

Orano Mining


Corporate Social Responsibility Report

2020 Edition



orano

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Cover picture: Kanzhugan mine,
Kazakhstan

Orano Mining, RSE Direction
June 2021

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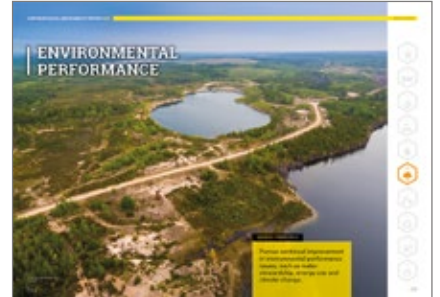
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MESSAGE FROM

Nicolas MAES

Orano Mining CEO



The year 2020 was turned upside down by the COVID crisis. From the very beginning of the pandemic, Orano and all of its mining companies in Canada, Gabon, Kazakhstan, Namibia, Niger, Mongolia and Uzbekistan engaged in multiple solidarity actions. Aimed at employees and subcontractors, but also at local communities, these actions included the deployment of preventive measures, the provision of medical supplies, equipment and consumables, the training of medical teams, and also initiatives to raise awareness among the public. In the countries where we operate, we have devoted more than 1,200,000 euros to these initiatives.

The health crisis has had a significant impact on the mining industry and for preventive reasons led to the temporary closure of some of our mines and plants. Nevertheless, all our employees remained mobilized to fulfill our commitments and displayed great professionalism and solidarity.

Against this troubled backdrop, and because they are driven by the desire for continuous progress, Orano Mining's employees, together with their internal and external stakeholders, participated fully in the process to establish clear and measurable corporate social responsibility commitments. At the beginning of 2021, this collaborative undertaking led Orano's Board of Directors to validate a new strategic vision for the Group, including its purpose, values, and strong commitments, with regard to the preservation of the climate, natural resources, and health.

Orano Mining's commitments are now clearly set out across five strategic pillars: Communities, Climate, Competencies, Customer Growth and Cash. Aimed at a



time frame stretching to 2030, with progress points in 2025, our commitments are backed by our employees, who are both ambassadors for these commitments and responsible for their deployment.

Among the commitments, some key ones include:

- the "Communities" pillar, where the priority is to manage the end of life and closure of the COMINAK mine in Niger with the transition and remediation of the site to be conducted in the most responsible manner possible. It is an earnest commitment that we owe to all stakeholders, employees, subcontractors, suppliers, and local communities.
- **Climate**, where our objective for 2025 is to achieve a 40% reduction in our CO2 emissions compared to 2015. Several feasibility studies have already been launched and should bear fruit in 2021, for instance for the construction of a solar power plant on the SOMAÏR site in Niger.
- **Competencies**, where we are concentrating on employee development with personalized training plans, and intercultural exchanges, including an increase in expatriation between countries. We are also committed to the development of skills within the communities in which we operate, through the deployment of new partnerships in the education sector.

In this report, we are giving a transparent account of our approach and our achievements in 2020.

In accordance with the GRI guidelines, we are applying, as of this year, the new ICMM (International Council on Mining and Metals) standard and meet the 38 performance expectations set out in the ten mining principles.



In 2020, we pursued our process of transparency, by disclosing, in compliance with the requirements of the EITI (Extractive Industries Transparency Initiative) and in accordance with our commitment, the mining contracts and licenses concluded with local governments which are not subject to legal, regulatory or contractual confidentiality obligations.



This ICMM framework is based on the values of its 27 member companies and 35 member associations and on a global consultation initiated in April 2018 and finalized with stakeholders in early 2020.

Here are the highlights of 2020 that I would like to share with you.

Health, safety and risk management

In 2020, we reported with deep regret a fatal accident at the SOMAÏR site in Niger. An operator guiding stockpile operations was struck by a rock that fell from a truck during a surface guiding operation. Following this tragic accident, several actions were decided upon, including the elimination of the role of stockpile guide operator and the intensification of discussions underway on systems to reduce the risk of collisions between vehicles and pedestrians.

Each accident is one too many, and we all have a duty to continue to relentlessly pursue our efforts on safety.

Despite this fatal accident, the total number of lost-time accidents recorded is declining, in line with our objective. To continue improving our safety culture, we are implementing reinforced safety protocols at each of our sites.

In terms of industrial events, the situations we experienced in 2020, though without human consequences or impact on the environment, lead us to keep consolidating our risk management plans, in particular those related to the processes at our facilities. This will be one of the priority areas for 2021.

Business continuity in 2020

I would like to thank all the employees for their work commitment and their resourcefulness, particularly in the production effort. Thanks to the commitment, solidarity and resilience shown by all Orano Mining teams, we have succeeded in meeting our commitments to our customers and fulfilling our deliveries in a difficult context

In Niger, our colleagues at SOMAÏR and COMINAK were able to meet their production targets, despite the very particular context with the COMINAK closure scheduled for March 2021. SOMAÏR has worked on optimizing its costs, in particular through innovation and digitization, and continued its structural adaptation work with a new leaching area. These efforts have made it possible to convert a significant portion of resources into reserves and to extend the life of the SOMAÏR mine by several years.

In Kazakhstan, our drilling activities were suspended for more than four months. However, thanks to the flexibility of the teams in terms of on-site rotas, production delays have been greatly reduced.

In Canada, in order to preserve the health of employees and local communities, the McClean Lake mill that we operate and the Cigar Lake mine operated by our partner Cameco were shut down from the start of the health crisis in March until September. Orano Mining Canada took advantage of the McClean Lake shutdown to complete plant upgrades and increase processing capacity to 55 kt of ore per year. Unfortunately, the resurgence of the epidemic crisis at the end of the year, led Cameco and also Orano Mining Canada, to once again suspend their activities in December 2020.

Exploration and development of projects

Despite the pandemic, in 2020 Orano Mining continued to move forward with its projects. To prepare for the future, we are continuing to develop the most comprehensive portfolio of projects in the sector.

This is notably the case in the Republic of Uzbekistan where two exploration licenses have been awarded to Nurlikum Mining (Orano's subsidiary in Uzbekistan). Our teams have started exploration work with borehole sampling in the Kyzylkum desert in order to improve the classification of the resources already identified and to discover new resources.

In Mongolia, Badrakh Energy (Orano Mining's subsidiary in Mongolia) has started processing the uranium-loaded resins from the 2011 pilot at its new Zuuvch Ovoo industrial facility. This launch was performed in line with authorizations and licenses obtained and in accordance with the programs approved by the competent authorities. Acidification of the cells of the Zuuvch Ovoo pilot plant should start in 2021 as soon as the necessary licenses are granted.

In Niger, at Imouraren, optimization studies for the project are underway and the first survey of hydrogeological parameters has been completed. These studies are aimed at assessing the feasibility of operating with new extraction methods that reduce operating costs.

In Kazakhstan, after having obtained the mining license for the South Tortkuduk deposit, the project's development is continuing. The Kanjungan land permit obtained at the end of 2019 will extend the mining of the Muyunkum deposit and allow the transition to the South Tortkuduk deposit.

Together, these projects will help provide a reliable, diversified and predictable supply of uranium over the long term.

In France, at the Bessines-sur-Gartempe site, construction of the new Center for Innovation in Extractive Metallurgy (Centre d'Innovation en Métallurgie Extractive – CIME), which represents an investment of more than 30 million euros, has continued and is scheduled for completion during 2021. With this modernization of a key Orano Mining's industrial asset, CIME will enable our teams to continue to develop cutting-edge services, ranging from studies to industrial pilots.

We should also note the continuation of photovoltaic projects within the framework of the redevelopment of former mining sites, with the launch of two new solar PV farms in Haute-Vienne, France, on the Bessines and Montamassacrot sites. They are part of a program comprising thirteen projects in total which should make it possible to develop 200 hectares and produce, by 2025, 130 MWp, equivalent to the average electricity consumption of 65,000 households.

Commercial performance reasserted

Our efforts in terms of business continuity and meeting delivery commitments have enabled us to maintain customer satisfaction and to continue discussions for the signing of new contracts. So, against a background of disrupted prices in which the spot price stabilized at the end of 2020 at around US\$30/lb but with the long-term indicator remaining depressed, our teams have been able to maintain sales activity by winning new contracts with our customers in Europe, Asia and the United States.

Environmental performance

As a member of the ICMM, Orano has worked within the independent working group "Global Tailings Review" for the establishment of an international standard on tailings management.

Launched in August 2020, the Global Industry Standard on Tailings Management developed by the United Nations Environment Program (UNEP), Principles for Responsible Investment (an investor network supported by the United Nations) and the International Council on Mining and Metals (ICMM), aims to achieve the ultimate goal of zero harm to people and the environment. This standard embodies a radical change in terms of transparency, accountability and protection of the rights of those affected and concerned by projects.

Orano Mining is committed to implementing this standard and respecting the deadlines for its deployment in 2023 and 2025 and the expected level of transparency.

We are constantly seeking innovative solutions to minimize our environmental impact and improve our operational performance. We have a pool of around 100 projects in our four main disciplines - geoscience, mining, chemistry, processes, and the environment.

One example is the IronBiox project, an innovative static leaching process that uses an oxidative unit based on bio-organisms. This is a less costly, less restrictive and less environmentally damaging solution. This project is currently being tested at the SOMAÏR site in Niger.

Engagement with stakeholders to establish constructive and transparent relationships

In 2020, we pursued our process of transparency, by publishing CSR reports for most of our sites, allowing us to be accountable, and by disclosing, in compliance with the requirements of the EITI (Extractive Industries Transparency Initiative) and in accordance with our commitment, the mining contracts and licenses concluded with local governments which are not subject to legal, regulatory or contractual confidentiality obligations.

To strengthen the relations of trust and transparency established with stakeholders close to where we conduct our activities, we set up a mechanism for the management of grievances. The first reports will be published by each site at the end of 2021.

We will continue to report on the fulfillment of our commitments after the closure of COMINAK via a dedicated website and will continue the dialogue and meetings with national and local stakeholders. At all our sites, we will continue to inform and share the actions we are taking from a social, environmental, and economic point of view.

It is our responsibility and it is enshrined in our very purpose to broaden our scope of action, to provide concrete solutions and to connect even more with our environment, today and for tomorrow.



Orano Group PROFILE

“Orano, giving nuclear energy its full value.”

As a recognized international operator in the field of nuclear materials, Orano delivers solutions to address present and future global energy and health challenges.

Its expertise and mastery of cutting-edge technologies enable Orano to offer its customers high value-added products and services throughout the entire fuel cycle.

Every day, the Orano group's 16,500 employees draw on their skills, unwavering dedication to safety and constant quest for innovation, with the commitment to develop know-how in the transformation and control of nuclear materials, for the climate and for a healthy and resource-efficient world, now and tomorrow.

GOVERNANCE

Orano's governance is supported by a Board of Directors, an Executive Committee and four specialised committees that issue opinions and recommendations: the Strategic and Investment Committee, the Audit and Ethics Committee, the Appointments and Compensation Committee, the End of Cycle Obligations Monitoring Committee

The Board of Directors is chaired by Claude Imauven. Philippe Knoche is the Group's Chief Executive Officer.

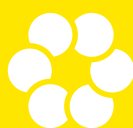
More information on Orano annual report



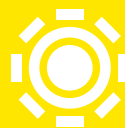
Mining



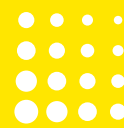
Uranium conversion and enrichment



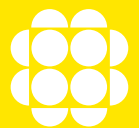
Used fuel recycling



Nuclear logistics



Dismantling and services



Engineering

ORANO MINING KEY FIGURES 2020



1,079 M€

revenue
(34% of Orano revenue)



4

sites in production in 3 countries



3,445

employees*



4.4 M€

community investments***



7,263

tons of uranium



73%

of purchasing volume comes from the
countries in which we are based



TOP 3

worldwide
in its businesses



98%

of our employees are
from the host country

* Number of Orano Mining employees - all types of contracts combined

** Including collaboration agreements with the indigenous communities in Canada

Mining activities

The group's mining activities concern the production and commercialization of natural uranium used after enrichment to make fuel for nuclear reactors.

