



# ON THE ROAD TO PROSPERITY

NMMC SUSTAINABILITY REPORT 2019



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# ABOUT THE REPORT



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The 2019 Sustainability Report (the Report) presents the key results of Navoi Mining and Metallurgical Combinat State Company's ("NMMC," the "company," the "combinat") sustainability activities in the period from 1 January to 31 December 2019 and the company's plans in the mid-term.

This Report has been prepared in accordance with the GRI Standards: Core option. The Report also discloses information about how NMMC is working towards achieving the UN's Sustainable Development Goals (UN SDGs).

The Report preparation process is coordinated by the Sustainability Report preparation project team. The Report is reviewed and approved by the First Deputy General Director of NMMC.

The Sustainability Report covers the following NMMC business units: the NMMC Head Office, Central Mine Group, Northern Mine Group, Southern Mine Group, GMZ-1 Mine Group, Zarafshan Construction Department and Navoi Machine Building Plant Production Association and social support facilities. As per NMMC's Charter, NMMC is a legal entity and commercial organization in the form of a state-owned unitary enterprise. The NMMC business units listed above are not independent legal entities and are part of NMMC's corporate structure.

## Determining Material Topics

NMMC performed a materiality assessment to determine the topics of greatest significance to the company and its stakeholders that require disclosure in the Sustainability Report. The assessment involved two steps. First, NMMC conducted a benchmark analysis of material topics disclosed by peer companies and an analysis of best practices in the industry, resulting in a preliminary list of significant topics. Second, the company convened a working group and surveyed the participants to assess the materiality of each topic for stakeholders and the impact of the company's business on the topic.<sup>1</sup> Based on the results of the survey, we determined nine material topics:

- Economic Performance
- Ethics and Compliance
- Employees
- Contributions to Regional Development and Social Responsibility
- Health and Safety
- Human Rights
- Responsible Water Consumption
- Climate Change
- Waste and Tailings Management.

The Report discloses information about all significant topics, although, as required by the GRI Standards, material topics are presented in the greatest detail.

GRI disclosures are presented and calculated in accordance with the requirements of the GRI Standards. Financial reporting indicators were converted into USD (\$) at the annual average weighted exchange rate for 2019 or at the 2019 year-end exchange rate, depending on the type of indicator.

## Contact Information

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First Deputy General Director  
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<sup>1</sup> In the future, the company plans to involve stakeholders in the process of identifying and prioritizing material topics.

*"I firmly believe in the wisdom and determination of our people, whose remarkable human qualities, resilience, unity and true courage have been especially evident in these trying times. I kneel before our noble, heroic people with a son's love and devotion."*

Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan



# GENERAL DIRECTOR'S STATEMENT

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**Kuvandik Sanakulov**  
General Director  
Navoi Mining and Metallurgical Combinat  
Hero of Uzbekistan

Dear investors and partners of Navoi Mining and Metallurgical Combinat,

Dear colleagues and citizens of Uzbekistan,

We present for your attention this Report on the sustainable development of Navoi Mining and Metallurgical Combinat.

We achieved significant results in 2019, both in terms of the reform process and our operational and financial indicators. In the reporting year, NMMC produced 2.4 million oz of gold and 614,000 oz of silver, outperforming last year's results by 1.3% and 2.6% respectively. Revenue from product sales totaled \$3.4 billion.

However, NMMC is not stopping there. In line with NMMC's 2026 Program to Increase the Production of Precious Metals, approved by a Decree of the President of the Republic of Uzbekistan on 1 March 2017, the implementation of 52 investment projects worth more than \$628 million is continuing at a rapid pace. Going forward, the realization of these projects will enable us to create more than 30,000 jobs and boost gold production by 30%.

NMMC has the necessary intellectual and technological potential to achieve the targets it has set for itself. Over the past decade, NMMC specialists have patented over 30 innovations, with five patents issued in 2019. By 2026, we will have implemented 105 investment projects that will enable us to increase the efficiency of mining and processing of gold ore, reduce cost of sales and expand export volumes.

The Navoi State Mining Institute, whose core objective is to train highly-qualified specialists for the mining and metallurgical, chemicals, machine building and other sectors, plays a critical role in the development of our R&D activities.

Encouraging NMMC employees to generate creative ideas and rationalization proposals is an essential component of how we intend to develop our innovation potential. In 2019, 93 rationalization ideas were implemented, generating an economic effect of over \$9 million.

NMMC's sustainable development also necessitates a consistent social policy that aims to comprehensively improve the well-being of employees, their families and everyone living in the regions where we operate. The company currently provides jobs for around 41 thousand people. All NMMC employees are covered by the Collective Agreement, which includes a comprehensive benefits package and details the company's obligations to provide decent working conditions, motivate employees, ensure occupational safety, and provide workers with social support.

NMMC coordinates the activities of a large number of social facilities that provide employees and their families with meals, medical assistance, treatment programs, improved housing conditions, and sporting and cultural leisure activities. To improve food security, in 2019 we commissioned a livestock complex, a 50-hectare nut orchard and a 170-hectare vineyard. We also built a broiler poultry farm in Takhiatash District of the Republic of Karakalpakstan. More than 15,000 employees took advantage of opportunities for rest and relaxation, an 18% increase on last year. NMMC's cultural institutions hosted more than 3,000 events for company employees.

The company's contribution to the regions of its business units' operations and its efforts to improve the well-being of local communities is also significant. NMMC's social expenditures amounted to over \$70 million in 2019. We conducted major renovations of over 800 multi-story residential buildings in Navoi, Uchkuduk,

Zarafshan and Nurabad. At the initiative of the President of the Republic of Uzbekistan, a health resort was opened in Jizzakh Region, which can be visited by employees and their families, as well as writers, poets and other cultural figures.

When talking about sustainable development, it is essential to highlight the importance of occupational health, industrial safety and production supervision. The health and safety of our employees have always been, and remain, our top priority. NMMC underwent an audit of Health and Safety Management System in 2019 (ISO OHSAS 18001 certificate).

Another important element of sustainable development at NMMC is environmental protection. NMMC's Plan to Improve Environmental Conditions in Navoi Region was implemented in full in 2019. We also modernized the dust and gas cleaning equipment at GMZ-3's furnace with an installed purification rate of 99.9%.

Given the breadth of topics covered in this Report, I am confident that it will be of interest to a wide range of stakeholders: investors, creditors, partners, employees, government officials and the general public. I would also like to note that the key results of NMMC's activities are reflected in the description of the company's contribution to the achievement of the UN Sustainable Development Goals.

Sustainable growth, social and environmental responsibility, innovation and steady progress are key to NMMC's long-term successful development. Navoi Mining and Metallurgical Combinat is meeting the challenges of the modern world with due care and consideration; it is responsibly looking after its employees, the residents of its regions of operation, and the environment, all while working to achieve goals that benefit the entire country.

## FIRST DEPUTY GENERAL DIRECTOR'S STATEMENT



**Olga Ponkratova**  
First Deputy General Director

Dear colleagues,

The concept of "sustainable development" is best described as an approach to corporate management that focuses on the creation of long-term economic, environmental and social benefits. As one of the largest industrial enterprises in Uzbekistan, NMMC has always given priority to ensuring sustainable economic growth, providing all employees with safe and decent working conditions, being good stewards of our natural resources and improving the well-being of the people of Uzbekistan. The 2019 Sustainability Report presents the main results of our efforts in these areas.

The year 2019 heralded a wide-ranging reform process for the mining and metallurgical industry of Uzbekistan, aimed at developing domestic production, creating a favorable investment climate and improving the competitiveness of NMMC on the global market. The adoption of the Decree No. PP-4629 of the President of the Republic of Uzbekistan "On measures to reform

Navoi Mining and Metallurgical Combinat" of 6 March 2020 initiated NMMC's reorganization and the creation of a joint-stock company based on part of the property of NMMC SC. This event is an important chapter in NMMC's story.

Throughout 2019, work has been underway to integrate best practices in financial management, including a transition of financial reporting to International Financial Reporting Standards (IFRS), the organization of an independent external audit, and the reclassification of reserves in accordance with standards of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). We are currently continuing our efforts to attract financing, including from foreign banks, to help us realize ambitious investment projects. We are planning to place a debut Eurobond \$in 2021.

NMMC also intends to undertake an assessment and obtain a minimum of two international credit ratings. We are considering the possibility of working with ESG rating agencies in the near future.

The measures we have implemented are laying the necessary foundation to prepare NMMC for an initial and secondary public offering on national and international stock exchanges. The IPO is scheduled for 2023.



# ABOUT US

## Key Results in 2019

### ECONOMIC STABILITY

- \$3.4 billion** in revenue
- 2.397 million oz** of gold production
- 614,000 oz** of silver production
- 10%** of Uzbekistan's industrial output originated with NMMC
- 76% of total budget** revenues of Navoi Region came from NMMC
- 60 investment projects** completed in 2019

### EMPLOYEES

- ~ 41 thousand employees** in the precious metals mining segment of NMMC
- 3.45%** employee turnover
- 100% of employees** covered by the Collective Agreement
- 977 employees** hired based on quotas in seven different categories
- 15,006 employees** benefited from corporate relaxation and recreation programs, an 18% year-on-year increase
- 13,877 employees** underwent retraining and professional development programs
- 56 hours** of training per employee on average, an 10% increase on 2018
- Over 3,000 events** held at NMMC cultural institutions

### HEALTH AND SAFETY

- 0.46** Lost Time Injury Frequency Rate (LTIFR) rate among employees
- 100%** of employees covered by the Health and Safety Management System
- 46** total work place accidents
- Occupational Health and Safety** targeted programs created for NMMC's electronic portal (AMSSHP and AMSOS)
- Zero emergencies** that resulted in loss of life
- More than \$3.1 million** spent on providing PPE
- 118 drills** and trainings conducted involving
- 4,642 people** and **309 units** of equipment
- 6,211 man-hours** spent on specialized occupational health and safety trainings.



### ENVIRONMENTAL RESPONSIBILITY

- 100%** of all planned environmental initiatives implemented
- 7.05 million m<sup>3</sup>** of treated household waste water reused for technological needs
- 115 solar power plants** installed to supply hot water
- Modernization of the **dust and gas cleaning equipment at GMZ-3's** furnace with a projected dust collection rate of 99.9%
- \$104 million** invested in environmental protection
- 23 million GJ** of total energy consumption
- 199.2 tons of oil equivalent/\$ million** specific consumption of fuel and energy resources for the production of core products
- 60 million kWh** of electricity and
- 1.67 million m<sup>3</sup> of natural gas** saved through the implementation of an action plan to reduce energy intensity and deploy energy saving technologies
- More than \$8.8 million** saved through energy efficiency measures



### REGIONAL DEVELOPMENT AND SOCIAL RESPONSIBILITY

- \$83.1 million** total social expenditures, including:
  - \$70.7 million** on financing the activities of social facilities
  - \$12.4 million** on financial aid
- Launched the **NMMC health resort** in Jizzakh Region for employees and their families, as well as artists and cultural figures in Uzbekistan
- Opened a **Children's Village for the Shodlik children's home** in the city of Zarafshan to increase living standards, offer psychological support and provide intellectual enrichment for children
- Built the **Golden Lake (Oltin Ko'l) complex**, with an artificial lake and a state-of-the-art recreational area for residents of Uchkuduk Region and employees of the Northern Mine Group
- Conducted **major renovations of over 800 multi-story residential buildings** in Navoi, Uchkuduk, Zarafshan and Nurabad
- Built a **livestock breeding complex** and **poultry farm**, planted a **vineyard** and **nut orchard** to contribute to national food security.





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## Our Business at a Glance

Navoi Mining and Metallurgical Combinat is a diversified company with a full production cycle, ranging from prospecting and exploration, ore mining and processing to the production of 999.9 hallmark-bearing gold.

As of year-end 2019, NMMC is a commercial organization in the form of a state-owned unitary enterprise.

*The most important event for NMMC in 2019 was the wide-ranging corporate reorganization and the creation of a joint-stock company based on part of the property of NMMC. The process involved the introduction of best corporate governance practices, the transformation of financial reporting and the optimization of business processes<sup>2</sup>*

Our core business activity is the development of mineral resources, mining and processing of minerals, with a focus on precious metals and gemstones. Gold is our flagship product, and it is sold by the Central Bank of Uzbekistan.

We operate exclusively in Uzbekistan, and our administrative and management center is located in the town of Navoi. Our workforce totaled around 41 thousand people at the end of 2019.

We process gold-containing ore and produce gold at five plants. We are planning to build another two in the future.

The main facility in NMMC's gold production structure is GMZ-2, which has a full production cycle: from crushing to the production of gold bars of the highest grade. Ore is sent to our plants from the Muruntau gold mine, which is unique in terms of gold reserves.

The first gold bar, weighing 11.82 kg, was cast at GMZ-2 in 1969. Since then, the 999.9 hallmark found on NMMC's gold bars has become inexorably associated with Uzbekistan on the world's precious metal exchanges.

*In 2019, the London Bullion Market Association (LBMA) presented NMMC with a certificate confirming the successful completion of the latest round of testing for full compliance with market requirements.*

The UN's World Intellectual Property Organization awarded NMMC specialists with a gold medal in 2017, a first for the Uzbek metals and mining industry. The medal was awarded for the development and implementation of a method for extracting gold from persistent sulfide gold-arsenic ores. The method was deployed at GMZ-3, where we commissioned a complex for the high-efficiency roasting of sorption tailings in 2019. Cutting-edge engineering solutions and advanced equipment make GMZ-3 unlike any other plant in the world. The launch of the complex for high-efficiency roasting of tailings created 150 new jobs, boosted the raw material efficiency at GMZ-3 by 8% and increased output of finished goods by 11%.

*NMMC is planning to gradually ramp up gold production volumes by 30% by 2026. This will enable us to create new jobs, increase our contributions to the state budget, expand existing capacities and develop new, promising deposits.*

Beyond our core business units focusing on gold production, NMMC's structure also includes the Navoi Machine Building Plant (NMBP), where we manufacture machine tools, produce steel construction structures and repair industrial equipment. NMMC also operates the Zarafshan Construction Department (ZCD), which builds facilities and produces required construction materials. We also produce our own household appliances, food, clothing and other consumer goods to provide for our employees and their families.

<sup>2</sup> For more details, refer to "Transformation."

## Our Mission

Our mission is to work for the benefit and prosperity of our country by achieving the highest level of performance. We take a responsible approach to production, and we care deeply about and pay close attention to the environment, nature in Uzbekistan, and the work of our employees. Our signature 999.9 hallmark, a global brand, is the result of our unwavering pursuit for excellence.

Step-by-step, we are moving closer towards global leadership in gold mining and aspire to be the best in everything we do: in the production technologies we use, the innovations we create and the corporate governance practices we employ. We strive to develop our sustainability agenda, foster environmental responsibility and ensure safe working conditions.

NMMC is synonymous with high standards of quality, responsibility, safety, efficiency and profitability.

### Key Priorities

Ever since its foundation, NMMC has made a significant contribution to the development of Uzbekistan. Our attention has always been, and remains, firmly focused on the well-being of the people in our region presence, the continuous improvement of production efficiency, the development of the economic potential of Uzbekistan, the advancement and implementation of innovations, and environmental protection.

In this vein, the Report will present in-depth disclosures of our performance in the following priority areas:

The Report also describes NMMC's contribution to achieving the UN SDGs to provide more complete information on our activities in these areas in 2019.<sup>3</sup>

Another integral aspect in the story of our development is the transformation process, which is also covered in the Report.<sup>4</sup> While these key priorities have defined – and continue to define – NMMC's development since its inception, the reorganization process and the creation of a joint stock company based on part of its property, along with subsequent changes to the corporate governance and financial management system, represent the immediate agenda for 2019 and over next three to five years.



### NMMC'S KEY FOCUS AREAS



<sup>3</sup> For more details, refer to "Our Contribution to Achieving the SDGs."

<sup>4</sup> For more details, refer to "Transformation."



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## Transformation

The years 2019-2020 will go down in the history of Uzbekistan as a period of far-reaching reform in the metals and mining industry. The aim of these reforms is spurring industrial development, creating a favorable investment environment, realizing major investment projects, and improving corporate practices. The implementation of these measures will empower local businesses to successfully compete with major international players in the metals and mining industry.

With the aim of improving the performance of NMMC and transforming it into a global company, we have approved a decision to reorganize NMMC and create a joint-stock company based on part of its property. This process encompasses **the introduction of a modern corporate governance system, a transition to International Financial Reporting Standards (IFRS) and the preparation of mineral resources and ore reserve statements in accordance with standards of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).**

The transformation process at NMMC, planned for 2019-2020, is guided by the following regulations:

- Decree No. 8 of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to improve the efficiency of Navoi Mining and Metallurgical Combinat" of 9 January 2019
- Decree No. PP-4124 of the Government of Uzbekistan "On measures to further improve the activities of enterprises in the metals and mining sector" of 17 January 2019
- Decree No. PP-4629 of the President of Uzbekistan "On measures to reform Navoi Mining and Metallurgical Combinat" of 6 March 2020.

### Results of the Transformation (2019-early 2020)

We launched the transformation process at NMMC in line with the decrees of the President and Cabinet of Ministers of the Republic of Uzbekistan and achieved our first results.

We approved the new position of **First Deputy General Director of NMMC**, who is responsible for delivering the following objectives:

- Implementing the latest corporate governance and financial management practices, including the organization of an independent external audit with the publication of financial and other reporting for investors
- Coordinating the effective operation of the Project Office with the engagement of international and local experts who have experience delivering major projects
- Expanding and diversifying financing sources for investment projects, including from international financial institutions, and preparing for an initial and secondary public offering on financial markets in Uzbekistan and abroad.

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We created the **NMMC Project Office** to achieve these objectives, which reports directly to the First Deputy General Director. Around 100 people were engaged in the Project Office team in 2019-early 2020, comprising NMMC employees and external specialists (including from abroad) with expertise in IFRS, standards of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code), investor relations and so on.

We worked throughout 2019 to transform our financial statements, which had been prepared in accordance with national accounting standards, into IFRS accounts. We released financial statements for 2019 based on the IFRS principles and signed our first ever credit agreement with an international financial institution in January 2020. We also raised a loan from a local bank in the first half of 2020.

The Decree of the President of the Republic of Uzbekistan of 17 January 2019 sets out a two-stage approach for developing the metals and mining sector:

**Stage 1.** Starting with results for 2019, major metals and mining companies, including NMMC, must:

- Prepare and publish reports in accordance with IFRS to improve the accessibility of information for potential investors
- Engage international auditing firms to perform independent audits
- Introduce minimum requirements for profit margins on sales of assets, and the turnover of assets and liabilities in line with the requirements of international stock exchanges and financial institutions.

**Stage 2.** The results of industry companies for 2020 must be disclosed in accordance with the GRI Standards.

While the Decree of the Cabinet of Ministers marks the beginning of our journey to reorganize NMMC, the Presidential Decree approved the creation of a special body and an implementation timeline. The National Committee for the Reformation of the Metals and Mining Industry was created to reorganize NMMC and deliver the reorganization roadmap.

### Key Transformation Goals

Future plans for our transformation include the following:

- Reorganizing NMMC and creating a joint-stock company based on part of the property of NMMC (2021)
- Approving a target corporate governance structure and a range of regulatory documents (Corporate Governance Code, Code of Ethics, etc.)
- Creating the "NMMC Fund" State Organization (2021)
- Obtaining the results of reserve reclassifications in accordance with standards of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code) (2020-2021)
- Preparing and publishing a Sustainability Report for 2019 (2020)
- Conducting assessments and obtaining at least two international credit ratings (2021)
- Placing a debut Eurobond issue of over \$300 million (2021)
- Holding a public share offering (2023).



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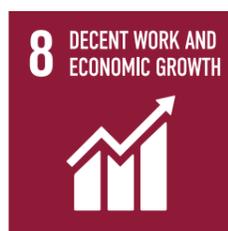
## Our Contribution to the Achievement of the UN SDGs

NMMC contributes to the achievement of three focus and six indirect SDGs. Focus SDGs are the goals on which we have a direct impact through our core business activities. Indirect SDG are goals upon which we have a significant impact, but which fall outside the scope of our core areas of business.

### Contribution to the Achievement of Focus SDGs



- Installation of solar power units for hot water supply
- Development and implementation of a mine water treatment process in collaboration with the Ecology and Environmental Protection Research Institute
- Incorporation of treated household waste into the production process at GMZ-3.



- Promotion of rationalization initiatives among NMMC employees
- Implementation of NMMC's 2026 Innovation Development Program
- Engagement with small business owners as part of our localization initiative
- Confirmation that 100% of workplaces comply with NMMC's Health and Safety Management System based on the results of external audit procedures
- Organization of excursions to historic Uzbek cities.



- Implementation of NMMC's 2026 Innovation Development Program with a focus on the environment and energy
- Completion of R&D projects
- Performance of scientific studies and development of technologies in collaboration with research institutes and foreign companies
- Year-on-year increase in funding for research and rationalization activities.

### Contribution to the Achievement of Indirect SDGs



- Sponsorship of low-income families, veterans of war and labor, pensioners, orphanages, and boarding schools, as well as care homes and societies for the disabled or elderly
- Investment in universities, payment of military exemption fees and payment of initial down payments to help young specialists buy homes
- Provision of free healthcare, allocation of funds for the purchase of agricultural goods and organization of relaxation and treatment for pensioners.



- Donations to secondary schools, boarding schools and institutes
- Completion of retraining and professional development programs by over 13,000 employees.



- Major renovations of over 800 multi-story residential buildings in Navoi, Uchkuduk, Zarafshan and Nurabad
- Improvement of the urban environment for city residents: construction of Fountain Boulevard in Zarafshan and the Golden Lake complex in Uchkuduk District; planting gardens and vineyards; cleaning up the parks, squares and streets of towns and villages near our facilities; clearing ditches; engaging NMMC employees in cleaning and delimiting campaigns
- Payment of initial down payments for 1,077 young professionals to help them purchase homes
- Renovation and retrofitting of GMZ-3 to install eco-friendly roasting technology and introduce a five-stage waste gas purification process.



- Development and implementation of an automated management system for industrial safety
- Creation of a predictive modeling program for potential accident and emergency scenarios at NMMC's facilities
- Free medical coverage for all employees, their families and NMMC pensioners at healthcare facilities.



- Completion of the annual delivery plan for the Program of Measures to Improve Energy Efficiency in Socio-Economic Sectors, Introduce Energy-Saving Technologies and Develop Renewable Energy Sources
- Installation of steam turbines at the Northern Mine Group's sulfuric acid production unit
- Installation of five photovoltaic power stations with a total capacity of 10 kW
- Installation of 60-150 W solar-powered LED spotlights with motion sensors at mine dumps.



- Installation of improved sulfide ore processing technology at GMZ-3 in collaboration with Engineering Dobersek GmbH
- Recycling of 473 tons of plastic waste to produce plastic pipe at a specialized plant at NMMC's Southern Mine Group.
- Decontamination of 12,333 decommissioned mercury-containing lamps at the Central Mine Group's demercurization unit
- Recycling of used tires to obtain furnace fuel and carbon black using pyrolysis at NMMC production units.



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# Stakeholder Engagement

We see the task of building a constructive dialogue with a wide range of stakeholders as one of our core priorities. Stakeholders include employees, government officials, the local and national media, the general public, and local, national and international organizations.

The transformation process is deepening our interaction with investors, credit organizations, ratings agencies and other institutions. When disclosing information about our business, we are guided by the principles of relevance, materiality and openness.

The **NMMC Press Center**, headed by the Press Secretary, is responsible for building a communication strategy and forming a messaging policy for the company. The Press Center team

includes a public relations specialist, the editor of the *Konchilar hayoti* (Miner's Life) newspaper, engineers and a photographer.

The **NMMC Trade Union Board** plays a key role in how we communicate with our employees. The board decides on social and labor considerations and represents the interests of all NMMC employees, as stipulated in the legislation of Uzbekistan and the Collective Agreement.

## Key issues discussed with stakeholders in 2019

Stakeholder group	Main communication channels	Key engagement issues in 2019
<ul style="list-style-type: none"> <li>NMMC employees and their families</li> <li>Residents of regions of presence</li> <li>Government officials</li> <li>Community representatives and non-profit organizations</li> <li>Business partners and suppliers</li> <li>Investors and creditors</li> <li>The media</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Konchilar hayoti</a> (Miner's Life) newspaper</li> <li><a href="#">NMMC's official website</a></li> <li>The official <a href="#">website of NMMC's Press Center</a></li> <li>Internal employee emails (Lotus)</li> <li>Official NCCM accounts on social media:               <ul style="list-style-type: none"> <li><a href="#">Facebook</a></li> <li><a href="#">LinkedIn</a></li> <li><a href="#">Telegram</a></li> <li><a href="#">Instagram</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Transformation process</li> <li>Implementation of NMMC investment projects in 2019</li> <li>Construction of new production facilities in Kyzylkum Region</li> <li>Commissioning of a one-of-a-kind complex at GMZ-3 to improve gold extraction technologies for hard ores at the Kokpatas and Daugyztau deposits in the Northern Mine Group</li> <li>Corporate social responsibility initiatives</li> <li>Deployment of cutting-edge IT technologies in production processes</li> <li>Implementation of NMMC's localization program in 2019</li> <li>Introduction of innovation and scientific breakthroughs at production facilities</li> <li>Geological exploration being carried out by NMMC in Kyzylkum Region</li> <li>Implementation of the government's youth policy.</li> </ul>

We engage with stakeholders through meetings, press conferences, media tours and other events that we hold for employees, the media, and the general public on a regular basis.

In 2019, we organized events for the employees of NMMC's business units that focused on improving awareness of laws and building a legal culture in society, as well as fostering a zero-tolerance attitude towards corruption and other forms of wrongdoing.

The management of NMMC's business units holds regular meetings with their employees to resolve any socio-economic or other issues they may face.

In 2019, NMMC's management received enquiries from individuals and representatives of legal entities through the following channels:

- A virtual reception by the President of the Republic of Uzbekistan (1,020 enquiries)
- A virtual reception by the Prime Minister of the Republic of Uzbekistan for enquiries from businesspeople (11 enquiries)
- NMMC's official email address, [info@ngmk.uz](mailto:info@ngmk.uz) (38 enquiries).

In 2019, NMMC managers and specialists held off-site receptions for the general public and representatives of the business community, which was attended by 118 people. In addition, NMMC's management invited 517 people to a private reception.

In 2019, we also held eight press conferences and two media tours for journalists, representatives of local and national media, and the general public.

The company's stakeholder engagement plans for 2020 address topics of public interest related to NMMC's reorganization, changes to the company's corporate governance, the delivery of the investment program and the 2026 Innovation Development Program, and other relevant and significant issues.





102-40, 102-42, 102-44

## Innovation and R&D

NMMC has enormous intellectual and technological potential that enables the company to conduct major research projects and deploy the latest innovations to boost production efficiency.

The company operates the Central R&D Laboratory (CRDL), Central Design Bureau (CDB), Central Project Bureau (CPB), Central Physics and Chemistry Laboratory (CPCL) of the Northern Mine Group, Central Gamma Activation Analysis Laboratory, and the Central Plant Laboratories (CZLs) at GMZ-2 and GMZ-3. The company employs seven Doctors of Science and 30 PhD equivalents.

The Central Mine Group's Muruntau gold mine has the world's only **Central Gamma Activation Analysis Laboratory for gold ore**, at which over three million analyses are conducted every year.



The NMMC Science and Technology Board (STB), supervised by the Chief Engineer, is responsible for managing the development of innovations at the company. The STB's duties include the following:

- Determining R&D development priorities for the company

**Navoi State Mining Institute plays an important role in the development of our R&D activities. The institute's core objectives are to train highly-qualified specialists for the mining and metals, chemicals, energy, and machine building sectors, and to conduct scientific research.**

**General Director of NMMC, Kuvandik Sanakulov, Doctor of Engineering, has been rector of the institute since 2014.**



Muruntau also features a uniquely powerful **KNK-270 steep-incline conveyor** that can transport ore from the quarry up to a height of 270 m and load it onto vehicles. KNK-270 has a capacity of 14 million tons of ore per year.

The installation of the steep-incline conveyor has helped us reduce the cost of transporting ore, boost the capacity of the excavator-automobile complex, and ensure the profitability of mining

and further development of the Muruntau open-pit at a depth of 900-1000 m.

- Implementing the innovation and technology policy
- Coordinating rationalization, innovation and R&D activities, including the approval of NMMC's innovation development program and roadmaps for R&D.

The Innovation Center for the Implementation of New Technologies, established in 2018, is responsible for delivering projects.

The Innovation Center has three subdivisions:

- The Group for the Deployment of Scientific and Technical Products, which oversees:
  - Rationalization activities
  - Patenting.
- The Group for the Integration of Innovations, which is tasked with linking the results of research projects to production
- The Editorial Group, which is responsible for:
  - The publication of the scientific journal Mining Newsletter of Uzbekistan, which informs readers about the results of the latest research and projects. The journal is included in the register of the Higher Attestation Commission of Uzbekistan and is registered on Ulrichsweb (Ulrich's Periodicals Directory) in the US. Work is underway to include the magazine in the Scopus database
  - The publication of scientific papers and monographs, and the creation of training manuals for students in cooperation with Navoi State Mining Institute (to date, NMMC, NSMI and TSTU employees have digitized and uploaded more than 140,000 publications to the NMMC electronic library website)
  - Organization of national and international conferences.

### NMMC's 2026 Innovation Development Program

In 2018, NMMC approved its 2026 Innovation Development Program with the aim of developing the company's R&D and innovation activities.

The Program covers 105 innovative projects, the realization of which will lay the groundwork for improving the efficiency of the mining and processing of gold ore, lowering cost of sales and increasing exports. Basic research lies at the heart of NMMC's innovative projects.

The program's key focus areas include:

- Exploration work
- Mining
- Processing and refining (gold)
- Transportation
- Machine building and metallurgy
- Energy
- Automation and ICT<sup>1</sup>
- Health and safety
- Ecology and environmental protection
- Medicine
- Agriculture.

The Innovation Development Program promotes the deployment of cutting-edge mineral resource assessment methodologies, the comprehensive and economically rational extraction of resources with due consideration of environmental factors<sup>2</sup> and occupational safety,<sup>3</sup> the use of the latest subsoil mining

methods, and innovative technologies to increase gold recovery. In the field of machine building and metallurgy, we are planning to develop and make use of new types of materials. Localizing the production of equipment and spare parts is also a priority in this area.

**Enhancement of sulfide ore processing technology at GMZ-3 in collaboration with Engineering Dobersek GmbH**  
*One of our most prominent achievements in 2019 was the commissioning of a roasting unit assembled at GMZ-3 in collaboration with specialists from Engineering Dobersek GmbH. The improved technology more than halved gold content in tailings, thereby significantly increasing gold recovery and output at GMZ-3. A patent was issued in Uzbekistan and Germany for this project.*

According to preliminary calculations, the economic effect from the realization of the 105 projects will total \$143.3 million. Alongside this, NMMC's 2020 Innovation Development Program was approved, which includes 63 projects with a total budget of over \$4 million.

The economic effect from the realization of the Innovation Development Program in 2019 was around \$5.7 million.

### Enhancement of flotation concentrate processing technology at the Auminzo-Amantoy ore field

NMMC, in collaboration with specialists from JSC Irgiredmet (Russia), conducted R&D to enhance flotation concentrate processing technology at the Auminzo-Amantoy ore field. The project used ultrafine grinding and oxygen-lime treatment: it increased the speed of oxygen-lime treatment and reduced consumption of reagents. The technology was implemented at GMZ-5.

<sup>1</sup> Information and communication technologies.  
<sup>2</sup> For more details, refer to "Environmental Responsibility."  
<sup>3</sup> For more details, refer to "Occupational Health and Safety."

**Deployment of unmanned aerial vehicles to inspect NMMC engineering infrastructure**  
 The use of unmanned aerial vehicles (UAV) will help us more accurately determine damage to elements of power transmission lines (PTL) in the Zarafshan power district and the Unified Energy Service's external water supply service in the event of emergency outages.

The deployment of UAVs will significantly reduce the amount of time previously spent lifting and lowering personnel to/from overhead power lines using supports, simplifying the performance of scheduled inspections and enabling quick and comprehensive identification of damaged sections and elements of PTL. We are also planning to use UAVs to monitor quarry face stability, observe quarry sediments and rocks and conduct surveying<sup>1</sup> of quarries and mines.

The NMMC Innovation Development Fund was created in 2019 to finance Innovation Development Program projects.

The initial size of the fund in 2018 was \$1.86 million, rising to \$2.83 million in 2020.

In addition to the Innovation Development Program, the Fund also finances:

- Upgrades of laboratories
- Government mining and geological programs
- Scientific research with the Academy of Sciences of Uzbekistan.

**Patents and Implementation of R&D Roadmaps**

In addition to its innovation programs, NMMC also develops R&D roadmaps, which are considered by the Science and Technology Board and approved for implementation at the level of production units.

A total of 29 R&D projects were completed in 2019, both independently by NMMC and with the involvement of third-party organizations. The implementation of these projects is financed from the budgets of production units.

Over the past 10 years, NMMC specialists have **patented over 30 innovations** at patent offices in Uzbekistan, Russia, Ukraine, Germany and Switzerland.

As of 2019, **16 innovations were in use in the production process** and 12 innovations were undergoing testing and follow-up research. The economic effect from the implementation of innovations totaled \$48.3 million in 2011-2019.

In 2019, we submitted five applications for copyright protection and **received five patents**. The economic effect from the use of innovations was \$11.4 million.

The company spent \$3.36 million on project financing in 2019. The economic effect of the projects' realization reached \$2.06 million.

NMMC works with companies such as SRK Consulting, Hatch, OUTOTEC (Finland), Engineering Dobersek GmbH (Germany), Mining One Pty Ltd. (Canada) and Blast Movement Technologies (Australia).

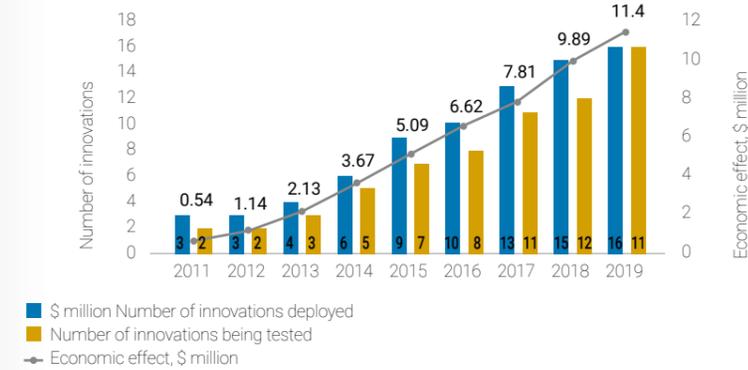
NMMC sees enormous potential for engaging its employees in rationalization activities. In order to boost the motivation of engineers and workers in scientific and technological innovation, the company has increased the size of financial bonuses that employees receive for developing rationalization proposals.

NMMC has a program to develop the innovative potential of young people and holds competitions for the Best Innovator and Best Young Rationalizer every year.

In 2019, a total of 93 rationalization ideas were approved and implemented. Their economic effect was \$9.04 million.

<sup>1</sup> A branch of a mining science and engineering that studies the structure of a deposit, the form and the size of sub-soil mineral deposits, their properties, the distribution of mineral and harmful components within them, the spatial arrangement of excavations, deformation processes of rock and surface caused by mining and impact on the production process of mining companies.

**Economic effect of innovations at NMMC business units in 2011-2019**



**Cooperation with Research Institutions**

In recent years, the government of Uzbekistan has enacted measures to improve the innovation environment, strengthen the comprehensive support system for the Academy of Sciences of Uzbekistan, universities and research centers, and further deepen integration of science, education, and production.

The company has successful experience working with institutes such as IMR SC, the Institute of Microbiology, Islam Karimov Tashkent State Technical University, Mirzo Ulugbek National University of Uzbekistan, Navoi State Mining Institute, the Training and Experimental Center for Advanced Technologies of the Ministry of Innovative Development, SUE Uzgeorangmetliti Research Institute, the Institute of Nuclear Physics, H. M. Abdullayev Institute of Geology and Geophysics, and the Physical-Technical Institute NGO Physics-Sun of the Academy of Science of Uzbekistan.

**NMMC provides Navoi State Mining Institute with full sponsorship support. We allocated \$227,600 for the development of the institute in 2019.**

We organized two conferences in 2019:

- The XXIV International Scientific and Practical Conference "Innovation 2019" in Tashkent
- The II International Scientific and Practical Conference "Integrated Innovative Development of the Zarafshan Oasis: Successes, Problems, Prospects" in Navoi.

NMMC specialists also actively participated in international and national conferences, symposiums, seminars, forums and other science events in Uzbekistan, Kazakhstan, Belarus, Afghanistan and Tajikistan.

From 2010 to 2019, the number of agreements for conducting innovative R&D work signed with the above-listed institutes increased more than five-fold, and financing for these projects increased significantly from \$56,600 to 1.8 million.

We are conducting joint studies with researchers from the Institute of Nuclear Physics of the Academy of Sciences of Uzbekistan on the possibility of performing express analyses of gold or the content of gold, silver, and other elements in geological samples to enable the rapid development of graded plans for the full development of deposit reserves. For these purposes, we have developed in-house quality control samples (QCS) for use as benchmarks in gamma-activation analysis. This will significantly improve the quality and reliability of analysis results of geological samples conducted in the Central Gamma Activation Analysis Laboratory at the Central Mine Group. It will also increase the efficiency of internal, external and arbitrage control in NMMC's physical and chemical laboratories in accordance with the requirements of state standards.

Together with researchers from the Navoi State Mining Institute, studies are being conducted on chemical and physicochemical processes in bacterial oxidation of float concentrate at GMZ-3. We have studied the qualitative and quantitative characteristics of the appearance of new intermediate inorganic and organic compounds, as well as the nature and composition of acid mixtures that result in the dissolution of minerals and noble metals during bacterial oxidation of the float concentrate.

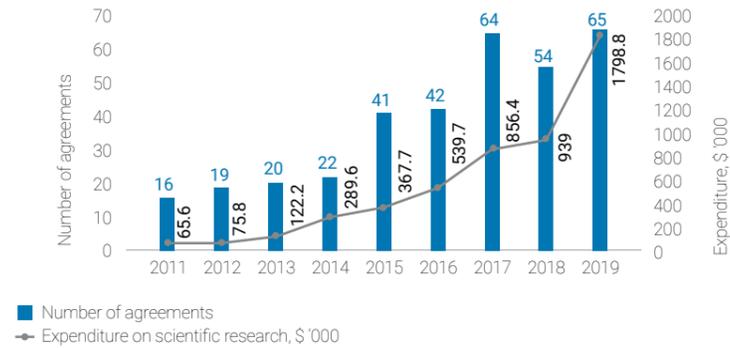
Together with specialists and researchers from IMR SC, research is being carried out to analyze the composition of rocks, ores and the products created by processing them. This includes defining the mineralogical composition and chemical speciation of valuable components and their associated extraction during hydrometallurgical processing of ores.

