Hydrocarbon production

The company retained its market leadership as one of Russia’s top-three hydrocarbon producers in 2020, with total production flat on prior year at 96.06 mtoe (96.1 mtoe in 2019). To comply with the OPEC+ production cut in force since April 2020, our oil and condensate production was 60.52 mt, 7.5% below the 2020 target.

Hydrocarbon production, mtoe

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<tr>
<td>Subsidiaries and Gazprom Neft’s interest in joint operations</td>
<td>59.90</td>
<td>63.28</td>
<td>65.36</td>
<td>67.58</td>
<td>68.02</td>
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<td>Oil and Gas Company Slavneft (JV)</td>
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<td>5.08</td>
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<td>Messoyakhaneftegaz (JV)</td>
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<td>3.11</td>
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<tr>
<td>Eurotek-Yugra (JV)</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td><strong>INCLUDING GAZPROM NEFT’S INTEREST IN JOINT VENTURES, TOTAL</strong></td>
<td><strong>86.20</strong></td>
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<td><strong>92.88</strong></td>
<td><strong>96.10</strong></td>
<td><strong>96.06</strong></td>
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<td>Average daily production by the Gazprom Neft Group, ktoepd</td>
<td>235.52</td>
<td>245.89</td>
<td>254.47</td>
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<td>262.46</td>
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</table>

Source: company data

2020 milestones

- Gazprom Neft started to develop the Bovanenkovskoye, Kharasaveyskoye and Urengoyskoye fields under long-term risk-operatorship agreements.
- The company proceeded to the full-scale development of the Zima project in the Khanty-Mansi Autonomous Okrug-Yugra.
- Gas production across the Group was up 5.5% to 43.08 bcm.

The new fields operated by Gazpromneft-Zapolyarye (Zapadno-Tarkosalinskoye and Pestsovoye fields), Meretoyakhaneftegaz (Tazovskoye field) posted the highest production increases in 2020 and Gazpromneft-Khants (Alexander Zhagrin field).

1 — Including gas condensate.
2 — Consolidated companies.
3 — The company’s share in production.
Asset of the Future

The Asset of the Future Programme seeks to deliver an integrated transformation of the business model for the Gazprom Neft Upstream Division by optimising business processes, enabling digital transformation, as well as developing cross-functional capabilities and new ways of working for our employees.

To ensure cross-functional and integrated changes, the Programme uses our product-based approach, adapted for the oil business. As a combination of new processes, capabilities and technologies, the product not only forms a cross-functional business-management tool that focuses the attention of management, but it also enables the company to bring about a multi-faced change-and-run transformation.

Programme highlights in 2020

In 2020, the company integrated all processes into six dedicated business products across the entire value chain: from finding new development opportunities to exporting products at custody transfer points. Rolling out a cross-functional business model for each business product prompted operations teams at subsidiaries to progressively develop new capabilities and refine "one team one business goal" teamwork.

Product teams launched more than 25 pilots to address the key business challenges facing the company’s upstream enterprises. A rapidly-built management system kept a normal operating rhythm even in a remote-working environment, and covered over 700 employees from dozens of the company's divisions. Product-based interaction and decision-making have become routine processes at both the Gazprom Neft Corporate Centre and subsidiaries.

As early as 2019, the pilot asset delivered ₽1.2 billion in business impact; but in 2020, the programme-associated benefits topped ₽3.6 billion, driving positive cash flow and proving the potential to deliver a ₽100 billion impact up to 2030.

A new single operating model, deploying end-to-end processes across all management levels, and rapidly rolling out solutions and best practices throughout product teams, – from new ways of working to innovative Industry 4.0 technologies – makes sure this transformation is sweeping and effective.