Orano counts among the world's leading producers of uranium with competitive production costs and cutting-edge extraction techniques implemented in mines in operation in Canada, Kazakhstan and Niger.

The principal line operations of the Mining Business Unit follow the lifecycle of a mine, i.e.:

- exploration: search for new deposits;
- developing mining projects: detailed studies, procurement and construction;
- production: extraction of uranium ore using various mining techniques, and ore processing (concentration of natural uranium by chemical means); and
- site redevelopment and conversion after operation: rehabilitation of mining sites in accordance with current environmental standards, followed by environmental monitoring.

Committed to its role as a responsible mining company, Orano conducts its mining activities in a manner that fully respects people and the environment and contributes to the economic development of local regions and their populations.

The amount of uranium produced annually by Orano is enough to supply the electricity needs of a country such as Spain.

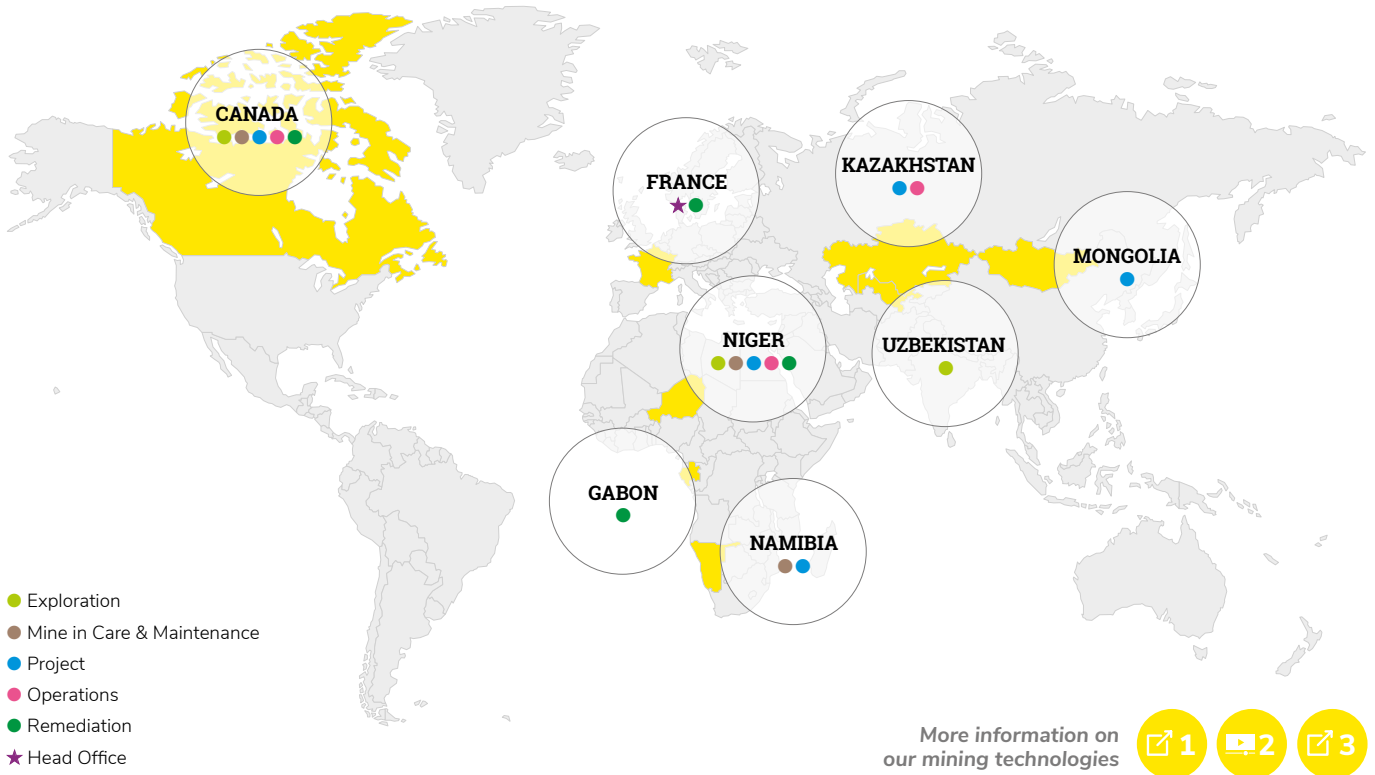
The production of the same amount of electricity from coal would have resulted in the release of 240 million additional tons of GHG.

Orano Mining has a diverse assets and portfolio, which constitutes an important security factor for utilities seeking long-term guarantees with regard to uranium supplies.

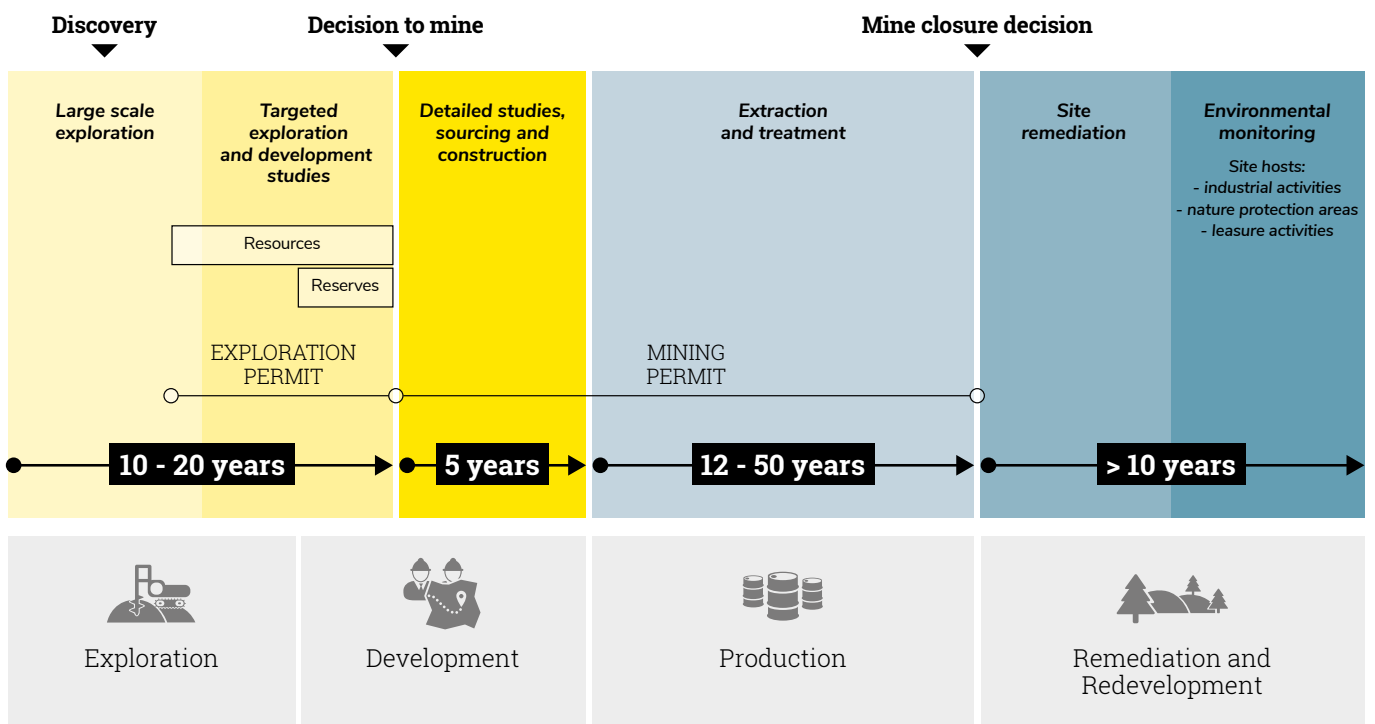
More information on Orano Mining innovation



OUR MAIN MINING SITES



MINING LIFE CYCLE



ORANO MINING GOVERNANCE AND ORGANISATION

The Mining Business Unit includes all the Orano’s mining activities “Orano Mining Mines SA” and “mining operations” abroad and in France.

The method of exercise of the General Management of the company, namely the separation of the functions of Chairman of the Board of Directors and Chief Executive Officer, has been in place since February 2016.

The Mining Business Line is managed by M. Nicolas Maes since November 1, 2018. He chairs the Mining Business Unit Management Committee which includes the operational directors, the directors of support functions involved in mining activities and the directors of the main subsidiaries.

BOARD OF DIRECTORS

Orano Mining is a business corporation with Board of Directors. Its primary function is to ensure operational consistency in mining activities carried out in France and internationally.

Orano’s CEO, Philippe Knoche, is the Chairman of Orano Mining and Nicolas Maes is the CEO.

Orano Mining SA has a share capital of 25,207,343 euros and is 100% owned by Orano SA.

The head office of Orano Mining SA is at Châtillon. Orano Mining has another site at Bessines-sur-Gartempe (Limousin).



The organization, operation and prerogatives of the Board of Directors are set by the statutes. The Board of Directors meets at least twice a year. It decides how the company orients its activities and ensures their implementation.

The Board of Directors comprises 9 administrators and includes 3 women and 3 men (note that staff representatives are not counted when calculating parity):

- 4 appointed at the proposal of Orano SA



Yellow Cake concentrated uranium.

- 1 State representative
- 1 appointed at the proposal of the French State
- 3 elected staff representatives

A State inspector and a government auditor also attend board meetings, along with the secretary of the Social and Economic Central Committee. Management Committee

MANAGEMENT COMMITTEE

The Mining Business Unit is run according to a decentralized operating model, based around a head office that performs overall management and oversight functions, and structures that carry out mining operations in France and internationally.

“Mining operations” covers exploration, project, production, remediation and mine closure monitoring activities.

The Management Committee meets regularly in order to study safety, commercial, industrial and financial results as well as to draw up and monitor mining activity action plans.

It also ensures that the Orano Code of Ethics is respected, in addition to the company’s commitments to sustainable development, and leads the risk management process for the Mining Business Unit.

The Management Committee is made up of directors from the operational departments (Operations, Industrial Projects



and Support, Geoscience, Health Safety and Environment, Remediation, Corporate Social Responsibility and Communication, Sourcing, Supply & Customer Service) and the functional departments (Human Resources, Finance, Legal, Strategy and Development) as well as the directors from the main subsidiaries.

27% of the Members of the Management Committee in France are currently women. 45% of its Members are between 30 and 50 years of age and 55% of its Members are over 50 years of age.



Uranium market

In this context, Orano Mining's objective is to continue to optimize the competitiveness of existing sites and to maintain its project portfolio by conducting the studies necessary for the extension of its production for the years to come.

In this way, Orano Mining aims to consolidate its position of reliable uranium supplier on the long term while remaining one of the most competitive producers.

Many uranium producers were obliged, from the beginning of March 2020, to reduce, or even interrupt, the activity of their mines due to the Covid-19 pandemic. This was the case for the Cigar Lake mine in Canada, whose production was interrupted for five and a half months.

This drop in uranium supply had an effect on the uranium spot price, which began to rise significantly to reach 34 US dollars/lb at the end of May.

The improvement in the health situation during the summer, as well as the introduction of protective measures by producers, allowed the gradual return to normal activity in the fall.

The uranium spot price has since stabilized at around 30 US dollars/lb at the end of 2020. The long-term indicator changed slightly during the Covid-19 pandemic to stabilize at 33US dollars at the end of 2020 (compared to 32 US dollars/lb at the end of 2019).

