic resource]
http://so-ups.ru/fileadmin/files/company/reports/disclosure/2019/ups_rep2018.pdf (reference date: March 29, 2019)

CHANGES IN ELECTRIC POWER GENERATION IN THE UES OF RUSSIA

Indicator	2016	2017	2018	Change 2017/2018, %
Total electric power generation	1,048.5	1,053.9	1,070.9	1.6
including:				
Thermal power plants	673.7	671.3	681.8	1.6
Hydroelectric power plants	178.3	178.9	183.8	2.7
Nuclear power plants	196.4	202.9	204.4	0.7
Renewable energy sources	0.01	0.1	0.2	66
Power plants of industrial enterprises	0.1	0.6	0.8	33
Electric power consumption	1,026.9	1,039.9	1,055.6	1.5

Source: System Operator of the Unified Energy System [Electronic resource]
http://so-ups.ru/fileadmin/files/company/reports/disclosure/2019/ups_rep2018.pdf (reference date: March 29, 2019)

¹ Source – Russian Ministry of Economic Development

² Source – JSC SO UES

243,243.2
MW

Installed capacity of UES of Russia power plants as of December 31, 2018

1,950.4
MW

total power capacity decommissioned

**INCREASE
IN INSTALLED
CAPACITY**

4,792.1
MW

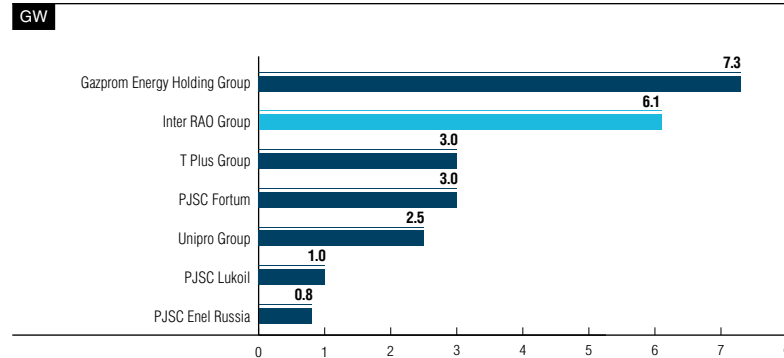
through the commissioning of new generating equipment