The Production Directorate is completely switching to the new product-based model in 2021. The programme will pursue the following key objectives:
- implement a product-based approach across the entire value chain, and deploy the operating model 2.0 at the asset level in 10 subsidiaries;
- interface products with the Integrated Operations Centre and scale these interfaces according to potential;
- implement a single digital landscape across all business products and management levels: from asset to the Gazprom Neft Corporate Centre;
- introduce uniform company-wide principles and interaction requirements for all Ecosystem participants.

### Key Figures
- **10** subsidiaries
- **27** assets
- **200+** business processes
- **130** technologies and digital solutions
A NEW MAJOR PRODUCTION CLUSTER

This new cluster will form one of the key areas of growth to support our production in Western Siberia. Thanks to cutting-edge exploration technologies, the Alexander Zhagrin field was brought into development in just two years, which is significantly faster than the industry average.

Project timeline

- **2017**
  - Discovery of the Alexander Zhagrin field

- **2018**
  - Acquisition of the Severo-Vaysky and Srednevaysky blocks

- **2019**
  - Commercial production startup at the Alexander Zhagrin field

- **2020**
  - Acquisition of the Karabashsky-84 block
This new cluster will form one of the key areas of growth to support our production in Western Siberia. Thanks to cutting-edge exploration technologies, the Alexander Zhagrin field was brought into development in just two years, which is significantly faster than the industry average.

111 mt of initially recoverable reserves
2,300 m - 2,600 m depth of productive formations
70% of high-tech horizontal wells
6.5 mtpa peak production (by 2024)
54 production wells (920 wells by 2028)

Peak production at the Alexander Zhagrin field
Completion of exploration campaigns across all blocks

5,000+ sq km TOTAL AREA OF THE BLOCKS
840+ MT GEOLOGICAL RESERVES OF THE CLUSTER
Oil production

Oil and condensate production across the Group was down 4.4% to 60.52 mt, with the company ranked the third-largest oil producer in Russia. Daily oil production (including condensate and liquids) stood at 165,360 tonnes.

In the production segment, the company remains focused on expanding its existing infrastructure, delivering reserves in the most economical way and improving oil recovery by leveraging cutting-edge technologies, unconventional reserve additions and new-project ramp-ups.

In 2020, the company proceeded to the full-scale development of the Zima project in the Khanty-Mansi Autonomous Okrug–Yugra. Zima’s estimated in-place reserves exceed 840 mt. This new cluster will form one of the key areas of growth to support our production in Western Siberia. This is one of the company’s most rapidly-evolving projects. Its production reached 1 mt of liquids at the end of 2020. The field is expected to hit a peak of 6.5 mt of oil per year in 2024.

One of the key pillars of the Gazprom Neft Development Strategy to 2030 is oil-rim development. The company has a complete skillset and a wealth of experience in developing such complex reserves, as showcased by the Novy Port and Messoyakha projects.

In Eastern Siberia, Gazprom Neft is developing a new production cluster, with an oil deposit at the Chayandinskoye oil and gas-condensate field in the Republic of Sakha (Yakutia) set to become one of its key contributors. This field is estimated to hold unique in-place reserves of 263 mt of oil; however, it has some subsurface nuances, such as a gas cap and abnormally-low reservoir pressure and temperature.

Gazprom Neft is developing the Chayandinskoye oil rim under an operating agreement with Gazprom Dobycha Noyabrsk (a subsidiary of Gazprom), which is developing the gas portion of the field. In addition, the company started commercial oil production at the oil rims of the Pestsovoye, Yen-Yakhinskoye and Orenburgskoye fields under a farm-in agreement.

Gazprom Neft has been developing the Tazovskoye field since 2017. This is a special project, with a challenging geology requiring sophisticated technology. There are few examples of similar oil rims, even globally. The field’s in-place reserves exceed 1 btoe. The construction of core infrastructure at the Tazovskoye field is slated for completion in 2021, with the field expected to come online in the same year. The company is planning to pass the 1 mt milestone before year-end.