DEMAND AND SUPPLY

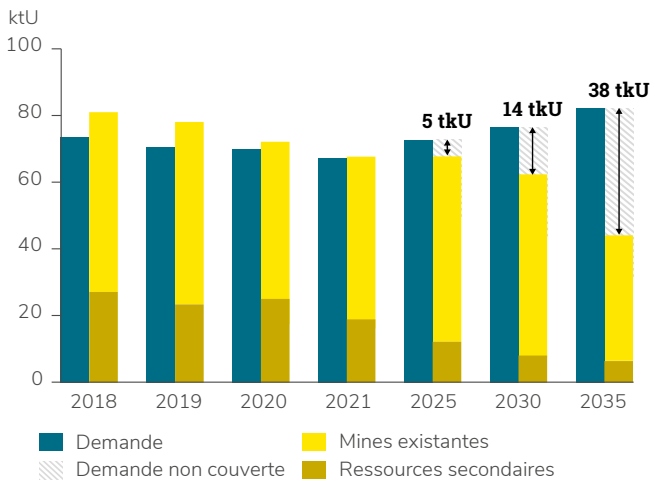
Reactor demand stood at around 69,600 tU in 2020 (source: WNA 2019), slightly decreasing compared to 2019.

Supply worldwide consists of:

- **mining production**, which amounted to approximately 47,500 metric tons of uranium, a 13% decrease compared with 2019. This decrease is explained by the measures taken by many producers to cope with the Covid-19 pandemic. We can also mention that since 2016, and in response to falling market indicators, the main producers (Orano, Cameco, Paladin and Kazatomprom) have announced closures, mothballing of mines and reductions in production,

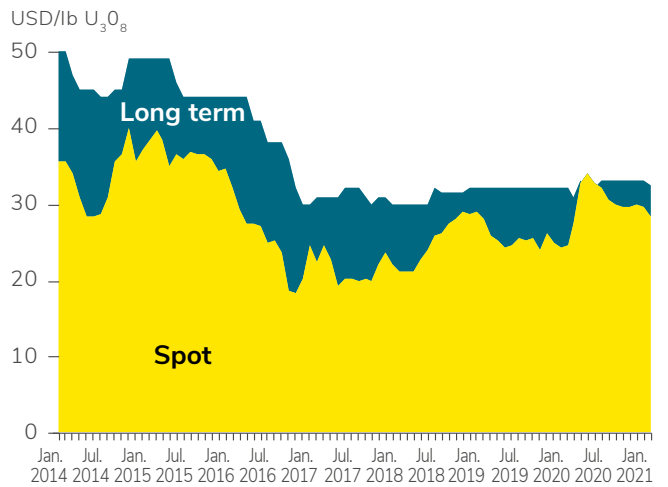
- **secondary resources** estimated to a total of 24,700 metric tons of uranium, coming from materials from used fuel recycling, marketing of uranium inventories of the US (DOE) and Russian governments, re-enriched depleted uranium, and low-enriched uranium.

Équilibre offre / demande en uranium



Sources UxC UMO Q1 2021

Évolution 2014-2019 des indices prix de l'uranium (en dollars courants)



Sources UxC UMO - Q1 2021

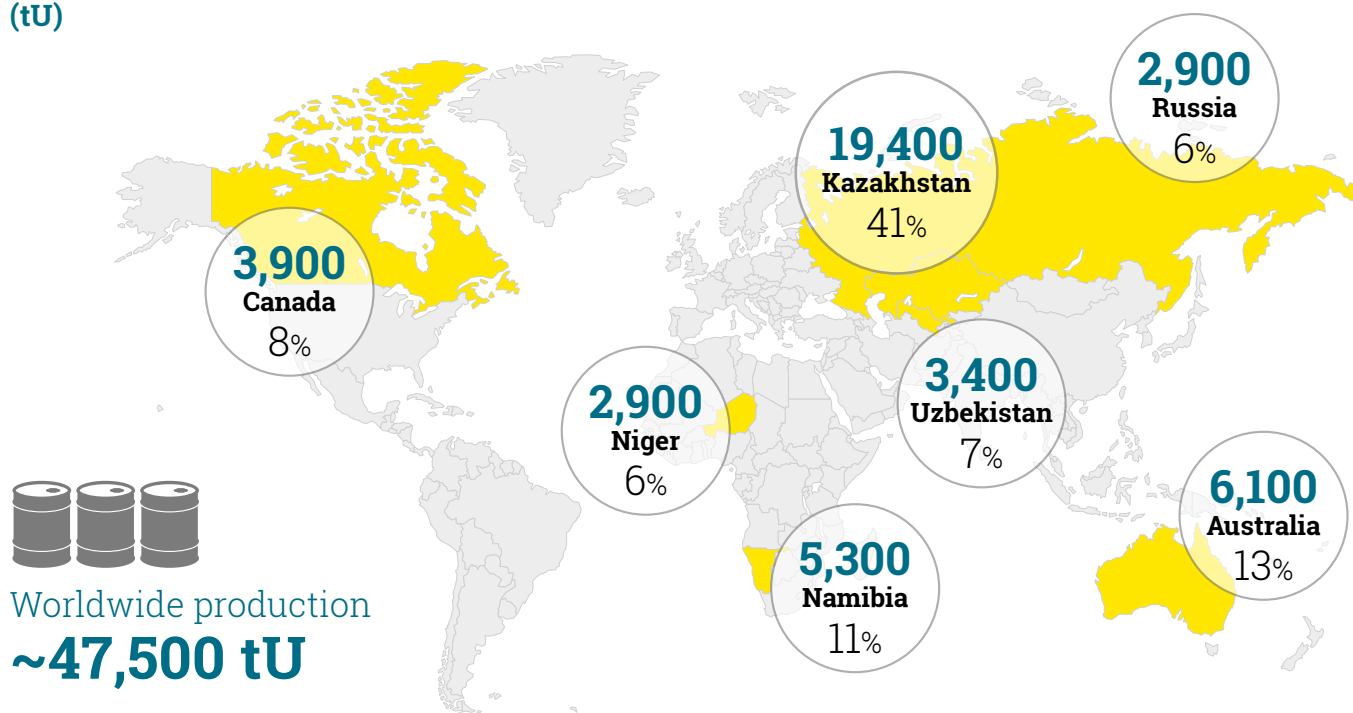
Over the long term, according to the WNA (World Nuclear Association), the market is still forecast to grow, with demand by 2025 predicted to be 17% higher in 2025 compared to 2015. The key drivers for this are the restarting of Japanese reactors and growth in requirement for the Chinese reactor fleet.

Rising demand is expected to raise market prices and enable new projects to be launched.



Main uranium producers in 2020

(tU)



Sources: UXC Q1 2021

BACKLOG

The Orano Mining backlog is diversified among customers in the different uranium-consuming regions.

The uranium sold originates either from the mining resources of companies in which Orano Mining has an equity interest or from uranium bought on the market.

CUSTOMERS

Orano Mining is a supplier to about 80% of the world's nuclear utilities, in Asia, Europe and North America.

PRODUCTION OF MINING SITES

Measures taken by Orano Mining and its partners to combat the Covid-19 pandemic are responsible for the decrease in mine production for 2020.

Despite this difficult context, the mobilization of our sites, the respect of sanitary protocols set up, the effective control over its production costs and its level of capital expenditure, the Mining business turned in good operating and financial performance in 2020.

- SOMAÏR produced 1,879 metric tons of uranium (on a 100% basis);

- COMINAK produced 1,112 metric tons of uranium (on a 100% basis)
- KATCO produced 2,833 metric tons of uranium (on a 100% basis);
- Cigar Lake produced 3,878 metric tons of uranium (on a 100% basis);

Orano mines production in 2020 (tU)

Country	Sites	Financial consolidation 2020 tU	Type*
Canada	McArthur River	0	UG
	Cigar Lake	1,439	UG
	Canada total	1,439	
Kazakhstan	KATCO	2,833	ISR
	Kazakhstan total	2,833	
Niger	SOMAÏR	1,879	OP
	COMINAK**	378**	UG
	Niger total	2,257	
Total		6,529	

* Type of operation: ISR: In-Situ Recovery; OP: Open-Pit, UG: Underground.
 ** COMINAK has been consolidated under the equity method since January 1, 2014. Source: Orano.

ORANO'S CSR APPROACH



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Irahzer project, Niger:
meeting with journalists.

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Orano Mining, proactive in defining Orano's Commitments

Orano Mining, along with each of the Business Units, has actively participated in the co-construction of the CSR Engagement approach.

Across our sites, 150 managers took part in some 15 workshops. At the same time, a panel of 130 external stakeholders was interviewed in each country.

On the basis of this feedback and its own CSR approach, and after validation by the Management Committee and the CSR Committee, Orano Mining identified and reported on the representative issues and specificities of its mining activity.

Orano's Purpose

Orano's social and environmental commitment was renewed and reshaped in 2020 resulting in an ambitious roadmap which was co-constructed with the Group's extended management and feedback from stakeholders.

On this occasion, Orano and its Board of Directors also set out the company's purpose, as follows:

« To develop know-how in the transformation and control of nuclear materials for the climate, for a healthy and resource-efficient world, now and tomorrow ».

More information on Orano's purpose



Structured around our values and strategic goals, this new roadmap, through a set of 13 objectives, reflects the ways in which Orano wishes to embody its purpose and contribute to the Sustainable Development Goals.

More information on Orano annual report, chapter 4.1.3, p. 96-97



Shaft of mining extraction, South of Tortkuduk, Kazakhstan.





A CSR policy anchored in Orano Mining's strategy

In its corporate strategy, Orano Mining states its resolve to be a leader in the industry in terms of health and safety at work, community involvement, and environmental and ethical practices.

As a responsible mining company, we ensure sustainable, concerted and balanced management of resources and meet the social, environmental, societal, technical and economic challenges, at each stage of the mining cycle, in all of the countries where we operate.

Our CSR policy, drawn up in consultation with the various different sites and departments of Orano Mining and approved by the Senior Executive Vice President of the Business Unit, defines the following principles of action:

- Forward planning and prevention
- Consideration of the local context
- Compliance with regulations and international standards
- Information, listening, dialogue and consultation
- Ethics and transparency

It lends a precise framework to our approach to corporate social responsibility and addresses two convergent demands:

- Orano Mining's desire to structure and formalize its corporate responsibility action,
- the determination to apply the principles and best practices advocated in the extractive industries sector and in particular those set out by the ICMM (International Council on Mining and Metals).

More information on
Orano Mining CSR policy



It has its own governance system.

This is structured as follows:

- **The Corporate Responsibility, Engagement and Communication** Department which oversees implementation and monitoring of policies and standards defined by the Group and makes sure they are consistent with the particularities of the industrial, economic and social contexts of our locations.
- **Orano Mining CSR Committee.** This body, set up in 2016, is made up of the Orano Mining management committee, the site directors, along with the Social Responsibility, Engagement and Communication department team. The CSR Committee meets once or twice a year and reviews the main current and future CSR issues for the various subsidiaries. It takes care to ensure the consistency of the

actions undertaken with regard to the Orano Mining CSR policy and validates financial commitments for certain amounts for new projects.

- **The Mining Social Committees (CSMs)** of Orano Mining, created in 2013, are tasked, in each country where we operate, with putting social actions into practice at the local level in terms of partnerships and economic development aid:
 - identification of indicators and development of a monitoring system to measure deployment of the CSR policy;
 - highlighting of the value of social commitments both internally and externally;
 - choice of perimeters and topics to be given priority for the deployment of significant and sustainable courses of action;
 - determination of associated budgets (budgets of Subsidiaries and/or central budgets);
 - supervision of validated financial commitments;
 - reporting on actions taken.