294.8
MW

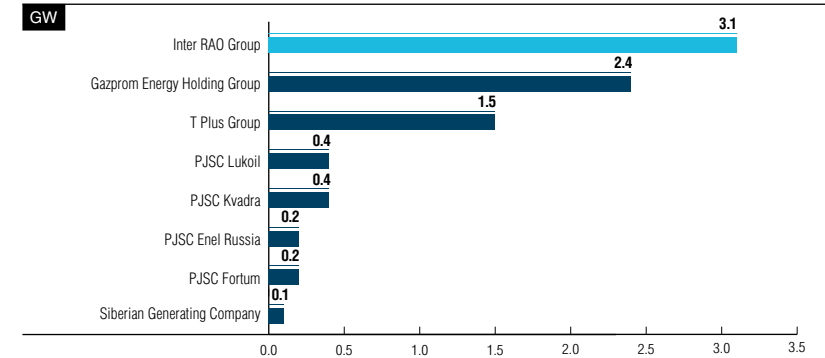
due to relabeling

Market share of the Inter RAO Group

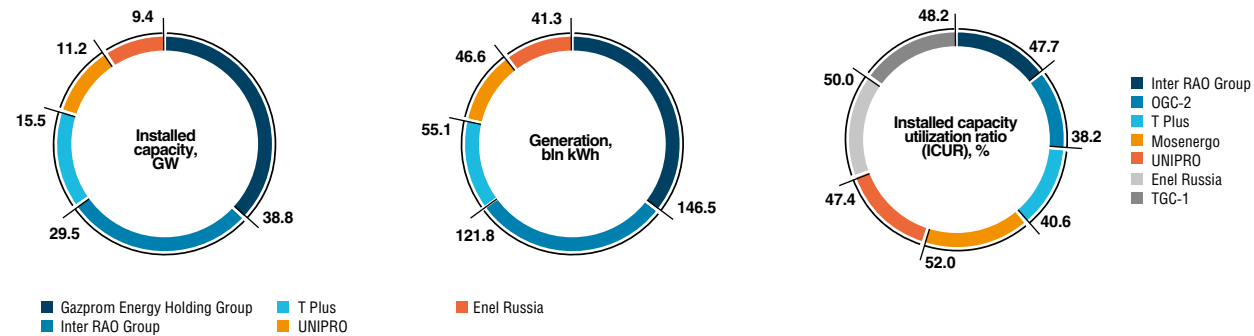
THE INTER RAO GROUP'S RANKING AMONG GENERATING COMPANIES OF THE RUSSIAN FEDERATION IN TERMS OF COMMISSIONING NEW EFFICIENT CAPACITY AND DECOMMISSIONING INEFFICIENT CAPACITY AS OF DECEMBER 31, 2018



THE INTER RAO GROUP'S RANKING AMONG GENERATING COMPANIES OF THE RUSSIAN FEDERATION IN TERMS OF DECOMMISSIONING INEFFECTIVE CAPACITY AS OF DECEMBER 31, 2018



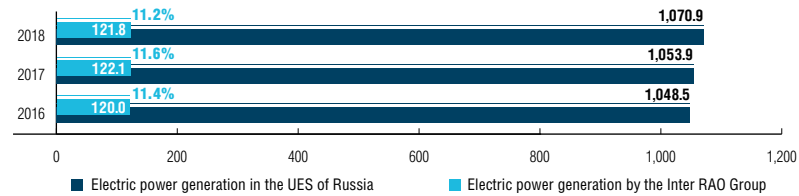
THE INTER RAO GROUP'S RANKING AMONG GAS AND COAL GENERATION COMPANIES IN THE RUSSIAN FEDERATION AS OF DECEMBER 31, 2018



Source: company press releases

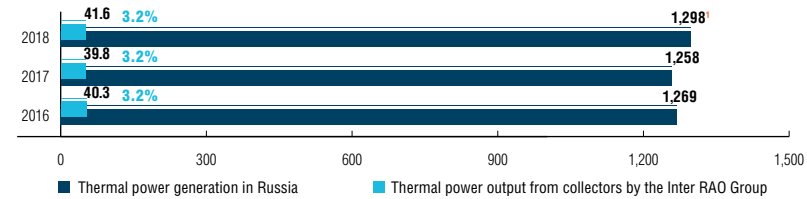
SHARE OF THE INTER RAO GROUP IN ELECTRIC POWER GENERATION IN RUSSIA IN 2016–2018

bln kWh



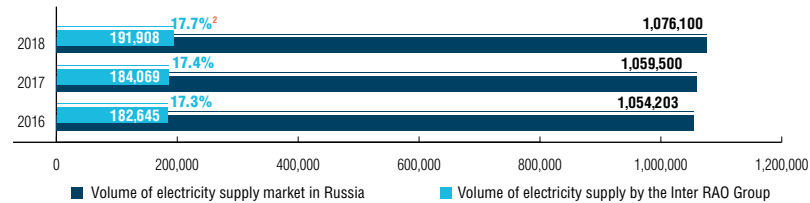
SHARE OF THE INTER RAO GROUP IN THERMAL POWER GENERATION IN RUSSIA IN 2016–2018

thousand Gcal



SHARE OF THE GROUP'S SUPPLY SEGMENT ON THE RUSSIAN MARKET IN 2016–2018

mln kWh



Key legislative initiatives regulating activities on the market:

- The deadline for the licensing of energy supply activities has been postponed.
- A law has been passed to develop smart metering systems for electric power.
- The Housing Code of the Russian Federation has been amended to establish a transition to direct contracts with resource supply companies.
- The Federal Law "On Advertising" has been amended to restrict advertisements on payment documents for housing and utility services.

¹ The thermal power generation forecast is calculated based on the Company's market share in 2017

² Including electricity sales on the wholesale market