The Prirazlomnaya offshore ice-resistant stationary platform is one of the company’s key projects and the only hydrocarbon-production project on the Russian Arctic shelf currently on stream. By late 2020, cumulative production from the Prirazlomnoye field had topped 15 mt of oil. The company is introducing a mix of solutions for extended-reach drilling and upgrading the pressure-maintenance system to ensure continuous drilling and production operations.

Gazprom Neft tasks the Single Centre for Technical Assurance and Integrated Evaluation of Offshore Development Options with overseeing its shelf operations. Exploring new solutions for the shelf is part of Gazprom Neft’s unified technological development programme.

Gazprom Neft extensively uses new technology, such as unmanned aerial systems (UAS or drones) for field development. Drones are used for a wide range of applications: from delivering cargo and assisting in petroleum exploration to performing inspection runs over assets and selecting locations for filling stations. The core benefit of using drones – faster acquisition of higher-quality data – translates into faster and better decision-making. At Gazprom Neft, unmanned vehicles perform a variety of functions:

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1 – Company data.
2 – A special type of reserves, which is a thin layer of oil under a much larger gas cap.
The digital technology used in the Asset of the Future programme (interview)

-38\% reduction in costs through the use of unmanned vehicles

+24\% faster data acquisition through the use of unmanned vehicles

Oil samples were delivered to the laboratory at the Yuzhno-Priobskoye field in the Khanty-Mansi Autonomous Okrug-Yugra by a Russian-made drone, resistant to the Far North climate. The drone travelled more than 40 km non-stop, completing the journey twice as fast as land transport. Furthermore, at the Vostochno-Messoyakhskoye field, which is accessible only by air for seven months a year, an unmanned helicopter was tested for the first time in Russia in September 2020 to deliver heavy and oversized cargo in the Arctic environment.

In addition, drone-borne shallow-electrical surveying and hyperspectral imaging were tested and performed for the first time in Russia in 2020. The company is preparing to conduct a 3,700 line km drone-borne magnetic survey over the Pokhvistnevsky licence block.

2020 also saw a string of firsts for this technology in Russia.

Artificial intelligence systems used for the analysis of field data

- The Automated Core Identification System leverages machine learning and digital vision to analyse formation samples from Western Siberian fields. The system proved it can accelerate whole-core analysis by a factor of seven to enable a decision on further core survey. The heart of the system – a lithological layer analyser – was trained on more than 17,000 core photographs taken under daylight and UV light. Combined with other technological advances made by Gazprom Neft, this new system will drive savings of about ₽85 million a year on laboratory testing.

- The OptimA project: consists of a 3D model that rapidly analyses thousands of field-development options, and aids in selecting the optimal well spacing for new wells and choke settings for existing wells. Introducing this system in pilot projects has already delivered about ₽500 million in economic benefits, a figure expected to grow several-fold once it transitions to full-scale deployment.
Gazprom Neft transitioned to the full-scale development of the Zima project in the Khanty-Mansi Autonomous Okrug-Yugra in 2020. Until recently, this oil production cluster included five licence blocks in the Kondinsky District of the Khanty-Mansi Autonomous Okrug-Yugra and the Uvatsky District of the Tyumen Oblast, namely the Karabashsky-84, Severo-Vaysky, Srednevaysky, Yuzhno-Zimny and Zapadno-Zimny blocks. In late 2020, the company extended the cluster area with three new blocks: Kholodny, Ledovy and Snezhny. Zima’s estimated in-place reserves exceed 840 mt.

The core of this project is the Alexander Zhagrin field, with initial recoverable reserves estimated at 111 mt of oil. The Severo-Vayskoye and Srednevayskoye fields were also discovered in this new cluster, in the Severo-Vayskoye and Srednevayskoye blocks. The total resource potential of these two fields stands at about 81 mt of liquid hydrocarbons.

This new cluster will form one of the key areas of growth to support our production in Western Siberia. Higher-category reserves adjacent to the existing infrastructure of Transneft-operated fields. This proximity to existing facilities condensed the time required to bring the Zima’s reserves into production to between one-and-a-half and two years.