To ensure that the instructions of the President of Uzbekistan are followed through, NMMC has developed and approved a Roadmap for Developing Geological Science involving NMMC, the Institute of Mineral Resources and H. M. Abdullayev Institute of Geology and Geophysics for the period of 2020-2025. The cost of implementing these projects will be more than \$10.5 million.

The development of many unique technologies, along with the efforts of talented, highly qualified specialists, have turned NMMC into an innovation cluster around which a large economic region has formed.

The company's plans for 2020 are to continue delivering the 2026 Innovation Development Program and engage with small business owners as part of the localization program.

**Involvement of Uzbek universities, research centers and institutes of the Academy of Sciences to develop solutions to NMMC's scientific and technical challenges:**



*“We can all see how demanding global competition is becoming today. In such a rapidly changing and competitive environment, only the widespread introduction of advanced science and innovations will enable us to adequately respond to this challenge. This strategic objective is becoming a priority in our activities.”*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**





# CORPORATE GOVERNANCE

102-18, 102-19, 102-20, 102-22, 102-23, 102-24, 102-25, 102-26, 102-27, 102-28, 102-29, 102-31

## Corporate Governance Structure of the Joint-Stock Company

The Decree of the President of the Republic of Uzbekistan No. PP-4629 of 6 March 2020 set the process of reforming the activities of NMMC into motion. This involved creating a joint-stock company (JSC) based on part of its property by introducing advanced corporate governance practices.

There is no question that the economic and legal nature of governance practices in state-owned enterprises differs considerably from those of joint-stock companies. Recognizing this, we intend to build a corporate management system that incorporates best practices (Best Practices for CG), meets international standards, and is well suited to the business environment to create a JSC with an effective management system. In particular, we will integrate a model that combines elements of single-tier and double-tier management.

Four committees will be formed under the Supervisory Board, the JSC's corporate governance body responsible for general management of the company's day-to-day operations:

- The **Audit Committee**, responsible for building the internal control and risk management system
- The **Nominations and Appointments Committee**, which determines the appointment and remuneration of the Executive Body and members of the Supervisory Board
- The **Strategy and Investment Committee**, which monitors the development and implementation of the strategy and investment program, and coordinates the implementation of major investment projects
- The **Sustainable Development Committee**, responsible for interaction with key stakeholders regarding the Company's sustainable development agenda.

The rules of procedure of the Executive Body and its interactions with the structural subdivisions of the JSC will be established in accordance with a decision-making matrix.

Four committees will also be formed under the Executive Body:

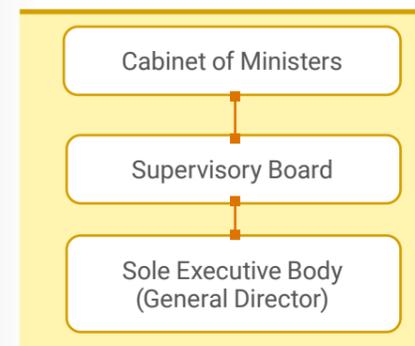
- The **Procurements Committee**, responsible for coordinating all activities associated with major procurements
- The **Budget Committee**, a cross-functional planning and budget monitoring group
- The **Ethics Committee**, for overseeing compliance with the Code of Ethics and conducting investigations into violations
- The **Investment Committee**, responsible for the investment program and the implementation of investment projects.

We will develop and approve a number of internal documents in 2020, such as a Code of Corporate Governance, Code of Ethics, Anti-Corruption Policy, etc., as well as a detailed responsibility assignment matrix and a system for involving various corporate governance bodies in decision making, approval and coordination.

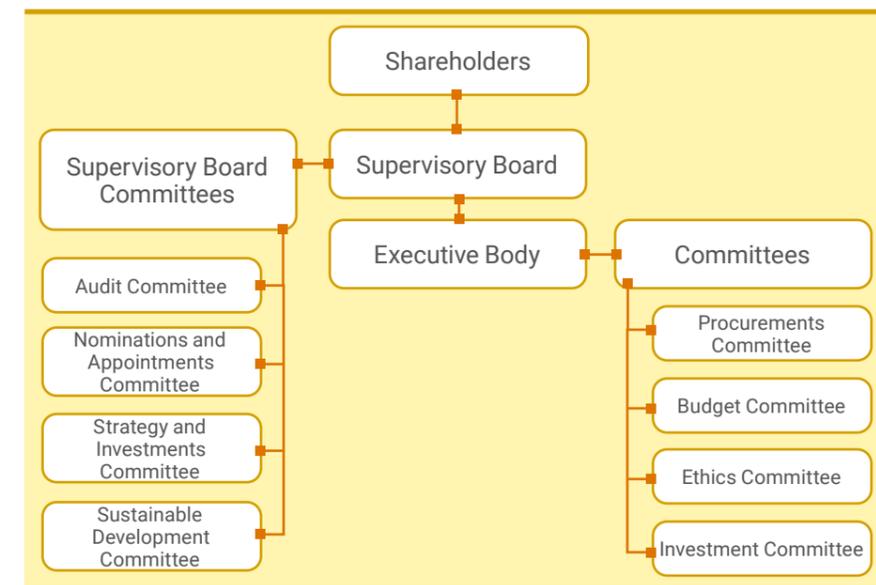
More detailed information about the upcoming changes are presented in the table below.

### Comparison of NMMC's corporate governance systems in 2019 and 2021<sup>1</sup>

#### Corporate governance structure in 2019



#### Corporate governance structure in 2021 (draft)



Key elements of the transformation	2019	2021 (draft)
Legal status	State-Owned Unitary Enterprise <sup>2</sup>	Joint-Stock Company <sup>3</sup>
Members of the Supervisory Board	Confirmed by decision of the President of the Republic of Uzbekistan Seven Supervisory Board members as of 31 December 2019, of which one was independent	Confirmed by the General Meeting of Shareholders. Nine planned Supervisory Board members, of which two must be independent
List of internal documents	<ul style="list-style-type: none"> <li>• Decree of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Charter of NMMC and the Regulation on the NMMC Supervisory Board"</li> <li>• Charter of NMMC SC</li> <li>• Regulation on the Supervisory Board..</li> </ul>	<ul style="list-style-type: none"> <li>• Charter of JSC NMMC (draft)</li> <li>• Regulation on the General Meeting of Shareholders (draft)</li> <li>• Regulation on the Supervisory Board (draft)</li> <li>• Regulation on the Executive Body</li> <li>• Code of Corporate Governance</li> <li>• Responsibility assignment matrices for corporate governance bodies (draft)</li> </ul>

<sup>1</sup> The corporate governance structure and the list of internal documents for 2021 as of the date of issue of the Report are drafts and are therefore subject to change where required.

<sup>2</sup> NMMC will continue its operations after the disposal of the assets of the gold producing business and will be renamed NavoiUran SC.

<sup>3</sup> JSC NMMC is being created based on part of the property of NMMC SC.

Key elements of the transformation	2019	2021 (draft)
Delegation of authority	The General Director delegates economic, environmental and social matters to his or her deputies, who in turn oversee the execution of instructions by the relevant divisions and specialists.	A responsibility assignment matrix will be developed that describes the decision-making system and the roles of various corporate governance bodies, the General Meeting of Shareholders, the Supervisory Board, the Executive Body, Supervisory Board Committees, and Executive Body Committees.
Responsibility for economic, environmental and social matters	There is no single official responsible for economic, environmental and social matters. Economic management, ecologists, human resources management, the trade union, press center, Product Quality Division, and laboratories are run separately. The heads of divisions report to the deputies of the General Director about relevant matters, which in turn are reported to the General Director.	There are currently no plans to appoint a single responsible official for these matters due to a lack of a need. There are plans to appoint persons at the level of the Supervisory Board Committees responsible for each area. At the Executive Body level, responsibility for these three areas is vested in the respective committees of the Executive Body.
Chairman of the highest governance body	Chairman of the Supervisory Board (not an executive director)	Chairman of the Supervisory Board (not an executive director)
Nomination and selection of candidates for the highest governance body	According to the Charter of NMMC SC, the Supervisory Board is approved by decision of the President of the Republic of Uzbekistan.	As per the Charter of JSC NMMC, nine members sit on the Supervisory Board. Members of the Supervisory Board are elected by the General Meeting of Shareholders for a term of one year in accordance with the procedure established by the law, the Charter and the Regulation on the Supervisory Board. There shall be no restrictions on the number of times members can be re-elected to the Supervisory Board.
Conflicts of interest	Not applicable	The Internal Audit Service organizes and conducts investigations related to conflicts of interest and violations of the Code of Ethics by employees, with the exception of members of the Executive Body. An Ethics Committee of the Executive Body will be formed, which will promptly consider any potential violations of the Code of Ethics.
The role of the Supervisory Board in setting goals, defining values and developing strategy	The determination of strategic objectives and promising development areas, the drafting of mid- and long-term development programs and the approval of annual business plans are all processes that fall within the authority of the Supervisory Board.	The Supervisory Board is responsible for decisions with long-term impacts and major risks that require special expertise and knowledge. The scope of the Supervisory Board's powers includes, among others, the development and approval of the company's strategy, the technological strategy, the long-term investment program, the annual budget and business plans, risk maps, appointments and remuneration for management positions, etc.
Collective knowledge of the Supervisory Board	The Executive Body regularly informs members of the Supervisory Board about the results of NMMC's economic, environmental and social activities. Due to the specific nature of the company's legal form, its size, and the high degree of integration with and impact on the regional socio-economic and environmental situation, the collective knowledge of the Supervisory Board about relevant issues has always been, and remains, considerable.	
Evaluating the Supervisory Board's performance	Not applicable	This will be conducted on a regular basis after the Supervisory Board's first year of operation.

Key elements of the transformation	2019	2021 (draft)
Identifying and managing economic, environmental, and social impacts	The Supervisory Board directly participates in the identification and management of the economic, environmental and social aspects of NMMC's activities, including the assessment of associated risks and potential opportunities. Members of the Supervisory Board and the Executive Body engage proactively with government authorities and other stakeholders on these matters.	
Risk management	—	The Audit Committee of the Supervisory Board will assess the effectiveness of the risk management processes in the JSC. A Financial Control and Risk Management Division has been established within the JSC structure to develop and monitor the risk map.
Review of economic, environmental, and social topics by the highest governance body	Four meetings of the Supervisory Board were held in 2019, which included the consideration of economic, environmental and social matters.	According to the Charter of JSC NMMC, Supervisory Board meetings shall take place in accordance with the approved annual schedule, and can also be convened by the Chairman of the Supervisory Board at his or her own initiative, or at the request of one of the members of the Supervisory Board, the Revision Commission, the Internal Audit Service, the Management Board, or the Corporate Consultant.





102-15, 102-30

## Risk Management

NMMC analyzes risk factors, including sustainability risks, which could have a negative impact on the development of the business and the achievement of set targets and indicators. The assessment of risk parameters is accompanied by an analysis of risk management actions, and it is integrated into the company's overall risk management system.

The new corporate governance structure of NMMC will include an Audit Committee under the Supervisory Board, which will also deal with risk management issues at the senior management level.

The risk register will be optimized and added to, including in the area of sustainable development, as part of the reorganization process and the creation of a joint-stock company. In the future, the company is planning to conduct a financial risk assessment and risk probability assessment.

NMMC identifies the following as its key risks:

### Industry risks

- Risk of falling gold prices
- Production risks
- Risk of incorrect assessment of reserves

### Operational risks

- Geodynamic risk during gold deposit development
- Risk of ineffective budget management
- Risk of low-quality project reviews

### Financial risks

- Risk of failure to obtain debt financing
- Liquidity risks

### Sustainability Risks

- Environmental risks
- Health and safety risks.

The company is implementing the following risk management actions for sustainability risks:

Risk type and factors	Risk management actions
<p><i>Environmental risks</i></p> <p>Damage to the environment during production activities, including as a result of deforestation and pollution of air (emissions), water (effluents) and land (toxic waste)</p> <p>Fines and penalties, legal liability for environmental rehabilitation and other far-reaching financial consequences</p> <p>Risk of water deficiency due to water intake in arid areas</p> <p>Risk of pipe rupture due to the harsh continental climate (temperature variation).</p>	<p>The company is implementing a number of initiatives to monitor and limit the environmental impact of its operations. These include expert assessment of pollution produced and use of best industry practices with respect to policies and procedures, both at the corporate level and at individual business units.</p>
<p><i>Health and safety risks</i></p> <p>The company operates potentially hazardous production facilities, such as open-pit mines, underground mines, exploration sites, ore processing facilities and warehouses storing explosive materials. Work at these facilities exposes our employees to various health and safety risks, including risk of injury. These include visiting hazardous production facilities, using service vehicles, walking up and down stairs, and being in contact with live electrical appliances and higher levels of electromagnetic radiation.</p>	<ul style="list-style-type: none"> <li>• Implementation of the health and safety monitoring system, which includes risk assessments of individual workplaces and the provision of personal protective equipment</li> <li>• Application of best industry practices</li> <li>• Ensuring compliance with international, state and regional regulatory requirements through the occupational health (including modern standards) and industrial safety management system.</li> </ul>

*"Uzbekistan has embarked on a far-reaching fight against corruption: an odious phenomenon that causes great harm to the country's development."*

Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan

102-16, 102-17, 102-25

## Business Ethics and Anti-Corruption

NMMC strives to create a robust corporate culture, based on the principles of business ethics and zero tolerance of corruption. The company takes whatever actions are necessary to ensure compliance with human rights, openness to dialogue with employees and attentiveness to the interests of stakeholders.

The values, principles, standards and norms of behavior within the company are articulated in the **Rules of Ethical Conduct for NMMC Employees**. These rules apply to all NMMC employees, regardless of the position they hold. NMMC's ethical rules aim to prevent legal violations and combat corruption. All company employees are made aware of these rules during the onboarding process.

NMMC's ethical rules require all employees to comply with the principles of legality, fairness and avoidance of conflicts of interest. NMMC employees are not permitted to receive any material or other benefits from other individuals or companies for the performance of their work duties. Employees are obliged to inform their manager or law enforcement authorities about all attempts by any person to induce them to commit a criminal offense. They must also report any known offenses committed by other employees.

NMMC categorically forbids giving preferential treatment to persons who are in any way connected with company employees during the recruitment process. The company respects the traditions and interests of various ethnic, social and religious groups and strives to strengthen social cohesion.

NMMC's ethical rules oblige employees to take all necessary measures to ensure the security and confidentiality of the information that becomes known to them in the course of their professional activities.

Employees may face disciplinary actions for violations of ethical rules. Compliance with these rules is taken into account when conducting employee appraisals and considering promotions.

The company applies a range of measures to avoid potential conflicts of interest that may arise in the course of its business activities. These measures are set out in the Rules of Ethical Conduct for NMMC Employees. Employees are not permitted to derive any personal benefit from their official positions. If a conflict of interest arises, company employees must immediately inform their manager. Upon receiving information about a conflict of interest, a manager must swiftly take measures to address it. Every NMMC employee is required to state any actual or potential conflict of interest that could influence the performance of their official duties.

Employees can contact the Ethics Commission to voice any concerns related to ethical violations. The Commission is made up of company employees and has at least five members. Its mission and objectives are defined in the Regulation on the **Ethics Commission**. The Commission reviews cases of conflicts of interest, wrongdoing and employee allegations or complaints.

*Employees can submit claims to the Commission through the responsible secretary. The Commission reviews all employee claims, except those submitted anonymously. In accordance with the law of the Republic of Uzbekistan, anonymous claims are not reviewed.*

*The Division for Monitoring and Handling Enquiries from Individuals and Legal Entities – the NMMC Virtual Reception has existed at the company since 2017. NMMC also maintains a hotline.*

*Enquiries and complaints from individuals and legal entities can likewise be submitted to NMMC managers, while businesspeople can also submit queries to the virtual receptions of the President of Uzbekistan and the Prime Minister of Uzbekistan.*

*The review deadline for enquiries is one month. The submitter is sent a written response based on the results of the review.*

In the reporting period, 2,599 enquiries on issues related to social problems were sent to NMMC managers. Of these, 843 were in writing, 38 by email and 26 via the hotline. NMMC managers dealt with enquiries from 661 people on personal issues, of which 101 were addressed at an off-site reception of NMMC managers and specialists.

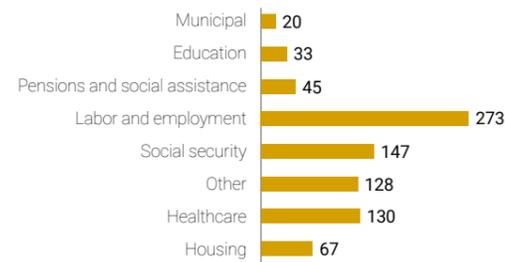
NMMC received 2,599 enquiries on social issues in the reporting year.

The 2019, the virtual reception of the President of the Republic of Uzbekistan received 1,020 enquiries, accounting for 39% of all enquiries. Businesspeople submitted eleven enquiries during the virtual reception of the Prime Minister of the Republic of Uzbekistan for in the reporting year.

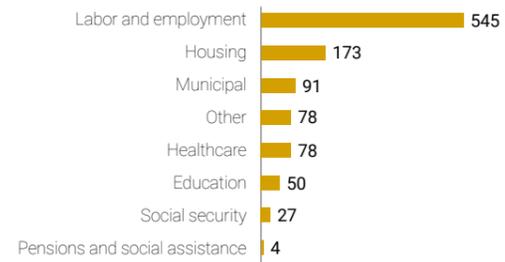
In 2017, the Division for Monitoring and Handling Enquiries from Individuals and Legal Entities through the NGMK Virtual Reception began its operations. The division is responsible for overseeing the implementation and organization of work in these areas.

*NMMC does not tolerate the punishment or dismissal of employees in response to enquiries about legal violations, or in enquiries with criticisms of existing processes at the company.*

**Written enquiries received by NMMC managers by topic**



**Enquiries received via the virtual reception of the President of Uzbekistan by topic**



The company has adopted the **NMMC Rules of Ethical Conduct for Procurement Activities**, which apply to all employees who are involved in the procurement process. The rules stipulate that NMMC's procurement activities must be based on the principles of transparency, openness, competitiveness, legality and anti-corruption. Employees must take all necessary measures to ensure the confidentiality of information received during procurement, and they must not use such information for personal purposes. Any violations of these rules by company employees is regulated by Law of the Republic of Uzbekistan "On Public Procurement".

**NMMC implemented the following anti-corruption measures in 2019:**

- Conducted a major awareness campaign for employees to explain the Law of the Republic of Uzbekistan "On Combating Corruption"
- Discussed the NMMC Rules of Etiquette with company employees, including young people, and organized seminars on compliance with ethical rules and zero tolerance/prevention of corruption
- Organized seminars on the topics "Combating Corruption Is Everyone's Business" and "Corruption is a Barrier to the Development of Society," which focused on anti-corruption and involved representatives of law enforcement
- Prepared a report on the anti-corruption activities conducted at NMMC and provided employees with the necessary materials at Spirituality Hours, which are held on Fridays
- Displayed the RULES of etiquette for NMMC's employees and anti-corruption awareness tools in special places on the premises of the Company's business units
- Published the Law of the Republic of Uzbekistan "On Combating Corruption" in the Konchilar hayoti newspaper, along with articles written by industry specialists on anti-corruption issues and ways of preventing them.

NMMC is guided by the principle of zero tolerance of corruption in everything it does. The main anti-corruption measures are performed by NMMC's Internal Control Division. The **Internal Control Division** is a structural subdivision of the NMMC Head Office and reports directly to the General Director. The division consists of a division head, deputy head, senior accountants and a senior engineer. The Company's business units do not have their own designated specialists responsible for internal controls.

The division's main objective is to perform internal controls of business operations to ensure the safety of property and the appropriate expenditure of funds.

In 2019, specialists from the Internal Control Division conducted 45 inspections at NMMC business units, during which violations totaling \$888,400 were identified. These include \$550,600 stemming from an overstatement of the volume of construction work performed and \$111,600 from an understatement of the amount of work performed was \$216,800. In total, \$635,000 was recovered. The remaining unrecovered amount of \$36,600 relates to the operations of the Southern Mine Group's Marjanbulak mine. This amount is being deducted from the salaries of the perpetrators on a monthly basis. The main reasons for violations in the reporting year were non-compliance with company policies, unprofessional conduct by employees, and conflicts of interest.

The company is planning to complete its reorganization and create a joint-stock company based on part of the property of NMMC in 2021. A **draft Code of Employee Conduct (Code of Ethics) of JSC NMMC** was drawn up as part of the reorganization process in 2020. The new code will have an expanded section on conflicts of interest and non-discrimination, additional provisions on the unacceptability of offensive behavior, and new sections on relations with contractors and competitors and interaction with the media and political organizations.



# ECONOMIC STABILITY



Navoi Mining and Metallurgical Combinat is the largest industrial enterprise in Uzbekistan. NMMC mines gold and rare metals, as well as producing raw materials for the building materials industry, machine tools, and a wide range of consumer goods.



- \$3.4 billion** in revenue
- 2.397 million oz** of gold production
- 614,000 oz** of silver production
- 10%** of Uzbekistan's industrial output originated with NMMC
- 76% of total budget** revenues of Navoi Region came from NMMC
- 60 investment projects** completed in 2019



103-1, 103-2, 103-3

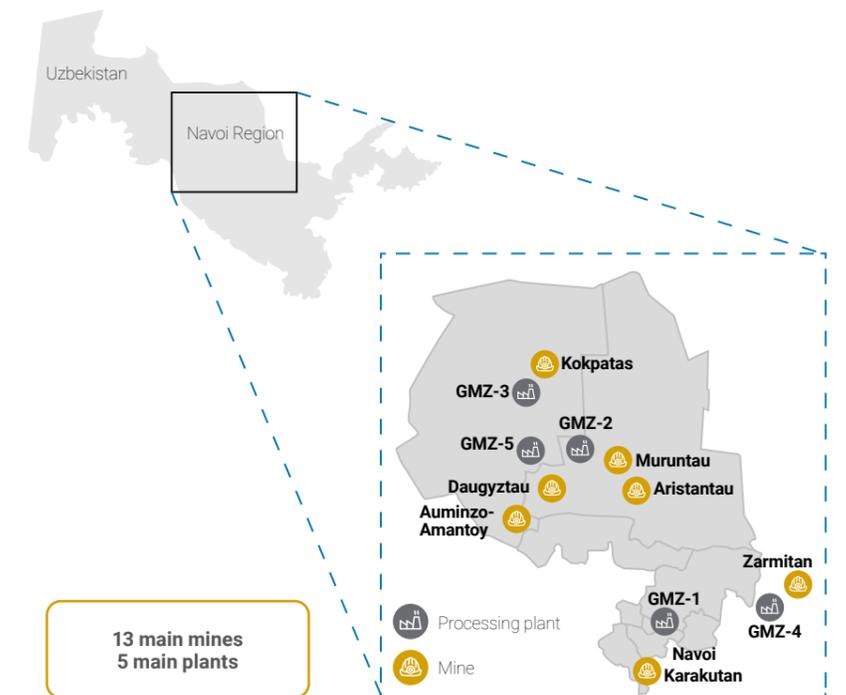
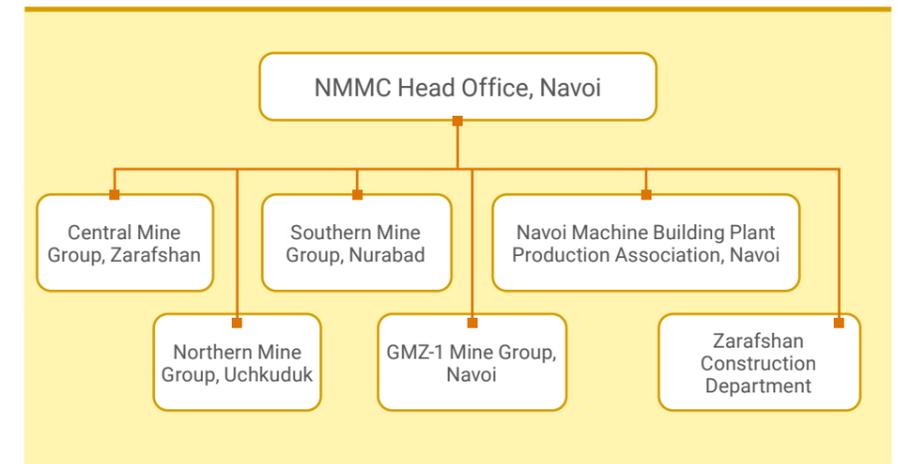
## Business Structure and Market Position

NMMC's business structure comprises four core mining and metallurgical enterprises (around which the cities of Navoi, Uchkuduk, Zarafshan and Nurabad were founded) and Navoi Machine Building Plant Production Association.

NMMC currently generates **10%** of Uzbekistan's entire industrial output, **18%** of budget revenues and **76%** of the budget of Navoi Region.

The company's scope of activity covers Navoi Region (the towns Navoi, Uchkuduk and Zarafshan, and Kominex and Tomdi Districts), Samarkand Region (the town of Nurabad and Kushrabad and Pakhtachi Districts) Jizzakh Region (settlement of Marjanbulak), Tashkent Region (Agren and Orta Chirchiq districts), Surxondaryo Region (town of Termez), the Republic of Karakalpakstan (town of Takhiatash) and the city of Tashkent.

NMMC is one of the world's ten largest gold producers, alongside Canada's Barrick Gold and Kinross Gold, American Newmont Corporation, South Africa's AngloGold Ashanti, Gold Fields and Harmony Gold, and Russia's Polyus.





201-1

## Financial and Operational Performance

Generated and distributed economic value provides a basic indication of how NMMC created value through its activities and the subsequent distribution of revenues across stakeholder groups.

We generate value for a wide range of stakeholders in the course of our operational activities. Such stakeholders include employees, suppliers and contractors, government authorities, and the local inhabitants of our regions of presence.

The difference between generated and distributed value is economic value retained, which is invested to fuel the company's future development. We strive to increase generated and distributed value while maintaining a high level of transparency and integrity in the information we disclose.

We compiled information from the company's financial reporting to disclose economic value generated and distributed.

NMMC posted revenues of \$3.405 billion in 2019, including \$3.368 billion from gold sales and \$37 million from other activities. The company's revenue, together with financial income and income/(loss) from the sale of tangible assets, form NMMC's **direct**

**economic value generated** of \$3.435 billion. The year-on-year rise in revenue in 2019 was driven by increased gold production volumes at the company's plants, as well as a transition to market pricing principles for determining gold prices as part of the liberalization of the tax system of Uzbekistan.

**Distributed economic value** amounted to \$3.238 billion in 2019. The largest share (62%) in the structure of distributed economic value was payments to the state, including income tax, fees, and a single social payment. In addition to payments to the state budget, distributed value also includes operational expenses (30%), including payments to suppliers and contractors, dividends, salaries, costs for the maintenance of social facilities, payments to providers of capital (7%), including dividends (the beneficiary of which is the Ministry of Finance of the Republic of Uzbekistan), and financial expenses.

**Retained economic value** amounted to \$197.9 million in 2019.



### NMMC's direct economic value generated and distributed, 2018-2019:

	2019	2018
<i>Unit of measurement</i>	<i>\$, mln</i>	
<b>Direct economic value generated</b>	<b>3,435.7</b>	<b>3,028.0</b>
Revenue	3,405.6	3,020.9
Financial income	22.2	19.1
Income/(loss) from the sale of tangible assets <sup>1</sup>	7.9	-12.0
<b>Distributed economic value</b>	<b>3,237.8</b>	<b>2,776.9</b>
Operating expenses (payments to suppliers and contractors, material acquisition costs)	972.1	733.2
Including payroll	195.9	143.5
Including the maintenance of social facilities	60.8	35.2
Other employee payments and benefits	6.3	4.7
Charitable donations	7.9	5.3
Payments to providers of capital	229.6	7.9
Including dividends paid	214.7	—
Including financial costs	14.9	7.9
Payments to the government <sup>2</sup>	2,021.9	2,025.8
including to the state budget due to the difference in cut-off price	—	849.5
including income tax <sup>3</sup>	1,109.1	146.7
including taxes, excluding the subsoil use tax and income tax <sup>4</sup>	10.5	63.9
including the single social payment from payroll	50.6	37.1
<b>Retained economic value</b>	<b>197.9</b>	<b>251.1</b>

### NMMC's operational results, 2018-2019:

Indicator	2019	2018
<b>Gold production</b>		
Tons	74.6	73.6
'000 oz	2,397	2,366
<b>Silver production</b>		
Tons	19.1	18.6
'000 oz	614	598

EBITDA rose by 16% year-on-year to \$1.451 billion in 2019. The EBITDA margin was 43%, which is comparable to other major gold producers.

With regards to operational indicators, gold production volumes increased by 1.3% year-on-year in 2019, totaling 2.396 million oz. Silver production increased by 2.6% to 614,000 oz.

By 2026, NMMC's strategic operational performance goals are set to increase gradually by:

- 30% for gold production
- 60% for silver production.

<sup>1</sup> The company posted a loss from the compensation-free transfer of tangible assets in 2018.

<sup>2</sup> The values in the line "Payments to the government" are specified on an accrual basis.

<sup>3</sup> The amount of income tax in 2018 differs significantly from that in 2019. The difference is due to the fact that that government bought finished products from NMMC at a fixed price of \$ 656 per oz. The difference between the international LBMA price and the price at which the government bought finished products from NMMC was reflected in IFRS as deductions to the state budget.

<sup>4</sup> In 2018, NMMC paid taxes to the pension, school and road funds. Due to changes in the Tax Code of the Republic of Uzbekistan, starting from 1 January 2019, these fees were abolished, resulting in a decrease in expenses for the taxes item, except for the subsoil use tax and income tax.



## Product Quality

NMMC's strategic priority in quality management is to continuously meet the necessary standards, requirements and expectations of consumers, as well as to strengthen the image of NMMC as one of the world's leading mining and processing companies, maintaining a leading position on the foreign and domestic markets.

In view of these goals, the Central Mine Group operates an **Integrated Management System for Quality, Environment, Health Protection and Occupational Safety** in accordance with the international standards ISO 9001:2015, ISO 14001:2015 and ISO 45001 (OHSAS 18001:2007). ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007 certificates apply to the production of precious metals and phosphate products. In addition to international standards, NMMC adheres to the provisions of the national standard O'z DSt ISO 50001.

The Quality Management System (QMS) has been deployed and certified at three NMMC business units.

- The Central Mine Group – specialists, engineers and technicians of the mine group are regularly trained and certified in accordance with the international standard ISO 9001:2015.
- Navoi Machine Building Plant – the QMS covers 20 subdivisions.
- Southern Mine Group – the ISO 9001 certification covers the production of polyvinyl chloride and polyethylene pipes.

An annual internal and external audit is conducted to assess the operation and compliance of the QMS with the requirements of standards at the three production facilities where the QMS is certified. NMMC has developed special procedures to identify the key quality risk (the risk difficulty or failure to purchase quality raw materials and equipment): these are the PR-03 internal audit management procedure and the PR-04 corrective actions procedure.

The product and quality management system is overseen by the **Chief Engineer**, who reports to NMMC's General Director. Quality control activities, overseen by the Chief Engineer, are coordinated by the chief specialists and heads of NMMC's divisions.

The **Division for Standardization, Metrology and Certification of the Quality Management System** provides organizational and methodical support and monitors NMMC's business units for compliance with the requirements of QMS regulatory documents.

The following are in operation at the Central Mine Group:

- The Technical Control Service, which monitors product quality
- The Production, Technical and Innovation Division, which helps the company obtain quality certificates for its products.

Within the structure of NMBP, the QMS is overseen by the plant director, who delegates tasks to the quality management representative, process managers, their deputies, and heads of business units.

The specifications of NMMC's products are defined by the **Quality Policy of the Central Mine Group of NMMC**, which guarantees that products comply with international standards.

*The quality of NMMC's gold is regularly assigned **Good Delivery** status. NMMC is on the **LBMA's London good delivery list of acceptable refiners for gold**, where it was granted a **proactive monitoring certificate** on 29 May 2019.*

NMMC's quality goals and objectives are set out in its Quality Policy. The Central Mine Group has an employee motivation system for product quality assurance that links performance with bonuses. The achievement of quality KPIs<sup>1</sup> by employees and compliance with standards is confirmed if no claims about the company's products are received.

NMMC organizes employee trainings as part of the retraining and professional development program for metrology, standardization, product testing, and management systems. The Central Mine Group holds a training seminar on the requirements of the international standard ISO 9001:2015 for employees of the mine group.

NMMC's goals for 2020 relate to the planned expansion of production, the uptake of new technologies, and the development of new products. Boosting exports has also been included in the corresponding action plans of NMMC business units.



<sup>1</sup> Key performance indicators.



102-9

## Supply Chain Management

NMMC adheres to the principles of transparency, openness, timeliness, and economic feasibility in supply chain management. It actively interacts with suppliers during procurement procedures and supports a localization program.

The Head of Equipment and Materials Procurement,<sup>1</sup> who reports to the Deputy General Director for Commercial Matters, is responsible for managing the company's procurements. Quality assurance within procurement management is carried out by NMMC's chief specialists, who control compliance with international standard ISO 9001:2015 and national-level standards (GOST) together with specialists from the subdivisions of Equipment and Materials Procurement.

Procurement requests are created every year in accordance with the production plan for the next year. The procurement budget is confirmed by the Finance Department after requests have been reviewed by specialists from the Localization and Procurement Planning Department.

Localization is currently developing at a rapid pace in Uzbekistan. To support local producers, the company provides a preferential advantage to local suppliers amounting to no more than 15% of CIP<sup>2</sup> (Uzbekistan) for imported goods. **The share of procurements from local suppliers reached 70% in 2019.**

The company completed a reorganization of the Equipment and Materials Procurement Division in 2020. The division was renamed the Procurement Division and now includes separate services for procuring transportation and equipment, as well as a service dealing with consumables and a contract support service.



<sup>1</sup> The division responsible for procurements was reorganized in 2020 and was renamed the Procurement Division.

<sup>2</sup> Carriage and Insurance Paid To (named place of destination).

## Investment Activity

When planning to execute investment projects, NMMC is guided by:

- NMMC's 2019-2022 investment program
- The 2026 Program to Increase the Production of Precious Metals.

As part of the investment program for 2019, NMMC is implementing 60 investment projects, including 13 projects included in the 2026 Program to Increase the Production of Precious

Metals. In accordance with the 2019 investment program, seven facilities have been put into service for a total sum of \$234 million. Investment utilization came to \$626 million.

Progress towards the realization of investment projects is assessed based on the achievement of forecast parameters and the reaching of capacity targets.

### Investment by NMMC plant, \$ million:

Facility of the investment project	Project summary	Investment, \$ million		Implementation period	Number of projects
		2019	2016–2026		
<b>GMZ-1</b>		<b>4</b>	<b>205</b>		<b>12</b>
GMZ-1	Reconstruction and retrofitting	1	8	2016-2022	4
Sarmich	Stripping and field development	–	107	2021-2024	1
Karakutan	Expansion of gold ore mining Stripping and field development	–	66	2019-2025	4
Aristantau	Construction of a mine at the Aristantau ore field	–	15	2016-2017	1
Ziatdin ore field	Development of gold ore reserves	3	9	2018-2022	2
<b>GMZ-2</b>		<b>241</b>	<b>1,638</b>		<b>36</b>
Expansion of GMZ-2	Increase in ore processing capacity	77	427	2016-2026	10
Murantau	Increase in production at the field	162	864	2016-2026	10
Chukurkuduk	Development of field reserves	–	167	2020-2024	1
Balpantau and Tamdybulak	–	–	99	2020-2023	1
Casting and mechanical plant	Construction of casting and mechanical production facilities	–	20	2019-2022	1
Supporting projects	–	2	52	2016-2022	11
Infrastructure projects	–	–	9	2017-2022	2
<b>GMZ-3</b>		<b>11</b>	<b>451</b>		<b>30</b>
GMZ-3	Construction, expansion and retrofitting	6	206	2016-2025	17
Kokpatas and Daugyztau	Increase in production at the fields	4	109	2017-2025	8
Turbai and Boztau	Development of field reserves	–	133	2020-2023	1
Supporting projects	–	1	4	2019-2022	4

Facility of the investment project	Project summary	Investment, \$ million		Implementation period	Number of projects
		2019	2016–2026		
<b>GMZ-4</b>		<b>53</b>	<b>403</b>		<b>21</b>
GMZ-4	Reconstruction and retrofitting GMZ-4 tailings facility Phase III	5	24	2016-2026	7
Guzhumsay	Development of field reserves	5	46	2016-2024	3
Zarmitan gold ore zone	Development of field reserves	41	325	2016-2023	8
Infrastructure projects	–	–	2	2016-2018	2
Supporting projects	–	2	6	2019-2021	1
<b>GMZ-5</b>		<b>182</b>	<b>850</b>		<b>7</b>
Auminzo-Amantoy	Launch of 25 new open-pit mines and the restoration of the Amantaitau gold recovery plant, heap leaching plant	182	850	2016-2025	7
<b>GMZ-6</b>		<b>–</b>	<b>276</b>	<b>2020-2025</b>	<b>2</b>
Pistali (GMZ-6)	Construction of a gold ore mining and processing complex	–	276	2020-2025	2
<b>Other</b>		<b>135</b>	<b>911</b>		<b>86</b>
SHGM	Construction of a technogenic waste treatment complex Modernization and retrofitting	64	317	2018-2023	2
MGRS	Reconstruction. Construction of a new tailings pit	–	7	2016-2019	3
Modernization of equipment at NMMC business units	Modernization of morally and physically obsolete main process equipment	30	159	2016-2020	1
Retrofitting at NMMC business units	Technical and technological retrofitting of NMMC Replacement of equipment based on the results of the technical audit	30	321	2017-2026	4
Other supporting projects	–	7	64	2016-2022	39
Social projects	–	3	41	2016-2023	28
Other infrastructure projects	–	1	2	2016-2019	9
<b>Total</b>		<b>626</b>	<b>4,734</b>		<b>194</b>

*"Today's challenging environment has made it imperative for us to effectively solve two important, extremely urgent tasks at the same time. We are simultaneously working to improve the health and living standards of the population while reviving the economy and creating the necessary conditions for people to work hard and prosper."*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**





# EMPLOYEES



Navoi Mining and Metallurgical Combinat's main asset is its employees, who make significant contributions to the development of the mineral resources industry and economy of Uzbekistan and the expansion of its export potential. Our employees help us achieve high production and social indicators, integrate cutting-edge technologies, and strengthen our cooperation with leading foreign companies.