These committees meet once or twice a year, chaired by the managing directors of the subsidiaries, and bring together local CSR leaders, and the coordinating and support teams from head office. Frequency of meetings varies depending on the country and on the needs. All Orano Mining locations are covered by CSMs, including Canada, Gabon, Kazakhstan, Namibia, Niger, Mongolia, Uzbekistan*.



ORANO MINING MATERIALITY

The materiality matrix aims to prioritize the main CSR issues in light of stakeholders' expectations and Orano Mining's priorities. It was updated at the end of 2018 by questioning Orano Mining's management.

Regular stakeholder mapping exercises conducted in the locations where we operate allow us to update our understanding of the expectations of external stakeholders.

Furthermore, the Group-wide materiality exercise conducted by Orano in early 2020 identified key expectations, risks and opportunities. All of this served as a basis for defining the CSR Engagement approach. The resulting matrix (*More information on Orano annual report, p. 90*) confirms the feedback registered by Orano Mining, its priorities and key issues within its mining scope.

* CSM set up in 2021

PRIORITY AREAS SELECTED

- Transparency
- Environmental footprint
- Health / Safety
- Risk management
- Remediation / Post-mining
- Community involvement
- Ethical business
- Our Employees

SUSTAINABLE DEVELOPMENT GOALS (SDGS)

The Sustainable Development Goals are key challenges defined by the United Nations for achieving a better future and they reflect the collective awareness of the need for a sustainable society.

Orano Mining contributes to many of the United Nation's 17 Sustainable Development Goals.

At the end of 2019, the Orano Executive Committee, after consulting 200 Group managers, reaffirmed its wish to contribute to the UN Sustainable-Development Agenda for 2030, and identified the following six SDGs as priorities for the Group.

Two additional goals corresponding to Orano Mining's activities have been added: SDG 6 (Clean water and sanitation) and SDG 16 Peace (justice and strong institutions).

These 8 goals have helped define Orano Mining's CSR roadmap and Commitments to 2030.



More information on SDGs



COMMITMENTS ROADMAP

Orano's Commitments Roadmap was defined collectively, based on 6,000 contributions, and then adapted to each Business Unit.

Within Orano Mining, the goals have been shared with the various departments and set out in the operational Master Plan for each site. These goals are discussed throughout this report. Starting next year, the 2021 CSR report will include a progress report on attainment of 2025 interim results.





More information on Orano annual report, chapter 4.1.2, p. 92








Orano Mining's Commitment Roadmap

FOCUSES AND COMMITMENTS	OBJECTIVES ORANO 2030 (VS 2019)	ORANO MINING MARKERS IN 2025	ORANO MINING OBJECTIVES 2021	EXPECTED IMPACT
OUR VALUES Aim for the highest standards	Aim for the highest standards in terms of nuclear safety, environment, health and occupational safety	Tend to a long-term TF1 <or = at 1 Tend to a TF2 <or = to 3.5 Maintenance of the Health Observatory in Niger after the closure of COMINAK Towards passive management of tailings storage for new mining sites (2030) Industrial risks: 0 unacceptable scenario according to the MMR matrix Application of ICMC "tailings dams" recommendations in proportion to the challenges	TF 1: < or = at 1 TF2: 3.8 Continued funding for OSRA Meeting the 2021 commitments of the PNGMDR 80% of improvement measures identified for unacceptable scenarios implemented 100% of tailings dams assessed in Niger	Operational safety and security Good health of employees, external companies and local communities
	Make information and dialogue more accessible to our stakeholders and more explicit regarding sensitive perceptions	Contracts published under the EITI standard whenever authorised by the States Deployment of the compliance action plan	Publications released Grievance mechanism : Annual review published Duty of care : Action plan 2021 completed	Acceptability of our activities Attractivity of the group
COMMUNITIES Be engaged and responsible locally in our environment	Strengthen local roots, particularly in the area of skills development and employment	Maintain a high level of local recruitment (95% minimum) New partnerships with schools close to our sites in connection with our skills Maintain the local purchase rate (75% minimum) Taking into account CSR criteria in the tender documents > 1M €	Maintaining the rate Target 3 new school / business partnerships Goal achievement Criteria implemented in Sirius by the end of the year	Regional development Acceptability



FOCUSES AND COMMITMENTS	OBJECTIVES ORANO 2030 (VS 2019)	ORANO MINING MARKERS IN 2025	ORANO MINING OBJECTIVES 2021	EXPECTED IMPACT
COMMUNITIES (continued)	Build the second life of the sites	Develop the installation of photovoltaics (+130 MW in France) Responsible closure and remediation of COMINAK	Start construction of the photovoltaic park on the Bernardan site 100% of 2021 commitments within the framework of the redevelopment project	Acceptability of our activity
	Eco-design all our major projects (see Orano annual report, p. 142 )	Eco-design all our major projects > € 5m launched from 2021	100% of projects worth + € 5M eco-designed	Resource saving
CLIMATE Contribute to carbon neutrality 	Reduce the "equivalent" carbon footprint of our business in line with the Paris Agreement	Reduce CO ₂ emissions equivalent to carbon on operated activities scopes 1 and 2 (-15% of tCO ₂ e compared to 2019 or -40% compared to 2015) reference year of the French SNBC*	By reducing CO ₂ emissions by 10% compared to 2019	Contribution to the fight against global warming Alignment with the Paris Agreement
	Innovate to reduce the footprint of our customers and increase the acceptability of nuclear power and nuclear materials	Supporting the decarbonisation of electricity in the countries where we operate When relevant, increase the share of low carbon energy on our sites in operation	By developing the photovoltaic power plant construction project in SOMAÏR By examining the different options on site	Contribution to the fight against global warming Acceptability of the nuclear industry
SKILLS Mobilize proud and committed employees who embody our purpose  	Offer professional and personal development within an attractive work environment	Reach a significant rate of employee who recommend Orano (75%) Support our employees towards certifying, qualifying or diploma training courses Keep the level of social conflict as low as possible according to GRI criteria	Keep the rate at 80% minimum 10% of employees per year Less than 1 week of annual strike per country of operation	Employee commitment Group appeal Waste reduction Resource saving
	Be a benchmark, inclusive employer, promoting diversity	Increase the proportion of women in the top management in 150 key positions (+ 50%) Promote access to employment for people who are far from it	10% annual increase Aim for 25% increase in the Education budget (compared to 2020)	Group appeal Support for employment
	Develop our innovation ecosystem	Supporting our employees to succeed in the digital transformation	Develop the digital roadmap with all sites and set up a system to measure its achievement	Group appeal Impact sociétal des innovations

* SNBC: Stratégie nationale bas carbone (French National Low-Carbon Strategy) 2020 version.

FOCUSES AND COMMITMENTS	OBJECTIVES ORANO 2030 (VS 2019)	ORANO MINING MARKERS IN 2025	ORANO MINING OBJECTIVES 2021	EXPECTED IMPACT
<p>CUSTOMER GROWTH</p> <p>Innovate to preserve resources and protect health</p>  	<p>Broaden our recycling offer</p>	<p>Develop the external activity of CIME</p>	<p>Develop the business of CIME</p>	<p>Electrical transition</p>
<p>CASH</p> <p>Operate efficiently and reduce our footprint</p>   	<p>Improve the efficiency of the extended enterprise by 25%</p>	<p>Reduction in water consumed per ton of U produced of 10% and 10% reduction in overall water consumption (compared to 2019)</p> <p>Provide each site with water issues with a water management plan shared by stakeholders</p> <p>Developing predictive models on natural attenuation in ISR</p> <p>Maintain R&D actions in the optimization of water treatment in stations</p> <p>Operational excellence: pursuing the road map value 21/23</p>	<p>By performing 100% of water diagnostics</p> <p>Environmental R&D roadmap achieved</p> <p>Study report completed</p> <p>By finalizing the road map value 21/23</p>	<p>Resource saving</p> <p>Competitiveness</p>
	<p>Reduce our production of non-recycled waste by 25%</p>	<p>Contribute to national policies for reducing plastic waste in our areas of operation</p> <p>Reduce our production of non-recycled waste (- 25% in 2030 compared to 2019)</p> <p>Keep our certifications on our production sites and deploy them on planned sites</p>	<p>Inventory of waste policies by country</p> <p>By defining non-recycled waste action plans</p> <p>SR and KATCO certification renewal</p>	<p>Waste reduction</p>



ETHICAL BUSINESS



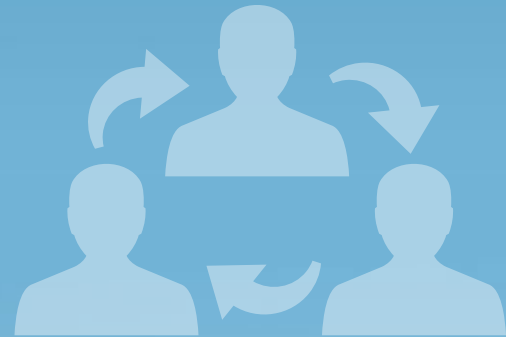
Team meeting, KATCO, Kazakhstan



MINING PRINCIPLE

Apply ethical business practices and sound systems of corporate governance and transparency to support sustainable development.

As a socially responsible mining company, Orano Mining is committed to operating ethically and with integrity and to establishing and following processes and behaviors that support this approach, at every stage of the mining cycle, in the countries in which we operate. We are convinced that dialogue, consultation and transparency build confidence with our stakeholders and that it is a commitment which is essential to the sustainability of our activities.



Performance expectations

PRINCIPLE 1.1

Establish systems to maintain compliance with applicable law.

This commitment is made at the very highest level by the Board of Directors of Orano SA. It relies on four specialized committees including the Audit and Ethics Committee.



PRINCIPLE 1.2

Implement policies and practices to prevent bribery, corruption and to publicly disclose facilitation payments.

Orano has taken a proactive approach in developing its own Code of Ethics and its anticorruption program and communicating these to all its employees, as well its industrial and commercial partners.

The mission of the Audit and Ethics Committee includes overseeing the Group's compliance with the best international ethical practices, reviewing the Code of Ethics and its updates and making recommendations to the Board of Directors.

More specifically, it conducts the review of the annual internal control campaigns INCOME after the internal audit assessment, and also the review of the Group's risk mapping and action plans with follow-up, as well as the follow-up of the audits carried out with validation of annual audit plan. It also reviews the payments made to Governments for each reporting period based on the EITI (Extractive Industries Transparency Initiative) declarations of the subsidiaries in Niger and in Kazakhstan, and on the ESTMA (Extractive Sector Transparency Measures Act) declarations of the Canadian subsidiaries.

More information on the EITI report



The role of the Orano Mining Compliance Officer is carried out by the General Counsel for our activities, in conjunction with the local Compliance officers in the countries where we are present. He works together with Chief Compliance Officer of Orano, who reports to the Chief Executive Officer. This organization makes it possible to maintain close relations with mining sites and operational activities whilst benefiting from a single line of reporting.

Orano Mining, like all the Business Units of the Group, conducts an internal ethical reporting process on the proper application of the Code of Ethics, any infringements observed, action plans put in place to remedy such breaches, and the sanctions imposed.


For more information on Orano Code of Ethics



The Orano Code of Ethics – accessible to everyone on the www.orano.group website and made available to all our employees and industrial partners (sub-contractors, suppliers, contractors, etc.) – describes Orano's ethical commitments and its expectations with regard to its internal and external stakeholders; it indicates the rules of conduct to which everyone must adhere and with which everyone must comply at all times. The mobilization of the whole Orano Group and the processes deployed form part of a continuous improvement approach.

The Compliance Policy specifies how the Code is to be implemented at all levels, across all activities and in all countries; this policy also explains how compliance is organized within the Group.