Zima is one of the company’s rapidly-evolving projects. Discovered only in 2017, the Alexander Zhagrin field moved to full-field development as early as 2019, with cumulative production at 2020-end reaching 1 mt of liquids. The field is expected to hit a peak of 6.5 mt of oil per year in 2024.
The Bazhenov Formation is a 30 to 80-metre-thick geological sequence with depths of 2,000 to 3,000 m in Western Siberia, spanning an area of more than 1 million sq km. Best-case estimates suggest that the Bazhenov reserves may hold as much as 60 billion tonnes of oil. Gazprom Neft set up Gazpromneft – Technological Partnerships (formerly the Bazhen Technological Centre), an Industrial Integration Centre to explore the Bazhenov Formation.

Compared to 2019, the company cut the cost of production\(^1\) of Bazhenov oil by 20% to ₽13,000 per tonne in 2020, a 2.3-fold cost reduction since 2017. Gazprom Neft is planning to further cut the production cost to ₽8,500 per tonne before 2022, in time for commercial production from Bazhenov fields with the infrastructure already in place.

In 2020, Bazhenov oil production was up 78% against 2019 to 100,000 tonnes. Further to this, developing a commercial technology for tapping unconventional oil will enable the company to produce up to 1 mt of Bazhenov oil annually by as early as 2025.

In 2020, the company also drilled and fractured a high-tech well with a 2,000 m horizontal section at the Palyanovskoye field in the Khanty-Mansi Autonomous Okrug–Yugra. The fracturing involved 30 stages injected at up to 16 cu m/min. This was the first time that Russian-made equipment was used for all operations in such a complex well. This experimental well drove import substitution of up to 95%.

In 2021, Gazprom Neft plans to finish testing its range of solutions aimed at making Bazhenov oil economically viable. Eight wells will be drilled at the Palyanovskoye field to conclusively prove that oil can be extracted commercially from this unconventional reservoir using this technology. A successful trial and a lower unconventional oil cost will profitably open up the Bazhenov reserves in West-Siberian fields that have established infrastructure.

For more details on Gazpromneft – Technological Partnerships, see page 125.
Oil production,\(^1\) mt

<table>
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<tr>
<th>Enterprise</th>
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<th>2017</th>
<th>2018</th>
<th>2019</th>
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<td><strong>TOTAL, INCLUDING GAZPROM NEFT'S INTEREST IN AFFILIATES</strong></td>
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<td><strong>62.99</strong></td>
<td><strong>63.30</strong></td>
<td><strong>60.52</strong></td>
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<tr>
<td>Average daily oil production by Gazprom Neft Group, thousand tonnes/day</td>
<td>163.52</td>
<td>171.04</td>
<td>172.58</td>
<td>173.43</td>
<td>165.36</td>
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</table>

Source: company data

**Gas production**

Gazprom Neft is actively developing its gas business by commercialising the reserves of associated petroleum gas and natural gas produced at oilfields and increasing their value. In 2020, gas production across the Group was up 5.5% to 43.08 \(\text{bcm}\). The key drivers behind this increase included new well additions at Arcticgas-operated fields and the Novoportovskoye field, a ramp-up of gas processing and utilisation facilities at oilfields operated by Gazpromneft-Vostok and in the Orenburg Oblast, as well as the commissioning of an integrated gas treatment facility at the Vostochno-Messoyakhskoye oil field in July 2020.

Further to this, in 2020, the company started developing major assets, such as the Bovanenkovskoye, Kharasaveyskoye and Urengoyskoye fields under a long-term operatorship agreement. The Kharasavey-Bovanenkovo project also made good progress, having already formulated a development concept for its fields and approved investments for the Definition stage. An exploratory-drilling campaign is ongoing. The Urengoy project has had its field-development concept approved, with its exploratory-drilling campaign also ongoing. When these projects come on stream in 2024–2026, gas will account for 45% of Gazprom Neft’s total production. The share of gas projects in the company’s total investments will average 30% within the next three years.