- ~ **41 thousand employees** in the precious metals mining segment of NMMC
- 3.45%** employee turnover
- 100% of employees** covered by the Collective Agreement
- 977 employees** hired based on quotas in seven different categories
- 15,006 employees** benefited from corporate relaxation and recreation programs, an 18% year-on-year increase
- 13,877 employees** underwent retraining and professional development programs
- 56 hours** of training per employee on average, an 10% increase on 2018
- Over **3,000 events** held at NMMC cultural institutions

102-41, 103-1, 103-2, 103-3

## Our Approach to Employee Engagement

Matters related to employee engagement are handled by the **HR Department**, which is a subdivision of the NMMC Head Office and reports to the company's General Director. The department is headed by the **HR Department Director**. The **HR Department** includes the **HR Division** and the **Employee Training Division**. The **NMMC Training Center** also reports to the HR Department, which is not part of its structure.

The Deputy Director of HR and General Matters is responsible for managing employee engagement in NMMC's **business units** and is in charge of the corresponding HR Division, Employee Training Division and Training Center.

The company's HR policy is regulated by the **following documents**:

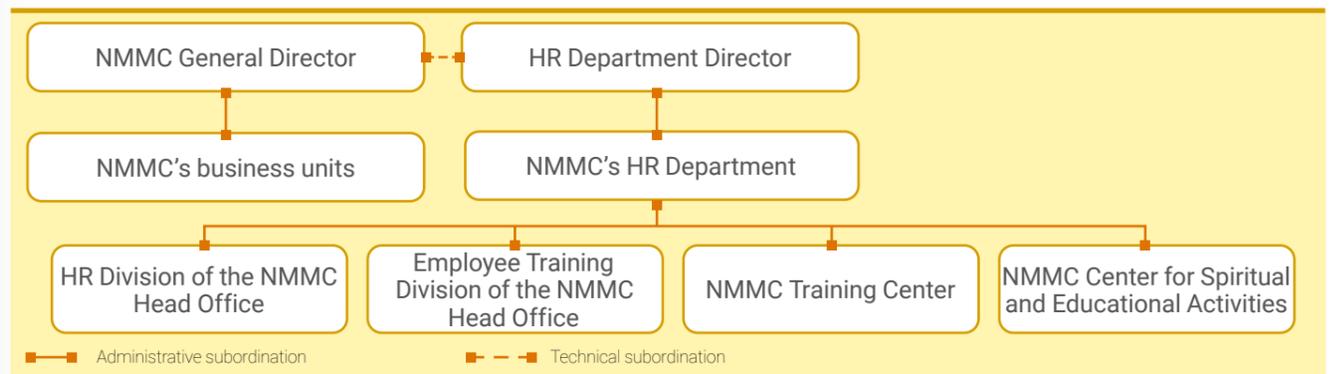
- Regulation on the HR Department
- Regulation on the HR Division
- Regulation on the Employee Training Division
- Collective Agreement
- Regulation on Employee Training and Retraining, the Government Standard on Employee Training
- Regulation on Professional Development and Advanced Training
- Regulation on the Organization of Training and Knowledge Testing
- Regulation on the Organization and Performance of Certification of Managers, Specialists and Employees
- Regulation on the Talent Pool
- Regulation on the Procedure for Handling Enquiries from Individuals and Legal Entities at NMMC

- Internal labor regulations
- Regulation on the NMMC Young Leaders Council
- Regulation on Bonuses
- Job descriptions and others.

As per the Regulation on the HR Department, the subdivision's key strategic goals are to:

- Provide the company with a workforce that have the necessary qualifications and training profile to perform NMMC's production and social activities in accordance with its production development programs for the period of 2017 to 2026 and beyond
- Coordinate the hiring process, make staff appointments and ensure the effective use of workers and specialists
- Create and develop a company talent pool
- Manage efforts to achieve the objectives of the National Program on Personnel Training of the Republic of Uzbekistan<sup>1</sup>
- Uphold labor rights and provide the benefits and guarantees stipulated by labor laws to company workers
- Manage the organizational, educational and methodical aspects of all types of training, retraining and advanced training of company employees based on the latest scientific, technological and economic advances and production experience
- Organize assistance for local government bodies to support the implementation of the main areas of the state employment policy.

<sup>1</sup> Approved by Law of the Republic of Uzbekistan No. 463-1 of 29 August 1997



### Collective Agreement

The main regulatory document governing labor and socio-economic relations between the employer and employees within the company is the Collective Agreement (the "Agreement"). The Agreement is concluded between employees (represented by the NMMC Trade Union Board) and by the employer (represented by the General Director of NMMC). The Agreement applies to the following:

- All NMMC employees
- Employees of the Trade Union Board and its subdivisions
- Cases provided for by the Agreement:
  - Family members of NMMC employees
  - NMMC pensioners
  - Former NMMC employees who are suffering as a result of injury, occupational disease or other damage to health related to the performance of work duties
  - Persons unable to work who were dependent on a deceased employee and are entitled to compensation for damages in connection with his/her death from a workplace injury, occupational disease or other damage to health related to the performance of work duties.

The current Collective Agreement was signed in May 2018 for a three-year period; it will be valid until the adoption of a new Collective Agreement. Proposals for any necessary amendments and additions while the Agreement remains valid must be submitted by labor collectives to the Central Commission for Verification of Agreement Implementation and then adopted at an annual labor collective conference.

As per the Agreement, the Trade Union Board (TUB) of NMMC employees is the sole and exclusive representative of all company employees in negotiations regarding the Agreement, as well as in matters of labor law and trade unions.

The Collective Agreement includes an **extensive benefits package and employer obligations** for occupational safety and the health and social security of workers.<sup>1</sup> To **motivate** its employees, NMMC holds various social events (contests, holidays), improves working conditions, trains and develops employees, helps create a constructive team environment, devolves authority and delegates responsibilities within teams, and involves employees when making significant decisions.

The company engages with stakeholders on the activities of social facilities via a trade union committees and the social development divisions (services) of NMMC's business units. The company takes whatever measures are necessary when it receives proposals about possible improvements to the performance of social facilities.

Social facilities are financed exclusively from NMMC's own funds on the basis of cost estimates. Expenses for the maintenance of social facilities amounted to 3.2% of the company's total budget in 2019.

<sup>1</sup> For more details, refer to "Social Security."

100% of employees are covered by the Collective Agreement.



### NMMC Commissions

The **Central Commission** is formed every year based on a joint decision by the administration and the NMMC Trade Union Board. The core goals of the commission is to review the delivery of the Collective Agreement for the past year and proposals from the company's business units on amendments to the current Agreement, which are subsequently approved at the Collective Agreement conference.

In the event of any disagreements between the employer and employees, all issues are resolved by the Labor Disputes Commission. The Labor **Disputes Commission** operates at all NMMC business units, and its members are reelected once every three years. Protocols, joint decisions and orders are drawn up by the commission, which are sent to NMMC's business units after signing to be executed.

In total for 2019, the labor disputes commissions of the company's business units received 61 petitions, of which 28 were settled in favor of the employee, 32 found no violation of rights, and one was dismissed due to the non-attendance of the applicant.

The **Occupational Safety Commission** coordinates the collective actions of the employer and employees. It aims to ensure compliance with labor safety requirements, prevent workplace injuries and occupational illnesses, and provide personal protective equipment (PPE). The Commission also organizes workplace inspections of working conditions and safety, and informs employees about the results of these inspections. Measures to reduce injuries, provide PPE, and ensure employees have access to healthy meals are taken at the shop-floor level.

The **Payroll Commission** regulates employee compensation. In 2019, salaries were paid in accordance with tariff rates approved by NMMC management with the Trade Union Board's agreement. Salary increases came into effect on 1 May 2019 and totaled 15% for production activities, 15% for construction, and 19% for non-production activities, with an additional 10% raise from 1 September 2019.





102-8, 102-36, 202-1, 401-1, 405-1, 405-2, 412-1

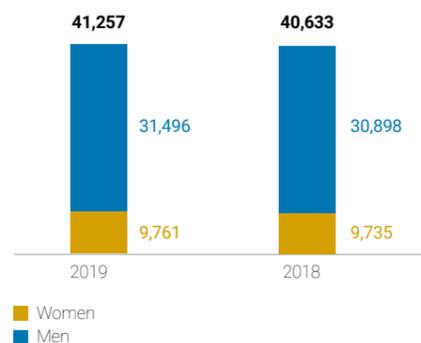
## HR Policy

In 2019, NMMC employed 41,257 people, 1.5% more than in 2018. The share of women was 23.7% in 2019, a slight decrease (-1.3%) compared to 2019. The majority of our employees (57%) fall into the 30-50 age group, which is indicative of the high percentage of qualified personnel and the stability of the company's HR potential.

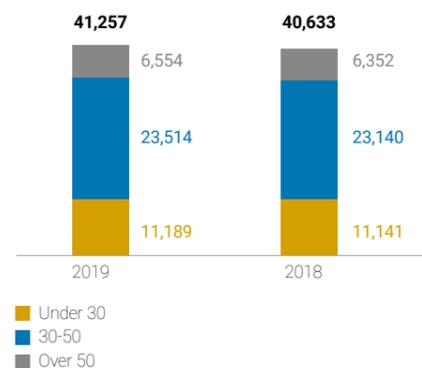
91% of NMMC employees are employed under permanent contracts. NMMC also accommodates the various needs of its employees by giving them the opportunity to work part-time. All they need to do is submit a personal application.

Notably, the percentage of senior management hired from local communities was 94.2% in 2019.

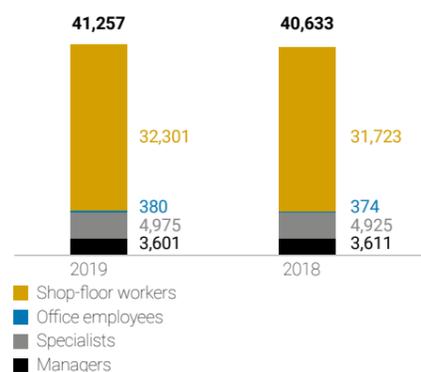
### Total employees by gender



### Total employees by age



### Total employees by position



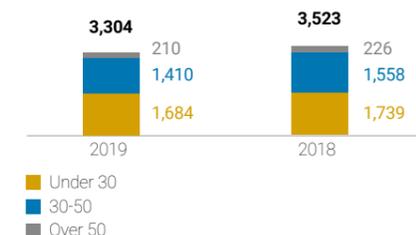
### Talent Acquisition

The professional development of employees, the creation of a talent pool, advanced training, the development of practical skills, and a comprehensive, systematic approach to our HR policy have always been, and remain, our priority focus areas in employee engagement. The core objective of HR management is the prompt and proper staffing of existing and newly commissioned facilities with qualified specialists and highly-skilled workers, as well as staff training.

The main sources of human capital for NMMC are universities in Uzbekistan (principally Navoi State Mining Institute<sup>2</sup>) and professional colleges affiliated with NMMC in Navoi, Zarafshan, Uchkuduk and other localities in Uzbekistan.<sup>3</sup>

We are proud to state that NMMC's employee turnover rate is improving. This is largely due to the company's HR Policy. Employee turnover was 3.45% in 2019, down from 4.3% from last year (a 21% decrease).

### New hires by age group



### Employment at NMMC under the Quota System

Some workers are hired by the company as freelancers and from the public employment service through allocated quotas (for disabled people, persons nearing retirement age, vulnerable young people, etc.). These quotas are important for groups in society in our regions of presence that face difficulties in finding employment. In 2019, the number of employees employed through the quota system totaled 977 across seven different categories.

### Number of people employed under the quota system in 2019



The HR Division bases its hiring decisions on the need to continuously improve the quality of NMMC's workforce. We maintain our workforce by hiring young, promising and capable talent with the required theoretical knowledge, practical skills and work experience, as well as the personal and business qualities we seek in NMMC employees. The preliminary recruitment procedure includes an assessment of a candidate's work experience, their business and professional history, and personal data. We also take into account the candidate's level of professional training, their business qualities, organizational skills, teamwork skills, health condition, etc.

Promoting employees who have the necessary education, qualifications, business acumen, and ethical qualities to successfully take on roles as managers and specialists is also of critical importance. We strive to reward outstanding employees with honorary diplomas, the Veteran of NMMC title, three levels of Mining Glory badges, and by nominating employees for state awards.

<sup>2</sup> For more details, refer to "Employee Training and Development"

<sup>3</sup> For more details, refer to "Employee Training and Development"

**The following awards were granted by Decree of the President of the Republic of Uzbekistan to NMMC employees in 2019:**

- The title Honored Worker of Industry of the Republic of Uzbekistan, presented to Komil Abdirasulovich Tangirov, miner at the Guzhumay mine of the Southern Mine Group
- The Jasorat Medal, presented to Alexander Anatolievich Khalturinsky, programming engineer of the Information and Communication Technologies Center of the Northern Mine Group.

**Building a Talent Pool**

NMMC has created a **talent pool** consisting of a special group of employees who have the potential professional, business and interpersonal qualities to work as managers or specialists. Targeted training would enable such employees to secure the qualification requirements for specific manager or specialist positions.

The talent pool structure includes the following levels:

- Talent pool included on a list of positions from the Presidential Administration of the Republic of Uzbekistan
- Talent pool included on a list of positions from the Service of State Advisors of the Presidential Administration of the Republic of Uzbekistan
- Talent pool included on a list of positions from the General Director of NMMC
- Talent pool subject to appointment and release based on an order from the Head of the HR Department
- Talent pool of NMMC subdivision managers.

The deadline for admitting new candidates into the talent pool is 25 January every year for all levels. New candidates are approved by the General Director of NMMC and subdivision heads. Permanent committees on the formation, preparation and rational allocation of the talent pool and HR services are responsible for coordinating work with the talent pool.

As per the Regulation on the Procedure for the Formation and Preparation of a Talent Pool for Promotion to Manager and Specialist Positions, the core aims of the talent pool are:

- The qualitative and timely advancement of employees who have the required education, qualifications, and high business and moral qualities to take on manager and specialist roles
- The identification of opportunities for using the potential abilities and capabilities of employees included in the pool
- The replacement of employees in certain positions during a period of temporary absence (vacation, business trip, illness) with employees in the pool
- The provision of professional development to the talent pool in accordance with the requirements set for the position to be filled
- The identification of career development opportunities and material incentives for employees in the pool.

The above regulation also governs the procedure and criteria for candidate selection to the talent pool, as well as the qualification requirements and the necessary level of knowledge. It also sets out the procedure for training, professional development and enhancement of practical skills.

**Respect for Human Rights**

Respect for human rights is an integral principle that underpins how we build relationships with our employees and other stakeholders. NMMC does not tolerate any form of discrimination, including discrimination on the grounds of ethnicity, race, language, gender, age, religion, political affiliation or any other social or social basis, property, or official status, etc.

The rights of NMMC employees are enshrined in the Constitution of the Republic of Uzbekistan, labor laws, the Collective Agreement, orders, instructions and other local legal regulations.

In accordance with Article 37 of the Constitution of the Republic of Uzbekistan, each individual has the right to free choice of work, fair working conditions, and protection from unemployment as proscribed by law.

According to the Internal Labor Regulations in force at the plant, every NMMC employee has the right to:

- Remuneration for work that is not lower than the minimum wage established by law
- Rest, provided by the establishment of limits on working hours, shortened working hours for a number of professions and jobs, the provision of weekly rest days, public holidays and annual paid vacation
- Working conditions that meet safety and hygiene requirements
- Professional training, retraining and development
- Compensation for harm caused to health or property in connection with the performance of work duties
- Association in trade unions and other organizations representing the interests of employees and labor collectives
- Social security on the basis of age and in the event of sickness, disability, loss of the family breadwinner, and in other cases established by law
- Protection, including judicial, labor rights and qualified legal assistance
- Defense of their interests in collective and individual labor disputes
- Other social conditions provided for by the Collective Agreement.

Annual inspections of compliance with labor laws and the work of the Labor Disputes Commission are conducted at NMMC business units. Inspections were conducted at six business units in 2019. An inspection covering all 28 subdivisions is conducted once every three years.



**Feedback**

NMMC has a procedure for handling enquiries from individuals and legal entities.<sup>1</sup> Enquiries can either be submitted via the NMMC hotline, during in-person receptions, in written form (by email or declaration), as a suggestion or complaint, via the official website, or to the official NMMC email address. Enquiries can be made during video conferences in accordance with a preapproved schedule for receiving applications submitted in electronic form.

**NMMC Hotline**  
 0(436) 227-72-22, +998 79 227-72-22  
 E-mail: [info@ngmk.uz](mailto:info@ngmk.uz)  
 The hotline is open from 8:00 to 12:00 and from 13:00 to 17:00 local time from Monday to Friday (excluding public holidays).

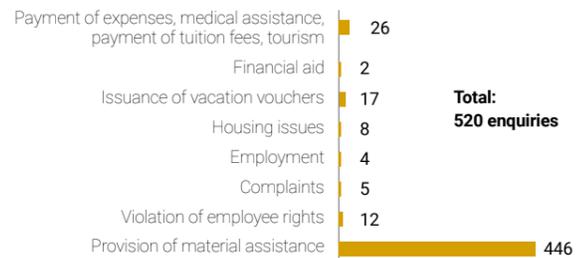
As per the Regulation on the Procedure for Handling Enquiries from Individuals and Legal Entities at NMMC, the Division for Monitoring and Handling Enquiries from Individuals and Legal Entities through the Virtual Reception of NMMC is responsible for reviewing any enquiries received. The company does not currently review enquiries submitted anonymously or under a pseudonym. A division employee contacts the applicant by phone and/or e-mail within three days to confirm the authenticity of the enquiry. The enquiry is then sent to the responsible NMMC business unit for review.

The application or complaint is reviewed within one month of receipt. Those that do not require additional investigation or checks should be reviewed within 15 days. In cases where it is necessary to carry out an inspection, obtain additional materials, or take other measures to fully consider an application or complaint, the review period may be extended by NMMC management in exceptional circumstances, but not by more than one month. The person who submitted the application or complaint must be notified about this.

<sup>1</sup> For more details about enquires statistics, refer to 'Business Ethics and Anti-Corruption.'

Employees can also get in touch with the Trade Union Board in line with an approved appointment schedule. The NMMC Trade Union Board received 520 enquiries in 2019, all of which were reviewed.

**Number of employee enquiries received by the Trade Union in 2019**



**Employee Remuneration**

The **Labor and Payroll Division** handles all issues related to employee remuneration within the company. Employee remuneration is regulated in accordance with the organizational chart and in line with fixed official salaries (base rates) established on the basis of the plant's salary bands, the unified salary band, and the salary bands of medical and pharmaceutical workers. These bands reflect differences in the complexity and working conditions of each professional and qualification group, as well as the specifics and nature of the production processes of each subdivision:

- Managers, specialists and office employees are paid an official fixed salary, or, if necessary, an hourly rate (for time actually worked)
- Shop-floor workers with a time wage are paid at hourly rates or monthly wages (for time actually worked)
- Shop-floor workers with a piece wage are paid at the corresponding piece rate (standard time) for actually performed work or in line with the corresponding wage system.

The specific amount of compensation an employee receives is set out in the labor agreement with the employee's consent; it cannot be lower than the minimum wage established in the Republic of Uzbekistan and is not limited by any maximum. In 2019, the minimum wage for men and women in entry-level positions was 23% higher than the minimum wage of the Republic of Uzbekistan. The ratio of the average annual remuneration of all employees to the total annual remuneration of the highest paid official was 12.2 in 2019.

The ratio of women's base salary to men's was 0.71 in 2019. This ratio is 0.63 for managers, specialists, and office workers, and 0.67 for shop-floor workers.

Based on NMMC's financial capacities, a multiplying factor is applied to the fixed official salaries of certain highly-qualified specialists if they achieve their bonus KPIs. The size of multiplying factors is stipulated in the current Regulation on Bonuses for Managers, Specialists and Office Employees of NMMC's Industrial Activities based on the key operational and financial results, as agreed with the NMMC Trade Union Board.

Cases in which NMMC provides its employees with additional remuneration in accordance with the law:

- Additional payment using a district (territorial) coefficient, as well as coefficients for work in mountainous, desert and arid areas
- Payment for adverse or particularly hazardous and arduous working conditions, as well as payment for work in underground mines and capital mining operations.
- Payment for night work at a rate of 1.5 times the base salary
- Payment for overtime
- Payment for work on weekends and public holidays
- Monthly premium for locomotive drivers who have a qualification class and assistant locomotive drivers who have licenses to operate locomotives
- Monthly premium to the fixed salary rate for automobile drivers, depending on skill grade.

*To stimulate labor productivity, NMMC pays a **length of service allowance** in the amount specified in the Regulation on the Payment of the Length of Service Allowance, approved by the presidium of the NMMC Trade Union Board. The length of uninterrupted service is determined by commissions for establishing the length of service in accordance with the main document for determining it: the employment record book. The length of service allowance is paid to NMMC employees on a monthly basis at the following rates:*

- For length of service of over one year – 40%
- For length of service of over three years – 60%
- For length of service of over five years – 80%
- For length of service of over ten years – 100%.



**Rotation System**

To ensure work is conducted in a continuous and regular manner, we have implemented a rotation system for work performed at a significant distance from the main plant, or if there-and-back travel time to the place of work is more than three hours from the production unit's base. Engaging an employee on rotation is not considered a business trip, but full employment to perform labor activity at a production facility.

The length of a rotation must not exceed one month, as set out in the rotation schedule. During their stay at the facility, employees live in specially equipped accommodations. Working days on rotation must not exceed 12 hours. Work is organized in accordance with the Regulations on the Rotation System for Drilling, Exploration, Geophysical, Construction, Installation, Commissioning and Other Work in the Remote Areas and Facilities of Navoi Mining and Metallurgical Combinat.

Employees working on rotation are paid for the volume of work performed in line with comprehensive norms and rates; for all actually worked time in hours, as calculated based on the base rate for assigned categories; and for all actually worked time based on the work schedule and the hourly base rate. Multiplying factors (based on district or for mountainous / desert terrain) are applied to the wages of all employees performing work on a rotational basis in the amounts set for employees of a given locality.

Workers living in rotation complexes are provided with transportation, social services and three meals a day. Medical stations are set up in areas with more than 50 people. Medical check-ups are conducted at medical institutions in employees' place of residence before each rotation.



404-1, 404-2

## Employee Training and Development

We are constantly striving to train our employees and provide them with opportunities for continuous professional development.

Employee development is one of our core priorities, and it helps us ensure that our plants have the most highly-qualified staff.

Employee training and retraining are regulated by the following documents:

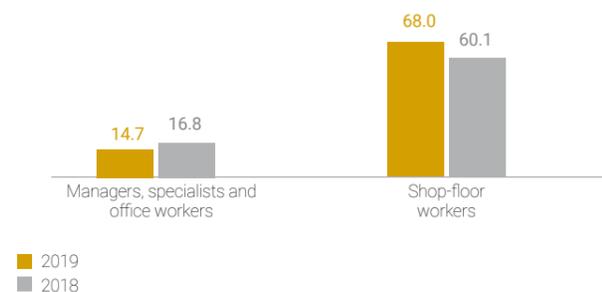
- Regulation on Training and Retraining NMMC Employees
- Regulation on the Organization of Training and Knowledge Testing
- Regulation on the Organization and Performance of Work Placements
- Regulation on Mentoring at NMMC
- State Standard on Employee Training.

NMMC's HR Department is responsible for employee retraining and professional development.

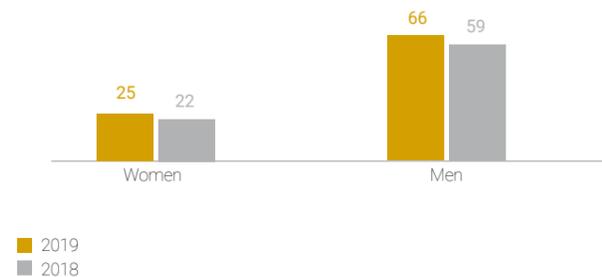
The current employee training system is designed for specialists with higher education and highly-qualified workers, as well as specialists with specialized secondary and vocational education. The core principle we follow when developing our educational programs is to provide employees with opportunities to continuously develop their skills so that they can advance their careers and improve the company's HR potential. Employee retraining and professional development is an ongoing process that continues throughout an employee's entire working life.

Employees received an average of 56 hours of training per person in the reporting period,<sup>1</sup> a 10% increase on 2018. This includes 68 hours for shop-floor workers and 15 hours for managers, specialists and office workers. We did not conduct training activities for employees of management boards in the reporting period. The average number of training hours per person was 25 hours for women and 66 hours for men in the reporting period.

Average number of training hours per employee by position



Average number of training hours per employee by gender



We offer **sabbatical leave** with guaranteed return to employment and preservation of average monthly salary for employees who wish to complete a doctoral dissertation or write textbooks and teaching aids, and employees who combine production or academic activities with scientific research.

<sup>1</sup> Data calculated in accordance with GRI Disclosure 405-1.

NMMC operates the **Navoi State Mining Institute (NSMI)**. NMMC's General Director, Kuvandik Sanakulov, Doctor of Engineering, is NSMI's rector.

Navoi State Mining Institute was founded in 1963 with the goal of supplying qualified mining and metallurgy specialists for the industrial sector of Kyzylkum Region and the NMMC industrial enterprises that were being established at that time.

**NSMI had 3,613 students** at the end of 2019. They included 2,955 full-time bachelor's students across 15 disciplines and 99 full-time master's students across ten disciplines. The part-time student body included 336 bachelor's students across ten disciplines and 223 bachelor's students on a special part-time program<sup>2</sup> across six disciplines. NSMI students received instruction from top-notch professors and lecturers of Uzbek universities, as well as from leading specialists from NMMC, teachers from Tashkent State Technical University, and members of the Academy of Sciences of Uzbekistan.

With the aim of improving the bachelor program, NSMI and NMMC's Employee Training Division have developed a dual system that combines university-based learning with on-site teaching at NMMC.



Specialists with higher education are sent to universities in Uzbekistan for training, or for certain majors, to universities abroad.

Specialists with secondary specialized and vocational education are trained at professional colleges in Uzbekistan that are affiliated with NMMC in accordance with the instructions of the Cabinet of Ministers of the Republic of Uzbekistan (No. 06/8-106 of 14 January 2011, No. 07-6-3 of 7 September 2011 and No. 07-06-03 of 27 March 2012): Zarafshan Industrial Vocational College, Zarafshan Mining Electrical Engineering College, Karmana Industrial Vocational College, Karmana Industrial and Service College, Karmana Industrial and Economic College, Navoi Mining College, Kushrabad Industrial Vocational College, Uchkuduk Vocational College of Construction and Public Utilities, and the Uchkuduk Vocational and Mining Colleges. Industrial work placements at NMMC are arranged for students at these educational institutions, and they are offered job placements following graduation.

NMMC helped employees who met the criteria and requirements the Abu Rayhan Beruni Republican Higher School of Business and Management (National Agency of Project Management under the President of the Republic of Uzbekistan) receive Masters of Business Administration (MBA).

We have an **apprentice-mentor system** to swiftly integrate young employees into working life at NMMC. The system applies to all newly hired workers who have recently graduated from higher, specialized secondary or vocational educational institutions and will be working in industry for the first time. New employees are assigned a mentor for the duration of their apprenticeship who provides them with assistance and advice. Mentors develop individual work plans covering the entire mentorship period together with young employees. As per the Regulation on Mentorship, the mentorship period for young workers lasts from six to 12 months depending on the complexity of the profession for which they are training. The individual plan should encompass an overview of the plant's activities, study of the basics of labor legislation, the development of practical skills, and the involvement of the new employee in the team's social life.

<sup>2</sup> Three years of study at university on the condition that prospective students have secondary special education.

NMMC employees undergo retraining and professional development at **three training centers** of the company's production units in Navoi and Zarafshan. The company also has two training complexes and training stations in Uchkuduk and Nurabad. Training centers train employees in accordance with programs that are specially designed for the working conditions at production facilities. NMMC has over 100 standard programs and more than 1,000 courses for specific professions and equipment. Employees take exams created by the attestation commission after completing training courses. The company currently employs seven Doctors of Science and 30 PhD equivalents who are involved in employee training. Employee competencies are also confirmed in the period of the attestation commission.



We are constantly striving to update our training methods and integrate the latest teaching technologies. For example, we use simulators from BelAZ, Caterpillar, and Komatsu when training operators of specialized equipment. In 2020, in response to the outbreak of COVID-19, we are planning to move the work of the attestation commission online. All NMMC employees are given access to our online library, which has a wide range of professional literature.



Professional development in **industrial and environmental safety** is conducted at LLC Xodimlar Tayyorlash Markazi (LLC Employee Training Center) (Tashkent), the Scientific Research Institute for Standardization, Metrology and Certification, St. Petersburg Energy Institute for Advanced Training, and other educational institutions.

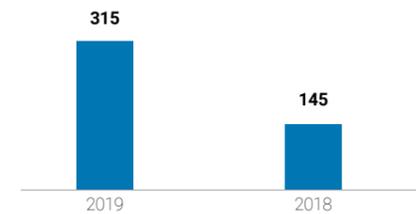
**Number of NMMC employees who underwent retraining and professional development programs in 2018-2019**

Type of training	2019, number of people		2018, number of people	
	Plan	Actual	Plan	Actual
Retrained and trained for second and related professions	5,279	6,211	4,454	5,291
Shop-floor employees, professional development	5,343	5,639	5,565	5,758
Managers, specialists and office employees, professional development	1,813	2,027	2,243	2,611
<b>Total</b>	<b>12,435</b>	<b>13,877</b>	<b>12,262</b>	<b>13,660</b>

A total of 315 employees received training on industrial and environmental safety on a contractual basis in 2019, up from 145 employees in 2018. We also arranged training on environmental protection for 28 employees with the support of the State Committee on Ecology of the Republic of Uzbekistan.

Occupational safety trainings are regulated by NMMC's Regulation on the Organization of Training and Knowledge Testing. The regulation sets out the mandatory procedures for employee training and knowledge testing on occupational safety. All new hires involved in production processes are only permitted to work independently after they have passed inductions on safe work, completed apprenticeships, and passed knowledge tests. Managers at every NMMC business unit develop plans for dedicated courses, seminars, conferences and lectures on occupational safety. In the reporting year, 100 employees underwent training on occupational health and safety.<sup>1</sup>

**Number of employees received training on industrial and environmental safety on a contractual basis**



NMMC is planning to further expand its educational programs for employees in 2020. Our main focus will be training employees to implement the company's investment projects.<sup>2</sup> We are planning to carry out a range of measures to staff facilities that are due to be launched in accordance with road maps to accelerate the implementation of investment projects envisaged in the 2026 Program to Increase the Production of Precious Metals.

<sup>1</sup> For more details on occupational health and safety training, refer to "Occupational Health and Safety."

<sup>2</sup> For more details about NMMC's investment project, refer to "Investment Activity."





102-41, 401-3

## Social Security

NMMC's social policy aims to improve working conditions and the living standards of its employees, which in turn, make a significant contribution to regional development and social stability. NMMC finances the activities of its social facilities, which can be accessed by employees, members of their families, and residents of our regions of presence.<sup>1</sup>

The **Collective Agreement**, which describes and addresses all key issues related to both employees and pensioners, ensures a broad spectrum of social guarantees for NMMC employees. The company has created and maintains all the necessary conditions to ensure a decent standard of living and the continued good health of elderly people and veterans of war and labor.

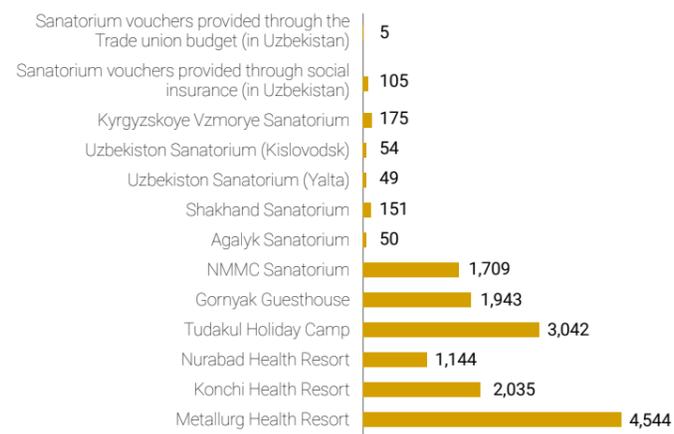
The **NMMC Trade Union Board** works to resolve any social, labor, economic, moral, environmental, intellectual and legal issues, and to represent the interests of employees within the company. The trade union's budget is financed through voluntary contributions totaling 1% of the salaries of union members.

Employees, members of their families, and NMMC pensioners can benefit from the services offered by the company's social infrastructure at preferential rates, (i.e. as agreed upon in the current Collective Agreement and other local documents).

All employees, members of their families and NMMC pensioners receive free medical services at the company's health center and clinics.

NMMC's administration and Trade Union Board provide workers and their families with access to ample opportunities for rest and relaxation to ensure high levels of productivity. The company's Metallurg, Konchi and Nurabad health resorts, Tudakul holiday camp, Gornyak guesthouse and NMMC sanatorium are extremely popular with our employees. In 2019, 15,006 people took advantage of opportunities for rest and relaxation, an 18% increase on the previous year.

### Provision of rest and relaxation for NMMC employees, members of their families, and pensioners, people



To help our employees with childcare, we allocate places at kindergartens for workers and pensioners with preschool-age children. We also organize vacations for the children of employees during the summer holidays at 11 children's recreation camps. A total of 10,490 children took part in rest and relaxation activities during the summer of 2019, including:

- 9,103 children at six countryside camps
- 907 children at three city camps
- 480 children at two summer camps for recreation and volunteering.

The company pays for children from the local Mekhribonlik and Shodlik children's homes in Navoi Region to stay at the company's camps every year. NMMC provides vouchers for children's recreation camps to children from low-income families in the remote steppe regions of Tomda, Nurata, Zarafshan, Uchkuduk and Konimekh.

<sup>1</sup> For more detailed information about expenditure on the maintenance of social facilities, refer to "NMMC's Contribution to Regional Development and Social Responsibility."

In accordance with the Labor Code of the Republic of Uzbekistan, every NMMC employee with a child of under two years of age is entitled to parental leave.

### Total number of employees that took parental leave

	2019	2018
Total	1,048	974
of which women	1,044	971
of which men	4	3

NMMC works to develop a sporting and active culture among its employees and members of their families; it also strives to promote sports among children. The company makes the following sports facilities available to the Trade Union Board and its structural units:

- Six stadiums (in Uchkuduk, Zarafshan, Navoi, Nurabad, Zarkent and Marjanbulak)
- Four swimming pools (in Uchkuduk, Zarafshan, Navoi and the Metallurg Health Resort)
- A palace of sports (Navoi), Lochin gyms (Uchkuduk), an outdoor gym and a martial arts gym (Zarafshan), and a sports complex (Zarkent and Marjanbulak)
- One health and fitness complex (Navoi)
- One sailing club (Zarafshan, at the city's lake).

Each of NMMC's sports complexes feature fitness and sports clubs that organize fitness and sporting activities, mentor young people, and improve the sporting skills and performance of sportsmen.

Name	Number of people who took advantage of the institution in 2019	Structure, sections
FSC Sogdiana (Navoi), including:	4,553	Fitness and sports center for employees and their families with swimming, aerobics, soccer, powerlifting, volleyball (male and female), chess, table tennis, handball, athletic gymnastics, athletics, and five-and-side football
The Children and Youth Sporting Academy (CYSA) of FSC Sogdiana	1,414	Swimming, synchronized swimming, artistic gymnastics, fencing, boxing, Greco-Roman wrestling, kurash wrestling, and football
Oltin Suv Swimming Center	25	
Sokol Sports and Wellness Complex (Uchkuduk, Northern Mine Group)	1,435	Swimming, aerobics, fitness, boxing, judo, sambo, basketball, volleyball, football, table tennis and powerlifting, as well as gymnastics, fitness, therapeutic swimming, and five-a-side football clubs
Mekhat Stadium (Nurabad, Southern Mine Group)	554	Chess, sambo, kurash, soccer, table tennis, and volleyball
Konchi Cultural and Sports Complex (Zarkent, Southern Mine Group)	341	Kurash, football, chess, rhythmic gymnastics, table tennis, and volleyball
Marjanbulak Sports Complex (Marjanbulak, Southern Mine Group)	195	Chess, rhythmic gymnastics, table tennis, taekwondo, and volleyball
Alpomish Sports Complex (Zarafshan, Central Mine Group), including:		
CYSA Alpomish	665	Judo, taekwondo, freestyle wrestling, swimming, sailing, basketball, volleyball, soccer, athletics, boxing, and weightlifting
SC Alpomish	3,193	Chess, aerobics, therapeutic swimming, gymnastics, karate, sambo, and powerlifting

A total of 12,196 people are actively engaged in sport at NMMC, and 180 full-time employees are involved in organizing the company's sporting program. During 2019, 1,637 medals were won at World Cups, Asian Championships, International Tournaments, National Championships and Cups and regional competitions, including 598 bronze medals, 536 silver medals and 521 gold medals. Swimmers from the Oltin Suv Swimming Center successfully competed at the 10th Asian Age Group Swimming Championships in India.

The following competitions were held at NMMC sports facilities during the reporting year:

- Kurash Wrestling Championships of Uzbekistan
- Kyokushin Karate Championships of Uzbekistan
- Basketball Championships of Uzbekistan (third round)
- Swimming Championship of Uzbekistan (first, second and third age groups)
- NMMC Cup International Artistic Gymnastics Tournament
- Greco-Roman, Freestyle and Women's Wrestling Championship of Uzbekistan
- Sambo Championship of Uzbekistan for Law Enforcement Agencies
- National Powerlifting Tournament to mark the 27th anniversary of the Constitution of the Republic of Uzbekistan
- XVI NMMC Open Five-a-Side Football Tournament for Veterans.

All sports and fitness facilities also held various competitions, cups, open tournaments, and sports days for workers and children, as well as assessments for the Alpomish and Barchina standards.<sup>1</sup>

We have developed and approved an Action Plan to broaden the cultural horizons of employees, encourage healthy lifestyles, develop sporting skills, and boost mass participation in sports.