In order to ensure compliance with the anti-corruption requirements of the Sapin II Act of December 9, 2016, and in accordance with the recommendations issued at the end of 2017 by the French anti-corruption agency AFA (Agence Française Anticorruption), the Compliance Policy is structured around the following actions:

- mapping of risks of bribery and influence peddling for Orano Mining (updated every year),
- updating of our Anti-corruption Code of Conduct (appendix to the Code of Ethics) and its incorporation into the internal regulations of Orano Mining and all its subsidiaries,
- an e-learning course developed specifically on the basis of the Orano Code of Ethics and intended for all employees,
- a face-to-face training course deployed to the employees most exposed to risk,
- the systematization of the third-party compliance verification process in accordance with a Group procedure, ([More information on Orano annual report, chapter 4.2.3, p. 103](#) )
- or the reinforced formalization of certain controls, in particular relating to accounting transactions, with the putting in place of procedures to ensure that books and records are not used to hide acts of corruption or influence peddling.



To identify and assess the risks of bribery and influence peddling to which Orano Mining is exposed, all of our sites worldwide undergo an annual assessment.

These risks are classified into sub-families of risks (purchasing, sales, conflicts of interests, gifts and invitations, human resources, representatives dealing with public officials, mergers & acquisitions, joint ventures, donations, influence peddling, other) which are assessed according to 3 criteria (severity, occurrence, and level of control).

Several further measures were taken:

- we issued a policy on gifts and invitations and a SharePoint for declaring them,
- Orano improved the ethics alert mechanism via an outsourced platform, accessible to all Group employees (with a poster campaign in all of Orano Mining’s working languages at all sites), supplementing its internal methods of reporting and communication. This allows us to maintain a professional environment in which it is possible to speak freely,
- management continued its frequent communication,
- an educational booklet “Ethics and compliance - what you need to do” was issued and circulated.



It is a reflex and a duty for each and every one of us to immediately raise the alert if any blatant incident or breach of a statutory or regulatory obligation or violation of the Code of Ethics or compliance policies and procedures is observed.

The rules of conduct of the Code of Ethics deal with the action we take in particular in terms of the following: compliance with international treaties, conflicts of interest, insider trading, corruption, corruption, gifts and unfair advantage, influence peddling, payments and relations with third parties, facilitation payments, competition, advocacy and lobbying, political funding, protection of life and property, corporate sponsorship, etc.

Every year, Orano Mining, like all the other Business Units, conducts an ethical reporting process. Each campaign opens with a letter from the Senior Executive Vice President of Orano Mining, in application of the letter of instruction from the CEO of Orano. This process involves all our directors and their managerial staff in all the countries where we are present (Orano Mining and its sites in France and abroad, as well as its subsidiaries).

All members of the Orano Mining Management Committee and of the management committees of subsidiaries have followed or will be following training in Ethics.

PROCESS

The ethical reporting process is underpinned by the principle that our employees can report an infringement they have found without repercussion to themselves if the facts are proven (whether the issue is within our own operations or related to the practices of our subcontractors). In the same way, if anyone is given an order that clearly runs contrary to the Orano Code of Ethics, they are entitled not to comply, and must report the matter to Group’s Compliance Department immediately.

Our employees can use this system or else raise any issue with the human resources teams, their managers, their staff representative,

Consulting with the Local Integration Commission, Mongolia.





or the network of compliance officers. A description of the system and how it works is available on the Orano intranet.

A system for alerting and issuing complaints in case of discrimination has been in place for several years. It guarantees the confidentiality and protection of whistleblowers acting in good faith. Since 2019, a dedicated, secure external web platform for collecting alerts has allowed the system to be further strengthened.

In addition to the ethics alert mechanism available on the platform, every year an ethics report provides information on the various ethics events reported and declared during the course of the previous year, as well as how they were handled and the actions taken or being taken concerning these cases. Reporting is carried out via the managerial chain or alerts raised by partners.

Depending on their severity, disciplinary measures have been taken in some cases, with some even resulting in the dismissal of the offending persons.

These events are classified by family, and 62 cases were reported in 2020 related to:

- interpersonal relations and human rights,
- protection of life and property,
- data protection and privacy,
- financial fraud, theft, false declarations,

- corruption,
- competition.


CONTROLS AND SANCTIONS

The nature of corrective actions and/or sanctions proposed will vary depending on the severity of the failure to comply.

Of the 62 cases reported for 2020:

- 1 dismissal
- 2 resignations
- 21 disciplinary sanctions ranging from a simple reminder to a layoff

In 2020, the ethics alert mechanism was used once within the scope of mining activities.

Furthermore, in 2020, a system for the management of claims and complaints in particular concerning any risks of Human rights violations was deployed on all of Orano Mining's sites (See Mining Principle 9.3, p. 139 )

PRINCIPLE 1.3

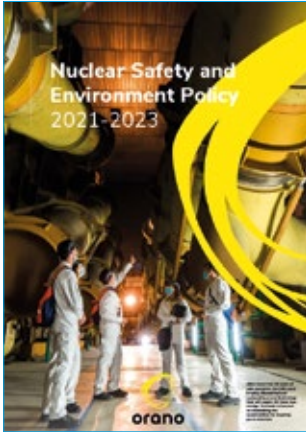
Implement policies and standards consistent with the ICMM policy framework.



In addition to the Group's Code of Ethics, Orano Mining is implementing specific policies, the next editions of which will incorporate the Group's social and environmental commitments, in the following areas:

- a Nuclear Safety and Environment policy;
- a Health – Safety – Radiation Protection policy;
- a Purchasing policy;
- agreements and guidelines in the areas of diversity and inclusion, skills and quality of life at work and social dialogue;
- a policy for combating corruption and influence peddling.





These policies are validated by the Executive Committee and the Board of Directors. Their appropriation and their application are verified by the Group’s Internal Control bodies, in particular by internal audit or the General Inspectorate. They cover topics relating to duty of care. Other policies (quality, protection, etc.) supplement the action taken by the Group.

These different policies and codes help organize the company’s operations in compliance with human rights and in the interest of environmental protection and the laws that govern them.

In its corporate strategy, one of Orano Mining’s stated priorities is to be a leader in the industry in terms of health and safety at work, community involvement, environmental and ethical practices. A CSR policy, drawn up in consultation with the various different departments in order to define the principles of action and set out a precise framework for this approach, has been approved by the Management Committee (See Mining Principle 2.1 - Decision Making p. 34 [📄](#)).

As a responsible mining company, Orano Mining is committed to implementing the Position Statements defined by the ICM, as well as the 10 mining principles and their performance expectations.

Orano strives constantly to improve its performance in all areas and takes account of the expectations of those of its stakeholders that are directly or indirectly affected by the Group’s activities.

PRINCIPLE 1.4

Assign accountability for sustainability performance at the Board and/or Executive Committee level.

NON-FINANCIAL GOVERNANCE OF ORANO

The Board of Directors of Orano guides and controls the actions of the Group’s Committees and its results, including in non-financial matters. Environmental, Social and Governance (ESG) matters are managed on an ad-hoc basis by each of the specialized committees of the Board of Directors depending on the topic. An overall review of progress with regard to the Commitments roadmap is carried out by the Board of Directors at least once a year (More information on Orano annual report, chapter 4.1.4, p. 100 [📄](#)).

REGARDING ETHICS

The Chief Compliance Officer, reporting to the Chief Executive Officer, manages the program in the area of ethics and the prevention of corruption and influence peddling. He coordinates an operational network within the Business Units and Central Departments.

Every year, the alerts and incidents reported by each Business Unit are summarized and presented to the Executive Committee and to the Audit and Ethics Committee. The trend, in recent years, shows that the area in which the most incidents are reported is “discrimination and harassment” (More information on Orano annual report, chapter 4.2.3, p. 109 [📄](#)).

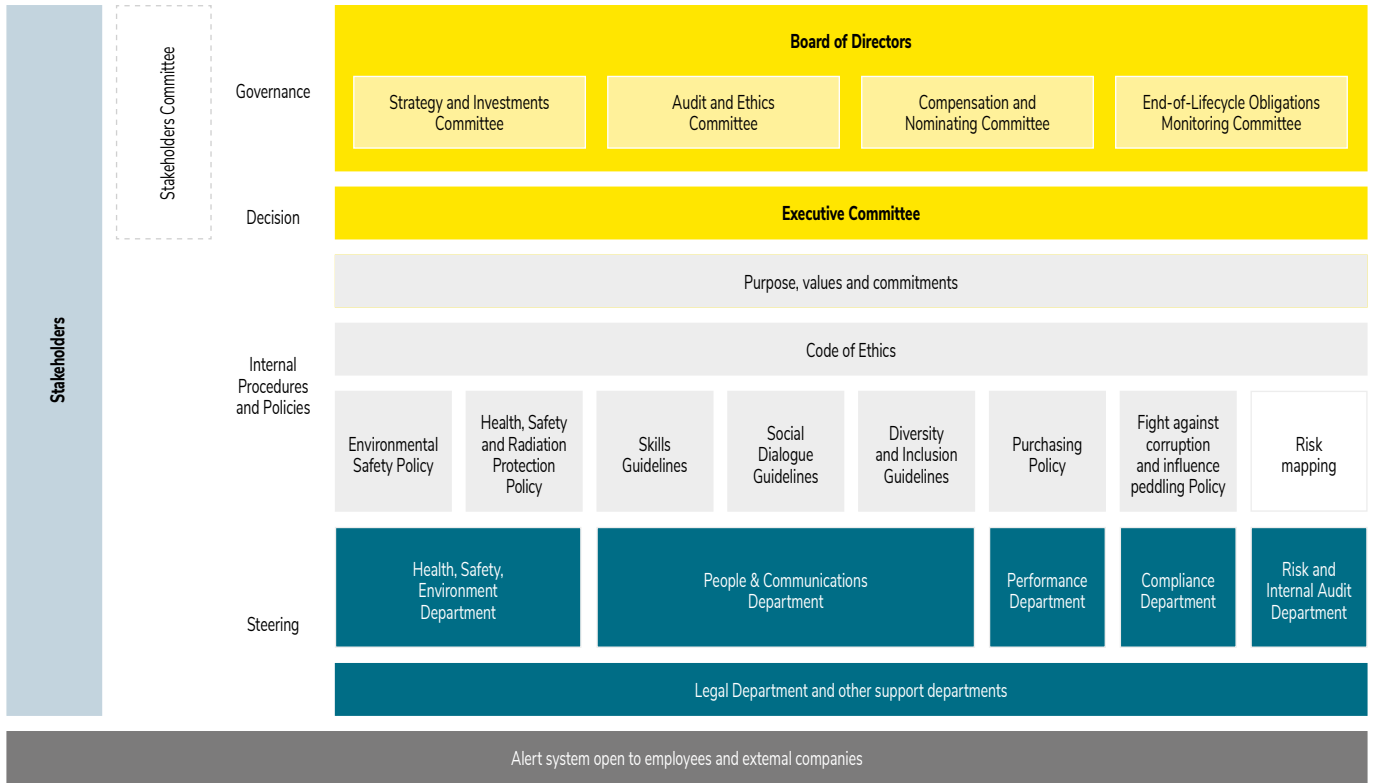
More information on Orano annual report



Orano Executive Committee



ORANO'S NON-FINANCIAL GOVERNANCE



PRINCIPLE 1.5

Disclose the value and beneficiaries of financial and in-kind political contributions whether directly or through an intermediary.

Orano Mining does not favor any political party, group or individual and does not make any direct or indirect payment to political parties or to candidates in any of the countries in which we are present.

DECISION- MAKING



McClean Lake mill, Canada.



MINING PRINCIPLE

Integrate sustainable development in corporate strategy and decision-making processes.