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\(^1\) — Including gas condensate.
\(^2\) — Consolidated companies.
\(^3\) — The company’s share in production.
Gazprom Neft is steadily increasing utilisation of associated petroleum gas (APG). In 2020, APG utilisation across Russian subsidiaries, excluding long-term operatorship agreements and blocks where flaring is not restricted by the authorities (i.e. new assets), stood at 95.06%, or 93.67% if new assets are accounted for. This achievement is the result of a sweeping campaign initiated back in 2011, which covers APG exports to gas processing plants and the Unified Gas Supply System of Russia, APG processing, captive power and heat generation and APG injection into gas caps to maintain reservoir pressure.

The key drivers behind the utilisation growth in 2020 included:
- high on-stream efficiency of gas equipment across the company’s facilities (96.5%);
- a ramp-up of production from the Urmano-Archinskaya group of fields and the Vostochny block of the Orenburgskoye oil and gas condensate field (commissioned in late 2019) to the design capacity of gas-processing infrastructure; and
- an increase in compressor unit capacity at the integrated gas treatment facility for the Novoportovskoye field.

2020 saw a unique APG-utilisation project implemented across the Messoyakha group of fields, far removed from any existing gas infrastructure. The company decided to inject gas into an underground storage facility at the Zapadno-Messoyakhskoye field, which currently remains untapped. This involved laying a 47-km pipeline between this field and the Vostochno-Messoyakhskoye field (on stream), and deploying a compressor station rated at 1.5 bcm per year. With this new underground storage facility, APG utilisation at Messoyakhaneftegaz (JV) has increased to 95%.

### Marketable gas and Gas utilised, bcm

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>2016</th>
<th>2017</th>
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<th>2019</th>
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<td>0.09</td>
<td>0.11</td>
<td>0.40</td>
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<tr>
<td><strong>INCLUDING GAZPROM NEFT’S INTEREST IN JOINT VENTURES, TOTAL</strong></td>
<td><strong>32.82</strong></td>
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<td><strong>37.22</strong></td>
<td><strong>40.85</strong></td>
<td><strong>43.08</strong></td>
</tr>
</tbody>
</table>

Source: company data
Major oil and gas production projects in 2020

- For the Yamal Gas project, the company finished laying an offshore pipeline and received the approvals package required for the minimum start-up complex of the integrated gas treatment facility.
- The company approved the simultaneous-implementation concepts to be used in the Malo-Yamalskoye and Blizhnenovoportovskoye projects.
- For the Tazovsky project, the company finished laying oil and gas pipelines, signed a contract with Gazprom Dobycha Yamburg for gas compression and moved to the second phase of the power centre project.
- At the Vostochno-Messoyakhsky licence block, the company commissioned facilities for gas injection to boost oil recovery.
- Final investment decision was taken on the Oil Rims project covering the Pestsovoye and Yen-Yakhinskoye fields. As the project moved to the Implementation stage, a high-pressure pipeline, an oil-treatment system and a power plant were commissioned.
- The company signed a long-term operatorship agreement for the Chayandinskoye oil and gas condensate field and took final investment decision.

In 2020, the company commissioned Sever, our first 110/10-kW digital double-transformer substation, at the Novoportovskoye field. It will supply power to multi-well pads and social/welfare facilities in the northern part of the field, which is 26 km away from the core infrastructure of the asset. The substation was designed and fitted out for operation in an extreme climate, with innovative, Russian-made SF6 gas insulation technology used for sealing.

With cutting-edge smart-control and diagnostic systems on board, the substation needs minimum human input for maintenance. The substation’s measurement, control and protection processes are automated as far as possible. The performance of all systems will be remotely monitored from the control room at the gas-turbine power plant at the Novoportovskoye field.