NMMC organizes leisure activities that its employees and their family members can take advantage of in their free time. To provide employees with opportunities for recreation, the company grants the Trade Union Board and its structural subdivisions the right to use its social facilities, at which around 3,098 events were held in 2019:

- Two palaces of culture (Farkhad Palace of Culture in Navoi and Uchkuduk Palace of Culture in Uchkuduk)
- Two cultural centers (Oltin Vodiy CC in Zarafshan and Nurabad CC in Nurabad)

- One cultural and sports center (Konchi CSC in Zarkent)
- One Navruz club (at the Dustlik Agricultural Enterprise in Malikrabort).

NMMC's cultural institutions were used by 4,652 people in 2019 (3,394 children and 593 adults). Our cultural institutions are home to 91 teams and 208 groups.

Each NMMC cultural institution has a library with collections of more than 340,000 books and more than 100,000 titles. In 2019, NMMC purchased 6,686 books (including 5,733 in Uzbek) for a total of \$12,100. All business units have mobile libraries, which serve readers directly at production units and remote work sites. NMMC has also set up the NMMC, NSMI and TSTU Online Library, which has an online collection of over 135,000 publications. Libraries were used by 26,896 people in 2019, including 9,149 children.

*Healthcare at the company falls within the scope of the Medical and Sanitary Department, which comprises five large medical and sanitary institutions located in NMMC's towns of presence and covers 200,000 people. All institutions are fitted with the latest medical and diagnostic equipment such as CT scanners, lithotripters, plasmapheresis machines, anesthesia and respiratory equipment, equipment for laparoscopic surgery, etc.*



<sup>1</sup> Sports competitions for various age groups based on specific sporting standards and state requirements for the general physical fitness of the population.

In line with the Collective Agreement, and given the specific nature of production processes and the health needs of employees working at hazardous production facilities, we provide healthy and nutritious meals through a network of canteens and buffets at NMMC.

**Measures to combat the spread of COVID-19**

*In the spring of 2020, before the publication of the 2019 Sustainability Report, the world faced the unprecedented challenge of the COVID-19 pandemic. Our company rapidly took all the measures required to prevent the spread of the virus and minimize the risk to our employees.*

*Special preventative measures were enacted at all company business units. We provided our employees with personal protective equipment (masks, glasses and advanced respiratory protection with fine filtration), and monitored the health and temperature of employees upon their arrival at work (using thermal imaging cameras placed at entrances). All our sites were regularly disinfected with cleaning solutions. All in-person meetings were moved online and employees were provided with annual leave. We also ensured that all staff complied social distancing: employees were not permitted to be inside without wearing masks and special protective screens were installed in canteens to separate eating spaces.*

NMMC maintains an agro-industrial complex made up of **five subsidiary farms and the Dustlik Agricultural Enterprise**, which produce all of the foodstuffs needed to feed NMMC employees. The complex cultivates over 1,200 hectares of land. Up to 30 tons of vegetables and 30,000 flowers are grown in greenhouses every year. The livestock sector houses over 1,700 cattle and small hooved animals. The sector produces 70 tons of beef and lamb, 116 tons of poultry meat, 7.5 million eggs and more than 2,100 tons of milk and dairy products. Agricultural output also included 300 tons of grain, 700 tons of vegetables and melons and 460 tons of fruits and grapes. The agricultural complex includes a poultry farm, canning unit, and three small milk plants. A microbrewery was successfully set up in Uchkuduk, along with a bottling plant for mineral water and soft drinks in Nurabad.

Canteens and buffets were set up in 2018-2019 at NMMC's production units to provide hot meals for employees. There are 65 canteens at NMMC's production facilities, of which 46 provide hot and healthy breakfasts and lunches, with milk and fruit juice also on offer.

The total number of employees who received hot, healthy breakfasts was 19,720 in 2019, a 4.5% increase on 2018. 3,080 people redeemed milk and fruit juice coupons, up 5% on 2018.

Meals are provided during evening and night shifts if required by the production schedule of NMMC's business units. Packed lunches with a range of recommended products are prepared for employees working at sites that are far away from canteens.

Employees are given a choice of hot meals at the canteens and catering facilities of NMMC's production units to enjoy during their lunch breaks. NMMC spent \$4.6 million on food products in 2019, a 31% increase on spending in 2018.

NMMC facilities also feature specialized housing for the temporary accommodation of employees and their families. These include hostels, company-owned apartments and cottages. Employees can stay at NMMC hotels during business trips.

Over 3,000 events (concerts, plays, cultural events, parties, etc.) were held at NMMC's cultural institutions in 2019. Expenditure on these events amounted to more than \$850,000 in 2019.

- From December 2018 through January 2019, New Years' performances were put on for the children of NMMC employees at all palaces of culture and clubs in Navoi, Uchkuduk, Nurabad, Zarmitan and Marjanbulak; they included a present giveaway for children aged 1-10 (more than 40,000 children). New Years' parties were organized for employees.
- Commemorative events were held at all cultural institutions to mark Defender of the Motherland Day on January 14.
- The Birthday of Alisher Navoi was celebrated at all palaces of culture and clubs in February.
- Funds were allocated to all business units for events to mark International Women's Day on March 8, including a celebratory lunch for the female employees of NMMC. Concerts and events honoring women were organized at all palaces of culture and clubs.

- On March 1-3, the inaugural Kyzylkum Oltin Meerosi 2019 folklore and ethnographic competition was held between NMMC's cultural institutions.
- The national public holiday Navruz<sup>1</sup> was celebrated with a festive *sayil*;<sup>2</sup> it included competitions for the best *dastarkhan* (festive table) and the best national dress. There was also an airshow and kite flying competitions. Performance groups from NMMC cultural institutions organized a concert tour in Uchkuduk, Zarafshan, Nurabad, Zarmitan, Ketmenchi, and Marjanbulak (concerts were held in stadiums).
- The XV Kyzylkum Art Days 2019 competition between NMMC cultural institutions was held from April 10 to 14.
- Commemorative events were held on May 9 to mark Memory and Honor Day, with the attendance of veterans of World War II, labor veterans, front-line laborers, and peace-keeping soldiers.
- Festive concerts, galas and parties were held across NMMC to mark the Day of Mining and Metallurgical Industry Workers on the third Sunday of May, including touring concerts of amateur performers from NMMC's cultural institutions.
- In May, all cultural institutions hosted recitals to showcase the work of amateur art groups in 2018 and 2019.
- On Child Protection Day, children's matinees were staged at all cultural institutions and NMMC business units, along with candy buffets for the children of NMMC employees, drawing contests and sports competitions.
- From May 19 until May 22, a major charitable concert program, Pearl of Kyzylkum, was held in Tashkent with performances by amateur art groups from all of NMMC's cities of presence; a total of 480 people participated.
- All business units held events to mark Youth Day on June 30.
- Quizzes based on the intellectual game show What? Where? When? were held at all cultural institutions. The winning teams went to Tashkent to compete in the finals.
- The 28th Anniversary of the Independence of the Republic of Uzbekistan was widely celebrated, with touring concerts, fairs, ceremonies, bonuses for each employee, the preparation of a celebratory plov (national meal) at all NMMC business units, and sports competitions.
- An awards ceremony was held in October to honor mentors on Teacher's and Mentor's Day.
- Constitution Day of the Republic of Uzbekistan was marked with commemorative events and concert programs.



- Puppet shows performed by the Bukhara Regional Puppet Theater were put on at NMMC's children's recreation camps during the 2019 summer recreation season:
  - May 5 – the comedy *Ey Biz Bormiz* performed by the Tashkent State Dramatic Theater directed by honored artist of the Republic of Uzbekistan V. Umarov
  - June 26 – a creative meeting with honored artists of Uzbekistan Yodgar Sagdiyev and Erkin Komilov
  - In November – a tour of the play *Toglardek Baland Bull* by Kuchkar Norkobil performed by the National Academic Dramatic Theatre of Tashkent was organized by joint decision of NMMC's administration and the Trade Union Board. The tour covered Navoi, Uchkuduk, Zarafshan, and Nurabad. It was well received at all of NMMC's sites.
- Professional holidays were widely celebrated (Builders' Day, Railway Workers' Day, Utility Workers' Day, Medical Workers' Day, Drivers' Day, Power Engineers' Day, etc.).
- All NMMC's cultural institutions have art studios, and they held exhibitions of the works created by participants and managers throughout the year. Local residents and schoolchildren were invited to visit exhibitions.
- The Shirin folk dance ensemble of the Farhad Palace of Culture took part in the Earth is our Common Home International Festival of Children's Music by invitation of the Sverdlovsk State Children's Philharmonic Society and the government of Sverdlovsk Region.

<sup>1</sup> The triumph of peace, well-being and prosperity. In 2009, Navruz was included in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity. According to the UN, the holiday promotes the values of peace and solidarity between generations and within families, as well as reconciliation and neighborliness.

<sup>2</sup> A folk festival.

- From April 17 to 19, members of the Ivushka Russian folk choir of the Farhad Palace of Culture took part in a ceremony to mark the 25th anniversary of the Russian Cultural Center of Uzbekistan; they also performed at the Regional Conference of Russians in the Near Abroad in Tashkent.
- The Happy Childhood ensemble of the Farhad Palace of Culture, made up of 26 children, took part in cultural events for the Day of Memory and Honor in Tashkent from May 3 to 10.

A number of comedy shows based on the popular KVN (popular cheerfull and savvy club) format were held in 2019.

- The NMMC Oltin League KVN season was held in Uzbek with teams from NMMC production units and sites in Uchkuduk, Zarafshan, Nurabad and Navoi. The 2018-2019 season launched with eight teams. The season was won by team Zagruzka of the GMZ-1 Mine Group (Navoi) with team AMG of NMBP PA (Navoi) in second place.
- The tenth season of NMMC Golden League KVN was held in Russian with teams from NMMC business units in Uchkuduk, Zarafshan, Nurabad and Navoi. Six teams took part in the 2018-2019 season. The season was won by team Kadr za Kadrom of the Northern Mine Group (Uchkuduk) with team LG of the Central Mine Group (Zarafshan) in second place and team YuRU (Nurabad) in third.
- The NMMC Youth Council and NMMC Youth Union held a KVN Cup on September 21. Thirteen teams competed for the cup, including team Kombek from JSC Uzmetkombinat (Bekabad). The winners of the inaugural KVN Cup of the NMMC Youth Council and NMMC Youth Union were team Let's Go of the Central Mine Group (Zarafshan).

### Benefits for Non-working Pensioners

Non-working pensioners of NMMC are entitled to the following benefits in accordance with the Collective Agreement:

- Free medical services at NMMC medical facilities. Coverage includes dependent children of pensioners up to the age of 18
- Treatment and screening at clinics within the CIS if referred by the selection committee of the NMMC health center
- Dental coverage for non-working pensioners who have at least five years of work experience in particularly hazardous and arduous working conditions or at least 10 years in adverse working conditions
- Financial compensation for the purchase of agricultural products of up to three times the minimum wage once a year for pensioners with at least 10 years' work experience at NMMC
- Financial compensation for the purchase of agricultural products of up to 1.5 times the minimum wage for pensioners with at least five years' work experience at NMMC
- Financial compensation for the purchase of agricultural products of up to three times the minimum wage for pensioners with disabilities due to work-related injuries and occupational illnesses, as well as emergency responders of the Chernobyl disaster regardless of length of service at NMMC.

NMMC pensioners (but not their family members) are allocated vouchers for sanatoriums and resorts in Uzbekistan by trade union committees in accordance with the Instructions on the Procedure for Planning, Issuing, Distributing, Implementing, Accounting, Reporting and Delivering Vouchers for Sanatorium Treatment and Recreation, Purchased at the Expense of NMMC. Single pensioners, war veterans and retirees are provided with comprehensive social support on the eve of public holidays.

NMMC pensioners of the Works were given discount vouchers to the Metallurg and Konchi health resorts and the Gornyak guesthouse:

- \$183,300 worth of discounts to 1,200 pensioners in 2018
- \$190,200 worth of discounts to 1,402 pensioners in 2019.

NMMC pensioners are paid a lump sum when they retire of their own initiative, if they can no longer perform their work duties for health reason, or if they are eligible for group 1 or 2 disability pensions. The amount depends on their length of service:

- Payment equivalent to one statutory minimum wage payment in the Republic of Uzbekistan for five–10 years of work
- Payment equivalent to three statutory minimum wage payment in the Republic of Uzbekistan for 10–20 years of work
- Payment equivalent to five statutory minimum wage payment in the Republic of Uzbekistan for over 20 years of work.

The company covers the funeral costs for deceased pensioners, including grave site preparation and transportation to and from the funeral service. NMMC provides a one-off financial payment of five times the minimum wage to the relatives of the deceased.

### Young Leaders Council and Benefits for Young People

NMMC created the **Young Leaders Council** (the “Council”) to support the activities of the primary organizations of the Youth Union (at the company’s structural business units) and provide them with practical assistance. The Council was founded in August 2017. It currently consists of 15 members and is headed by the **Chairman**. On the basis of the Regulation on the NMMC Young Leaders Council, the Council is charged with the following tasks:

- Coordinating the activities of leaders and assisting the primary organizations of NMMC’s business units in the performance of their duties
- Ensuring effective cooperation between stakeholding structures and NMMC’s services during implementation of the government’s youth policy at NMMC
- Protecting the rights, freedoms and legal interests of young people
- Developing an annual Action Plan for the Implementation of the Government’s Youth Policy at NMMC’s business units
- Providing the leaders of primary organizations with platforms for exchanging opinions, sharing experience, exploring new ways of working, and submitting suggestions
- Reviewing the work of leaders and providing them with practical and methodological assistance
- Investigating problems faced by leaders during the performance of their duties and developing proposals to resolve them
- Providing leaders with methodological and campaign materials.

The Young Leaders Council works closely with the Trade Union Board, NMMC Social Development Division, NMMC Center for Spiritual and Educational Activities, HR Department, and Innovation Center on various relevant matters.

The Council meets in the last week of every month. Meetings involve an analysis of the activities of primary organizations in subdivisions and discussion of any issues related to their performance, as well as presentations of reports by leaders.

The Action Plan for the Implementation of the NMMC Youth Policy is drawn up on an annual basis.

The main focus areas of the Council in the reporting year were:

- Fostering a sense of national pride among young people and instilling them with a broad outlook and a firm life stance, respect for national traditions, and the ability to make a meaningful contribution to ongoing reforms
- Implementing the five key initiatives of the President of the Republic of Uzbekistan aimed at encouraging well-being and self-improvement, and organizing worthwhile leisure activities for young people
- Increasing environmental awareness and a sense of stewardship for the environment
- Providing emotional and financial support to young families, vulnerable young people, and youth with disabilities
- Helping young specialists improve their performance at work and unlock their innovative creative potential
- Assisting the work of the primary organizations of the Youth Council in NMMC’s business units.

A range of initiatives were rolled out in 2019 to foster a sense of national pride among young people.

- More than 30 sports competitions, round tables, concert programs and spiritual events were organized as part of Patriotism Month to mark the 27th anniversary of the formation of the Armed Forces of the Republic of Uzbekistan.
- More than 10 spiritual and educational events, sports competitions and contests were held to mark International Women’s Day on March 8.

*“Our main goal will continue to be creating the optimal conditions for the younger generation to take full advantage of their talents and abilities and pursue their noble aspirations, boosting social activism among them and empowering them to take their rightful place in life.”*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**

- The main celebration for Navruz, a national holiday, was held in the square behind the Farhad Palace of Culture in Navoi. A competitive exhibition between the company’s 16 subdivisions for the best Navruz lightshow was held in Navoi. NMMC’s Sogdiana Stadium hosted kite competitions and an air show.
- Young people were actively involved in events to mark the Day of Memory and Honor on May 9 at all NMMC business units.
- Over 70 events were held to celebrate Independence Day and Constitution Day, including round tables, sports, and intellectual competitions with the extensive involvement of young people.
- Activities were carried out during the reporting year that aimed to familiarize young people with the lives and works of great writers, poets and statesmen.
- Round tables and educational events involving young people were held throughout the year in cooperation with the NMMC Center for Spiritual and Educational Activities and with the participation of representatives from various religions, law enforcement agencies, the Oila Center (Family Center) and the Department of Justice.

A range of significant measures were enacted to realize the five key initiatives of the President of the Republic of Uzbekistan.

- As part of Youth Month, all the company’s business units organized sports and intellectual games for young people, including a youth festival with the motto “The role of the five initiatives in the lives of young people at NMMC” at the Sogdiana Stadium in Navoi.
- The first ever NMMC Youth Five-a-side Football Cup was held; 16 teams from NMMC business units in Navoi, Zarafshan, Uchkuduk and Nurabad competed. A team from Navoi Machine Building Plant were the winners and first holders of the Cup.
- The first NMMC Women’s Volleyball Cup was held for female employees in Navoi, Zarafshan, and Uchkuduk; it was won by a team from the Northern Mine Group.
- The company hosted the NMMC Football and Streetball Championship, in which six teams took part. A team from the Northern Mine Group were crowned the winners.
- More than 30 games of What? Where? When? were played as part of our program of intellectual games.
- The company also hosted improv games based on the KVN format.
- Events held in cooperation with Navoi Regional Council:
  - The One Book a Week intellectual game in Navoi, which had entrants from 20 organizations and was ultimately won by a team from NMMC. The game aims to increase the intellectual potential of young people and encourage reading.
  - The Young Reader national competition, which brought together more than 100 young specialists at the regional stage of the contest.
  - The intellectual game My Native Language is My Pride to mark the 30th anniversary of the adoption of the Law of the Republic of Uzbekistan “On the Official Language,” in which a team of young specialists from NMMC took first place.

*A number of meetings between the Council and the General Director of NMMC were held in 2019.*

- *On February 2, a meeting was held to announce the results of the Best Innovator and Best Young Rationalizer competition, which was attended by 60 young innovators and specialists employed at NMMC. The event involved a discussion on the future development of innovation and research at NMMC, and how to involve young people in this process.*
- *On December 21, a meeting was held to announce the results of the long-running Best Young Specialist of the Year contest, in which 90 participants took part. The meeting included a discussion of topics such as the importance of finding talented young people working at NMMC’s business units, determining ways to support their ambitions to become fully-fledged experts, and how to increase their professional skills and knowledge.*

A number of events were organized to increase environmental awareness among young people at NMMC.

- The Green Challenge campaign,<sup>1</sup> which focused on raising awareness of the value of natural resources and the importance of preserving them for future generations. As part of the campaign, young employees planted six youth gardens at business units and carried out more than 10 environmental activities.
- The Conscientious Youth Brigade campaign, organized to engage NMMC's young employees in national *khashars*<sup>2</sup> to voluntarily clean up and landscape areas around business units in cities, makhallahs,<sup>3</sup> and local cemeteries.
- Tourist and ecotourism trips were organized throughout the year to the historical sites of Samarkand, Bukhara, Khiva, and Navoi, as well as to the Sarmishsay Gorge and Lake Tudakul.

NMMC carried out a number of activities in 2019 aimed at providing moral and material support to young families and vulnerable young people.

- On January 1, NMMC young leaders visited an oncology center in Navoi to celebrate the New Year with patients.
- On January 18, as part of the Unite for Good campaign, food packages were sent out to nine struggling households from the Blind Association living near Karmana. The company also provided nine modern electric stoves as part of the planned relocation of the Association's beneficiaries to new homes.
- On May 9, young NMMC employees visited veterans of war and labor and handed out food packages to them courtesy of the company.
- Children's sports events were held at all NMMC's business units to mark International Children's Day on June 1. The company's young employees also visited children from low-income families and children with disabilities.
- In October, young people at NMMC played a key role in the Good Heart charity event, which was organized by the Navoi Regional Council of the Youth Union of Uzbekistan. The funds raised during the event were used to pay for operations for children from poor families with heart disease.
- Young NMMC employees visited HIV-infected children at the Navoi Regional AIDS Center to mark World AIDS Day on December 1.
- As part of the campaign, young NMMC employees gave blood at donor centers in Navoi and Zarafshan throughout the year.

The following events were held in 2019 to help young specialists improve their professional skills and unlock their innovative potential.

- The Best Innovator and Best Young Rationalizer awards, at which 45 innovative proposals implemented by 32 young specialists were presented in six categories (the results of the contest were announced on February 2). The preliminary economic effect from implemented proposals was estimated at more than \$850,000.
- INNOWEEK 2019 (October 29-31) at the National Exhibition Complex Uzexpocenter with the participation of researchers, businessmen and representatives of major companies from more than 30 countries. The exhibition showcased the inventions of 17 foreign and 29 local enterprises and organizations, as well as the innovations of NMMC's young employees.
- The Best Young Specialist of the Year competition, at which talented young people working in NMMC's business units worked to showcase their skills in 14 categories. The contest aims to support them in their aspirations to become experts in their respective fields and develop respect and pride for their chosen profession. More than a thousand young specialists working in various areas of NMMC took part in the competition.



<sup>1</sup> For more details, refer to "Contributions to regional development and social responsibility."  
<sup>2</sup> Voluntary clean-up of public spaces by local residents.  
<sup>3</sup> A city neighborhood. In some countries, residents of makallahs exercise local self-government.

A number of measures were carried out at NMMC's business units to support the activities of the primary organizations of the Youth Union.

- A practical seminar for 95 leaders of primary organizations of NMMC's business units was organized at the Tudakul holiday camp on September 14-15. The main goal of the seminar was to develop their leadership skills, improve teamwork, and exchange experience and opinions.
- A decision was made and implemented to introduce quarterly assessments of leaders' performance in the Collective Agreement. In 2019, 21 leaders of primary organizations were rated as "good" and received a corresponding financial bonus.
- The Best Leader of a Primary Organization in competition was held on February 10. Prizes were awarded to the 2018 winners. Sodat Boboyerova (Central Mine Group) was named the best leader of a primary organization, and Nodira Alimova won the best leader of a primary organization who is not exempt from their primary work duties.



**Achievements of young NMMC employees in 2019**

*Davronbek Nomozov, a labor organization and regulation engineer at the networks and substations unit of the Central Mine Group, was named the winner of the Mard O'g'lon state award, which is the highest award for young people under 30. This prize is awarded to gifted young men who make a meaningful contribution to the development of the Republic of Uzbekistan through their knowledge, talent, ambition, and initiative, and who demonstrate the potential and ability to take responsibility for the future of the country.*

*Hasanboy Namozov, an employee of the security team of the Central Mine Group, took third place at the Asian Kurash Championships held in India.*

*A security guard in the Northern Mine Group's security team, Sherzod Husenov, received a medal at the Combat Sambo Championship of Uzbekistan in the +100 kg weight class.*

*Dildor Dzhurayeva, a laboratory technician at the Northern Mine Group's Physics and Chemistry Laboratory, took honorary second place in the +81 kg weight class at the Uzbekistan Women's Boxing Cup held on November 24-30 in Namangan. She also took second place at the Women's Boxing Championship of Uzbekistan in Jizzakh, as well as first place at the Women's Powerlifting Championship in Tashkent, retaining her title as national champion.*

*Zulaiho Suyunova, a pupil of Komilbek Olimov, an employee of the Central Mine Group who trains young people in hand-to-hand combat in his spare time, won honorary first place at the World Junior Championship in Hand-to-Hand Combat in August 2019.*

*Komilbek Olimov's pupils Javohir Samarov and Temurbek Tolobov took first and third place respectively at the Asian Championships, which were held in Tashkent on September 19-23, 2019.*

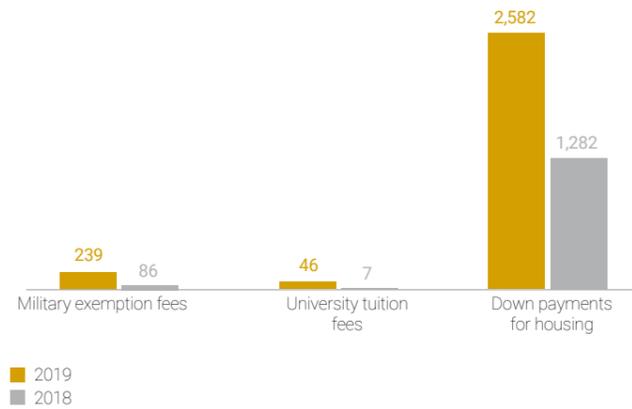
*The Kadr za Kadrom KVN team of the Northern Mine Group won the Golden Bolt category at the KVN contest in Tashkent on February 16, 2019.*

*Maksat Eldjanov, a singer of the Eles folk vocal studio of the Uchkuduk Palace of Culture of the Northern Mine Group took first place in the international Shark Attirguli contest held in Tashkent on May 3-8, 2019.*

NMMC's Social Support Fund finances the education of young people in higher educational institutions of Uzbekistan, their exemption from compulsory military service, and the purchase and repair of housing to support the company's young employees.

In 2019, the company paid tuition fees for 53 young specialists, paid for the military exemption fees of 817 specialists, and provided loans for down payments to help 1,077 people purchase homes. The company's expenditures in these areas amount to \$2.9 million in 2019, double its contributions in 2018. This increased expenditure was driven by the announcement that 2019 was to be the Year of Investment and Social Development in Uzbekistan, encouraging increased financing in this area.

**Financing of education, military exemption, and housing for young specialists at NMMC, \$ '000**



**NMMC's Center for Spiritual and Educational Activities**

The **Center for Spiritual and Educational Activities** is a structural subdivision of NMMC's Head Office. The core objectives of the Center are to:

- Foster a sense of civic duty among NMMC employees and instill democratic principles based on national and universal human values
- Effectively communicate the meaning and importance of political, economic, social, spiritual and educational reforms in the nation to NMMC employees
- Promote the essential aspects of the principle "From National Revival to National Prosperity," educate the younger generation in the spirit of national pride and patriotism
- Conduct employee outreach to counteract various internal and external encroachments that threaten peace and tranquility, the sustainable development of the country, national values; and traditions and humanist ideals
- Conduct outreach and awareness campaigns among NMMC employees based on the idea of "Education against Ignorance" and foster an atmosphere of religious tolerance and international harmony, etc.

Virtually all business units have designated individuals responsible for leading spiritual and educational activities. The Center for Spiritual and Educational Activities provides information, approved action plans for spiritual and educational activities, and an annual program of topics for Spirituality Hours at NMMC business units.

A new annual program of Spirituality Hour topics is set to be developed in 2020 that reflects the public holidays of the Republic of Uzbekistan, introduces the theme of promoting the essential aspects of the principle "From National Revival to National Prosperity," and educates the younger generation in the spirit of national pride and patriotism.

Professors and teachers of higher educational institutions, representatives of subdivisions of the Administration of Muslims of Uzbekistan, as well as other representatives of government agencies, all take part in Spirituality Hours.

The Center for Spiritual and Educational Activities performs the following functions:

- Promptly informs NMMC employees about new laws in Uzbekistan and decrees of the President and Government of the Republic of Uzbekistan covering spiritual and educational activities
- Develops and provides NMMC's management with approved action plans for spiritual and educational activities
- Develops an annual program of Spirituality Hour topics, including for NMMC's business units
- Provides practical and methodological assistance with outreach and awareness campaigns at NMMC's business units. The Center for Spiritual and Educational Activities also organizes seminars, round tables, meetings, and cultural and educational events for NMMC employees
- Promotes the Center's spiritual and educational activities in the media; coordinates cooperation and communication between primary organizations and the Youth Council at NMMC business units
- Helps to resolve issues related to the artistic and technical design of editable materials for the publication of books, posters, congratulatory notes, posts on the official NMMC website; assists with the publication of the Konchilar hayoti newspaper.

NMMC's spiritual and educational activities are covered by the Press Center and are later published in the Konchilar hayoti newspaper and other media. Materials are also posted on the NMMC and Press Center websites.

NMMC also organizes events and contests with the Young Leaders Council aimed at educating the younger generation of employees to be spiritually and physically healthy, intellectually developed, and independent thinkers. As part of events held to mark Youth Month in 2019, the company held Zakovat, an intellectual competition in online video format.

NMMC approved a **Plan of Spiritual and Educational Activities** for 2019 in the reporting year, covering 26 areas, the most important of which are:

- Patriotic education
- Spiritual and moral education of young people

- Promotion of reading
- Prevention of delinquency and crime
- Improved legal awareness
- Promotion of interethnic harmony and religious tolerance
- Promotion of national values, the rich cultural heritage of the country, the celebration of national holidays, historical dates and birthdays of great historical figures
- Weekly Spirituality Hours, and others.

Several partner organizations were also engaged in the above mentioned spiritual and educational events in 2019 to improve their impact: The Navoi Regional Branch of the Republican Center for Spiritual and Educational Activities, Navoi Regional Council of the Youth Union of Uzbekistan, Navoi Regional Department of Justice, the Regional Department of Internal Affairs, and the Oila (Family) scientific and practical research center in Navoi region.

*Together with the regional Department of Internal Affairs and the regional prosecutor's office, NMMC business units organized spiritual and educational activities to prevent offenses, fight crime and promote public safety in September–December 2019.*

In the reporting year, a number of events were held to improve employees' legal literacy, including the "We Are Against Corruption" and "Let's Unite to Eliminate Corruption" campaigns. An Action Plan for the second half of 2019 to improve legal literacy and culture of NMMC's employees and foster a culture of zero tolerance towards corruption was also approved.

We hosted several events to promote the rich cultural heritage of our country and celebrate the 578th anniversary of the birth of the great thinker and poet Alisher Navoi: "Alisher Navoi, a great thinker and poet," "The role of Alisher Navoi in national culture and world literature," "Alisher Navoi, the sultan of poetic achievement," as well as "Ideas of kindness and patriotism in the works of Zahiriddin Muhammad Babur," and "The Contribution of Babur and Baburids to world culture."



## Goals for 2020

In line with the Plan for the Retraining and Professional Development of Shop-floor Workers, Managers, Specialists and Office Employees, NMMC is planning to:

- Retrain 5,213 people in second and related professions
- Provide 5,615 people with professional development
- Provide 2,228 managers, specialists and office employees with professional development.

A range of measures to improve activities related to the training, formation and development of the talent pool in order to staff newly commissioned NMMC facilities with qualified specialists should reach 2,880 individuals.

The **NMMC Trade Union Board** is planning to conduct the following initiatives in 2020:

- Collaboration with the NMMC Central Commission on the results of the execution of the Collective Agreement of NMMC work teams for 2019
- Organization and hosting of public holidays at NMMC business units
- Monthly review of the possibility of providing struggling NMMC workers and pensioners with material assistance from the Solidarity Fund at meetings of the Trade Union Board
- Organization and implementation of measures to develop internal tourism and active recreation at NMMC business units
- Approval of a training schedule covering the various areas of activity of the Trade Union Board
- Preparation and convention of meetings to review reports and elect new officials
- Quarterly summary of the execution of the Social Insurance budget
- Constant monitoring of the organization of the health and recreation of workers at the Metallurg, Konchi, Nurabad and NMMC health resorts
- Monitoring of the work of trade union committees in relation to the accuracy of reporting and issuance of recreation vouchers to workers

- Training of officials responsible for occupational safety in accordance with the curriculum
- Collaboration with the Central Commission for Healthy Meals at NMMC business units
- Competition for the Best Occupational Safety Commissioner
- Competition for the Best Young Specialist of the Year
- Competition for the Best Work Coordinator and Expert in Workplace Rules and Laws on safety and health protection
- Continuous practical assistance with the coordination of trade union activities in the joint trade union committee and trade union committee.

The **Young Leaders Council** aims to realize the following objectives in 2020:

- Organize meetings between young people and winners of state awards, respected poets and writers
- Hold the Young Reader contest
- Host the NMMC Soccer and Volleyball Cup for young people
- Conduct the IT Challenge competition to improve the IT skills of young people
- Hold a Robot Wars contest to develop young people's knowledge and skills in robotics
- Organize workshops for young people, including for women, to teach income-generating crafts that they can practice in their spare time
- Encourage the active participation of young people in celebrations and activities to mark national holidays and significant dates of the Republic of Uzbekistan
- Implement the Travel Across Uzbekistan project
- Improve the system for connecting newly hired young employees to experienced specialists on the basis of the long-running Teacher-Master program
- Organize seminars aimed at improving public speaking and presentation skills
- Host an essay competition to improve the written communication skills of NMMC's young employees and encourage free expression

*"Our country is working incredibly hard to ensure that human rights and freedoms are respected. The practical results achieved in Uzbekistan's legal and judicial system were recognized at a session of the United Nations Human Rights Council. This was an objective assessment of our efforts in this area."*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**

- Hold the Oltin League, Golden League and Voice of Kyzylkum 2020 competitions between NMMC business units
- Host a Model Young Family of the Year contest
- Conduct a video contest on the theme "Family is Sacred"
- Organize wedding celebrations for young people who grew up without a father and mother and for low-income youth
- Conduct prevention campaigns to protect young people from harmful ideas, increase legal literacy and prevent youth crime
- Create young inventors' and innovators' clubs
- Ensure the proactive participation of young people in the National Week of Innovative Ideas and international conferences
- Hold the Best Young Specialist in his/her Field competition
- Coordinate platforms for primary organization to exchange experience
- Organize professional development seminars for leaders
- Hold the Best Leader of a Primary Organization competition for the heads of the primary organizations of the Youth Union at NMMC's business units.





# CONTRIBUTIONS TO REGIONAL DEVELOPMENT AND SOCIAL RESPONSIBILITY

NMMC continuously strives to enhance the wellbeing of the country and act in the interests of its citizens. NMMC is both a major taxpayer and employer in Uzbekistan. For this reason, the company is aware of its responsibility to develop its regions of operation, and it considers providing social assistance to local inhabitants as a key priority.



**\$83.1 million** total social expenditures, including:  
**\$70.7 million** on financing the activities of social facilities  
**\$12.4 million** on financial aid

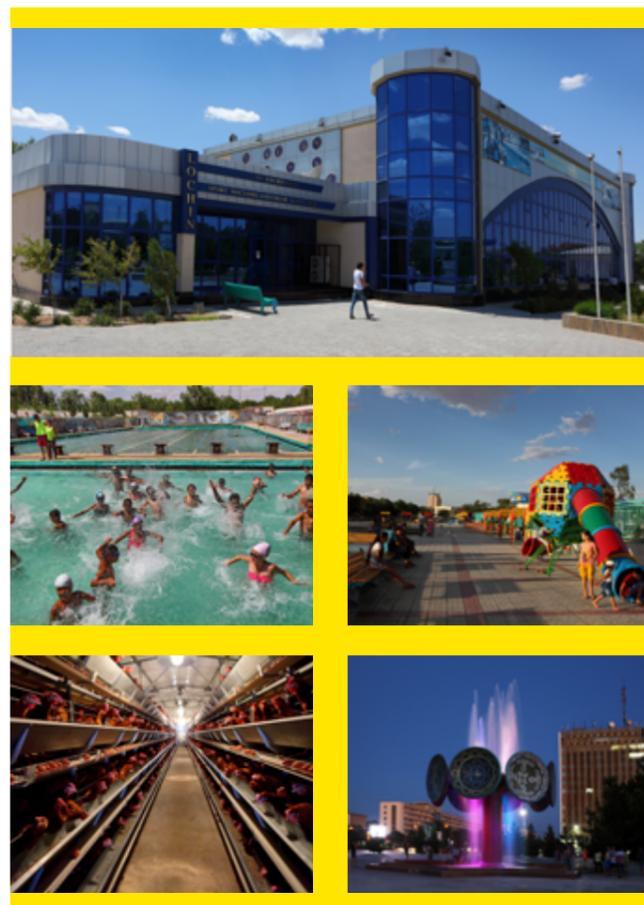
Launched the **NMMC health resort** in Jizzakh Region for employees and their families, as well as artists and cultural figures in Uzbekistan

Opened a **Children's Village for the Shodlik children's home** in the city of Zarafshan to increase living standards, offer psychological support and provide intellectual enrichment for children

Built the **Golden Lake (Oltin Ko'l) complex**, with an artificial lake and a state-of-the-art recreational area for residents of Uchkuduk Region and employees of the Northern Mine Group

Conducted **major renovations of over 800 multi-story residential buildings** in Navoi, Uchkuduk, Zarafshan and Nurabad

Built a **livestock breeding complex** and **poultry farm**, planted a **vineyard** and **nut orchard** to contribute to national food security.



103-1, 103-2, 103-3

## Social Responsibility and Managing Regional Development

As a socially responsible enterprise, NMMC has launched multiple social projects aimed at improving living standards of the inhabitants of its regions of operations, including employees and their family members.

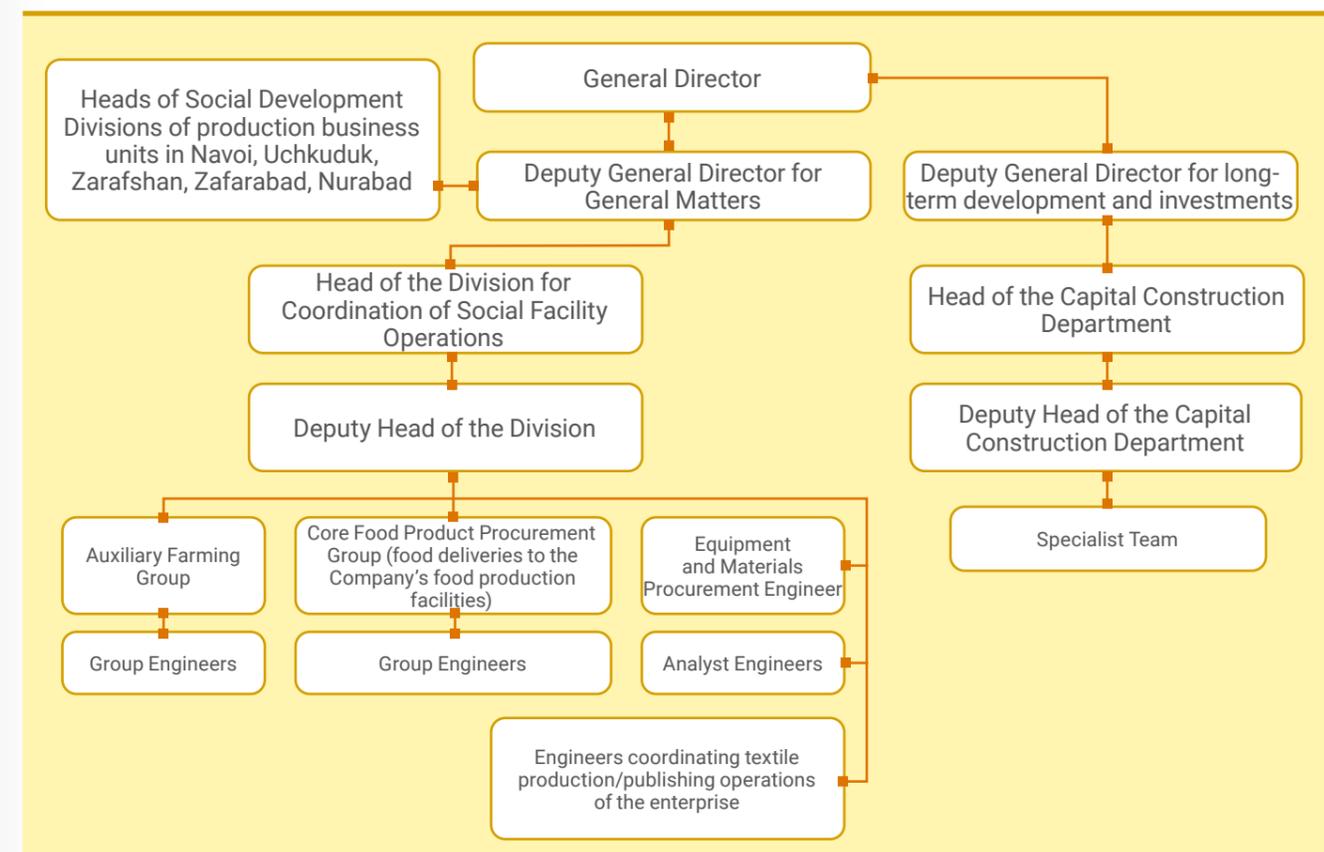
The Company's contributions to its regions of operations include:

- Maintenance and modernization of social facilities<sup>1</sup>

- Implementation of urban improvement programs in cities and towns, with the participation of the Company's employees
- Financial aid (charitable activities).