The Innovation Center for Extractive Metallurgy, Bessines-sur-Gartempe, France.



PRINCIPLE 2.1

Integrate sustainable development principles into corporate strategy and decision-making processes relating to investments and in the design, operation and closure of facilities.

Because it is convinced that protection of the climate, resources and health are issues of fundamental importance, Orano has made addressing them central to its purpose and intends to use and develop know-how in the transformation and control of nuclear materials for the climate, for a healthy and resource-efficient world, now and tomorrow.

In 2020, Orano updated its strategic vision incorporating social and environmental commitments put together with managers of the group and thanks to feedback from stakeholders. Structured around a purpose, values and strategic goals, its 13 objectives reflect the way in which Orano wishes to embody its purpose and contribute to the achievement of Sustainable Development Goals.

In its corporate strategy, one of Orano Mining's stated priorities is to be a leader in the industry in terms of health and safety at work, community involvement, environmental and ethical practices.

As a responsible mining company, we ensure sustainable, concerted and balanced development and meet the social, environmental, social, environmental, societal, technical and economic challenges at each stage of the mining cycle in the countries where we operate.



Orano Mining is committed to implementing the Position Statements defined by the ICMM, as well as the 10 mining principles and their performance expectations by adopting a continuous improvement approach.

More information on ICMM Mining principles



Orano strives constantly to improve its performance in all areas and takes account of the expectations of those of its stakeholders that are directly or indirectly affected by the Group's activities.



GOVERNANCE OF ORANO MINING'S APPROACH TO CSR

The CSR policy, drawn up in consultation with the various different sites and departments of Orano Mining, then approved by the Management Committee and signed by the Senior Executive Vice President of the Business Unit, defines the following principles of action:

- Forward planning and prevention;
- Consideration of the local context;
- Compliance with regulations and international standards;
- Information, listening, dialogue and consultation;
- Ethics and transparency.

The CSR policy lends a precise framework to our approach to corporate social responsibility and addresses two convergent demands:

- Orano Mining's desire to structure and formalize its action in the area of corporate social responsibility,
- the determination to apply the principles and best practices advocated in the extractive industries sector and in particular those set out by the ICMM (International Council on Mining and Metals).

In order to ensure its deployment, a CSR committee was established in April 2017 and the Mining Social Committees (CSMs) created in 2013 have evolved to adapt to this new governance.

For more information, see CSR Approach, p.17



PRINCIPLE 2.2

Support the adoption of responsible health and safety, environmental, human rights and labour policies and practices by joint venture partners, suppliers and contractors, based on risk.



As far as relations with its suppliers and subcontractors are concerned, Orano Mining follows Orano's purchasing policy, which includes social and environmental criteria.

Orano Mining’s supply chain works closely with the HSE, Legal and Compliance Departments to ensure that suppliers meet compliance requirements, particularly with regard to the prevention of corruption and influence peddling.

Suppliers are assessed and monitored based on the criteria of nuclear safety, quality, conformance, finance, competitiveness, health, industrial safety and the environment, and on their ability to supply products and services that meet the needs and specified requirements.

Orano has made a point of getting its suppliers to engage in a process of sustainable development. For several years, all Orano contracts and its General Terms & Conditions of Purchase have included provisions on the compliance of suppliers with such a commitment.

Under the terms of this commitment, suppliers undertake to promote and safeguard compliance with human rights, labor law (pertaining to labor standards, child labor, discrimination, working hours, minimum wage) and protection of the environment.

Each supplier also makes a pledge to prevent corruption, and this is a factor in the selection of Orano suppliers.

As an integral part of the contracts signed with suppliers, the General Terms and Conditions of Purchase (T&C) or contractual clauses set out the health, safety and protection obligations for suppliers, as well as their environmental responsibility. They include provisions concerning the obligations of the supplier with regard to:

- hygiene, safety and the protection of health;
- regulated substances (REACH regulations);
- sustainable development in terms of human rights, health, safety, labor law and the environment.

Non-compliance with these provisions may result in termination of the contract or order.



Athabasca Catering Limited Partnership providers, McClean Lake, Canada.

The T&C or contractual clauses include provisions so that Orano, where applicable, its customer, any third party mandated by Orano or any empowered authority, can access the premises of the supplier, or its subcontractors and suppliers, for the purpose of verifying or auditing all the requirements specified in the order.

The various documents and processes that make up the supply chain management system (Code of Ethics, T&C, Purchasing policy, Sustainable development commitment, etc.) take into account:

- risk analyses by purchasing market (hazards table) and by country (see Orano’s internal procedure “Country Compliance Classification”) via a compliance questionnaire;
- the mitigation plan for associated risks prior to contract award;
- supplier performance metrics and required improvement plans;
- the ethical and sustainable development aspects of contractual clauses, in accordance with the French Sapin II and Duty of Care laws;
- studies carried out by the Group’s business intelligence unit, in particular for all SOC suppliers, when justified by the risk analysis.



Depending on the results obtained within the framework of the assessment procedure, and where deemed necessary, a questionnaire is sent to the supplier (containing in particular questions concerning the subsidiaries of the company and existing equity ties), and, where applicable, an investigation by the business intelligence unit is carried out.



This business intelligence investigation is carried out systematically for suppliers with a medium or high level of risk, including in Sourcing Opportunity Countries (sourcing from low-cost countries, mainly Niger, Kazakhstan, China and Turkey).

New suppliers created in 2020 were evaluated through the process. A campaign to verify pre-existing suppliers in the supplier base before 2019 is underway by the Orano Compliance Department.

The following action has been decided for the Mining BU in 2021:

- supplement our corporate responsibility initiative by setting up duty of care awareness training for the main buyers in each country where we operate.
- take into account new criteria in the mapping of risks relating to duty of care.
- conduct CSR risk analyses in the context of calls for tender exceeding €1 million.



Since the end of April 2019, a systematic assessment process for new suppliers, adapted to the level of risk involved (compliance, corruption, duty of care), has been deployed in coordination with the Compliance Department. The completed and approved third party assessment form is a mandatory prerequisite for the creation of a supplier in Orano Mining's ERP.



2025 OBJECTIVE: to expand the inclusion of CSR criteria in calls for tender totaling more than €1 million in Orano Mining subsidiaries, depending on the local legislation in force.

HUMAN RIGHTS





MINING PRINCIPLE

Respect human rights and the interests, cultures, customs and values of employees and communities affected by our activities.

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PRINCIPLE 3.1

Support the UN Guiding Principles on Business and Human Rights by developing a policy commitment to respect human rights, undertaking human rights due diligence and providing for or cooperating in processes to enable the remediation of adverse human rights impacts that members have caused or contributed to.




Team meeting, Ulan Bator, Mongolia



Orano conducts its business in compliance with the fundamental texts aimed at protecting human rights, namely:

- the Universal Declaration of Human Rights adopted by the UN in 1948;
- the fundamental conventions of the International Labour Organization (ILO); and
- the Guidelines for Multinational Enterprises issued by the Organization for Economic Co-operation and Development (OECD).

Orano Mining values transparency and dialogue with its stakeholders, in particular on questions relating to human rights raised in these different forums for exchange such as the Site Monitoring Committees (CSSs) or the Local Information Committees (CLIs). Moreover, the management of grievances plays an essential part in the quality of our relations with our stakeholders. With this in mind, Orano Mining deployed a grievance mechanism on all of its sites in 2020 to resolve complaints at an operational level (See Mining Principle 9.3, p.139 ).

PRINCIPLE 3.2

Avoid the involuntary physical or economic displacement of families and communities. Where this is not possible apply the mitigation hierarchy and implement actions or remedies that address residual adverse effects to restore or improve livelihoods and standards of living of displaced people.

COMUF (a subsidiary of Orano Mining in Gabon) mined the Mounana uranium deposits, from 1958 to 1999, the date of the last commercial shipment.



In 2001, the International Atomic Energy Agency (IAEA) found that concrete made in part of radiologically contaminated products was being used for the construction of parts of the buildings in the town of Mounana.

Between 2006 and 2011, two exhaustive inventories of dwellings conducted by the Gabonese Nuclear Safety and Security Agency (Agence Gabonaise de Sûreté et de Sécurité Nucléaire – AGSSN), were carried out, taking account of the 1990 Recommendation of the International Commission on Radiological Protection (ICRP) reducing the effective dose limit for public exposure from 5 to 1 mSv/year.

In this context, COMUF took the decision to participate in the management of these radiologically contaminated houses, as part of the "Mounana 200" project, based on the diagnostics carried out and the location of the dwellings concerned.

The project is divided into three parts:

- 69 houses in the municipality of Mounana, demolished and rebuilt in the same place,
- 24 houses on a new plot of land, with the necessary roadworks and works to install the necessary supply networks,
- 100 houses in the Cité Rénovation, demolished and rebuilt in the same place,
- 8 dwellings only requiring partial works.

The definitive list of the houses concerned by the project was approved in 2012 by a technical committee, made up of COMUF, representatives of the Gabonese State and the supervising ministries.

In 2021, a specific commission made up of representatives from the Prefecture, the Sub-Prefecture, and the Town Hall, and community leaders, was created to:

- Draw up the list of tenants and owners of the dwellings,
- Finalize the framework for compensation payments for rehousing and compensation for damages for the populations during the works phase,
- Assign the houses built,
- Examine disputes.

Within the framework of a public consultation, the persons concerned were able to make their comments and grievances known to the Sub-Prefecture and the Town Hall. No complaint was lodged with the authorities.

This procedure makes it possible to ensure that people have not been moved against their will.

No other situation that may fall into this category is currently being managed by Orano.

PRINCIPLE 3.3

Implement, based on risk, a human rights and security approach consistent with the Voluntary Principles on Security and Human Rights.

Orano Mining regularly assesses risks identified with regard to the Voluntary Principles on Security and Human Rights in the countries where it is present, as an essential part of ensuring the safety of personnel, and of local communities.





PRINCIPLE **3.4**

Respect the rights of workers by: not employing child or forced labour; avoiding human trafficking; not assigning hazardous/dangerous work to those under 18; eliminating harassment and discrimination; respecting freedom of association and collective bargaining and; providing a mechanism to address workers grievances.

Orano conducts its business in compliance with the fundamental texts aimed at protecting human rights.

It reflects the company’s commitment to eliminating child labor and all forms of forced or imposed labor, adherence to free association, privacy, and the right for collective bargaining.

For more information on processing of complaints, see Mining Principle 1.2 p. 28



For more information, see Orano annual report, Chapter 3.4.1, p. 75



POLICY

Due to the diversity of the countries in which Orano Mining operates, we work in local communities with different and cosmopolitan cultural, religious and ethnic backgrounds.

As an economic player in these territories, Orano Mining is also a leading employer ambitious to attract, develop and retain talented individuals who will make our projects a success. We propose career paths to our employees which favor the development of their careers, by offering them a level of remuneration that is competitive on the job market and by fostering quality of life at work and labor relations dialogue.

Orano’s Human Resources Policy acts as a framework for all Orano Mining entities, both in France and internationally. Operational entities of Orano Mining apply it in the form of an action plan while ensuring compliance with the regulations in force and international standards.

GOVERNANCE

To respond to the issues before us, operational teams are supported by the Human Resources Department, whose director is a member of the Orano Mining Management Committee.

HR teams at central level train, develop and provide their support to HR teams on site: they regularly carry out missions in the field to meet with teams (managers, talents, etc.), conduct participatory safety visits, and give tours allowing for a better understanding of how our facilities work.

Dedicated training sessions and seminars are organized on a regular basis to allow local teams to improve their skills. They ensure that HR programs and processes (annual interviews, personnel and salary reviews, etc.) are consistent, make sure that best practices are shared and incorporate all actions into a continuous improvement approach.