Social facilities and urban improvement projects are managed by the **Division for Coordination of Social Facility Operations** and the **Capital Construction Department**. Using resources of the NMMC Head Office in Navoi, these two bodies

<sup>1</sup> For more details, refer to "Employees" chapter.



203-1, 203-2, 413-1

provide methodological and practical assistance for organizing the operations of facilities and implementing social development projects in the company's regions of presence. The direct management of social facilities is performed at the level of individual production business units.

The Division for Coordination of Social Facility Operations supervises, coordinates and ensures the operational efficiency of food production facilities, medical institutions, medical rehabilitation and recreation centers, sports, culture and social facilities, residential buildings, children's recreation camps and agricultural divisions.

The Division for Coordination of Social Facility Operations is led by the Division Head, who is overseen by the Deputy General Director for General Matters. The former is responsible for preparing development plans and strategy, as well as monitoring the execution of orders from jointly with the NMMC Trade Union Board. The Deputy Division Head is in charge of operations.

Deputy heads of mine group management for staff and general matters, as well as heads of social development divisions at production business units in Uchkuduk, Zarafshan, Nurabad and Navoi coordinate facility operations and report to the Deputy General Director for General Matters.

Decisions on the scope of financial aid are made by the **NMMC Supervisory Board**. Management at the company level is performed by the **First Deputy General Director**.

The key governance documents that regulate the company's social efforts comprise the following:

- NMMC's charter
- The Collective Agreement<sup>1</sup>
- The Regulation for the Provision of Healthy Food and Milk (juice) to NMMC Employees Exposed to Adverse Working Conditions
- The Housing Code
- Internal labor regulations.



<sup>1</sup> For more details, refer to the "Employees" chapter.

## Contributions to the Development of the Company's Regions of Operation

In 2019, the most significant results of NMMC's social effort included the launch of the following facilities:

- NMMC's health resort in Jizzakh Region,<sup>2</sup> built at the behest of Uzbek President Shavkat Mirziyoyev to improve the wellbeing and leisure opportunities of employees and their family members, as well as writers, poets, and cultural figures
- The Shodlik children's home in the city of Zarafshan, built to increase living standards, offer psychological support, enhance their education, and provide intellectual and creative enrichment
- The Golden Lake (Oltin Ko'l) recreation complex in the Uchkuduk region
- A livestock breeding complex, vineyard (170 ha), and nut orchard (50 ha) in Kushrabad Region and a poultry farm near Takhiatash in Karakalpakstan (Uzbekistan) with the capacity for raising 20,000 broiler chickens.

In addition, the company completed major renovations of over 800 multi-story residential buildings in Navoi, Uchkuduk, Zarafshan and Nurabad, contributing to the improvement of living standards in the company's regions of operation.

### Maintenance of Social Facilities

NMMC manages and finances social facilities in its regions of presence, which ensures a high standard of living for employees, their family members, and residents of Navoi Region and other regions. The company ensures the continuous operation of industrial hospital infrastructure, rehabilitation and recreation facilities, and children's recreational camps. It also sponsors the activities of cultural and sports facilities accessible to people throughout the country. Employees, their family members, and retired former employees may take advantage of social services at discounted rates in accordance with the effective Collective Agreement, as well as other local regulatory documents.<sup>3</sup>

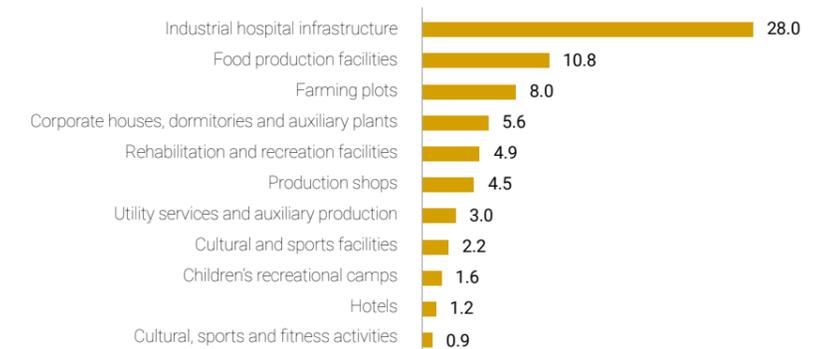
*The financing of social facilities reached \$70.7 million in 2019.*

To manage the operations of social facilities, NMMC collaborates with stakeholders via trade union committees, the company's social development divisions (services), and resources available to the public, such as the Konchilar hayoti (Miner's Life) newspaper and the corporate website.

Rehabilitation, recreation, cultural and sports facilities gather feedback from visitors, who have the opportunity record their opinions on ways to improve services. The company reviews and responds to all proposed improvements to the facilities' operations.

When planning improvements and constructing new social facilities, the company considers the requests and expectations of employees and local residents. For example, a city lake and recreational area in Uchkuduk region was constructed in 2019 based on the needs of local residents, including the company's employees.

### Expenditures of NMMC on maintaining social facilities in 2019 (by category)



■ Social facility maintenance expenses, \$ million

<sup>2</sup> The company's Uzbek name (Navoiy Kon-Metallurgiya Kombinati) is used for the sanatorium.

<sup>3</sup> For more details, refer to the "Social Benefits" section of the "Employees" chapter.

**Key plans** for developing social facilities include:

- Major renovations of buildings
- Provision of financial and technical support for medical institutions, food production facilities, and rehabilitation and recreation facilities (the Gornyak guesthouse in Bostanlyk District of Tashkent Region)
- Acquisition of necessary medical equipment and stocks, as well as kitchen equipment for plant canteens.

**Urban Improvement Programs**

In March 2019, on the eve of Navruz, the company sent over 27,000 employees to assist the authorities in their efforts to plant trees and clean up *makhallas*.<sup>1</sup> At the event:

- Saplings were planted in designated areas and responsible persons were appointed to take care of them on a permanent basis to maximize greenery
- Planting sites were allocated, and saplings of poplars, willows and other ornamental trees were procured and planted in order to provide planting stock subsequent years.

In addition, the company's employees planted six gardens in 2019:

- 6,000 apple saplings were planted on 5 ha in Karmana District
- 1,100 saplings of various sorts were planted on 3.5 ha along the Fountain Boulevard in Zarafshan
- 350 pine and arborvitae saplings were planted at GMZ-2 on 0.35 ha in Bessopan
- 2,000 pine, juniper, elm and ash tree saplings were planted on 5 ha around the city lake in Uchkuduk Region
- 2,000 apple and ornamental tree saplings were planted on 5 ha in Zarkent in Kushrabad Region.



In late August 2019, the company completed the second phase of the **Fountain Boulevard** in Zarafshan, which became a favorite recreation space in the goldmining city.

In August 2019, all business units of NMMC held urban improvement events dedicated to the 28th anniversary of Uzbekistan's independence; over 23,000 company employees participated. The effort consisted of the following activities:

- Cleanup and improvement of residential areas and industrial premises, as well as adjacent territories
- Cleanup of areas surrounding multi-story buildings, parks, public gardens and streets in towns and villages benefiting from NMMC sponsorship, as well as pilgrimage destinations and holy sites

- Trimming of bushes, fruit and ornamental trees, pruning and whitewashing of trees
- Cleaning of irrigation channels and flumes, litter clean up and garbage removal.

The funds collected during the *khshar* charity event<sup>2</sup> were transferred to the Navoi, Samarkand, and Jizzakh subdivisions of the Uzbekistan Makhalla Charity Fund.

NMMC's planting efforts contribute both to urban improvement and the biodiversity of its regions of presence.

<sup>1</sup> A self-governed quarter of a city.  
<sup>2</sup> Charity cleanup day.

**NMMC's young employees participated in the environmental project "The Fate of the Aral Sea is the Fate of Future Generations"**

In February 2020, the NMMC Young Leaders Council initiated the Green Challenge campaign, in which 100 employees united as volunteers under the slogan "The Fate of the Aral Sea is the Fate of Future Generations" to visit Muynak District in the Republic of Karakalpakstan.

A group of young specialists, accompanied by representatives of NMMC's Emergency and Ambulance Service, covered 1,000 km in five buses. The team was met by young residents of Muynak, and they visited the Environmental Museum of Muynak District and the District Sports Center, where volunteers donated sports equipment to young people who trained there. The volunteers also visited the "Ship Cemetery," a local tourist attraction.

During their visit, the young NMMC specialists planted 87,000 saxaul saplings. The saxaul is a desert plant reaching 5–6 meters in height whose roots can reach depths of up to 10 meters in the soil. The plant is salt tolerant and grows even in salt marshes. The team covered 106 km on the desiccated Aral Sea bed, from Muynak to the site allocated for saxaul planting.



**Charitable Activities**

NMMC provides financial aid to a wide range of benefactors, including educational institutions, low-income households, veterans, orphanages, care homes for disabled people and the elderly, sports organizations, and various municipal and national institutions.

*The total amount of charitable contributions reached \$12.4 million in 2019.*

The financial aid provided in accordance with a decision of the Uzbek Government was the most significant expenditure (76%) and it comprised such areas as support for the National Olympic Committee, FC Kyzylkum, the Scientific Center for Innovation Research, Navoi state Mining Institute, Tashkent State Technical University, Makhalla Foundation, regional governments and other institutions. Contributions from the payroll fund to cultural, sports and health rehabilitation activities, trade unions (for payments to trade union employees), and provision of benefits in accordance with the Collective Agreement amounted to 23% of total charitable aid. Financing for other areas amounted to approximately \$180,000 (1%).

**Financial aid and charitable contributions made by NMMC in 2019**

Recipients of financial aid	Expenditures, \$ '000
Financial aid provided in accordance with decisions of the Uzbek Government	9,362.84
Membership contributions and awards at international organizations	15.93
Payroll fund allocations granted to trade unions for cultural, sports and fitness activities	2,835.49
Donations to secondary schools	13.39
Donations to higher education institutions	72.77
Aid for veterans of war and labor	2.26
Expenses associated with military and defense bodies	15.49
Funds for holiday celebrations	1.34
Financial aid for hokimiyats (regional governments)	10.93
Corporate assistance for the Internal Affairs and Traffic Police Departments	6.29
Donations to orphanages and boarding schools	5.89
Sponsorship of contests, festivals and conferences	7.16
Financial aid for the Special Prosecutor's Office	1.63
Financial aid for low-income households	7.49
Corporate assistance for fire-fighters	0.94
Sponsorship of sports organizations	1.94
Donations for care homes for disabled people and the elderly	0.12
Donations to other organizations	16.10
<b>Total financial aid</b>	<b>12,378</b>



## The NMMC Fund

In 2021, the "NMMC Fund" State Organization (the "Fund") will be set up simultaneously with JSC NMMC to coordinate the operations of social facilities and non-core business.

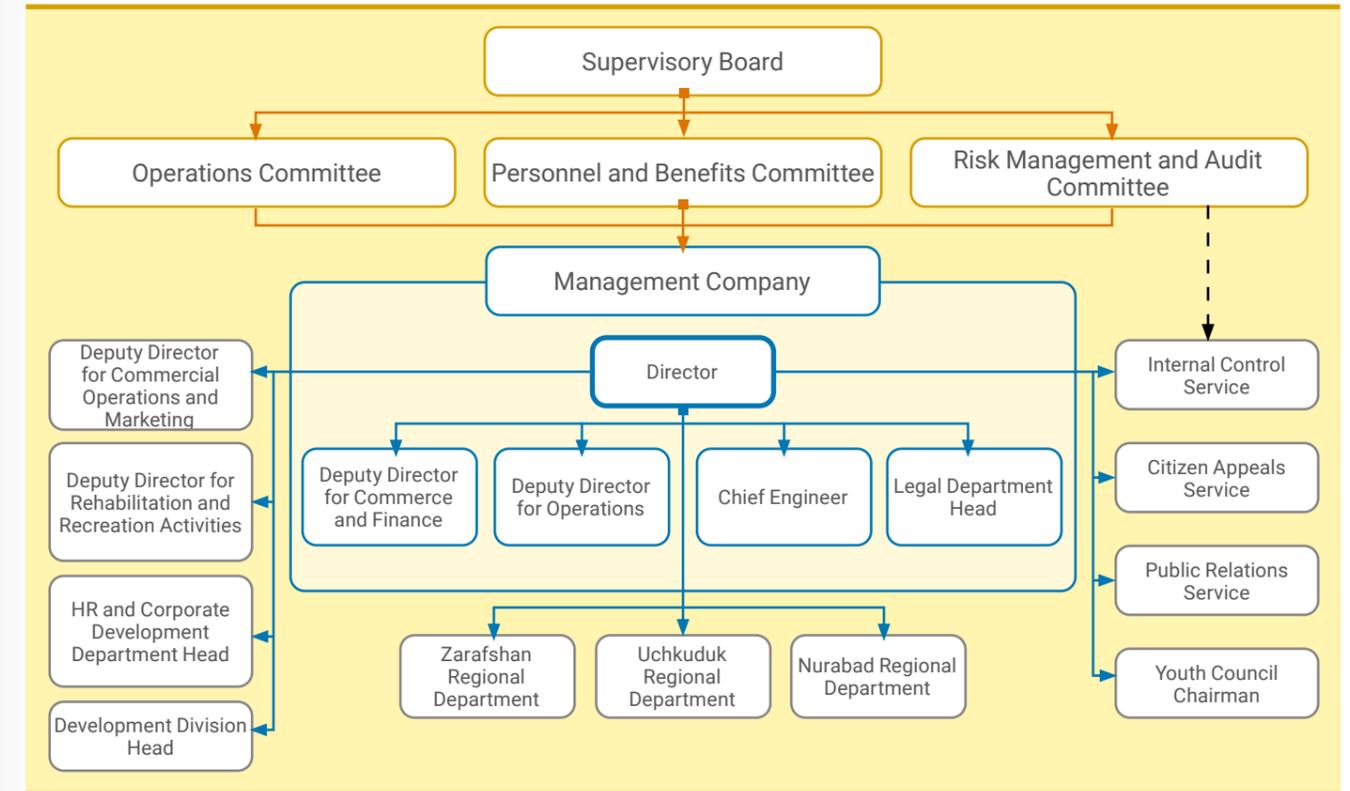
The Fund will manage the Company's non-core assets, including the following:

- Agricultural plots and facilities
- Food production facilities
- Dormitories, houses, corporate apartments
- Children's recreation camps
- Rehabilitation and recreation facilities

- Industrial hospitals
- Production plants and warehouses
- Hotels, laundry and bathing facilities
- Cultural and sports facilities.

The Fund will be managed by the independent management company.

**The NMMC Fund's management structure<sup>5</sup>**



<sup>5</sup> This chart represents a provisional Fund management structure and may change in 2021.

The Fund was established to ensure the **efficient management** of the social facilities run by the Fund, restructure assets, **improve management systems, and introduce international best practices to monitor compliance with NMMC's social obligations**, including provision of charitable aid.

The transfer of non-core facilities to the Fund's management will allow NMMC to focus on its core business, streamline the organizational structure and headcount, increase budget transparency, and improve the efficiency of the social facilities themselves. Outsourcing support business functions is a wide-spread international practice.

The Fund will be financed both commercially and using charitable aid from NMMC, the Trade Union, state subsidies and other sources.

Decree No. PP-4124 of the Government of Uzbekistan "On measures to further improve the activities of enterprises in the metals and mining sector" of 17 January 2019 focuses on efficient organization and development of the Fund's operations. Among others, it prohibits headcount reduction, privatization, and conversion of social facilities to other purposes (excluding non-core facilities) for five years. This sets the basis for sustainable development of social facilities during this period.

Presently, the company is developing strategy options and roadmaps for social facilities managed by the NMMC Fund in 2021-2022. The company is reviewing scenarios to increase the operating efficiency of social facilities, develop and expand operations, and exclude some facilities from the Fund's management framework.



*"The mobilizing idea 'From National Revival to National Progress' is becoming an increasingly vital part of our lives. It is on this basis that we are taking important steps to radically improve people's lives, ensuring human rights and freedoms, the rule of law and social justice, and innovative development."*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**





# OCCUPATIONAL HEALTH AND SAFETY



Occupational safety is a key corporate value that is central to the efforts of NMMC's leadership. The lives and health of employees take precedence over all the company's other priorities, including operating performance. For this reason, the company ensures safe working conditions, and it has developed a mechanism to promote safe conduct during production activities.



**0.46** Lost Time Injury Frequency Rate (LTIFR) rate among employees

**100%** of employees covered by the Health and Safety Management System

**46** total work place accidents

**Occupational Health and Safety** targeted programs created for NMMC's electronic portal (AMSSHP and AMSOS)

**Zero emergencies** that resulted in loss of life

**More than \$3.1 million** spent on providing PPE

**118 drills** and trainings conducted involving

**4,642 people** and **309 units of equipment**

**6,211 man-hours** spent on specialized occupational health and safety trainings.

103-1, 103-2, 103-3, 403-1, 403-8

## Occupational Health and Safety Management

Our approach to occupational health and safety (OHS) management is based on promoting a culture of safety at all the company's business units, ensuring the ongoing development of OHS competencies, and preventing accidents and emergencies.

NMMC has implemented an **Integrated Management System for Quality, Environment, Health Protection and Occupational Safety**. In accordance with this system, NMMC works to achieve the following:

- Limit unfavorable impacts of production in business units on the working capacity and health of employees, as well contractors engaged in operations at NMMC's premises
- Minimize risks of accidents or other contingencies, mitigate the impacts of the consequences on the health and working capacity of employees engaged in the production process, implement changes in technical processes
- Ensure high-performance operations, improve and enhance the safety and health protection management system based on ISO 18001:2007.<sup>1</sup>

Our key objectives for safety and health protection are as follows:

- Monitor working conditions
- Adjust criteria and assess material hazards and risks
- Check the compliance of work conditions with legislative and regulatory requirements
- Develop, implement and supervise measures aimed at lowering material hazards and risks in accordance with the hierarchy defined in the OHSAS 18001:2007 international standard<sup>1</sup>

- Provide personal and group protective equipment, sanitary amenities and appliances, and medical and protective resources
- Assist in non-governmental supervision of efforts aimed at respecting the rights and legal interests of workers relating to the protection of their safety and health
- Prevent occupational injuries and diseases
- Communicate the safety and health protection policy to all employees
- Analyze the functioning and improving the safety and health protection management system.

In 2019, the Central Mine Group passed an independent supervisory audit confirming compliance with this standard. The Health and Safety Management System's certificate was extended based on the audit results and demonstrated maturity of the system.

The Health and Safety Management System (HSMS) applies to all employees of NMMC, irrespectively of the employment forms, and takes into account the specific features of OHS legislation applicable to employees engaged in hard physical work, adverse and hazardous conditions, and some employee categories (women, people younger than 18 years, individuals with a limited working capacity). The certified management system, having passed the external audit, applies to 18,100 employees (44%).

<sup>1</sup> The OHSAS 18001:2007 certification applies only to the Central Mine Group.

**Health and Safety Management System**

NMMC has implemented the **Health and Safety Management System (HSMS)** developed in accordance with Law No. 839-XII of the Republic of Uzbekistan "On Safety and Health Protection" of 6 May 1993. The HSMS applies to all NMMC's employees.

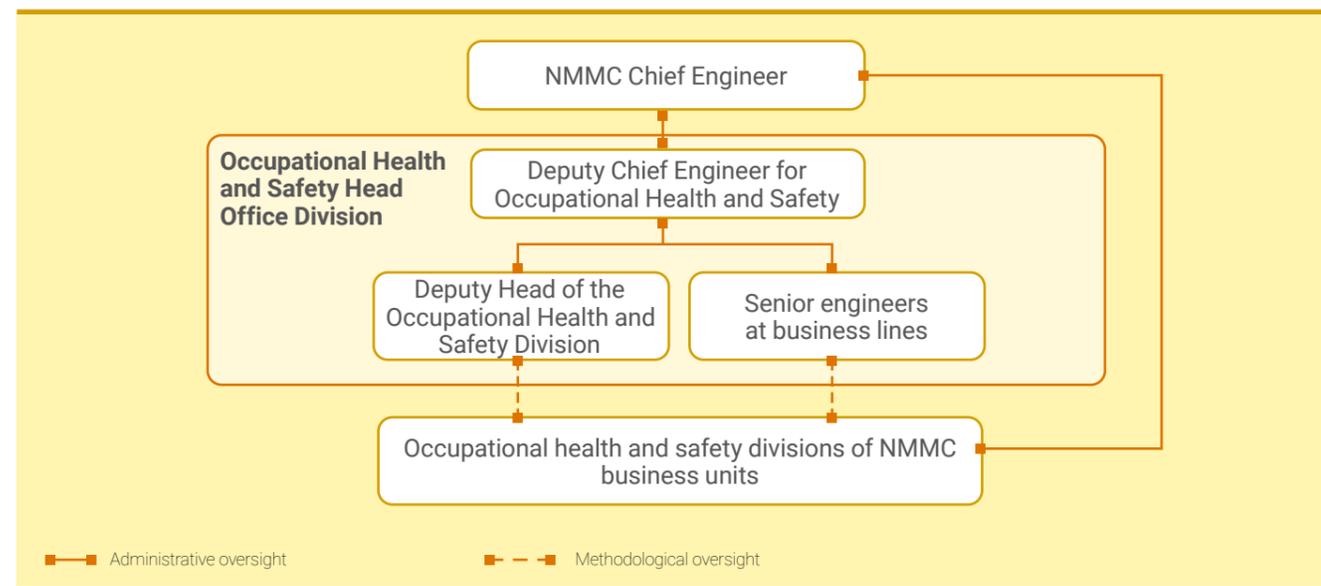
NMMC's health and safety management framework comprises the **Occupational Health and Safety Head Office Division ("OHS Head Office Division")**, and Occupational Health and Safety divisions at business units. The OHS Head Office Division reports to **NMMC's Chief Engineer**. OHS divisions at business units are subordinated to the Chief Engineer (for administrative oversight) and to the OHS Head Office Division (for methodological oversight). The Cabinet of Ministers of the Republic of Uzbekistan is the highest supervisory authority that regulates safety and health protection management. OHS compliance in Uzbekistan is monitored by the State Committee for Industrial Safety, the Ministry of Employment and Labor Relations, and the State Energy Inspectorate.

The HSMS's key objectives are as follows:

- Ensure the safety, health and work capacity of NMMC's employees
- Create a favorable sanitary and hygienic environment at production facilities

- Ensure the safety of technology processes as follows:
  - Make current technical and production processes compliant with occupational health and safety standards, rules, guidelines, etc.
  - Introduce new safe technical processes and automation
  - Comply with technical guidelines
  - Ensure that OHS guidelines match professional duties and the nature of performed work
  - Make available and implement tools for supervision of technical processes
- Ensure workplaces are organized and well maintained
- Promote occupational safety
- Provide medical and preventive care for workers as follows:
  - Perform preliminary and pre-trip medical examination of drivers
  - Provide healthy meals at the workplace, ensure employees drink enough
  - Implement health and sanitation measures.

NMMC has launched a multilevel OHS monitoring and supervisory framework. At level 1, workplace design is supervised by authorized OHS inspectors. At level 2 and higher levels, supervision is carried out by **occupational health and safety commissions** set up at plants and enterprises and consisting of worker and administrators. In the reporting year, occupational safety commissions performed inspections at NMMC's business units. In addition, there are authorized OHS personnel and trade union representatives in the company.



OHS specialists check that all employees comply with special requirements and rules; they also issue binding orders for heads of business units to address identified deficiencies. In addition, these specialists may present proposals to NMMC's management on holding employees responsible for breaching technical and OHS regulations. All employees attend mandatory safety and health protection briefings.

**The Framework for Emergency Response and Production Supervision**

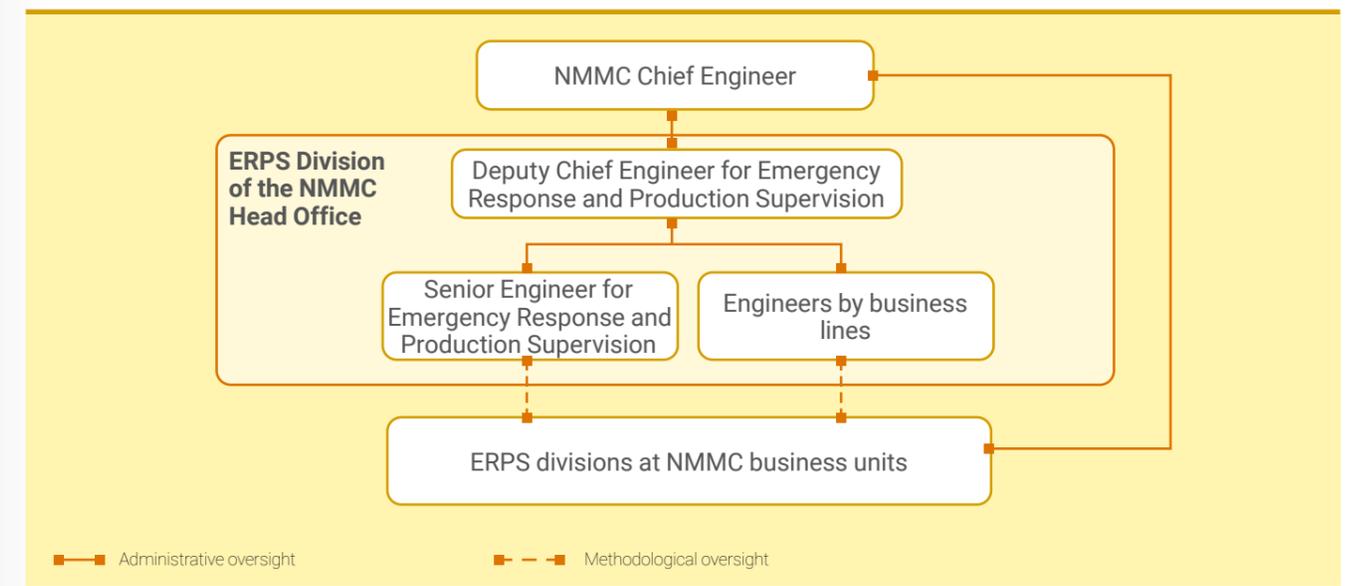
The prevention of emergencies, supervision of production's compliance with safety and health protection requirements, fire safety, and civil defense are managed by the **Emergency Response and Production Supervision (ERPS) Division**. The ERPS Division is subordinated to NMMC's Chief Engineer. ERPS divisions and services of business units are subordinated to the Chief Engineer (for administrative oversight) and to NMMC's ERPS Division, (for methodological oversight).

The ERPS Division is led by **Deputy Chief Engineer**. The governmental authority overseeing civil defense, emergencies and fire safety for NMMC is Uzbekistan's Ministry of Emergency Situations. The governmental authority overseeing industrial safety is Uzbekistan's State Committee for Industrial Safety. The Committee's local authorized branches oversee all facilities of NMMC with respect to compliance with regulatory requirements

in the area of industrial safety. The ERPS Division takes effective measures to prevent incidents, accidents and emergencies.

According to the Regulation on the Emergency Response and Production Supervision Division, the key objectives of the division are as follows:

- Organize, provide methodological oversight over, and supervise the implementation of the following measures:
  - Prevent and address accidents and emergencies, increase the reliability and operational stability of NMMC's facilities, meet requirements for industrial and fire safety
  - Provide personal and group protective equipment, gear and safety engineering technology for NMMC's civil defense divisions and services
- Organize and supervise the availability of management bodies, manpower and technical capabilities to prevent and address accidents and emergencies at NMMC's facilities
- Organize and lead emergency rescue operations, evacuate employees in the event of accidents and emergencies
- Provide methodological oversight, coordinate and organize production supervision over compliance with the requirements of industrial and fire safety
- Collect, analyze and summarize data pertaining to civil defense and emergencies and industrial and fire safety, prepare reports for higher authorities.



403-2, 403-3, 403-6, 403-7, 403-9

**Changes to the Framework for Managing Safety and Health Protection, Emergency Response, and Production Supervision**

NMMC is working to implement **changes to its Safety and Health Protection Division** in accordance with Appendix No. 5 "Guideline on the procedures for the creation and design of the occupational health and safety service in organizations" (issued in 2018) to Regulation No.1066 of the Cabinet of Ministers of Uzbekistan. NMMC plans to introduce necessary changes in order to streamline its OHS management framework in accordance with the requirements of the new legislation. In the process, the number of staff in OHS Division will increase.

In addition, in 2020 NMMC plans to set up a **Traffic Safety Division** subordinated to the Deputy Chief Engineer for Occupational Health and Safety in accordance with Article 12 of Law No. 410 of the Republic of Uzbekistan "On safety and health protection" of 22 September 2016.



NMMC plans to spin out **production supervision services** as independent departments as part of the company's reorganization and establishment of a joint-stock company based on the property of NMMC's territory in accordance with Decree No.291 of the Cabinet of Ministers of the Republic of Uzbekistan of 19 May 2020. The headcount of the Production Supervision Division will be reviewed as the management framework is transformed. NMMC's activities in the area of production supervision are governed in accordance with the Regulation on organization and implementation production supervision at all of NMMC's business units. The Regulation establishes procedures for organizing and implementing production supervision at hazardous facilities, as well as procedures for preventing accidents and ensuring preparedness for accident containment and mitigation of consequences.



# Prevention of Occupational Injuries and Illnesses

In preparation for its reorganization and the establishment of a joint-stock company based part of its property, NMMC will remain committed to implementing best practices in the area of safety and health protection and improve them further. This will ensure the best possible working conditions and compliance with global best practices.

**Hazard Identification and Risk Management**

NMMC's operations involve a number of risks that may affect the results of financial and commercial operations to a significant extent under certain circumstances. Safety and health protection measures are developed and implemented in accordance with a systemic approach to hazard identification and risk management. Key health and safety risks are listed in the document "Assessment of risks ranked by risk of injury (poisoning) for employees" for each mine group. The following key risks are highlighted:

- Touching electric appliances
- Using stairs
- Using corporate vehicles
- Spending time at hazardous facilities
- Increased levels of electromagnetic rays
- Low air ionization as a result of using personal computers.

The company meets its obligations to ensure the necessary sanitary and hygienic conditions by systematically monitoring adverse and hazardous production factors and eliminating their sources. **Key production hazard factors** that may cause severe injury include the following:

- Unexpected changes in overburden pressure, leading to underground rockslides in mines
- Poisoning by gases produced by explosions in underground mines
- Falls from height
- Electrocutation, arc flash injuries, etc.
- Traffic accidents caused by vehicle malfunction
- Technology and mining equipment operation
- Large blast-induced rock fragmentation.

The Central Mine Group has developed a process for hazard identification, assessment and management. It is defined in the Procedure for Hazard Identification, Assessment and Risk Management in accordance with OHSAS 18001:2007.

**Prevention of Occupational Injuries**

NMMC is constantly working to prevent occupational injuries and breaches of safety and health protection requirements. The company does its best to avoid fatalities and prevent any injuries.

Regretfully, in 2019 some occupational injuries and accidents occurred during the production process.<sup>1</sup> The production hazard factors that caused injuries during the reporting period included changes in overburden pressure, leading to underground rockslides in mines, falls from height, traffic accidents, poisoning by gases produced by explosions, personal negligence, and willful breaches of safety requirements.

In the reporting period, there were a total of 46 accidents,<sup>2</sup> which is 7% higher than the 2018 level. This spike was associated with an upturn in production volumes, as well as a rise in the tempo and intensity of work, even though the number of staff remained stable. Eight fatalities were recorded in 2019. In the reporting year, there were three group accidents that led to five fatalities and one severe injury. In the reporting year, the number of severe injuries totaled 25 (17 in 2018). There were 24 light injuries. Lost Time Injury Frequency Rate (LTIFR) was 0.46 (up 4.5% vs. 2018).

<sup>1</sup> For more details, please refer to Appendices.  
<sup>2</sup> Hereinafter, data on the precious metals segment is presented, for more details, refer to 'About the Report'.

Each accident was reported to the Ministry of Employment and Labor Relations and the State Committee for Industrial Safety of the Republic of Uzbekistan. In accordance with the Decree of the Ministry for Employment and Labor Relations (or the State Committee for Industrial Safety, depending on the subordination of the facility where the accident took place), a commission is established to investigate the accident. Based on reports of witnesses, the commission establishes the facts relating to the accidents, investigates the reasons, and determines the guilty individuals. After investigation, the commission sends the list of measures aimed at addressing the breaches to the plants. NMMC has implemented rules of compensation for harm to employees as a result of a severe injury, professional illness or other damage to health resulting from performing occupational duties. The company also pays accident-related compensations and pensions. In 2019, NMMC paid compensations worth a total of \$1.4 million.

After each accident investigation, the company takes corrective measures to minimize the probability of such accidents' reoccurrence. In 2019, severe injuries and fatalities (including group accidents) became more frequent at the Zarmitan mine of the Southern Mine Group due to breaches of safe underground mining technology. Based on the results of an analysis performed by the Urals Branch of the All-Russia Scientific Research Surveying Institute (VNIMI) of the Russian Federation jointly with Uzgeorangmetliti Research Institute and the Tashkent State Technical University, the company developed **technology for stope filling in mined deposits**, as well as **a program of measures for stabilizing mining operations in zones of identified overbear pressure**. In 2019, NMMC designed, constructed and commissioned a filling facility at the Zarmitan mining plant to fill stopes in the mined deposit. Thanks to this technology, the **risk of rockslides has decreased significantly**.

All accidents involving vendors and contractors at NMMC's premises are investigated, but they are not recorded by the company for statistical purposes. That said, no accidents involving contractors occurred. All contractors must hold the proper permits and attend health and safety briefings prior to performing works.

NMMC does its best to improve its safety and health protection practices. We strive to eliminate all fatalities. In order to achieve this goal, we have implemented a wide range of injury prevention measures. Our commitment to comply with all current safety and health protection requirements underpins our OHS policy. NMMC's specialists regularly monitor safety and health protection indicators, perform workplace supervision at hazardous production sites, and monitor employees' health. NMMC develops annual action plans for ensuring production safety.



In order to prevent accidents in the underground mines of the Southern Mine Group, NMMC has established **geomechanical services** (hereinafter, "services"). These services promptly identify changes in overbear pressure and pressure bursts by using **acoustic emission**. This allows for the monitoring of hazardous subsurface areas during each shift. If high overburden pressure is found, operations at hazardous areas are suspended.

In addition, the company applies **remote air sampling using portable gas analyzers**. This method prevents workers from being poisoned by gases produced during explosions in underground mines. On-board recorders (trackers, cameras) are installed on vehicles to monitor speed on a continuous basis. CCTV cameras are installed on construction and repair work sites to continuously monitor compliance with safety requirements.

The technical oversight specialists perform production supervision on a daily basis. They provide the due explanations prior to issuing orders for complex or hazardous work. Workers supervise the work order execution themselves in accordance with the safety rules. Operations can be suspended if a safety threat is identified and are resumed only after its elimination.

**The automation of OHS processes**, as well as implementation of new techniques and technologies, plays a significant role in ensuring a safe operational environment. In 2019, NMMC launched the **Automated Management System for Safety and Health Protection (AMSSHP)**, which is integrated into

the company's corporate portal. This system is a comprehensive database where technical data is aggregated. It can be used to obtain data on the work permit and personal protective equipment sets of employees responsible for work areas, as well as about work conditions. In 2020 NMMC plans to improve the system and integrate it with NMMC's other systems.

An important part of our efforts to prevent occupational injuries is the **incentive mechanism**. In order to motivate employees to actively participate in our preventative OHS efforts, the company regularly reviews divisions' achievements in decreasing the number of occupational injuries and accidents, as well as improving working conditions. Based on the results of the review, the company remunerates winners and workers who made significant contributions to improving the OHS system.

Employees who violate safety and health protection requirements are penalized. Among others, such employees are deprived of bonuses, made to pay fines of 30-50% of their wages, or subjected to disciplinary action. In the event of repeated OHS violations, employees may be downgraded or dismissed.

**The NMMC's Best Authorized Health and Safety Inspector Competition**

*In 2019, the company held a competition to determine NMMC's best authorized health and safety inspector. The main goal of the competition was to encourage favorable conditions at work places, increase workers' sense of responsibility, and ensure that production assignments are performed without violations of safety rules. The employees had to show their professionalism with respect to OHS on-site.*

*During the competition, trade union and management representatives, together with leaders at production plants, identified the best authorized health and safety inspectors and passed the data on to the plant's trade union committees. Next, they identified the best authorized health and safety inspectors together with the OHS Division (up to three inspectors per business production unit). The data on the divisions' best authorized health and safety inspectors were then transferred to the central contest commission, which identified the 10 contest participants with the best results.*

*The winners of the competition for the best authorized health and safety inspector received awards from NMMC's Trade Union Board. The winner of the contest received a monetary reward amounting to ten minimum wages, while the second and third-place winners were awarded seven and five wages respectively. The participants who came in fourth to tenth place received certificates of merit from the NMMC Trade Union Board and monetary rewards amounting to one minimum wage each.*



**Prevention of Occupational Illnesses**

All employees receive medical and preventive services on a regular basis, including medical inspections, healthy meals and special personal hydration regimes at workplaces. Sanitary and health precautions are also in place.<sup>1</sup> Newly hired employees undergo preventive medical check-ups, while drivers must pass mandatory pre-trip medical examinations.

Employees exposed to hazardous conditions during the course of their professional duties are provided with the necessary **personal and group protective equipment**. When receiving new personal protective equipment (PPE) from vendors, the company verifies the compliance of certificates with the Health and Safety Management System, as well as government quality standards.

The company reduced work hours for employees exposed intensively to hazardous substances. Workplaces are equipped with screens, free-of-charge healthy meals, and milk or equivalent food products for such employees. The OHS policy also provides benefits and pensions to employees.

NMMC conducts awareness campaigns to prevent illnesses, including precautionary printed and video materials. NMMC's employees are provided with PPE at entrance checkpoints and dining areas; disinfection measures are taken at workplaces, and vehicles used for staff transportation are also sanitized.

*In 2019, NMMC spent over \$3.1 million on the purchase of PPE.*



<sup>1</sup> For more details, refer to "Employees."

# Prevention of Incidents, Accidents and Emergencies

Prevention of natural and technological emergencies is another area of focus for NMMC as it strives to ensure the safety and health of its employees.

In 2019 there were two natural disasters. These disasters did not entail fatalities or significant loss for the company thanks to timely forecasting and risk assessment, as well as measures taken to prevent and contain damage. We are pleased to report that there were no technological emergencies in the reporting year.

In 2019, there were five incidents: three vehicle fires, a rollover of a large open-pit truck, and a warehouse fire. The circumstances and reasons of the incidents were identified and analyzed, respective briefings were held for employees, and measures have been developed to prevent such incidents in the future.

**Industrial safety and emergency measures included in NMMC's innovations program**

**1) Development and implementation of an automated management system for occupational safety (AMSOS)**

*In order to improve oversight of industrial safety at NMMC's plants, a decision was made to implement an automated management system for critical processes and create a single database of facilities, personnel and documentation relating to the company's industrial safety.*

*The AMSOS is an efficient tool for ensuring operational supervision and safe operation of hazardous production facilities. It is a corporate multiple-user server-based computer system. The system is used by industrial safety managers and specialists.*

*This system is designed for leaders of industrial enterprises as a flexible tool that provides prompt access to comprehensive data on the status of hazardous facilities; it is instrumental in meeting industrial safety requirements at a given facility.*

**Expected result:**

*Implementation of this project will allow for prompt access to data on the status of hazardous facilities, devices, buildings, and installations at hazardous facilities; references and compliance status of persons granted permission to access hazardous facilities; the status of storage and transportation of hazardous substances; the results of production process audits, progress in fulfilling corrective actions and orders; and internal guidelines and documents on industrial safety.*

*Total R&D and project costs will amount to \$11,300. The estimated commercial effect is expected to exceed \$18,000. The AMSOS was deployed by the end of 2019, and data will continue to be uploaded to it throughout 2020.*



**Industrial safety and emergency measures included in NMMC's innovations program**

2) *Development of predictive modeling software to analyze accident scenarios at NMMC's facilities where large quantities of highly poisonous substances, explosives and other hazardous materials are used and stored.*

*In 2020, NMMC will model spills of highly poisonous substances, as well as explosions at explosive storage facilities. The company will also plan and prepare for potential incidents that may bring about spills of such substances. When planning its response to potential accidents, NMMC will consider various mitigation strategies.*

**Expected result:**

*The development and use of predictive modeling software will enable NMMC to forecast potential accident and emergencies scenarios, and recommend the most efficient measures to contain and remedy them.*

*Total R&D and project costs will amount to \$11,300. The estimated commercial effect is expected to exceed \$18,000.*

In 2019, the key focus of NMMC's ERPS Division was to further improve the subsystems of functions and facilities that are integrated into the state system for emergency prevention and response actions at the company, as well as further implement the requirements of the laws of the Republic of Uzbekistan "On Civil Defense" and "On Protection of the Population and Lands in the Event of Natural and Technological Emergencies." To achieve these goals, NMMC engaged in **continuous monitoring of hazardous and potentially hazardous production facilities, as well as areas with heightened technological hazards** resulting from the company's operations. In 2019, NMMC also monitored the implementation of measures taken to address the sustainability of its facilities, which were performed in 2014. The company developed and implemented a set of measures aimed at executing Decree No. 585 PP "On the measures aimed at preventing disasters caused by high water, mud torrents, avalanches and landslides and addressing their consequences." These measures enabled the company to prevent potential disasters at its facilities during the high water seasons in spring and fall 2019. They also allowed NMMC to promptly contain disasters at its health resort in Zaamin District of Jizzakh Region and at the Zarmitan mine in Kushrabad District of Samarkand Region, which were caused by massive mud flows.

In accordance with the **schedule for supervising compliance with industrial, fire safety, and emergency precautions at highly hazardous facilities of the company**, in 2019 NMMC held 10 internal ad hoc and comprehensive reviews, during which 149 issues were identified. In order to address deficiencies, the company developed respective remedial measures, determined a timeline, and designated responsible employees.

In 2019, local certification commissions carried out a regular **performance reviews of rescue workers** from NMMC's external rescue teams; a contract was signed to provide them with **obligatory medical insurance** (if they passed performance reviews). Effective 21 May 2019, NMMC's ERPS division introduced the position of "engineer responsible for organizing measures to promptly collect and exchange data" (jointly with specialists from other business units) with respective branches of the Ministry of Emergency Situations.

As part of its core measures for 2019 to prevent and contain natural and technological disasters, NMMC has designed, constructed and modernized existing **warning systems** at the company's facilities.

In order to prevent potential disasters at NMMC's facilities, the company has developed and continues to implement measures to more closely monitor current conditions, territories exposed to mud flows and high water, the power supply, and housing and utilities systems. NMMC also works to identify and prevent a broad range of illnesses among its employees. If necessary, NMMC's civil defense teams, rescue groups at the company's facilities, and medical services can be placed on high alert, additional in-patient beds are installed in isolation wards of infectious disease departments at NMMC's medical facilities. Vehicles are prepared for use by joint mechanized teams.

NMMC regularly replaces its equipment with more modern versions, which allows the company to enhance the safety of production and reduce the impact of harmful and hazardous production factors on employees.

Fire-fighting measures are also in place at the company. In order to ensure **fire safety** at NMMC's facilities, fire-fighting commissions and voluntary fire-fighting teams have been created and operate at the NMMC Head Office and the company's business units. Fire-fighting commissions hold quarterly meetings to review fire safety matters and a report entitled "Analysis of the fire safety status of NMMC's facilities," which is prepared by specialists from the State Fire Safety Supervision Authority.





403-4, 403-5

## Promoting a Culture of Safety and Training in OHS, Industrial Safety, and Emergency Response

NMMC enables its employees to engage in ongoing professional development, and it delivers obligatory trainings in safety and health protection.

Pursuant to Decree No. 1066 of the Cabinet of Ministers of the Republic of Uzbekistan "On the Measures for enhancing the work of the Republic of Uzbekistan Ministry of Employment and Labor Relations," all managers and employees of NMMC engaged in production processes must be trained in safety and health protection.

Safety and health protection trainings are conducted in accordance with the Regulation on organizing training and assessments (hereinafter, the "Regulation"). This Regulation introduces a uniform **obligatory procedure for OHS training and assessments** for the workers, managers, and specialists at the business units, enterprises, and facilities of NMMC who are engaged in organizing and performing works directly at production facilities. The amount of such trainings corresponds to qualification requirements of various positions and the nature of the work performed. Employees are allowed to perform their duties independently only after attending safety briefings and completing respective internships and safety assessments. The regulation requires that preliminary professional and special trainings of employees be conducted. The quality and timeline of safety trainings and assessments is supervised by the OHS service. All employees of OHS Division and the ERPS Division received training in their respective areas in 2019.

The preliminary off-site safety training is conducted at **NMMC's training centers**, and it is followed by obligatory assessments held by a commission appointed by special order of the company. The results of the assessments are recorded in the minutes of the assessment sessions. The preliminary safety and health protection training is delivered to all workers of respective professions who enter into new employment contracts or are change roles in the company. Students of higher and secondary mining technical institutions, as well as college students, take preliminary two-day safety trainings prior to on-the-job training. The programs of preliminary safety trainings are developed by the OHS divisions of NMMC.

*NMMC is mounting a robust effort to increase the health and safety awareness of its employees. The company holds regular OHS trainings and retrainings for employees, and it reviews and answers their **inquiries and complaints**. OHS issues are communicated to employees via bulletin boards and printed announcements placed at the company's premises, outdoors, and in the offices, as well as via radio and video broadcasts. Contests and lectures are also held. Social media and messengers are not used in communications to employees, as the company's facilities are restricted access areas. Questions and inquiries on safety and health protection from employees are accepted via **the company's portal**. Employees can use this portal to report breaches of safety and health protection requirements. All complaints are reviewed by the OHS Division, after which an investigation must be launched by respective inquiry services that exist at all business units of NMMC in accordance with the Law of the Republic of Uzbekistan "On inquiries filed by individuals and legal entities." Works can be suspended locally if breaches of safety rules are identified by the company's employees so that such incidents can be addressed as soon as possible.*

*In 2019, 6,211 man-hours of specialized safety and health protection trainings were delivered to employees at NMMC's training centers as part of new job training and advanced professional training. The training programs includes a at least 20-hour safety and health protection course.*

All employees who are rehired by NMMC, whether they have no profession, are changing their professions, or are being cross-trained, are trained in their respective profession before they begin work. Professional trainings comprise theoretical and practical parts, and they are organized by NMMC's HR trainers.

Employees who must meet tighter professional safety requirements are required to take special industrial safety trainings before receiving permits to engage in unsupervised work. Practice trainings in safe workplace practices and internships are organized at workplaces, and they last 2-31 days depending on the complexity and hazards inherent to the work. Practice trainings are led by experienced and highly competent specialists.

The company's employees attend regular briefings on **safety and health protection matters**. All newly hired employees must attend an induction briefing, regardless of the position. Employees engaged in production attend induction briefings on-site. The secondary briefing is held for safety rules for each line of work. The company can also hold unscheduled briefings (in the event of changes in the technical processes, installation of new equipment, systematic safety breaches by employees, etc.)

In the reporting year, the training was held at the non-government education institution Mehnat Ta'lim (The Institute of Labor Education), and a 72-hour safety and health protection course was delivered as part of the advanced professional training and retraining of 200 employees. After the training, attendees took knowledge assessments. No safety and health protection trainings for contractors were conducted in the reporting year.

*In 2019, 110 of NMMC's employees took a 40-hour course on industrial safety on a contract basis at NTC Kontekhnazorutukuv and the non-governmental education institution Buhoro ukuv-kursi kombinati (Bukhara Training Course Complex).*

In order to advance knowledge and practical skills related to civil defense in times of peace and war, in 2019 118 **drills and trainings** were held for managers and employees at NMMC's facilities; 4,642 people participated and 309 vehicles were used. The training was also delivered to 507 command staff and 4,255 rank-and-file personnel of civil defense units, 41,897 workers and office employees, and 406 counselors of children's health camps. Ten people were trained in the Institute for Civil Defense of Uzbekistan's Ministry of Emergency Situations, and 26 people – at the training center for the management of the Emergency Management Service in Navoi region. Four competitions were organized with the participation of civil defense representatives (medical aid post operators, fire-fighters, rescue groups).





## Goals for 2020

Safe labor conditions, health, and the professional development of employees will remain key priorities for NMMC.

NMMC has set the following OHS goals for 2020:

- Further improve the quality of safety and health protection trainings; develop the professional knowledge and skills required to ensure occupational safety and prevent injuries, accidents and incidents
- Improve working conditions
- Automate production processes
- Implement positioning at underground mines.

*In order to improve oversight of occupational health and safety at NMMC's underground mines, a decision was made to implement an **automated management system for critical processes** and create a single database of facilities, personnel and documentation relating to occupational health and safety at the company.*

In 2020, NMMC is planning to further **implement stope (block) filling technology** and acquire high-precision portable multi-channel gas analyzers capable of swiftly identifying toxic and hazardous gases in mines.

Planning is under way to provide **intensive safety training to students** of technical professions (energy, mining, metals and chemicals) together with the head of the Health and Safety Department of Navoi State Mining Institute.

*In 2020, the Uzgeorangmetliti Research Institute plans to develop a project for implementing comprehensive **positioning in underground mines**, as well as a communications and warning system at the Guzhumsay mine of the Southern Mine Group. Investments in the project will total approximately \$1.4 million.*

NMMC's goals for ERPS are as follows:

- Conduct a study of the operational stability of NMMC's facilities during regular operations and emergency situations in compliance with the Law of the Republic of Uzbekistan "On protection of the population and lands during natural and technological emergencies"
- Create a program for predictive modelling of possible emergency scenarios at NMMC's facilities where large quantities of highly poisonous substances, explosives and other hazardous substances are used and stored in accordance with the Program for Innovative Development of NMMC in 2020
- Sign a contract with a specialized design organization to modernize warning systems used at NMMC's facilities via automation, and set up an automated warning and communication system to inform populations about threats or emergencies at local levels at GMZ-1 and GMZ-4
- Sign a contract with the Ministry of Emergency Situations of the Republic of Uzbekistan to perform stationary multi-mode seismic surveys in order to study the strain-stress state of the Zarmitan and Guzhumsay mines of the Southern Mine Group.



*"The main purpose of our nation's independence is to prioritize the life, rights, interests, honor and dignity of each and every person in the country."*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**





# ENVIRONMENTAL RESPONSIBILITY



Being a responsible steward of natural resources throughout the production process is among NMMC's key priorities. NMMC strives to reduce technology-related impacts on the environment by consuming water and energy resources efficiently, employing skillful waste management, and operating tailings facilities as it focuses on the protection and rational use of land.



- 100%** of all planned environmental initiatives implemented
- 7.05 million m<sup>3</sup>** of treated household waste water reused for technological needs
- 115 solar power plants** installed to supply hot water

Modernization of the **dust and gas cleaning equipment at GMZ-3's** furnace with a projected dust collection rate of 99.9%

**\$104 million** invested in environmental protection

**23 million GJ** of total energy consumption

**199.2 tons of oil equivalent/\$ million** specific consumption of fuel and energy resources for the production of core products

**60 million kWh** of electricity and

**1.67 million m<sup>3</sup> of natural gas** saved through the implementation of an action plan to reduce energy intensity and deploy energy saving technologies

**More than \$8.8 million** saved through energy efficiency measures



103-1, 103-2, 103-3

## Environmental Management

Environmental protection activities are managed by NMMC's **Environmental Protection Service** (hereinafter, the "EPS"), led by the Head of the Service subordinated to NMMC's Chief Engineer. The EPS engages in environmental protection activities in accordance with Uzbek legislation; NMMC's charter; the Collective Agreement of NMMC; orders, decrees, and directions of NMMC's management; and the Regulation on the Environmental Protection Service.

The key tasks of the EPS comprise:

- Ensuring favorable environmental conditions at the premises of NMMC's business units
- Reducing the potentially harmful impacts of production activities performed at NMMC's business production units
- Performing the following activities:
  - Monitoring environmental protection and rational use of resources
  - Implementing comprehensive management of environmental protection activities at NMMC
  - Controlling land reclamation in accordance with design documentation and commissioning the reclaimed lands to owners in accordance with established procedures.

The EPS collaborates with the following bodies and divisions:

- State Committee for Environmental Protection of Uzbekistan Republic
- Division for Emergency Response and Production Supervision

- Department for Investments and Capital Construction Department
- Division for Standardization, Metrology and Certification of the Quality Management System
- Technology Division for Gold Production
- Division of the Chief Geologist
- Division of the Chief Power Engineer
- Central R&D Laboratory (CRDL) and other laboratories for environmental protection at NMMC's business units
- NMMC's business units.

In the reporting year, the EPS held quarterly meetings on the implementation status of the following:

- Program for Environment Monitoring for 2016-2020 in Uzbekistan
- Plan of Measures for Environmental Protection and Rational Use of Natural Resources in 2019
- Environmental rehabilitation measures in Navoi Region.

Responsibility for managing the environmental protection measures at NMMC business units lies with **environmental engineers and safety engineers**.

In order to improve management systems for producing and processing mineral raw resources, NMMC has implemented the **Integrated Management System for Quality, Environment, Health Protection and Occupational Safety<sup>1</sup>** in accordance with the international standards ISO 9001:2015, ISO 14001:2015<sup>2</sup> and OHSAS 18001:2007.

NMMC's business units operate in accordance with NMMC's approved policy for quality, environment, and occupational health and safety<sup>3</sup> (hereinafter, the "Policy"). Environmental goals and objectives have been defined. NMMC's operations are aimed at implementing restorative and preemptive technology, as well as technical and organizational measures to ensure the regeneration capacity of areas exposed to technology-related impacts.

<sup>1</sup> For more details, refer to "Economic Stability".

<sup>2</sup> NMMC introduced the environmental management system (EMS) ISO 14001:2015 at the Central Mine Group.

<sup>3</sup> A section called "High-performance operation, improvement and enhancement of the system for environmental management based on ISO 14001:2015 and the analysis of the EMS performance and improvements" has been included in the Policy of the Central Mine Group.

NMMC's key environmental goals (according to the Policy) comprise the following:

- Prevention of environmental pollution
- Reclamation of lands exposed to technology-related impacts
- Maximum utilization of mineral resources while minimizing the consumption of material, energy, technical, environmental and financial resources
- Minimization of risks of emergencies or other contingencies while reducing the scale of environmental consequences
- High-performance operation, improvement and enhancement of the system for environmental management based on ISO 14001:2015.<sup>1</sup>

In order to achieve the goals it defined, NMMC implements the following measures:

- Monitors the natural environment
- Adjusts criteria and measures material environmental aspects
- Assesses the compliance of environmental impacts with legislative and regulatory requirements
- Develops, implements and monitors the implementation of measures aimed at reducing the material impacts on the environment
- Measures, separately collects, and re-uses production waste
- Restores affected lands
- Trains the personnel of business units in environmental protection
- Communicates the environmental policy to all employees
- Analyzes the operations of and improvements to the EMS.

Once every five years, NMMC identifies and assesses environmental issues in accordance with the Procedure for identifying environmental topics PR-06. Material environmental topics are updated when environmental requirements are revised. Such issues comprise the following: waste storage, explosion works, mining works, maintenance of mining pit roads, ore processing, and vehicle use. The list of material environmental topics was reviewed in 2018 and will remain in force until 2023. At the Central Mine Group, there were no unscheduled revisions of material environmental topics in 2019.

According to the Regulation on Procedures for Performing Environmental Production Oversight at NMMC Production Facilities, the business units of NMMC are obligated to do the following:

- Develop and approve local regulations on environmental controls
- Approve audit programs
- Ensure that environmental requirements are developed and complied with in a timely manner
- Develop and fulfill production plans related to environmental events and programs
- Establish systems for continuously monitoring emissions and dumps of pollutants into the environment, environmental conditions, and natural resources
- Develop the professional qualifications of environmental service specialists
- Impose disciplinary and financial penalties on employees guilty of non-compliance with requirements relating to environmental protection.

NMMC monitors air, water, subsoil waters, and soil pollution in accordance with the Program for Monitoring the Environment in the Republic of Uzbekistan for 2016-2020.<sup>2</sup>

In 2019, NMMC's nature protection activities were performed in accordance with **approved programs and event plans:**

- Environment protection plans for 2019 at all (without no exceptions) production units
- A plan of environmental rehabilitation measures in Navoi Region.

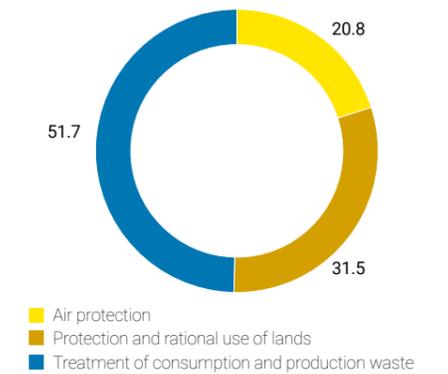
All environmental measures planned by NMMC for 2019 were fully implemented in terms of both volume and financial expenditures<sup>3</sup>.

The most significant events of 2019 that had a profound impact on the environment in the regions where NMMC operates included the following:

- Renovation and retrofitting of hydrometallurgical plant No. 3 (GMZ-3) to install eco-friendly firing technology and introduce a five-stage waste gas purification process
- Restoration and return of 117 ha of lands disturbed by mining operations to the owner
- Capital construction as part of a project "Construct facilities for processing industrial waste from the gold heap leaching plant"
- Reconstruction and increasing the capacity of tailings facilities of hydrometallurgical plants (limiting the impact of toxic waste generated by gold processing facilities locally)
- Sanitary water treatment at biological treatment plants in Zarafshan



Investments in environmental protection, \$ million



and Uchkuduk to ensure the rational use of water resources in Kyzylkum (treated water is re-used to cover technical needs of production plants)

- Introduction of solar thermal collectors<sup>4</sup> at NMMC's business production units to provide a total capacity of 13,250 kWh/day or 2.65 million kWh/year
- Implementation of technology to recycle used tires into furnace fuel for NMMC's needs with a capacity of 2,300 tons/year.

NMMC's total investments in environmental protection reached \$104 million in 2019.

NMMC used internal control procedures to monitor compliance with environmental legislation, which allows it to submit statistical reports in a timely manner, confirm the availability of design projects specifying the maximum permissible negative impact on the environment, issue respective approvals, and monitor the implementation of planned environmental and restoration measures.

The registry of environmental regulations is maintained by the EPS on an ongoing basis. When the government issues new regulations, NMMC sends orders to business units for their further review and implementation. In addition, the training center of Uzbekistan's State Committee on Ecology holds professional advancement courses for environmental specialists

NMMC obtained a special water-intake permit from the State Committee for Nature Conservation<sup>5</sup> for all of NMMC's production units that consume water from natural surface and subsoil sources. In addition, all production units of NMMC developed draft documents on maximum permissible air emissions, limits of waste generation and disposal, and maximum permissible discharges to water and land. All the above-mentioned design documents have received a positive expert assessments from Uzbekistan's State Committee for Nature Conservation.

When planning commercial and other operations, prior to financing, NMMC develops a draft statement on environmental impacts and receives respective regulatory approvals. In 2019, NMMC received positive state expert assessments with respect to the launch of the following projects:

- The construction of six mining pits in Daugyztau, Kokpatas, Balpantau, Tamdybulak, Chukurkuduk and Pistali
- The construction of an auxiliary technical water reservoir in Uchkuduk
- The construction of a vanadic pentoxide production unit from used vanadium catalyst
- Expansion of existing capacities at the Meylisay field through construction of the local sorption units LSU-5 and LSU-6.

<sup>1</sup> NMMC introduced the environmental management system (EMS) ISO 14001:2015 at the Central Mine Group.  
<sup>2</sup> For more details about the monitoring results, please refer to "Air protection," "Responsible water consumption," "Waste and Tailings Management."  
<sup>3</sup> For more details, please refer to "Air protection," "Responsible water consumption," "Waste and Tailings Management."

<sup>4</sup> A device for collecting solar energy transferred by visible and near-infrared emission to generate heat for further use.  
<sup>5</sup> In accordance with Decree No. UP-5024 of the President of the Republic of Uzbekistan of 21 April 2017, the State Committee for Nature Conservation of Uzbekistan was reorganized into the State Committee on Ecology and Environment Protection of Uzbekistan.

NMMC takes an active part in developing nature conservation regulations. In 2019, NMMC submitted proposals to amend the following documents:

- Law No. ZRU-529 “On amendments and additions to the Law of the Republic of Uzbekistan “On Air Protection” adopted by the Legislative Chamber on 30 November 2018 and approved by the Senate on 28 February 2019 of 13 March 2019
- Decree No. 484 of the Cabinet of Ministers of the Republic of Uzbekistan “On approval of the strategy for preserving biodiversity in Uzbekistan in 2019-2028” of 11 June 2019
- The Strategy for preserving biodiversity in the Republic of Uzbekistan in 2019-2028 (Appendix No.1 to Decree No. 484 of the Cabinet of Ministers of the Republic of Uzbekistan dated 11 June 2019)
- Decree No. 98 of the Cabinet of Ministers of the Republic of Uzbekistan “On amendments and additions to the Regulation on procedures for using wildlife areas and issuance of approvals for using them” of 6 February 2019
- Decree No. 949 of the Cabinet of Ministers of the Republic of Uzbekistan “On approval of the Regulation on State environmental assessments” of 22 November 2018
- The Regulation on procedures for establishing water protection zones and sanitary protection zones for water bodies in the Republic of Uzbekistan (Appendix No. 1 to Decree No. 981 of the Cabinet of Ministers of the Republic of Uzbekistan of 11 December 2019)
- Decree No. 981 of the Cabinet of Ministers of the Republic of Uzbekistan “On approval of the regulation

on procedures for establishing water protection zones and sanitary protection zones for water bodies in the Republic of Uzbekistan” of 11 December 2019

- Decree No. 855 of the Cabinet of Ministers of the Republic of Uzbekistan “On practical measures for ensuring rational use of subsoil waters in select regions” of 9 October 2019
- Administrative regulations for providing state services that involve issuing permits for drilling water wells (Appendix No. 1 to Decree No. 672 of the Cabinet of Ministers of the Republic of Uzbekistan of 14 August 2019)
- Decree No. 672 of the Cabinet of Ministers of the Republic of Uzbekistan “On measures for improving state services that involve issuing permits for drilling water wells” of 14 August 2019
- Decree No. 95 of the Cabinet of Ministers of the Republic of Uzbekistan “On approval of regulations on waste treatment” of 6 February 2019.

NMMC collaborates with the general contractor, i.e. Zarafshan Construction Department (ZCD), a business unit of NMMC. Work is performed in accordance with approved and agreed projects. The ZCD developed its own approval documents, including tentative limits for waste placement containing calculations of waste volume per work performed. Waste is disposed of at NMMC’s own licensed landfill.

NMMC has also approved a plan of organizational and technical measures for reviewing ventilation systems and repairing or replacing gas treatment units. In 2019, NMMC performed scheduled replacement of the scrubber at the Marjanbulak gold extraction plant.





302-1, 302-3, 302-4, 305-5

# Energy Efficiency

The efficient management of energy consumption at NMMC is ensured by the stable operation of all its industrial and social facilities. Higher production volumes lead to higher energy costs, which is why NMMC develops and implements measures aimed at energy and resource saving on a quarterly basis.

## Management Approach to Energy Consumption

NMMC's core production units are distributed among the following mine groups:

- Central Mine Group
- Northern Mine Group
- Southern Mine Group
- GMZ-1 Mine Group.

The production facilities of these mine groups are located in Navoi, Samarkand and Jizzakh regions. Each mine group has a **Division of the Chief Power Engineer** that ensures power supply for its respective mine group; they are led by the **Chief Power Engineer**. The technical leadership of these divisions lies with **NMMC's Division of the Chief Power Engineer**, led by the NMMC Chief Power Engineer and his two deputies for energy and heat and water supply, respectively.

Controls over measures aimed at increasing energy efficiency are performed on a continuous basis. Morning meetings on energy matters are held every day to promptly resolve various issues that may arise. In addition, meetings are held monthly to discuss operational results. Quarterly meetings on achieving production targets are attended by NMMC's General Director.

NMMC's power supply system comprises the following:

- 13 220kV substations with a total transformer capacity of 1,223,000 kVA
- 15 110kV substations with a total transformer capacity of 687,400 kVA
- 77 35kV substations with a total transformer capacity of 729,040 kVA
- 22 220 kV power transmission lines 1,085.6 km long
- 25 110 kV power transmission lines 336 km long
- 87 35kV power transmission lines 931 km long, as well as 6 and 10 kV distribution lines, including internal power supply lines at production facilities.

The electricity for NMMC's production facilities is supplied to three destinations:

- Electricity supply for facilities located at the Zarafshan-Uchkuduk power supply node
- Electricity supply for facilities located at the Navoi site
- Electricity supply for facilities using AO Samarkandskoe PTES and AO Jizzakhscoe PTES.

All energy facilities are managed and controlled by the **Central Energy Operational Dispatch Service of NMMC (CEODS)**. The CEODS is a business unit of the **Grid and Substation Plant at Navoi Site (GSP)**, and it is led by the GSP head. Methodological management of CEODS is performed by NMMC's Division of the Chief Power Engineer.

The operational management of the CEODS is performed by **Samarkand regional dispatch service (SRDS)** of AO NES Uzbekistan in accordance with the operational subordination register.<sup>1</sup>

The main goals of the CEODS are as follows:

- 24-hour dispatch management and coordinated operation of energy facilities in accordance with the prescribed mode, as well as power supply management for the entire plant
- Control over the operation modes of the Amu Darya-Zarafshan water conduits and the pump stations of the Unified Energy Service's external water supply service for the Central Mine Group (UES EWS CMG)
- Uninterrupted and reliable power supply for the entire company and its business units
- Maximum overall cost effectiveness of the energy district
- Optimal operation mode of electric grids in terms of active and reactive power, as well as energy quality (frequency and voltage of the electric current)
- Elimination of accidents in NMMC's electric grids, prompt normalization of the power supply for consumers in the event of accidents or deviations from established parameters and the operation mode.

<sup>1</sup> The list of operations with energy system equipment that require all actions to be taken only at the order of the respective dispatch (the senior on-shift employee) who is in charge of that equipment.

The CEODS runs the energy facilities through operational management of shift personnel at business units. NMMC's CEODS runs 220 kV electrical equipment and electric grids jointly with the Samarkand Regional Dispatch Service; the electrical equipment and 110 kV electric grids are run jointly with the operational dispatch services of AO Navoiiskoye PTES, AO Samarkanskoye PTES, AO Bukharskoye PTES, AO Jizzakhskoye PTES, an AO Navoiiskaya TES of Uzbekistan's Ministry of Energy.

In many aspects, the reliability of power units is ensured through the use of protective relays, automation equipment, prevention of accidents, identification of weaknesses, and preventive measures implemented by the **Central Electric and Technical Laboratory (CETL)** or directed by the CETL in NMMC's business units.

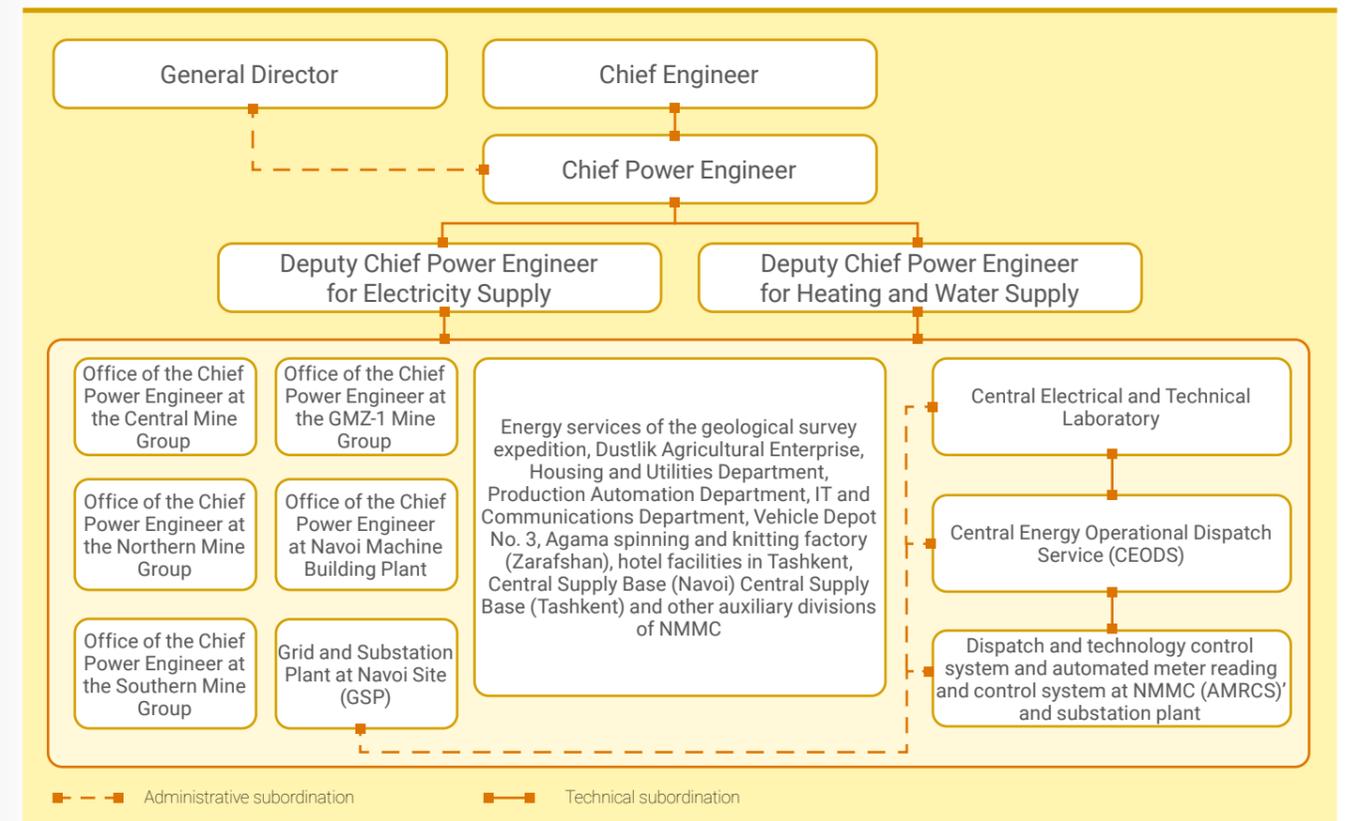
In 2012-2022, NMMC plans to implement an automated meter reading and control system for electric energy at NMMC (AMRCS). A list of automated facilities will be defined after the establishment of a joint-stock company on part of the property of NMMC. The AMRCS is designed for automated remote meter reading and data processing. The purpose of developing and implementing the AMRCS is to increase the level of control over and accounting for electricity, as well as to provide complete data to all system users with respect to electricity consumption at NMMC's facilities. The objectives of the AMRCS are as follows:

- More precise and prompt accounting of electricity consumption to facilitate financial calculations

- Analysis, forecasting and timely tracking of loads
- Prompter and more reliable data.

The hierarchical structure consists of three levels:

- Meters for technical and commercial accounting for electricity
- Devices for collecting and transmitting data (GSM/GPRS modems)
- Centers for collection and processing using specialized software.



### The Energy Management System

The Central Mine Group has implemented ISO 50001 “Energy management systems – Requirements with guidance for use” to gradually reduce energy costs. All business units have issued internal orders appointing supervisors for energy management, as well as employees responsible for developing energy management documents, policies and goals, and monitoring the status of energy saving plans.

In 2017-2018, three business units of NMMC were certified in accordance with ISO 50001: the Central Mine Group, Southern Mine Group, and NMBP. The responsibility for implementing the energy management systems at business units rests with chief power engineers.

In 2017, NMMS held intensive trainings on ISO 50001 that certified the trainees as internal auditors; they were issued certificates indicating their successful completion of the program.

NMMC also focuses on increasing energy saving awareness among its employees. In order to achieve this goal, NMMC conducts educational activities and trainings among personnel. NMMC’s employees regularly attend workshops for implementing energy saving technology organized by Uzbekistan’s Ministry of Energy, Tashkent State Technical University, and Navoi State Mining Institute. Afterwards, those

who attended the workshops deliver trainings on energy matters themselves to other personnel. In order to encourage the involvement and initiative of young specialists, NMMC holds annual events such as the Contest for the Best Efficiency Proposal and the Best Young Energy Specialist Contest.

In accordance with the **energy management policy** of the three above-mentioned business units, NMMC considers power supply and energy saving to be an integral part of achieving its strategic goal to increase the energy efficiency of production. It assumes long-term obligations for reducing energy consumption based on the ongoing process of improving the energy management framework.

The performance of the energy management framework is measured and assessed during regular audits. Audits are held on an ongoing basis by the NMMC business unit’s own employees holding respective certificates.

NMMC has established key parameters for energy analysis and energy consumption management. It has also identified sources of energy consumption for which it performs continuous monitoring and comparative analysis of energy consumption for all energy categories and usage areas. Data on progress made in the field of energy consumption reduction is regularly sent to the Ministry of Economic Development and Poverty Reduction, the Ministry of Energy, and the Cabinet of Ministers of the Republic of Uzbekistan.

### Energy Consumption Highlights

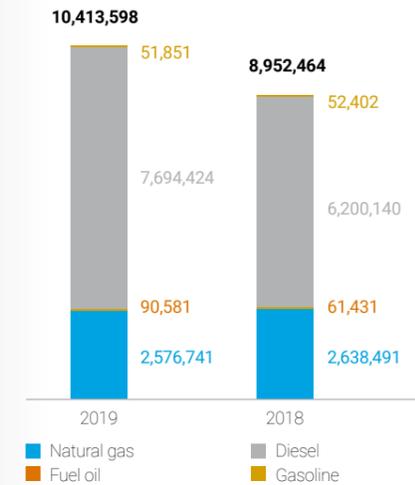
In 2019, total energy consumption amounted to 23 million GJ, exceeding the 2018 levels by 8.2% as a result of the launch of new production facilities with a total capacity of 14 MWt at GMZ-3 (the kiln) to develop the Muruntau mining pit in accordance with investment projects. Compared with 2018, ore processing, ore production, and product solution output increased by 5%, 20.9%, and 7.9% respectively.

The increase in fuel oil consumption in 2019 vs. 2018 is related to a change in average daily temperatures and differences in the length of the heating season and heat supply to newly commissioned industrial facilities.

In 2018, the average hoisting height from which ore was conveyed from mining pits by vehicles was 88 m, and the average transportation distance was 2.5 km. In 2019, the average hoisting height from which ore was conveyed from mining pits was 98 m (up 11.4%), while the average transportation distance was 2.78 km (up 11.2%), which resulted in higher consumption of diesel fuel.

In 2019, NMMC commissioned four modern high performance hydraulic shovels at Muruntau pit and 30 hydraulic shovels at the Auminzo-Amantoy mine. In addition, NMMC started using 39 large mine dump trucks, two watering machines and more than 20 trucks with a 25-ton load carrying capacity.

### Fuel consumption (non-renewable energy sources), GJ



In 2019, energy consumed from renewable sources accounted for 0.7%. Given NMMC’s total energy consumption, as well as nuances and limitations related to the use of renewable sources in the mining industry, the share of energy consumed from renewable sources is significant in absolute terms.

The decrease in CCGT electricity generation (using reheat steam) and biogas generation (using biogas units)—by 6.6% and 16% respectively—was due to the scheduled capital repairs of the equipment in 2019. Capital repairs were performed in accordance with schedules and timelines for equipment maintenance.