Each entity establishes a human resources management plan adapted to the specific challenges of each site, with an HR team that is present in the field and involved in operational issues.



ENCOURAGING EMPLOYEE-EMPLOYER DIALOGUE AND RESPECTING THE FREEDOM OF ASSOCIATION AND THE RIGHT TO COLLECTIVE BARGAINING

Orano and Orano Mining take care to maintain employee-employer dialogue at all levels: at local or national level in the countries where we operate, or at central level through participation on representative bodies or by the signature of agreements.

Within the framework of remediation of the COMINAK site, an agreement concerning the redundancy plan was signed with staff representatives and the Labor authority of Niger on November 20, 2020. In France, work continues to further strengthen our labor relations policy with the signature of several agreements concerning quality of life at work and training in particular.

Discussions are guided by a readiness to listen and consultation, which equally have a key role to play in the smooth running of the company. Staff representative bodies are one of the key categories of stakeholders involved in employee-employer dialogue. Regarding collective bargaining, agreements can be signed with union representatives at group level, as well as with each of the companies that make up the group, whilst ensuring compliance with the regulations in force.



Within Orano Mining, 100% of our sites in operation have trade union representation.

The topics covered vary but some such as hygiene, health, safety, remuneration, equality of opportunity, recruitment, quality of life at work are addressed on a systematic basis. Regular discussions are also organized to keep people up-to-date with the latest developments concerning the company, whether via staff representative bodies (Instances Représentatives du Personnel - IRP) or at informal meetings organized with all of our sites.

Mandatory annual negotiations are organized with the staff representative bodies.

- In France and Niger, 100% of employees are covered by a collective bargaining agreement.

- In Canada, workers and other employees are covered by a collective bargaining agreement under the “Canadian Labour Standards Acts”. In addition, a three-year collective agreement has been negotiated for the McClean Lake site (June 2019 – May 2022).
- In central Asia: In Mongolia, an agreement covering all employees has been signed for a period of 2 years (April 2019 - April 2021), while in Kazakhstan, a collective agreement is in place for a period of 3 years (April 2018 – April 2021) for all employees. And finally, in Uzbekistan, an agreement on work in shift rotation has been in place since 2020.

A mechanism for the processing of workers’ grievances is in place within the company (For more information, see Mining Principle 1.2, p. 28).

In 2020, no strikes or lock-outs lasting for more than a week took place on any of Orano Mining’s sites worldwide.

Working conditions and decent work

Number of strikes and lock-outs exceeding one week’s duration, by country	0
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Orano Mining has set itself the objective of keeping the level of social action as low as possible by 2025.

Every year, in the main countries where it is based, Orano conduct an internal opinion survey - Orano Vox - with its employees to gather their opinions and expectations concerning their professional situation and their perception of the company.

Within Orano Mining, over 80% of the employees eligible took part (corresponding to 1,749 employees out of a total of 2,133). The results showed a level of employee commitment of 98% in response to the question: "I am committed to helping Orano reach its goals"

The results showed a rate of employees’ pride in belonging of 91%, which is 16 points higher than the Korn Ferry standard for industry* (for industrial clients worldwide).



* Korn Ferry is the firm which assist Orano with the implementation of the internal opinion survey



PRINCIPLE 3.5

Remunerate employees with wages that equal or exceed legal requirements or represent a competitive wage within that job market (whichever is higher) and assign regular and overtime working hours within legally required limits.

Attracting and retaining talented individuals are challenges that we have to meet to enable our employees to develop. It is necessary to strike the right balance to optimize human resources, support employees throughout their professional development and adopt a fair and competitive remuneration policy.

In 2020, we had 3,445 employees, 93.85% of whom were on permanent contracts (Contrats à Durée Indéterminée - CDI).

PRIORITIZING LOCAL RECRUITMENT

In the countries where we are present, Orano Mining is contributing to the improvement of employment opportunities and to the advancement of social and economic development in local communities.

Orano’s social policy expresses a commitment to promoting the local recruitment of employees. In 2020, 98.5% of our employees on our sites are from the host country.

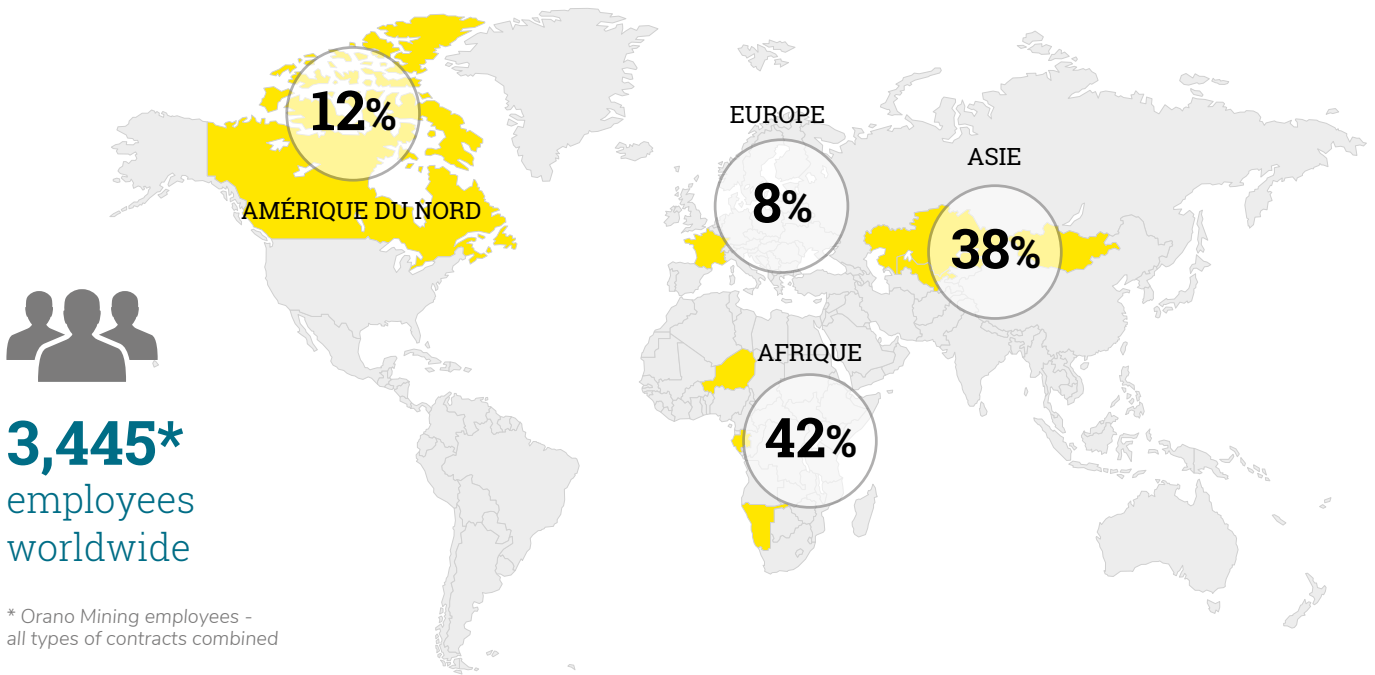
Split of employees by gender and contract type*

Type of contract	Female	Male	TOTAL
Permanent	455	2,810	3,265
Temporary	24	156	180
			3,445

Split of employees by country

Countries	Total number of employees	Local employees	Percentage of local employees
Canada	351	347	98.8%
France	254	247	97.2%
Kazakhstan	1,190	1,177	98.9%
Mongolia	56	52	92.8%
Namibia	16	16	100%
Niger	1,366	1,350	98.8%
Uzbekistan	26	22	84.62%
Total	3,272	3,222	98.53%

* Except China, Gabon and Germany - entities with less than 10 employees



3,445*
employees
worldwide

* Orano Mining employees - all types of contracts combined

Turnover

Countries	Entries	Departures	Turnover
Canada	40	74	16%
France	17	13	8.3%
Kazakhstan	168	148	12.6%
Mongolia	0	5	2.7%
Namibia	0	0	0%
Niger	80	83	5.28%
Uzbekistan	23	0	0%
Total	328	323	6.41%

Turnover rate = $\frac{[(\text{number of departures} + \text{arrivals}) / 2]}{\text{Number of employees on January 1}} \times 100$

For more information, see the sheet



A FAIR AND COMPETITIVE REMUNERATION POLICY

The purpose of Orano's remuneration policy, applied within Orano Mining, is to reward the efforts of employees worldwide and also to attract and retain people with the skills that are valuable to the group. It is founded on three pillars: remunerate performance, guarantee internal fairness, and help to make Orano more

attractive in particular on the market for technicians, managers and engineers.

The majority of employees are covered by legislation guaranteeing minimum pay. Where this is not the case, in particular in Namibia, Orano Mining guarantees a level of remuneration superior to the minimum seen locally.

Internally, fair treatment is ensured by processes of performance assessment (annual interview), conducted by the manager, as well as during the course of people reviews, which bring together managers, HR and a compensation manager.

For more information, see Orano annual report, chapter 4.3.1, p. 115



MANAGEMENT AND DEVELOPMENT OF SKILLS

Adapting skills to the goals of the sector (France)

Every year, Orano prepares a skills review. This mapping makes it possible to have a vision of the skills to be maintained and brought on board, as well as to identify professional areas where there may be skills shortages and to report on individual needs. This "Skills 2025" ("Compétences 2025") skills development plan can be broken down into 4 areas:

- the process of skills management
- the recruitment policy
- training, digitization and transfer of skills
- development of the pool of experts

Every year, employees have the benefit of an interview conducted to assess their performance and development of skills.

During the 2020-2021 campaign, 100% of managers completed an annual interview via single IT tool "OPUS". Used at group level, OPUS provides one single, traceable and comparable form, thus allowing consistency to be guaranteed between all countries.



PEOPLE REVIEW

Following these interviews, in all the countries where we are present, meetings between managers and HR are organized every two years to examine the potential and career development prospects of management staff. Action plans make it possible to define training pathways and succession plans for identified "talents" and people in key positions.

Number and percentage of employees receiving performance and career development reviews*

Non-executive		Category		TOTAL
Female	Male	Executive	Non-executive	
379	1,644	837	1,186	2,023
18,73%	81,27%	41,37%	58,63%	

* Employees from Uzbekistan were not part of the staff during the performance assessment campaign.

ACCESS TO TRAINING

The training offer is structured not only around the "École des métiers" but also reference "pathways" and independent modules in order to adapt as best as possible to the expectation of each employee and to enhance employees' professional prospects over the long term.



2025 OBJECTIVE FOR ORANO MINING:
 10% of employees to receive training leading to a qualification or diploma each year.

3,000 training courses are being offered to employees to help them to improve their skills.





Average training hours per year, per employee

	Gender		Category		TOTAL
	Female	Male	Executive	Non-executive	
Total number of training hours provided to employees	17,382	127,420	44,348	100,454	144,802
Total number of employees (CDI)	455	2,810	588	1,186	3,265
Average hours of training that the organization's employees have undertaken during the reporting period	38	45	58	56	44

“École du management”

Orano’s Management School (“L’École du Management”) offers strategic training programs to develop and support managers in the Group’s transformation.

The School encourages the development of skills, as well as simplification and proximity to what is happening in the field. The aim is to give employees the means of remaining committed and confident in the future. These training sessions are also contributing to build a common managerial culture within Orano in all its entities.

In 2020, due to health situation, the majority of courses were delivered remotely throughout the world from the mid-point of the year onwards. Training sessions on change management and taking into account customers’ needs were implemented in

Mongolia and Kazakhstan. Besides, remote welcome sessions are organized in the countries where we operate.

Mining College

The Mining College offers more than thirty training courses in technical areas to employees of Orano Mining and Orano, in France and on our subsidiaries’ sites (Canada, Kazakhstan, Mongolia and Niger). These courses are designed and delivered by employees of Orano Mining, and experts and specialists in our activities.