Type of renewable energy, GJ	2019	2018
Electricity generation using reheat steam	133,189	142,705
Biogas generation	3,740	4,481
Implementation of solar power plants	11,113	10,987
Implementation of photovoltaic power plants	19	14
<b>Total</b>	<b>148,061</b>	<b>158,186</b>

Consumption of purchased energy, GJ	2019	2018
Electricity consumption	12,250,627	11,768,414
Heat consumption	173,212	206,423
Steam consumption	44,894	44,935
<b>Total</b>	<b>12,468,733</b>	<b>12,019,772</b>

The heat purchased in 2018-2019 was used at the Navoi site. Other production units used heat generated on site by burning natural gas and fuel oil.

In order to calculate the **energy intensity** of the production process, NMMC applies the **unified indicator of specific fuel and energy consumption resulting from manufacturing core products**. The indicator was introduced by the Ministry of Energy of the Republic of Uzbekistan for enterprises operating in the republic. In 2019, this indicator amounted to 199.17 tons of reference fuel/million ton of marketable products. The calculation of energy intensity accounts for all types of fuel and energy (electricity and heat energy, natural gas consumption, steam, diesel fuel, gasoline, and fuel oil) with respect to the total amount of manufactured marketable products in 2019.

### Energy Saving Program

In accordance with Decree No. PP-3012 of the President of the Republic of Uzbekistan "On the program of measures for reducing the energy intensity and implementing energy saving technologies and systems in various industries and social sphere in 2017-2021" of 26 May 2017, NMMC developed its own **Program of Measures for Reducing Energy Intensity and Implementing Energy Saving Technologies and Systems in Various Industries and the Social Sphere in 2017-2021** (hereinafter, the "Program").

The main goals of the Program are the following:

- Reduce energy intensity of manufactured products by means of further modernization, technical and technological upgrade of current facilities, and creation of new production capacities based solely on modern energy-efficient and energy-saving technologies
- Implement organizational and technical measures aimed at reducing energy intensity, introducing energy intensive technologies, and performing energy audits of production facilities
- Accelerate the development of renewable energy sources, including tested technology for using solar energy
- Expand the automated meter-reading and control system for electric power
- Introduce energy efficiency measures during construction of new residential and administrative buildings and industrial facilities, as well as upgrades to current ones, using modern architectural and construction solutions, as well as new energy-saving construction structures and insulation materials.

In order to ensure the rational use of energy resources when designing, upgrading, constructing, and commissioning facilities, NMMC verifies their compliance with urban construction requirements and rules for energy efficient and energy saving technologies. NMMC also requires that solar water-heating units for hot water supply and energy saving lighting be installed when designing, upgrading, constructing and commissioning facilities, with the exception of individual residential buildings.

To this end, NMMC has developed a special Program, which comprises the following measures:

- For saving electricity:
  - Installation of a steam turbine at the Northern Mine Group's sulfuric acid production unit
  - Implementation of transistor power-to-motor systems on mine shovels<sup>1</sup>
  - Reactive power compensation
  - Implementation of frequency convertors and smooth-start systems on electric drives of technology equipment
  - Modernization and upgrade of equipment
  - Installation of power saving lamps
  - Installation of solar thermal collectors to supply hot water
  - Implementation of photovoltaic power plants.
- For saving natural gas:
  - Regulation of the temperature of service water in industrial boiler divisions at night
  - Introduction of solar thermal collectors for hot water supply in NMMC's business units.

**In total, NMMC saved 558 kJ of energy in 2019** (up 37% on 2019) as a result of energy efficiency initiatives, which were developed to save electricity, natural gas, diesel fuel and gasoline. The fuel and energy saving effect was estimated in accordance with methodology developed by the Ministry of Energy of the Republic of Uzbekistan with respect to the current (base) year.

All energy efficiency measures taken by NMMC resulted in lower consumption of energy resources. Thus, in 2019 NMMC saved 60 million kWh and 1.67 million cubic meters of natural gas. In 2019, the energy efficiency measures led to the saving of \$8.8 million. GHG emissions reduced as a result of energy saving measures amounted to 33,800 tons in CO<sub>2</sub> equivalent.<sup>2</sup>

<sup>1</sup> The transistor power-to-motor system is a modern replacement of outdated generator-to-motor technology, and is widely used in shovels.

<sup>2</sup> The calculation includes electricity, natural gas, fuel oil, gasoline, and diesel fuel saved in 2019 through the implementation of energy saving measures. The calculation was performed in accordance with IPCC Guidelines for National Greenhouse Gas Inventories, 2006, the Republic of Uzbekistan.

Measures	Energy saving, \$ '000		Fuel and energy saving
	Plan	Actual	Electricity, million kWh
<b>Introduction of energy saving technologies</b>	<b>767.9</b>	<b>799.2</b>	<b>23.5</b>
Implementation of transistor power-to-motor systems on mine shovels	247.3	252.2	7.6
Installation of energy efficient equipment at the Central Mine Group and NMBP	60.8	60.9	1.8
Use of variable-frequency drive	421.7	446.7	12.8
Installation of energy saving lighting equipment	38.0	39.5	1.2
<b>Improvement of technical processes</b>	<b>186.1</b>	<b>190.7</b>	<b>5.7</b>
<b>Modernization and reconstruction of production capacities:</b>	<b>447.8</b>	<b>467.3</b>	<b>13.9</b>
Transfer of electrical equipment to standby at the Central Mine Group, Southern Mine Group and Unified Energy Service	199.3	208.6	6.0
Replacement of lower-capacity electrical equipment at the Central Mine Group, Northern Mine Group, Southern Mine Group and Unified Energy Service	248.5	258.8	7.9
<b>Reduction of efficiency losses:</b>	<b>583.1</b>	<b>588.7</b>	<b>17.0</b>
Installation of a compensating device at the Central Mine Group of the NMBP	502.9	504.9	14.5
Installation of thyristor exciters on the electrical equipment at the GMZ-1 Mine Group	52.1	52.1	1.5
Reduction of other losses as a result of an increase in the power factor (cos φ) at the Central Mine Group and replacement of transformers at the Northern Mine Group	28.1	31.7	0.9
			<b>Natural gas, '000 cubic meters</b>
<b>Natural gas was saved by regulating the temperature of the heating network (at the Central Mine Group) and installing solar power plants (at the Central and Southern Mine Groups)<sup>3</sup></b>	<b>96.8</b>	<b>98.4</b>	<b>1.7</b>

The implementation of measures aimed at reducing consumption of fuel and lubricants also helped achieved the economic effect.

Measures	Economic effect, \$ million
Optimization of technical and technological processes (improving operational conditions in the open pit, road topping, installation of the Provita oxygen plant, switching the power supply of equipment from the diesel power plant to electric lines, etc.)	3.6
Replacement of outdated and obsolete vehicles	0.3
Optimization of outdated and obsolete vehicles (temporary storage, write-off, etc.)	0.4
Streamlining routes and distances run by corporate vehicles. (changes and reduction of routes)	1.4
Further implementation of the Fuel and Lubricant Control System using GPS/GSM technologies and improvement of operating performance	0.2
Re-equipment of transportation vehicles to convert to alternative fuels	0.2
Reduction in consumption of lubricants (motor, transmission oil, grease oil) as a result of implementing organizational and technical measures aimed at saving fuel and energy resources and various other measures	0.6

<sup>3</sup> The data does not comprise the statistics not related to this Report.

In order to guarantee power supply to newly launched production facilities in 2019, NMMC has built the following substations and electricity lines:

- The 226-km long Sarymay-Zarafshan VL-220 kV overhead power line from Sarymay substation to Zarafshan substation
- Two sources of reactive power at the Bessopan 220 kV switching substation
- One 220/6/6 kV (operating voltage) substation at GMZ-2 with transformers of 2x63 MVA type and VL-220 kV, 2x0.5 km in length;
- One 220/35/6 kV (operating voltage) substation at GMZ-5 with 2x80 MVA transformers and VL-220 kV, 2x40 km in length
- One 220/6/6 kV (operating voltage) substation at GMZ-7, with transformers of 2x63 MVA type and VL-220 kV, 2x12 km in length
- The Prikaryernaya 220/110 kV (operating voltage) substation, with 2x125 MVA transformers
- The Gornorudnaya-2 110/35/6 kV (operating voltage) substation, with 2x16 MVA transformers.

NMMC decommissions and replaces obsolete equipment and cuts production costs. The measures aimed at upgrading outdated and obsolete equipment are implemented in stages in accordance with approved annual grid schedules throughout the entire company.

### Alternative Energy Sources

The use of alternative energy sources is a core development area for NMMC's economic strategy. The role and place of renewable energy in NMMC's current and future energy balance have been determined based on available technical potential.

To attain these goals, NMMC implements projects aimed at increasing energy efficiency and saving natural resources via renewable resource technologies. In 2015-2019, NMMC developed and approved a Comprehensive Program for Developing and Expanding Use of Renewable Sources in NMMC.

The most relevant and in-demand renewable technologies for NMMC include solar energy, geothermal energy, and biomass energy. Renewable energy sources are now being used by NMMC's business units at facilities and mines in addition to traditional energy sources. The significant advantage of renewable energy sources is that the released energy resources can be used as raw materials in the petrochemical industry, while the renewable energy sector becomes the only economically viable, available and reliable source of energy for NMMC's facilities and mines located both in remote and hard-to-reach areas and within mine groups.

### Solar power

NMMC takes advantage of the favorable climatic conditions and solar energy potential of Uzbekistan to develop and implement projects for using solar energy and providing hot water via **solar power plants**.<sup>1</sup> Solar power plants are used at NMMC's facilities in five regions of Uzbekistan: Navoi, Bukhara, Samarkand, Tashkent and Jizzakh regions.

Solar power plants are used in the Northern, Central and Southern Mine Groups, at the Navoi Machine Building Plant Production Association, GMZ-1, Dustlik Agricultural Enterprise, and social facilities.

Solar thermal collectors have been used at NMMC's business units since 2001. The first such device was installed at Kokpatas mine of the Northern Mine Group, which is located far from heat sources. However, large-scale installation of solar devices mostly started in 2009.

In 2001-2007, NMMC produced 289 solar thermal collectors with an area of 486 square meters, which allowed NMMC to save 513,800 kWh/year. In 2009-2019 NMMC produced 2,153 solar thermal collectors with an area of 5,054 square meters, which allowed NMMC to save 2.7 million kWh/year.

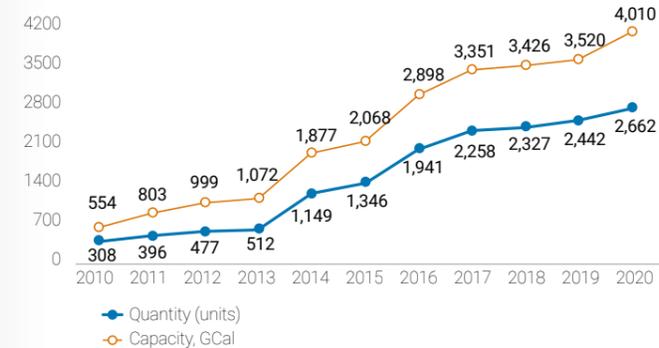
In accordance with the Comprehensive Program for Developing and Expanding Use of Renewable Sources at NMMC, in 2015-2019 NMMC commissioned

<sup>1</sup> A device that collects solar energy and transforms it into other types of energy, e.g. heat or electricity.

1,293 solar thermal collectors with total area of 2,845 square meters and total capacity of 1,819 GCal/year. The heat generated by solar thermal collectors installed within this period alone amounted to 7,839.6 GCal, which is equivalent to 9.51 million kWh of electricity. In 2019, NMMC built 115 solar thermal collectors.

Presently, NMMC successfully operates 2,442 solar thermal collectors with a total area of 5,540 square meters and total capacity of 2,985 GCal/year, saving up to 3.5 million kWh of electricity equivalent annually. By end-2020, the total quantity of solar power plants should achieve 2,662 units, while their total capacity should reach 3,285 GCal per year.

### Installation of solar power plants in NMMC's business units



To provide hot water supply for NMMC's facilities in the long term, design and production projects for solar power plants for 2021-2024 will be developed.

NMMC has launched its own production of solar power plants, which allows it to fully cover its own demand for such equipment. Solar power plants are produced at the Central Laboratory of Measurement Equipment and Automation at the Navoi site. The industrial production and delivery of solar power plants to NMMC business units started in 2018. In total, 220 solar power plants were installed in 2019 vs. 133 in 2018.

When designing and upgrading industrial and social facilities, NMMC considers the need to use renewable (alternative) energy sources.

### Construction of photovoltaic solar plants

By 2026, NMMC plans to construct photovoltaic (PV) solar plants with a total capacity of 200 kW as part of the following projects:

- Power supply for industrial facilities (100 kW capacity) for a project to construct a mine for the production and processing of gold ore at the Auminzo-Amantoy ore deposit (GMZ-5)
- Power supply for industrial facilities (100 kW capacity) for a pit development project (Stage 5) at Muruntau.

These PV solar plants are designed to meet the company's own needs for substations that ensure the supply of power to the production facilities constructed as part of the above-mentioned investment projects.

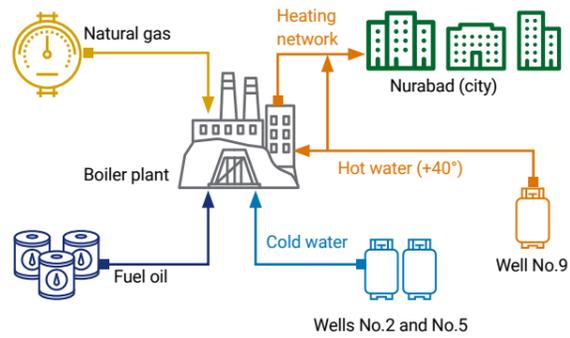
NMMC has been introducing PV solar plants to generate electricity from solar energy since 2015. In 2017, NMMC installed two PV solar plants at the Zaamin plot (Dustlik Agricultural Enterprise) with a total capacity of 4 kW. They have since generated 9,600 kWh of electricity (100% of the planned output).

In late 2018 to early 2019, NMMC installed three PV solar plants with a total capacity of 6kW at the small hoofed livestock division of the Dustlik Agricultural Enterprise in Tamdyn District. Since their launch, these PV solar plants generated 5.8 million kWh (100% of the planned output). As of end-2019, NMMC's business production units had commissioned five PV solar plants with a capacity totaling 10 kW.

In 2020, NMMC's business production units plan to install 60-150 W.LED-spotlights equipped with solar panels, photocells and motion-sensors at spoil heaps.

**Geothermal Energy**

The use of geothermal energy from subsoil waters plays a special role in NMMC's energy saving effort. Geothermal waters are used by the Southern Mine Group to provide hot water to Nurabad residents. Water is supplied to the Nurabad boiler plant from well no. 9 of the Janub water intake facility, located 5 km from the boiler plant. The well flow rate<sup>1</sup> is 70–85 cubic meters per hour, while the temperature of the produced water is 37–40 °C.



**Introduction of biogas units**

Geothermal water is filtered and delivered to the boiler plant, where it is heated to the required temperature and delivered to the heating system to supply heat and hot water to households and the municipal infrastructure. The annual savings resulting from the use of geothermal heat in the reference fuel equivalent amount to 1,000 tons of reference fuel (30,597 GJ) or 0.9 million cubic meters of natural gas.

To put alternative energy to practical use, NMMC's Dustlik Agricultural Enterprise has implemented and successfully operates technology for processing cattle manure (3,500 tons per year for 1,000 animal units) and poultry litter (1,260 tons per year for 30,000 birds in Malik-Rabot, Navoi Region, as well as 1,260 tons per year for 30,000 birds in Termez, Surxondaryo Region).

The installed capacity of two biogas units for processing the farms' poultry litter is 200 cubic meters of biogas per day, while the dairy farm-based manure biogas plant produces up to 400 cubic meters of biogas per day. The core equipment was designed, produced and installed by NMMC's specialists.

In 2013-2019, these units produced 929,000 cubic meters of biogas. They also produced 59.6 tons of dry fertilizer (biohumus) and 8,695 tons of liquid fertilizer. This biogas is used for technical purposes to provide hot water to the dairy farm, hammer shop, and vegetable processing shop. In 2019, NMMC produced 110,000 cubic meters of biogas and 1,222 tons of biofertilizers.

Presently, NMMC is working to improve biogas quality and reduce production costs. Additional solar thermal collectors have been installed to improve the raw material heating technology. In 2021-2022, NMMC plans to install and launch a cogeneration unit for producing electricity from biogas.



<sup>1</sup> Well output per unit of time.

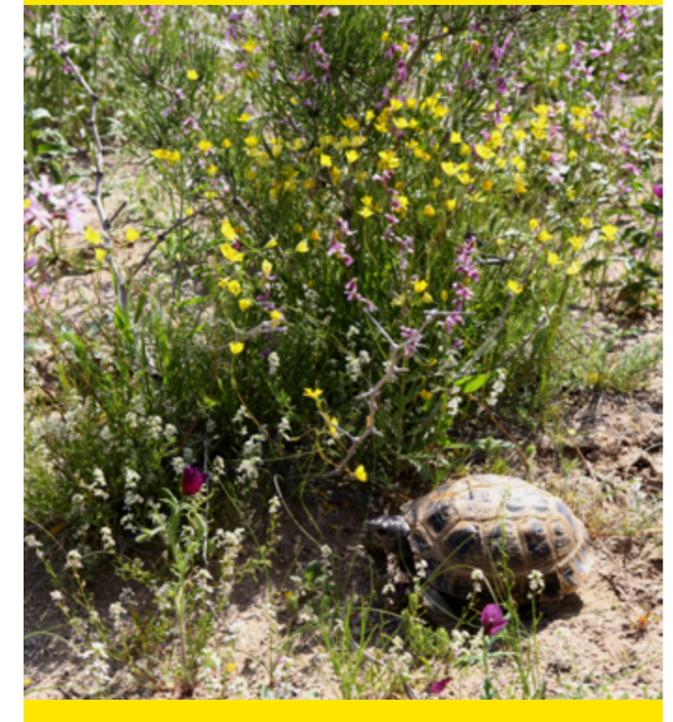
**Installation of steam turbines at the Northern Mine Group's sulfuric acid production unit**

A project to install steam turbines at the Northern Mine Group's sulfuric acid production unit in Uchkuduk was implemented with the aid of the International Development Bank. The key goal of the project was to increase the energy efficiency of sulfuric acid production through electricity generation using secondary heat produced in the sulphuric acid production shop.

Sulfuric acid production involves burning sulfur, which leads to significant heat generation. This heat is used to produce steam consumed in production processes and for heating purposes. In order to prevent permanent heat losses during consumption, in 2016 NMMC installed a steam turbine unit to generate electricity. The steam turbine unit generates 38-39 million kWh of electricity, covering 80% of electricity needs in the sulfuric acid production process.

The implementation of this project allowed the unit to exclude heat losses and use heat for electricity generation purposes. In 2019, electricity output reached 36,996,939 kWh, while during the entire operation period (June 2016 to late 2019) the steam turbine produced 133,472,172 kWh of electricity. In the first half of 2018, use of the steam turbine unit compensated for its construction and installation costs in full.

NMMC has developed and approved a Plan of Organizational and Technical Measures for Fuel and Energy Saving in 2020-2022 with Uzbekistan's Energy Inspectorate, Uzbekistan's Oil and Gas Inspectorate and the Ministry of Energy. The plan envisages electricity savings amounting to 72.7, 6.62 and 9.77 million kWh in 2020, 2021 and 2022 respectively, as well as natural gas saving totaling 1.03, 0.59 and 3.7 million cubic meters in 2020, 2021 and 2022 respectively.





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## Air Protection

In accordance with **NMMC's Plan to Improve Environmental Conditions in Navoi Region**, in 2019 NMMC implemented the following environmental measures aimed at reducing atmospheric impact:

- Modernized the dust and gas cleaning equipment at GMZ-3's furnace and introduced a five-stage waste gas purification process
- Monitored key air pollution sources at NMMC's industrial sites (jointly with representatives of Uzbekistan's State Committee on Ecology).

Key air pollution sources were monitored in accordance with a schedule for controlling compliance with maximum admissible discharge requirements at NMMC's business units for 2019; it was agreed with local offices of the State Committee for Nature Conservation. In the reporting year, NMMC performed 614 measurements and 297 assessments of gas purification efficiency at 106 priority sources of emissions. The average efficiency of purification was 72.28%, with a standard range of 70–90%. The measurements were performed at key air pollution sources jointly with Uzbekistan's State Committee on Ecology

on a quarterly basis. NMMC submitted the monitoring results to the regional division of the State Committee on Ecology on the monthly basis. The measurements showed that the air quality at the borders of sanitary protection zones of industrial facilities does not exceed current requirements. Pollution zones around industrial sites did not increase either.

According to the progress report on implementation of the **Plan of Measures for Environmental Protection and Rational Use of Natural Resources at NMMC Core Assets**, NMMC implemented the following air protection measures in 2019:

*In 2019, NMMC completed the construction and installation of dust and gas cleaning equipment at GMZ-3's furnace. The equipment was commissioned and start-up/adjustment works were performed. The design purification efficiency is 99.9%.*

Business unit	Measures	Result
Central Mine Group	Reduction dust and gas emissions through improving the stemming quality of hole loading by constructing retention walls during blasting operations	Reduced dust emissions by <b>520 tons per year</b>
	Water spraying of mined rock with technical water fed into the receiving bunker of the screw-toothed roll crusher	
	Water spraying of mined rock with technical water fed into the receiving bunkers and delivered to external spoil heaps	Reduced dust emissions, removed limestone dust from cyclones
	Upgrade of aspiration systems (replacement of filters)	
Northern Mine Group	Spraying the bottom of the face with water from hydromonitors Water spraying ore at conveyor belt transfer points Dust suppression on roads (using sprayer trucks)	Reduced air pollutant and dust emissions by <b>1,000 tons per year</b>
	Planting greenery (trees, bushes, flowers), landscaping	Planted <b>5,500 trees and bushes</b>
	Repair and adjustment of fuel equipment	Repaired <b>340 fuel equipment devices</b>
	Green landscaping and tending of plants	Landscaped a total area of <b>90,160 square meters</b>

Business unit	Measures	Result
Zarafshan Construction Department	Regular vehicle checks for exhaust gas toxicity and smoke levels	Checked <b>707 vehicles</b>
Navoi Machine Building Plant	Outfitting of vehicles to use compressed natural gas	Outfitted <b>two vehicles</b> to use compressed natural gas
	Vehicle checks for exhaust gas toxicity and smoke levels	Checked <b>33 vehicles</b>
GMZ-1 Mine Group	Inspection and cleaning of ventilation in the baking, sorption, cyanidation and extraction units Cleaning of scrubbers, dust cyclones, bunkers, and air ducts	Inspected and cleaned ventilation <b>40 times</b>
	Regular watering down of plant and tailing facilities' roads	Watered down roads <b>189 times</b>
Vehicle Depot No. 3	Outfitting of vehicles to use compressed natural gas (two vehicles) and liquefied petroleum gas (two vehicles)	Outfitted <b>four vehicles</b> in accordance with the plan
	Vehicle checks for exhaust gas toxicity and smoke levels	Checked <b>400 vehicles</b>
Housing and Utilities Department	Monitoring of trees and bushes, extraction of old trees, planting of saplings, preventing of burning dry leaves and garbage within city limits	Planted <b>15,000 trees and bushes</b>
	Vehicle checks for exhaust gas toxicity and smoke levels	Checked <b>37 vehicles</b>
Unified Energy Service (UES)	Greenscaping of the UES premises	Planted <b>1,200 trees</b>
	Vehicle checks for exhaust gas toxicity levels	Checked <b>11 vehicles</b>

In 2019, 1,678 air pollution sources were recorded at NMMC's facilities, which is insignificantly more than in 2018 (by 0.4%). These sources of pollution generated 22,071 tons of pollutants in the reporting year. 2,214 tons of these pollutants were captured in 221 air cleaning units. All ore dust was re-used in the production process. The efficiency of dust and gas cleaning equipment reached 75.8% in 2019. In the reporting period, NMMC's facilities emitted 128 types of pollutants in the air with

a total weight of 19,748 tons,<sup>1</sup> which is below the maximum permissible threshold of 22,700 tons<sup>2</sup> set by the State Committee for Nature Conservation of the Republic of Uzbekistan. Emission of pollutants has slightly decreased (by less than 1%). No dust emissions with phosphate content were recorded in 2019, as the Kyzylkum phosphate plant was re-assigned to a different ministry. The installation of dust and gas cleaning equipment at the furnace of GMZ-3 includes the commissioning of the following units: a double arm cleaning filter (99%

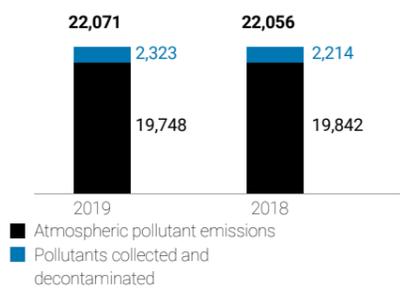
cleaning efficiency), absorber (97.6%), dry electric filter (99.9%), quenching unit (99.9%), hydroelectric filter (99.9%), and radial scrubber (99.9%). The reduction of pollutant emissions was achieved by installing a new water sprayer for emissions generated during limestone production (at the gold prospecting plant in Marjanbulak).

<sup>1</sup> Air pollutant emissions are estimated in accordance with approved methodologies and regulations of the Republic of Uzbekistan.

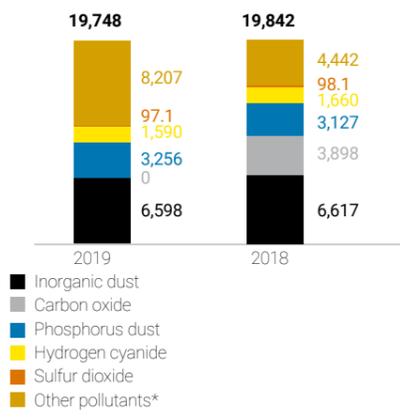
<sup>2</sup> The State Committee on Ecology and Environmental Protection of the Republic of Uzbekistan.

303-1, 303-2, 303-3, 303-4, 303-5

**Generated pollutants, tons**



**Atmospheric pollutant emissions, tons**



\* Other pollutants include lime dust, hydrogen cyanide, ammonia, nitric acid, Nitrogen (IV) oxide, Nitrogen (II) oxide, hydrocarbons, sulfuric acid, carbon sulfide, white spirit, xylene, spray paints, etc.



NMMC identified key air pollutant sources and developed a schedule to install automated control sensors in 2022 in order to reduce the following emissions:

- Inorganic dust from limestone production at GMZ-2
- Hydrogen cyanide, ammonia and nitric acid at the roasting plant of GMZ-2
- Inorganic dust, sulfur dioxide and carbon oxide at the roasting plant of GMZ-3

NMMC records its direct greenhouse gas (GHG) emissions, which amounted to 687,900 tons in CO<sub>2</sub> equivalent<sup>1</sup> in 2019. In accordance with the Comprehensive Plan to Reduce Energy Intensity in the Economic and Social Sphere, Limiting GHG Emissions and Preventing Climate Change in 2016-2030, the following measures are in place at NMMC:

- Efforts to modernize energy intensive production processes and increase the energy efficiency of fuel and energy resources
- Measures for implementing and expanding the use of alternative and renewable sources of energy
- Timely technical maintenance and repair of vehicles, replacement of obsolete vehicles, etc.

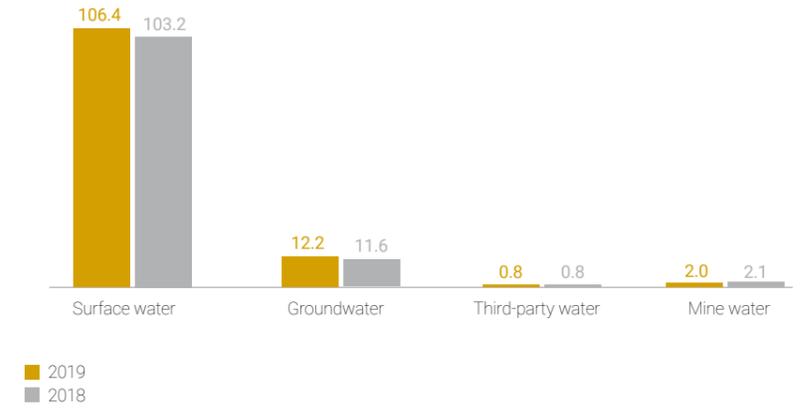
<sup>1</sup> The calculation was performed in accordance with Guidelines for national greenhouse gas inventory, MGEIK, 2006, the Republic of Uzbekistan. The calculation includes CO<sub>2</sub> emissions generated as a result of burning carbon fuels at power generation plants (natural gas, fuel oil, furnace fuel) and in vehicle internal combustion engines (gasoline, diesel fuel, compressed natural gas, and liquefied gas).

# Responsible Water Consumption

The rational consumption of water resources is a priority task for NMMC.

NMMC's production units are located in regions suffering from high (40-80%) or extremely high (over 80%) water shortages and in arid, water-scarce regions. In order to receive rights for groundwater intake, NMMC applies for a permit for special use of water and agrees it with Uzbekistan's State Committee on Ecology and State Committee on Nature Conservation if water is taken from surface sources. NMMC obtained an approval for special water intake from the State Committee for Nature Conservation for all NMMC's production units that consume surface water and groundwater.

**Total water withdrawal from areas with water stress, million cubic meters**



NMMC takes water from the Amu Darya and Zarafshan Rivers, Tusunsay water-storage reservoir, and water-intake artesian wells. Water intake sites are listed in the Appendix. Water is consumed in a way that meets the industrial and sanitary needs of the enterprise.

NMMC consumes water in areas with water stress.<sup>1</sup> The total water withdrawal in 2019 reached 121.3 million cubic meters, which is 3% above the 2018 level.

The total quantity of wastewater in the reporting year reached 12.3 million cubic meters. Key potentially-hazardous substances contained in the wastewater include suspended solids, ammonium nitrate, ammonium nitrite, ammonium-nitrogen, dry residues, sulfates, chlorides, phosphates, oil products, total iron, and organic substances (based

**The Amu Darya-Zarafshan water conduit was constructed by NMMC. It is the only river that supports life in Uzbekistan's desert zone.**

The key source of water supply for the cities of Zarafshan and Uchkuduk, the industrial facilities of GMZ-2 and GMZ-3, as well as mines, pits, and other industrial facilities, are the Amu Darya and Zarafshan Rivers. There are low-capacity subsoil water sources in Zarafshan (Uchkuduk Region) such as the Mingbulak, Beshbulak and Karak Ata, but their productive capacity is not sufficient to cover the industrial needs of NMMC's production facilities.

As a result of the rapid industrial development of the region, a decision was made in 1965 to construct the **Amu Darya-Zarafshan water conduit**, which is unrivaled in Europe. **The diameter of the conduit is 1220 mm, and it is 208 km long.** Among the most complex energy projects, it consists of five trunk booster pump stations operating in the same mode and ensuring water lift from a 140 m elevation point at the Amu Darya River to 550 m. The water conduit project comprises 220kV electric lines 210 km long with four transit 220/35/6 kV substations and three 35/6 kV substations.

<sup>1</sup> Regions suffering from water shortage were identified on the basis of publicly available data in the World Resources Institute's [Aqueduct Water Risk Atlas](#)

The fact that it was constructed and commissioned in the harsh conditions of the Kyzylkum Desert, in the absence of roads and water, makes the project unique. The water conduit crosses through sand dunes up to 30 m high, where air temperatures can reach above 60° C in summer. Its first kilometers were installed in autumn of 1966, and the entire conduit, including water intake facilities and the network of pump and filtering stations, were commissioned on 27 May 1969. In order to increase its productivity, a second conduit with a diameter of 1,220 mm was constructed in subsequent years. Two water conduits 95 km long each were built to deliver water from Zarafshan to Uchkuduk, one of which—with a diameter of 1,000 mm—is used for fresh water, while the 700 mm water conduit is used for technical water. In 2019, 80.703 million cubic meters were taken from the Amu Darya River, as opposed to 76.424 million cubic meters in 2018.

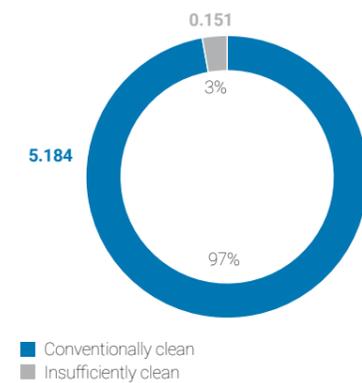
The Amu Darya-Zarafshan conduit diverts water from the Amu Darya River, which is then purified at water treatment facilities located near water intake areas and subsequently delivered to the industrial region (including industrial facilities and city residents) located in the Kyzylkum Desert. Water intake points have been constructed along the entire conduit to provide water to the population of the adjacent region. Rational use of water is a requirement for developing the production sites that have been launched in this ore-rich region. Thanks to the Water Saving Program, water meters have been installed at all apartments in the cities of Navoi, Zarafshan, and Uchkuduk, as well as in residential buildings at NMMC-run settlements that form part of a larger city-forming infrastructure, leading to a significant decrease in water consumption (e.g. by 40% in Navoi).

In order to supply water to new facilities at GMZ-2, GMZ-3, GMZ-5, GMZ-7, the Muruntau pit, and the Auminzo-Amantoy mine, the construction of a third line of the conduit is scheduled to be finished by 2025, along with upgrades to pump stations. The construction of a 157.3 km long conduit is planned as well. The allocated construction capex is estimated at \$127 million. The maximum capacity of the Amu Darya-Zarafshan conduit is expected to reach 120 million cubic meters by 2026.



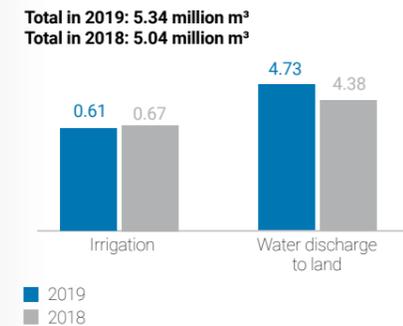
on biological oxygen demand). Pollutant discharge requirements were approved in accordance with the maximum permissible discharge levels. No breaches of established maximum permissible discharge levels were recorded in the reporting year. Discharge water consists mostly of water that is biologically treated as required by existing regulations (60%). The remainder is water discharged to land or used for irrigation of industrial crops; it comprises conventionally clean or insufficiently clean water.

**Total wastewater discharge, million cubic meters**



NMMC has a unique experience re-using industrial and treated municipal wastewater for technical purposes, including irrigation of industrial crops, to ensure the rational use of water resources and prevent pollution of water reservoirs and land. In the reporting period, a total of 7.05 million cubic meters of discharge water have been re-used after treatment as part of the gold production process.

**Total wastewater discharge by discharging facility, million m³**



In accordance with its **Plan to Improve Environmental Conditions in Navoi Region**, in 2019 NMMC monitored subsoil water pollution jointly with Uzbekistan's State Committee on Ecology.

In 2019, NMMC monitored **wastewater quality** discharged to water bodies or to land; it also checked the efficiency of sewage water treatment at 36 points of waste-water discharge to land and one discharge point to a body of water, in accordance with the schedule for monitoring wastewater discharges of IV quarter 2019 and as agreed with local offices of Uzbekistan's State Committee for Nature Conservation. The quality of wastewater is assessed in accordance with the requirements of the Republic of Uzbekistan and adjusted for background concentration at bodies of water. The efficiency of wastewater treatment facilities in Uchkuduk, Zarafshan, Malikrabad, Zarkent, Nurabad, and Marjanbulak is in line with design levels, while the treated wastewater in Uchkuduk, Zarafshan and Malikrabad is fully utilized to meet internal technical needs of enterprises and for irrigation green spaces.

Location	Results of monitoring groundwater near tailings facilities in 2019
Central Mine Group, GMZ-3	<ul style="list-style-type: none"> <li>Performed mode-linked hydrogeological monitoring of the changes and chemical composition of groundwater, as well as the impact of water from tailings facility pools on groundwater, across the observation well network</li> <li>Cleaned 23 wells, took 21 samples to check for 12 hazardous chemical substances (cyanides, thiocyanates, arsenic)</li> <li>Performed a total of 608 tests</li> <li>Decreased infiltration by 10% as a result of anti-filtration protective measures taken in accordance with the recommendations of the Uzgeorangmetliti Research Institute.<sup>1</sup></li> </ul>
Northern Mine Group, GMZ-3	<ul style="list-style-type: none"> <li>Ground water (of technical origin) at 38 first-line observation wells at all dams</li> <li>Performed a total of 708 tests</li> <li>The largest number of wells with high water cut on the side of the technical dam (in the north) and the southern dam were identified</li> <li>Decreased infiltration by 10% as a result of anti-filtration protective measures taken in accordance with the recommendations of Uzgeorangmetliti Research Institute.</li> </ul>

**Groundwater pollution is monitored** by sampling water in observation wells along the perimeter of tailings facilities. This control is performed in accordance with the analytical control schedule agreed with the EPS and the regional Environmental Protection Department.



<sup>2</sup> The General Designer engaged in developing pre-project and project documentation of investment projects for NMMC State Company. Throughout the entire project, the Uzgeorangmetliti Research Institute continuously monitors compliance with approved decisions and implements measures to improve production and processing of mineral raw materials jointly with project's initiator.

**Development and implementation of a technological process for treating mine drainage water jointly with the Ecology and Environmental Protection Research Institute**

In order to protect the environment from heavy metal pollution, and to ensure the rational use of water resources given the region with water stress, NMMC joined efforts with the Ecology and Environmental Protection Research Institute to develop and implement a technological process for treating mine drainage water at the Zarmitan and Karakutan mines in 2019. The mine drainage water is treated to remove heavy metals using physical and mathematical methods, which allows it to be reused for irrigating industrial crops. The implementation of this technology was monitored by the Innovation Center and the Service for Environmental Protection.

103-1, 103-2, 103-3, 306-2

According to the progress report on the implementation of the **Plan of Measures for Environmental Protection and Rational Use of Natural Resources at NMMC Core Assets**, NMMC implemented the following water protection measures in 2019:

Business unit	Measures	Result
Central Mine Group	Re-using wastewater from the finished water plant in the sorption and regeneration unit plant of GMZ-2	Saved <b>160 cubic meters</b> of water per day from surface sources
	Water spraying ore in the receiving bunker using the crusher oil cooler system	Ensured the rational use of <b>135,000 cubic meters</b> of water per day
	Pumping water from the mine at a rate of 120 cubic meters per hour and re-using it in the gold heap leaching plant Watering down the road at the Muruntau mine	Kept mine drainage operational, ensuring water pumping of at least <b>1 million cubic meters</b> per day
Northern Mine Group	Re-using treated sanitary discharge from Uchkuduk by applying technology capabilities of GMZ-3	Re-used <b>1,371,160 cubic meters</b> of treated sanitary water discharge
	Constructing observation wells	Constructed <b>866 observation wells</b>
	Re-using treated sewage water for watering urban green spaces and personal garden plots	Re-used <b>205,640 cubic meters</b> of treated sewage water
GMZ-1	Performing measurements, sampling and maintenance at observation wells in accordance with the approved monitoring schedule	Took <b>210 samples</b> overall
	Performing maintenance of drainage barrier wells	Performed maintenance of 200 wells
The Unified Energy Service	Promptly repairing water supply networks in Navoi and the Navoi industrial zone	Repaired <b>650 running meters of water supply lines</b>
Zarafshan Construction Department	Re-using treated water for vehicle washing	Re-used <b>800 cubic meters</b> of treated water discharge
Navoi Machine Building Plant	Performing maintenance of technical wells and analysis of subsoil water	Performed maintenance of <b>11 wells</b> .

NMMC strives to save water resources by in several ways, including by:

- Re-using water in technical processes
- Using the water recirculation system
- Using mine drainage and subsoil water
- Implementing drip irrigation
- Optimizing technology equipment operation.

NMMC has constructed a system that recirculates water from the existing tailings facility of GMZ-2 to the industrial site of GMZ-7. The designed capacity of the water recirculation system amounts to 1000 cubic meters per hour (8.8 million cubic meters per year). The total length of the water conduits is 30 km.

*In 2019, NMMC implemented a project to reconstruct sewage and treatment facilities at the Zarmitan site. The project entails increasing the productivity of sewage treatment facilities in the city of Zarkent using bioponds. Sanitary water discharge undergoes treatment using technology developed at Tashkent Research Institute VODGEO,<sup>1</sup> consisting of a natural biological treatment that uses macrophytes. Productivity is planned to be increased to 2,500 cubic meters per day. Treated water from sewage treatment facilities will be re-used for the sanitary and production needs of the Zarmitan industrial site at GMZ-4.*

<sup>1</sup> Tashkent Research Institute for Water Supply, Sewage, Hydrotechnical Facilities and Engineering Hydrogeology.

## Waste and Tailings Management

Professional waste and tailings management is a key part of NMMC's attempts to reduce the impact of NMMC's industrial operations on the environment.

NMMC transfers waste to licensed organizations for decontamination and utilization, disposes of it at its own production waste landfills and tailings facilities, or re-uses it in production processes.

Tailings are generated and deposited by the following gold producing business units of NMMC:<sup>2</sup> GMZ-1, GMZ-2, GMZ-3, GMZ-4, the Marjanbulak Gold Extraction Plant, and Auminzo-Amantoy Gold Extraction Plant. NMMC's enterprises generate over 50 million tons of waste a year as they process ore and concentrate. This waste is deposited in special tailings facilities constructed and operated in accordance with design documentation.

Structures for managing tailings include a storage unit and the tailings hydrotransportation system. Tailings facility basins have anti-filtration barriers and embankment dams. All tailings facilities are currently in operation.

NMMC operates tailings facilities in accordance with the **Safety Rules for Operating Tailings Facilities** approved by Order No. 28 of the Inspectorate Head of Sanoatkontekhnazorat of 14 February

Tailings facility location	Year of commissioning	Area, ha	Collected tailings, million tons
Hydrometallurgical plant No. 1 (GMZ-1) in Navoi	1964	782.13	85.7
Hydrometallurgical plant No. 2 (GMZ-2) in Tamdyn District of Navoi Region:	—	—	1,151.7
Tailings facility No. 1	1969	597	150
Tailings facility No. 2	—	—	1,001.7
Map No. 1	1975	2,500	—
Map No. 2	2004	2,460	—
Hydrometallurgical plant No. 3 (GMZ-3) in Uchkuduk of Navoi region	1995	720	103.6
Hydrometallurgical plant No. 4	2010	73.2	16.6
Marjanbulak Gold Extraction Plant	1980	63	20.5
Auminzo-Amantoy Gold Extraction Plant	2004	98	9

2006. Responsibility for complying with legislation pertinent to operating tailings facilities is defined in regulatory documents (regulations, job descriptions) approved by the head of the respective tailings facility. At the request of the State

Committee for Nature Conservation, NMMC provides data on waste disposal locations and consumption by NMMC's production units.

<sup>2</sup> The waste generated as a result of mineral processing consists mainly of mining spoil that has minimal useful content.

NMMC has developed **tailings facility accident remediation plans** for each tailings facility. These plans contain information on possible accident locations, necessary measures, available rescue and accident remediation resources, lists of responsible persons, and lists of mechanisms, tools and materials to be used during accident responses at tailings facility sites, as well as personal protective equipment (PPE).

Partial dam failures resulting from sludge line breakthrough result in loss of control; root causes may include installation of equipment, actions (omissions) of staff, natural and man-made disasters that may cause sludge spills or other

environmental pollution. Performing works in the polluted area requires safety measures to reduce external impacts on the environment, residential housing, etc. NMMC implements several such measures:

- Introduction of strict limits for impact factors
- Containment of pollution
- Organization work to ensure protection for all employees
- Keeping pollutants from spreading beyond operation sites.

Measures to protect personnel during accidents include preventing the entry of pollutants into the body or limiting them

to acceptable levels; preventing or limiting skin and respiratory tract contamination; and stemming the spread of pollutants outside the accident zone using PPE.

In the event of an accident, the area is divided in two zones following analysis, control and assessment of the situation: 1) a strict access area; 2) a security zone. Access to zone 1 requires wearing additional protective garments or additional PPE. In zone 2 it is sufficient to evacuate people to a safe area.

In 2019, in order to ensure the safety of tailings facility operations, NMMC implemented the following measures:

Tailings facility location	Measures
GMZ-1	In order to ensure the safe operation of tailings facility sections, NMMC performed the following works: <ul style="list-style-type: none"> <li>• Inspected and examined anti-mudflow dams</li> <li>• Inspected and examined dams used for flood discharge</li> <li>• Instructed specialists and workers of the emergency team, conducted trainings in dealing with high water conditions</li> <li>• Established 24-hour shift work to monitor water levels in tailings facilities and road conditions.</li> </ul>
GMZ-2	The company performed capital repair of trunk sludge lines 1 and 2, replaced 1.2 km of worn pipe and replaced and installed block and regulating valves on trunk sludge lines and spigots.
GMZ-3	The Uzgeorangmetliti Research Institute conducted applied research to monitor the tailings facility and dam section sluicing at the West and Distribution dams of GMZ-3 from the 159 m to 162 m elevation points. As part of this effort, the following work was accomplished: <ul style="list-style-type: none"> <li>• Monitored the condition of the tailings facility and developed recommendations on rational depositing of tailings in 2019</li> <li>• Conducted research to develop recommendations on the gravity sluicing of West and Distribution dam sections to the 162 m elevation point, thereby decreasing construction unit costs and extending the service life of the facility's current useful tailing storage tanks.</li> </ul>
GMZ-4	Specialists of the Uzgeorangmetliti Research Institute monitor the condition of the tailings facility on a quarterly basis, control the correctness of its operations, and provide summary reports with recommendations. Recommendations are implemented on a mandatory basis within required timelines.
Marjanbulak Gold Extraction Plant	Specialists of the Uzgeorangmetliti Research Institute monitor the condition of the tailings facility on a quarterly basis, control the correctness of its operations, and provide summary reports with recommendations. NMMC develops measures aimed at ensuring the tailing facility's sustainable operation, performs commissioning inspections of the facility, and addresses deficiencies immediately.
Auminzo-Amantoy Gold Extraction Plant	The company conducted applied research on the hydrotransportation system at the Auminzo-Amantoy Gold Extraction Plant's tailings facility; it issued recommendations on rational the transporting and depositing of tails to increase ore processing to 150,000 tons per month. It replaced 2.5 km of trunk sludge lines 1 and 2.

**Workshop on mine tailings safety in Central Asia**

NMMC participated in a UNECE Subregional Workshop<sup>1</sup> on improving mine tailings safety in Central Asia. It was held in Almaty (Kazakhstan) on 20-21 November 2019. The key objectives of the workshop were as follows:

- Improve mine tailings safety in Central Asia
- Foster awareness of persisting disaster risks, such as accidental water pollution, and describe ways to address them
- Share information and experiences on mine tailings safety in Central Asia: achievements, lessons learned, challenges, and individual countries' needs
- Present final and tentative results of two UNECE projects to improve the safety of mining operations, and especially tailings management facilities (TMFs), in Kazakhstan, Tajikistan and beyond in Central Asia
- Assist with the implementation of the Convention on the Transboundary Effects of Industrial Accidents and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, both serviced by UNECE
- Improve awareness of linkages with the 2030 Agenda for Sustainable Development, its Sustainable Development Goals, and the Sendai Framework for Disaster Risk Reduction 2015-2030
- Prepare regional consultation events as part of the project for Global Industry Standard on Tailings Management.

A document on the Global Standard for Tailings Management was prepared based on the results of the workshop; it will be used for public consultations.

<sup>1</sup> The United Nations Economic Commission for Europe is one of five regional commissions of the United Nations



**Production and Consumption Waste**

In 2019, NMMC's production units generated 48.7 million tons of industrial waste. Key waste categories include processed mined rock and tailings of gold ore generated by hydrometallurgical plants.

Hazard Class 3 waste was the most common category in 2019 (47,986 million tons, which is 1.4% above the 2018 level). The bulk of generated waste is sent to landfills (99%). In 2019, 53.1 million tons of waste were transferred for utilization and decontamination. For more details on the volume of waste and hazard classes, please refer to Appendix.

*NMMC's business units have introduced separate waste collection for metal scrap, plastic, used oil, used tires, waste paper, used batteries, and fluorescent and mercury-vapor lamps. The waste is deposited temporarily at specially equipped locations or tanks and subsequently transferred to specialized licensed organizations for decontamination or utilization, including extraction of valuable components.*

Inorganic dust is stored temporarily at production sites and then re-used in ore processing.

Silt generated from water settling is collected in silt screens and used in land reclamation in agriculture.

Limestone dust is stored temporarily at the production site and then re-used in ore processing at NMMC.

Sludge from hydrometallurgical processes is stored at tailings facilities. Depending on market demand and the availability of innovative technology, sludge can be used in the additional recovery of core metal and accompanying elements.

*In the reporting period, NMMC passed 7.5 tons of used polypropylene bags to third parties to produce pellets and re-use them.*

*A total of 473 tons of plastic waste were recycled to produce plastic pipes at a specialized plant at NMMC's Southern Mine Group in 2019.*

*Used tires were recycled to obtain furnace fuel and carbon black using pyrolysis at NMMC production units. In 2019, NMMC recycled 2,158.5 tons of scrap automotive tires. The following useful components were also extracted:*

- Magnetic fraction (for producing sulfuric iron)
- Waste vanadium catalyst (for producing vanadium).

*In 2019, 12,333 used mercury-containing lamps were recycled at the mercury recovery unit of the Central Mine Group.<sup>1</sup>*

<sup>1</sup> The removal of mercury and its compounds by applying physical, chemical and mechanical methods to prevent the poisoning of people and animals.



**Protection and Rational Use of Lands**

As of early 2019, NMMC had used 45,700 ha of allocated lands, of which 35,600 ha were disturbed as a result of mining operations. During the entire period of operation, NMMC reclaimed and returned to natural conditions 35,396,000 ha of lands disturbed as a result of mining operations.

In accordance with the **NMMC's Plan to Improve Environmental Conditions in Navoi Region**, in 2019 NMMC implemented the following environmental measures aimed at reducing its impact on lands:

Measures	Results
Construction of an anti-filtration screens at the tailings facility of GMZ-2 by means of sluicing in accordance with the recommendations of Uzgeorangmetliti Research Institute	<ul style="list-style-type: none"> <li>During construction of the project at the experimental section of Map No. 2, NMMC installed a polypropylene pipe running 3,220 meters long.</li> <li>Constructed the foundation for a trunk conveyor line and screening unit</li> </ul>
Capital construction as part of a project to construct facilities for processing industrial waste from the gold heap leaching plant in 2018-2021	<ul style="list-style-type: none"> <li>Constructed a technical water conduit 11.3 km long</li> <li>Completed construction of a 20,000 cubic meter technical water storage unit for the Gold heap leaching plant</li> <li>Assembled 90% of the main building frame of the grinding plant</li> </ul>
Capital construction as part of a project to upgrade and expand the GMZ-2 tailings facility (Stage 2) in 2016-2022	<ul style="list-style-type: none"> <li>Assembled the pipes at Map No. 1 of tailings facility No. 2</li> <li>Assembled the pipes at Map No. 2 of tailings facility No. 2 running 3,604 meters long</li> </ul>
Monitoring of the condition of the tailings facility and adjacent territories together with Uzbekistan's State Committee on Ecology	<ul style="list-style-type: none"> <li>Performed soil sampling at 27 controlled locations on lands adjacent to the tailings facility</li> <li>Monitored the condition of the tailings facility and adjacent territories twice a year jointly with the State Committee on Ecology</li> <li>Established that the amount of pollutants in the soil at the borders of sanitary protection zones of tailings facilities does not exceed current requirements and remains within the natural background</li> <li>Recorded no expansion in the contaminated soil area of the tailings facility's affected zone.</li> </ul>





According to the progress report on implementation of the **Plan of Measures for Environmental Protection and Rational Use of Natural Resources at NMMC Core Assets**, NMMC implemented the following land protection measures in 2019:

Business unit	Measures	Result
Central Mine Group	Reclamation of disturbed lands and return to natural conditions	Reclaimed 25 ha of land
	Prompt removal of industrial waste to specialized landfills and landfill maintenance	Removed 3,000 tons of industrial waste
	Prompt removal of magnetic fraction	Ensured prompt removal
Northern Mine Group	Dismantling equipment and pipelines at used landfills and liquidation of drainage shafts	Dismantled 6,000 meters of pipelines.
	Maintenance of the tailings facility of GMZ-3	Deposited 21,011,640 tons of sludge in the tailings facility, including 13,711,640 tons in the liquid phase and 7.3 million tons in the solid phase
Zarafshan Construction Department	Treatment and removal of construction waste from lands adjacent to the road leading to the industrial landfill	Removed 25 tons of waste
Navoi Machine Building Plant	Manufacturing of containers for production waste	Manufactured 30 containers, 90 cubic meters each
Scientific Production Center (SPC)	Technical reclamation of disturbed lands	Reclaimed 4.5 ha of lands
	Monitoring of soil contamination in the affected zone of the GMZ-1 tailings facility	Took 72 samples
Housing and utilities services	Regular cleaning of the plant's premises and removal of waste for disposal to the landfill	Removed 19,000 tons of waste
	Collection and disposal of used tires	Collected and disposed 25 used tires.

## 2020 Targets

*“Today, when people of the world over speak about our country, they increasingly use the term ‘the New Uzbekistan’. This is in recognition of the fact that in recent years we have entered a completely new stage of development, achieving significant progress on this path.”*

**Shavkat Miromonovich Mirziyoyev, President of the Republic of Uzbekistan**

NMMC has set the following environmental protection goals for 2020:

- Perform capital construction as part of a project to reconstruct the sewage network and facilities of the town of Zarkent in order to increase the capacity of waste treatment facilities up to 2,500 cubic meters per day
- Construct 260 of solar water heating units for hot water supply (223 GCal per year) in order to reduce consumption of non-renewable energy resources
- Fill the anti-radiation barrier at GMZ-1 with 1.2–1.3 million tons per year of tailings (waste) generated during the processing of gold ore for the environmental rehabilitation of the tailings facility at GMZ-1
- Continue upgrading and expanding the tailings facility at GMZ-2
- Perform capital construction as part of a project to reconstruct and expand the tailings facility of the Auminzo-Amantoy gold extraction plant
- Perform geotechnical control and monitoring of the condition of NMMC's tailing facility taken by Uzgeorangmetliti Research Institute, issue recommendations for the safe and correct placement of tailings.

In 2020, NMMC plans to implement the following energy consumption measures, which are expected to save fuel and energy resources:

- Use variable-frequency drive (16.5 million kWh)
- Introduce energy saving lighting devices (1.2 million kWh)
- Introduce the transistor power-to-motor system for crawler excavators (2.87 million kWh)
- Implement energy efficient equipment (10.77 million kWh)
- Install compensating devices at substations (22.86 million kWh)
- Upgrade and reconstruct equipment (16.4 million kWh)
- Optimize technical processes (1.9 million kWh)
- Install solar thermal collectors to ensure hot water supply at NMMC's facilities (0.018 million kWh);
- Introduce photovoltaic power plants at NMMC's facilities (0.074 million kWh).



# APPENDICES

102-55

## GRI Index Table

Number	Disclosure name	Reference	Page	Comment
<b>GRI 102: General Disclosures 2016</b>				
<b>1. Organizational profile</b>				
102-1	Name of the organization	About This Report Our Business at a Glance	10	
102-2	Activities, brands, products and services	Our Business at a Glance	10	
102-3	Location of headquarters	Our Business at a Glance	10	
102-4	Location of operations	Our Business at a Glance	10	
102-5	Ownership and legal form	Our Business at a Glance	10	
102-6	Markets served	Our Business at a Glance	10	
102-7	Scale of the organization	Our Business at a Glance	10	
102-8	Information on employees and other workers	HR Policy	46	
102-9	Supply chain	Supply Chain Management	38	
102-10	Significant changes to the organization and its supply chain	Our Business at a Glance GRI Index Table	38	There were no significant changes to the supply chain in 2019.
102-11	Precautionary Principle or approach	GRI Index Table	126	NMMC applies the Precautionary Principle to risk management.
102-12	External initiatives	Our Business at a Glance	14	
102-13	Membership of associations	Our Business at a Glance	126	Collaboration with industrial and human rights organizations will continue as part of the company's reorganization and the creation of a joint-stock company based on part of NMMC's property.
<b>2. Strategy</b>				
102-14	Statement from senior decision-maker	General Director's Statement	6	
102-15	Key impacts, risks, and opportunities	Risk Management	28	
<b>3. Ethics and integrity</b>				
102-16	Values, principles, standards, and norms of behavior	Business Ethics and Anti-Corruption	29	
102-17	Mechanisms for advice and concerns about ethics	Business Ethics and Anti-Corruption	29	

Number	Disclosure name	Reference	Page	Comment
<b>4. Corporate governance</b>				
102-18	Governance structure	Corporate Governance	25	
102-19	Delegating authority	Corporate Governance	26	
102-20	Executive-level responsibility for economic, environmental, and social topics	Corporate Governance	26	
102-21	Consulting stakeholders on economic, environmental, and social topics	Corporate Governance	26	
102-22	Composition of the highest governance body and its committees	Corporate Governance	26	
102-23	Chair of the highest governance body	Corporate Governance	26	
102-24	Nominating and selecting the highest governance body	Corporate Governance	26	
102-25	Conflicts of interest	Business Ethics and Anti-Corruption	26, 29, 127	In 2019, the company launched a reorganization, creating a joint-stock company based on part of the property of NMMC SC. Therefore, no conflicts of interest resulting from cross-membership, cross-shareholding, etc. were recorded.
102-26	Role of highest governance body in setting purpose, values, and strategy	Corporate Governance	26	
102-27	Collective knowledge of highest governance body	Corporate Governance	26	
102-28	Evaluating the highest governance body's performance	Corporate Governance	27	
102-29	Identifying and managing economic, environmental, and social impacts	Corporate Governance	27	
102-30	Effectiveness of risk management processes	Risk Management	28	
102-31	Review of economic, environmental, and social topics	Corporate Governance	27	
102-32	Highest governance body's role in sustainability reporting	About This Report	4	
102-36	Process for determining remuneration	HR Policy	50	
102-38	Annual total compensation ratio	HR Policy	50	
<b>5. Stakeholder Engagement.</b>				
102-40	List of stakeholder groups	Stakeholder Engagement.	16	
102-41	Collective bargaining agreements	Our Approach to Employee Engagement; Social Security	44, 56	

Number	Disclosure name	Reference	Page	Comment
102-42	Identifying and selecting stakeholders	Stakeholder Engagement		The working group identified stakeholder groups based on the materiality of the company's impact on them and their influence on the company's ability to implement its development strategy and achieve its goals.
102-43	Approach to stakeholder engagement	Stakeholder Engagement	16-17	
102-44	Key topics and concerns raised	Stakeholder Engagement	16-17	Partial disclosure due to the lack of information on the breakdown of key topics by stakeholder groups
<b>6. Reporting practice</b>				
102-45	Entities included in the consolidated financial statements	About This Report	4	
102-46	Defining report content and topic Boundaries	Determining Material Topics	4	
102-47	List of material topics	Determining Material Topics	4, 128	The company relied on the principles for determining the content of non-financial reporting defined in the GRI standards when determining the content and structure of the Report.
102-48	Restatements of information	About This Report	128	The 2019 NMMC Sustainability Report is the first of its kind published by the company.
102-49	Changes in reporting	About This Report	128	The 2019 NMMC Sustainability Report is the first of its kind published by the company.
102-50	Reporting period	About This Report	4	
102-51	Date of most recent report	About This Report	128	The 2019 NMMC Sustainability Report is the first of its kind published by the company.
102-52	Reporting cycle	About This Report	4	
102-53	Contact point for questions regarding the report	Contacts	4	First Deputy General Director Olga Ponkratova Telephone: +998 79 22-77-232 E-mail: info@ngmk.uz
102-54	Claims of reporting in accordance with the GRI Standards	About This Report	4	
102-55	GRI content index	GRI Index Table	126	
102-56	External assurance	GRI Index Table	129	The 2019 NMMC Sustainability Report was not subject to external assurance.

Number	Disclosure name	Reference	Page	Comment
<b>GRI 103: Management approach 2016</b>				
103-1	Explanation of the material topic and its Boundary	Determining Material Topics Corporate Governance Economic Stability;	4, 24, 29, 33, 43, 71, 81, 97	
103-2	The management approach and its components	Our Approach to Employee Engagement; Our Approach to Employee Engagement; Occupational Health and Safety Management; Environmental Management; Management Approach to Energy Consumption; Waste and Tailings Management; Responsible Water Consumption; Respect for Human Rights		
103-3	Evaluation of the management approach			
<b>GRI 200: Economic standards</b>				
<b>GRI-201: Economic performance 2016</b>				
201-1	Direct economic value generated and distributed	Financial and Operational Performance	35	
201-4	Financial assistance received from government	GRI Index Table	129	NMMC did not receive financial aid from the state in 2019. 100% of shares in JSC NMMC will be owned by the state.
<b>GRI 202: Market presence 2016</b>				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	HR Policy	50	
<b>GRI 203: Indirect economic impacts 2016</b>				
203-1	Infrastructure investments and services supported	Contribution to the Development of the Company's Regions of Operation	73, 74, 76	
203-2	Significant indirect economic impacts	Contribution to the Development of the Company's Regions of Operation	73	
<b>GRI 204: Procurement practices 2016</b>				
204-1	Proportion of spending on local suppliers	GRI Index Table	129	The share of procurements from local suppliers in national currency amounted to 70%.
<b>GRI 205: Anti-corruption 2016</b>				
205-3	Confirmed incidents of corruption and actions taken	Business Ethics and Anti-Corruption	130	In 2019, there were no confirmed cases of corruption or corruption-related litigations or non-renewal or termination of contracts with business partners due to violations.

Number	Disclosure name	Reference	Page	Comment
<b>GRI 300: Environmental standards</b>				
<b>GRI 302: Energy 2016</b>				
302-1	Energy consumption within the organization	Energy Efficiency	104	
302-3	Energy intensity	Energy Efficiency	105	
302-4	Reduction of energy consumption	Energy Efficiency	106	
<b>GRI 303: Water and effluents 2018</b>				
303-1	Interactions with water as a shared resource	Responsible Water Consumption Appendices	115, 137	
303-2	Management of water discharge-related impacts	Responsible Water Consumption	115	
303-3	Water withdrawal	Responsible Water Consumption Appendices	115, 138	
303-4	Water discharge	Responsible Water Consumption	115	
303-5	Water consumption	Responsible Water Consumption	117	
<b>GRI 305: Emissions 2016</b>				
305-1	Direct (Scope 1) GHG emissions	Air Protection	114	
305-5	Reduction of GHG emissions	Air Protection	105	
<b>GRI 306: Effluents and waste 2016</b>				
306-2	Waste by type and disposal method	Waste and Tailings Management; Appendices	122, 139	
306-3	Significant spills	GRI Index Table	130	No significant spills at the company's premises were recorded in 2019.
<b>GRI 307: Non-compliance with environmental laws and regulations</b>				
307-1	Significant fines and non-monetary sanctions for non-compliance with environmental laws and/or regulations	GRI Index Table	130	No fines or non-financial sanctions were imposed on the company by regulatory authorities in 2019.
<b>GRI 400: Social topics</b>				
<b>GRI 401: Employment 2016</b>				
401-1	New employee hires and employee turnover	Talent Acquisition	47	
401-3	Parental leave	Social Security	57	

Number	Disclosure name	Reference	Page	Comment
<b>GRI 402: Labor/Management Relations 2016</b>				
402-1	Minimum notice periods regarding operational changes	GRI Index Table	131	The minimum notice period with respect to significant operational changes (i.e. the period during which the company is obligated to notify all employees about changes to the company's structure, e.g. a merger or spin-off) is at least two months.
<b>GRI 403: Occupational health and safety 2018</b>				
403-1	Occupational health and safety management system	Occupational Health and Safety Management	81	
403-2	Hazard identification, risk assessment, and incident investigation	Prevention of Occupational Injuries and Diseases	85	
403-3	Occupational health services	Prevention of Occupational Injuries and Illnesses	85	
403-4	Worker participation, consultation, and communication on occupational health and safety	Prevention of Occupational Injuries and Illnesses	92	
403-5	Worker training on occupational health and safety	Promoting a Culture of Safety and Training in OHS, Industrial Safety, and Emergency Response	92	
403-6	Promotion of worker health	Prevention of Occupational Injuries and Illnesses	85	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Prevention of Occupational Injuries and Illnesses	85	
403-8	Workers covered by an occupational health and safety management system	Prevention of Occupational Injuries and Illnesses	81	
403-9	Work-related injuries	Occupational Health and Safety Management	85, 131, 136	The percentage of work-related injuries among the employees of contractor organizations was not calculated. Fatalities/injury rates were calculated on the basis of 1,000,000 hours worked.
<b>GRI 404: Training and education 2016</b>				
404-1	Average hours of training per year per employee	Appendices	52, 134	
404-2	Programs for upgrading employee skills and transition assistance programs	Employee Training and Development	52	
<b>GRI 405: Diversity and equal opportunity 2016</b>				
405-1	Diversity of governance bodies and employees	HR Policy	46, 135	
405-2	Ratio of basic salary and remuneration of women to men	HR Policy	50	

Number	Disclosure name	Reference	Page	Comment
<b>GRI 412: Human rights assessment 2016</b>				
412-1	Operations that have been subject to human rights reviews or impact assessments	HR Policy	49	
412-2	Employee training on human rights policies or procedures	GRI Index Table	132	No training on human rights policies or procedures was delivered to employees in 2019.
<b>GRI 413: Local Communities 2016</b>				
413-1	Operations with local community engagement, impact assessments, and development programs	Social Responsibility and Managing Regional Development	73	
413-2	Operations with significant actual and potential negative impacts on local communities	GRI Index Table	132	The company has no business units with significant actual and potential negative impacts on local communities. Nevertheless, NMMC is aware of the risk that its operations may have a negative impact on the regions where the company operates. It takes appropriate measures to reduce this impact through urban and community improvement programs, as well as its charitable and investment activities. No significant negative impacts were recorded in the reporting period.
<b>GRI 415: Public policy 2016</b>				
415-1	Monetary value of financial and in-kind political contributions	GRI Index Table	132	The company did not make any political contributions in 2019.
<b>GRI 419: Socioeconomic compliance 2016</b>				
419-1	Non-compliance with laws and regulations in the social and economic area	GRI Index Table	132	There were no cases of non-compliance with socio-economic laws and regulations in 2019.

## Glossary

- EBITDA – Earnings before interest, taxes, depreciation and amortization
- GSM/GPRS modem – A two-range hardware device ensuring voice connection and wireless data transfer
- JSC – Joint-stock company
- AMRCS – Automated meter reading and control system
- AMSOS – Automated Management System for Occupational Safety
- AMSSHP – Automated Management System for Safety and Health Protection
- UAV – Unmanned aerial vehicle
- GMZ – Hydrometallurgical plant
- SC – State Company
- kW – Kilowatt
- kWh – Kilowatt-hour
- KPI – Key performance indicators
- LSU – Local sorption unit
- HF – Healthy food
- PTL – Power transmission lines
- IFRS – International Financial Reporting Standards
- NSMI – Navoi State Mining Institute
- NMMC – Navoi Mining and Metallurgical Combinat
- R&D – Research and development
- NMBP – Navoi Machine Building Plant
- STB – Science and Technology Board
- EPS – Environmental protection service
- OHS – Occupational health and safety
- SHP – Safety and health protection
- UES – Unified Energy Service
- PS – Production supervision
- PPE – Personal protective equipment
- QMS – Quality management system
- QCS – Quality control samples
- TUB – Trade Union Board
- SRDS – Samarkand regional dispatch service
- HSMS – Health and Safety Management System
- TSTU – Tashkent State Technical University
- Oz – ounce
- CRDL – Central R&D Laboratory
- CDB – Central Design Bureau
- CPB – Central Project Bureau
- CMG – Central Mine Group
- GSP – Grid and substation plants
- SDG – Sustainable development goals
- CPCL – Central Physics and Chemistry Laboratory
- CEODS – Central Energy Operative Dispatch Service
- CETL – Central Electric and Technical Laboratory
- ERPS – Emergency Response and Production Supervision

# Tables and Supplementary Information

## Supplementary Information for the “Employees” Section

Additional information relating to GRI 404-1: Average hours of training per year per employee

	2019	2018
<b>Training hours by position</b>		
Managers, specialists and office employees	131,490	149,313
Workers	2,195,854	1,907,155
<b>Total</b>	<b>2,327,344</b>	<b>2,056,468</b>
<b>Training hours by gender</b>		
Women	240,232	218,474
Men	2,087,112	1,837,994
<b>Total employees by position</b>		
Managers, specialists and office employees	8,956	8,910
Shop-floor employees	32,301	31,723
<b>Total</b>	<b>41,257</b>	<b>40,633</b>
<b>Total employees by gender</b>		
Women	9,761	9,735
Men	31,496	30,898
<b>Average annual training hours by position and gender</b>		
<b>Average annual training hours by position</b>		
Managers, specialists and office employees	15	17
Shop-floor employees	68	60
<b>Average</b>	<b>56</b>	<b>51</b>
<b>Average annual training hours by gender</b>		
Women	25	22
Men	66	59

Additional information relating to GRI 405-1: Diversity of governance bodies and employees

Total employees	Aged under 30		Aged 30-50		Over 50		Total employees	
	2019	2018	2019	2018	2019	2018	2019	2018
<b>Total managers, specialists and office employees</b>	<b>1,362</b>	<b>1,434</b>	<b>5,822</b>	<b>5,756</b>	<b>1,772</b>	<b>1,720</b>	<b>8,956</b>	<b>8,910</b>
Women	601	626	2,215	2,222	585	542	3,401	3,390
Men	761	808	3,607	3,534	1,187	1,178	5,555	5,520
<b>Managers</b>	<b>272</b>	<b>308</b>	<b>2,451</b>	<b>2,434</b>	<b>878</b>	<b>869</b>	<b>3,601</b>	<b>3,611</b>
Women	17	21	254	268	146	136	417	425
Men	255	287	2,197	2,166	732	733	3,184	3,186
<b>Specialists</b>	<b>964</b>	<b>1,003</b>	<b>3,173</b>	<b>3,120</b>	<b>838</b>	<b>802</b>	<b>4,975</b>	<b>4,925</b>
Women	483	507	1,800	1,789	403	374	2,686	2,670
Men	481	496	1,373	1,331	435	428	2,289	2,255
<b>Office employees</b>	<b>126</b>	<b>123</b>	<b>198</b>	<b>202</b>	<b>56</b>	<b>49</b>	<b>380</b>	<b>374</b>
Women	101	98	161	165	36	32	298	295
Men	25	25	37	37	20	17	82	79
<b>Total workers</b>	<b>9,827</b>	<b>9,707</b>	<b>17,692</b>	<b>17,384</b>	<b>4,782</b>	<b>4,632</b>	<b>32,301</b>	<b>31,723</b>
Women	1,526	1,586	3,943	3,934	891	825	6,360	6,345
Men	8,301	8,121	13,749	13,450	3,891	3,807	25,941	25,378
<b>Total</b>	<b>11,189</b>	<b>11,141</b>	<b>23,514</b>	<b>23,140</b>	<b>6,554</b>	<b>6,352</b>	<b>41,257</b>	<b>40,633</b>
Women	2,127	2,212	6,158	6,156	1,476	1,367	9,761	9,735
Men	9,062	8,929	17,356	16,984	5,078	4,985	31,496	30,898

## Supplementary Information to the “Occupational Health and Safety” Section

Additional information relating to GRI 403-9: Work-related injuries.<sup>1</sup>

	Indicator	Unit of measurement	Value	
			2019	2018
Average headcount	–	Number of people	37,173	37,021
Man-hours worked	–	man-hours	100,228,387.2	98,681,068.5
Total work-related accidents, including:	–	Number of occurrences	46	43
Fatalities	–	Number of occurrences	3	4
Accidents with more than one injured person	–	Number of occurrences	3	2
People injured, including:	–	Number of people	49	47
Fatalities	FA	Number of people	8	5
Severe injuries	–	Number of people	25	17
Minor injuries	–	Number of people	24	25
People injured in collective accidents, including:	–	Number of people	6	3
Fatalities	–	Number of people	5	1
Severe injuries	–	Number of people	1	2
Minor injuries	–	Number of people	–	–
Work-related injuries that resulted in a temporary inability to work	LTI	Number of people	24	25
Injuries that resulted in a temporarily restricted ability to work (but transfer to a less strenuous job is possible without a reduction in productivity)	RWC	Number of people	3	2
Injuries that required medical treatment without reduction in productivity (minor injuries)	MTC	Number of people	–	–
Total work-related injuries registered	TRI	Number of occurrences	46	43
Fatality accident rate	FAR	Per 1 million hours	0.08	0.05
Total recordable injury frequency rate	TRIFR	Per 1 million hours	0.46	0.43
Lost time injury frequency rate	LTIFR	Per 1 million hours	0.46	0.44

<sup>1</sup> Data on the precious metals segment is presented, for more details, refer to “About the Report”.

## Supplementary Information to the “Environmental Responsibility” Section

Additional information relating to GRI 303-1: Interactions with water as a shared resource and “List of NMMC’s water withdrawal locations”:

### Surface water sources:

- 1) Source of water supply: Amu Darya River; key consumers of service and potable water: GMZ-2, GMZ-3, GMZ-5, GMZ-7, residents of Zarafshan, Uchkuduk and other cities and towns, industrial and social consumers in the Zarafshan-Uchkuduk area
- 2) Source of water supply: Zarafshan River; the water is used for the sanitary and drinking needs of Navoi, Karmana, and other towns in the region, as well as industrial enterprises (GMZ-1, NMBP, GMZ-5, JSC Navoi Thermal Power Plant, JSC Navoiyazot, JSC Elektrokhimzavod)
- 3) Source of water supply: Tusunsay Reservoir; the water is used to supply service and potable water to GMZ-4, the industrial site of the Zarmitan mine, and the residents of Zarkent.

### Groundwater sources:

- 1) Zarafshan-Uchkuduk Districts: Karakata, Beshbulak, Minbulak water deposits
- 2) Samarkand Region: Alyami, Janub, Damhodzha, Baytoup water deposits
- 3) Jizzakh Region: Sangzor water deposit
- 4) The city of Navoi: Damhodzha water pipeline.

## Additional information relating to GRI 303-3: Water withdrawal:

Total water withdrawal in areas with water stress (million liters) Unit of measurement '000 cubic meters	2019	2018
<b>Surface water</b>	106,356.20	103,151.90
Including fresh water	106,356.20	103,151.90
Including other water resources	—	—
<b>Underground water</b>	12,205.00	11,621.80
Including fresh water	4,350.90	4,365.80
Including other water resources	7,854.10	7,256.00
<b>Mine drainage waters</b>	1,961.3	2,142
Including fresh water	—	—
Including other water resources	1,961.3	2,142
<b>Water provided by third parties, including</b>	—	—
Wastewater from other entities	—	752.14
Including fresh water	—	752.14
Including other water resources	—	—
Municipal and other water supply systems	797.09	117,667.84
Including fresh water	773.40	108,269.84
Including other water resources	23.69	9,398.00
<b>Total water withdrawn</b>	121,319.59	117,667.84
Including fresh water	111,480.50	108,269.84
Including other water resources	9,839.09	9,398.00

## Additional information relating to GRI 306-2 Waste by type and disposal method:

Total hazardous waste by disposal method, '000 tons	2019	2018
<b>disposed of at NMMC's waste storage facilities</b>	48,655,049.9	47,987,459.8
Hazard class 1	49.2	50.1
Hazard class 2	106.5	104.7
Hazard class 3	48,653,628.9	47,986,108.8
Hazard class 4	1,265.3	1,196.2
Hazard class 5	—	—
<b>On-site storage</b>	2,056.3	2,158.5
Hazard class 1	—	—
Hazard class 2	—	—
Hazard class 3	—	—
Hazard class 4	2,056.3	2,158.5
Hazard class 5	—	—
<b>Recycling</b>	53,142.63	54,998.53
Hazard class 1	—	—
Hazard class 2	6,531.73	6,661.73
Hazard class 3	745.8	875.8
Hazard class 4	45,865.1	47,461
Hazard class 5	—	—
<b>Decontamination</b>	0.27	0.27
Hazard class 1	0.27	0.27
Hazard class 2	—	—
Hazard class 3	—	—
Hazard class 4	—	—
Hazard class 5	—	—
<b>Incineration</b>	1.3	1.3
Hazard class 1	1.3	1.3
Hazard class 2	—	—
Hazard class 3	—	—
Hazard class 4	—	—
Hazard class 5	—	—
<b>Total</b>	48,710,250.4	48,044,618.4
<b>Hazard class 1</b>	50.8	51.7
<b>Hazard class 2</b>	6,638.2	6,766.4
<b>Hazard class 3</b>	48,654,374.7	47,986,984.6
<b>Hazard class 4</b>	49,186.7	50,815.7
<b>Hazard class 5</b>	—	—