The Mining College supports the maintenance and development of technical skills in our core businesses of mining from exploration to mine closure. It is aimed at engineers, managers and technicians both from technical and support functions.

In 2020, 19 training courses (11 of which were remote courses) were delivered to 170 trainees.



EXPERTISE

Orano has 800 experts and specialists. A policy is in place to ensure the value of this sector receives due recognition in terms of remuneration and status. In addition to the contribution they make to scientific and technical excellence, our experts also contribute to the distribution and sharing of knowledge through active participation in networks, mentoring and teaching.

As a result of the campaign to renew and identify Orano’s population of experts conducted in 2020, 53 experts have been identified or confirmed within Orano Mining. From this college of experts, 14 experts are new, 9 have moved up a level and 30 have been re-confirmed in their positions. The number of women has also increased: nine women have been recognized as being part of our group of experts (compared to six in 2017). In subsidiaries, Orano Mining is continuing to pursue its policy to develop expertise with 39% of experts working in Niger, Kazakhstan, Canada and Mongolia.

PRINCIPLE 3.6

Respect the rights, interests, aspirations, culture and natural resource-based livelihoods of Indigenous Peoples in project design, development and operation; apply the mitigation hierarchy to address adverse impacts and; deliver sustainable benefits for Indigenous Peoples.

Orano recognizes a responsibility to the Indigenous Peoples in areas in which we have activities and is committed to their meaningful involvement in those activities. To meet this commitment Orano communicates with and provides opportunities for dialogue with Indigenous Peoples and considers those views in our activities in order to build consensus.

From exploration permitting, through development and licensing, then expansion and/or decommissioning, we involve local leaders and community members by offering information, tours one-on-one meetings and technical presentations.



Veterans' meeting, Kazakhstan.



Orano Canada also provides employment and business opportunities and social investment support, and reports on our progress to Indigenous Peoples and the public. We do so in accordance with the Orano Code of Ethics. Nearly 40% of Orano's employees in Canada declare themselves to be indigenous, a figure well above the average for Canada which is 12%. Furthermore, the percentage of indigenous employees working for Orano's suppliers comes to more than 75%. While there are numerous opportunities for communication and conflict resolution in our day-to-day interactions and collaboration agreements, we also offer a grievance mechanism for transparent dispute resolution to strengthen trust-based relationships with Indigenous Peoples near our activities.



PRINCIPLE 3.7

Work to obtain the free, prior and informed consent of Indigenous Peoples where significant adverse impacts are likely to occur, as a result of relocation, disturbance of lands and territories or of critical cultural heritage, and capture the outcomes of engagement and consent processes in agreements.

Orano is a partner in the Pinehouse (2012), English River First Nations (2013) and Athabasca Basin Ya'Thi Néné (2016) Collaboration Agreements.

The Collaboration Agreements build upon the enduring partnership in the development of uranium resources in northern Saskatchewan. They are structured on the five pillars of workforce development, business development, community engagement, environmental stewardship and community investment.



Subcommittees under each agreement include local representation and meet quarterly to discuss uranium mining and community matters such as environmental protection, health and safety, employment and training opportunities, contracting and business opportunities, and benefits, such as wages, scholarships, donations and sponsorships.

In the limited number of cases where Orano's undertakings may have an impact on traditional activities in the area, we meet with Indigenous leaders and the interested parties and agree on how and when we will communicate with each other, and how the party will be accommodated or compensated.



PRINCIPE 3.8

Implement policies and practices to respect the rights and interests of women and support diversity in the workplace.



FRANCE

In France, a course of training on the prevention of sexual harassment and sexist behaviors has been delivered by the Orano group. At Orano Mining France, awareness of the issue has been raised with Trade Union organizations, members of the Social and Economic Committee (*Comité Social et Économique - CSE*), HR managers and other managers.



2025 OBJECTIVES FOR ORANO MINING:
 Increase the proportion of women in our 160 key positions (+50%).



OUR RESULTS

The indicators for Orano Mining are encouraging: women make up 40% of the teams in France, and 50% of the Board of Directors. We still need to improve the overall numbers of women abroad which now stands at 14% (up by 4% since 2018), and make sure they are promoted at all levels of the organization, particularly in Management Committees.

Efforts are made to accompany the international careers of talented women from one country to another from Kazakhstan to Canada and from Niger to France.

FRANCE

The index of gender equality in the workplace is 88 / 100.

In France, the 2020 ratio of women’s base salary to that of men by occupational category is 1.15 for Technicians and Supervisors and 0.85 for Engineers & Managerial staff.

Gender equality also extends to internships, apprenticeships, and professionalization contracts.

In 2020, within this population, women hired accounted for 33.51% of the count (51 female interns out of 158 and 12 female work-study contracts out of 30), meaning equality has been maintained at the same level as last year. And finally, in 2020, 18.28% of women occupied key positions within Orano Mining - 32 women out of a total of 160 key positions.

* Top 160: 160 key positions within Orano Mining



Employees involved in governance bodies (management committee) by gender and age group

	Gender		Age group		
	Female	Male	Under 30 years	30-50 years	Over 50 years
Number of employees	18	69	1	51	35
Percentage of employees	23.08%	76.92%	1.15%	58.62%	40.23%
Total number of members	87				

FRANCE

Professional gender equality agreement

Convinced that mixed working environment is a major asset in the life of the group and for its development, Orano concluded an agreement on equality between women and men in 2019 for a period of four years.

This agreement is structured around 6 areas of action:

- Gender diversity in the workplace
- Gender equality on pay
- Access for women to posts of responsibility
- Parenting integrated into day-to-day professional life
- Improvement of working conditions and looking for a better balance between professional activity and personal life
- Steps to prevent and counter sexual harassment and sexist attitudes and behavior



DIVERSITY - EQUAL OPPORTUNITIES

Orano is convinced that diversity is a performance factor, a source of innovation, that diversity enriches exchanges, confronts skills and nourishes reflections. Orano’s commitment is recognized by the Diversity Label obtained in 2010 and renewed in September 2020.

The scope of the Diversity Label covers France, but Orano Mining, given its international and multicultural dimension, see itself as a driver for the worldwide expansion of the Diversity policy. After all, it brings together a diverse range of skills from around thirty countries on all continents.

Orano Mining applies the group’s policy and our HR teams promote diversity during the course of exercising their functions by taking care to develop employees’ skills and career paths in a way that excludes any discrimination related in particular to origin, gender, race, sexual orientation or identity, disability, age, or belonging to a political, trade union, or religious organization or to a minority.

For more information, see the sheet

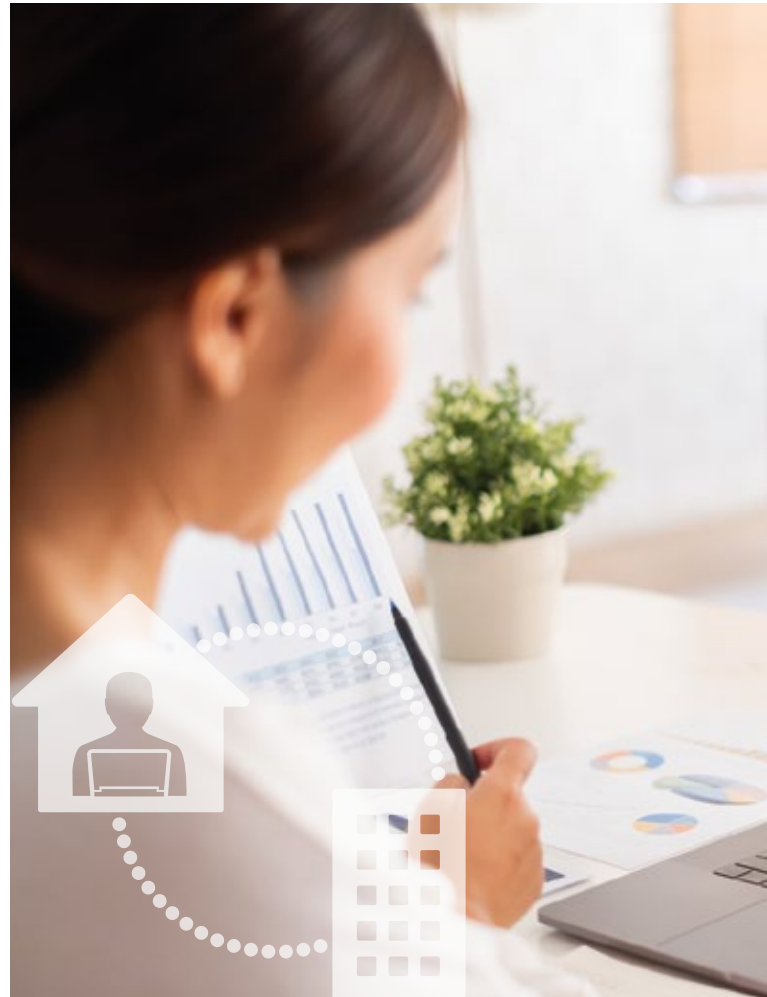


AGE DIVERSITY

Maintaining a generational balance within the workforce makes it possible to plan for the renewal of skills and the transfer of knowledge.

For over ten years, Orano has been committed to promoting work-study programs. In 2020, Orano Mining hosted 30 employees on work-study contracts for periods ranging from 1 year to 3 years.

For more information, see the sheet



FRANCE

Disability is an integral part of our diversity policy

In France, the Orano Group Agreement to promote the employment of people with disabilities for 2018-2020 has set up several actions aimed at strengthening and developing recruitment of people with disabilities, employability and integration into the work group, job retention and associated measures such as training and professional development. The Group Agreement also includes measures to raise awareness among managers and employees, and develop purchases from the protected and adapted sectors and self-employed disabled contractors.

In 2020, the rate of employment of people with disabilities within Orano Mining in France was 3.16%.

WORK ORGANIZATION

From the right to log off to teleworking, flexible working hours, services and employee benefits, every aspect has been addressed to promote the best work-life balance, so that everyone can give the best of themselves in an environment that enables them to thrive.

PART-TIME WORKING

Employees can also opt to work part-time on a voluntary basis.

At Orano Mining, we have 37 employees working part-time in the countries where we are present, of whom 26 are women and 11 are men.

TELEWORKING

The goals of organization of work vary depending on the countries in which Orano Mining is present, as well as on the environment



in which employees exercise their activity: shift work, shift rotation schedule, office work, legislation in force, etc. Guidance on new working methods, such as teleworking is currently being provided in France and in Canada in order to promote a good work-life balance.

In 2020, due to the pandemic and in order to protect our employees, teleworking was extended to all head offices of Orano Mining: in Kazakhstan, Canada, Mongolia and Niger.

FRANCE

Nearly 60% of Orano Mining employees work remotely on a regular (+ 30% vs 2019), with 40% being women and 60% being men. Measures protecting the right to disconnect are also in force and are featured in the "Quality of life at work" agreement which is currently being re-negotiated.

PARENTAL LEAVE

Particular attention is paid in the case of employees taking parental leave where there is such provision in the country.

During their return-from-leave interview, employees may ask for a specific update on their compensation status, professional mobility in relation to the remuneration policy in force within their department during their absence.



Number of employees on parental leave in 2020 (Niger and Namibia are not concerned)

Total number of employees (by gender)	Female	Male	Total
Total number of employees that were entitled to parental leave	383	1,484	1,867
Total number of employees that took parental leave	18	24	42
Total number of employees that returned to work in the reporting period after parental leave ended	12	18	30
Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work	11	17	28

Return to work rate of employees that took parental leave	67%	75%	71%
Retention rate of employees that took parental leave	33%	83%	62%



Base camp, KATCO, Kazakhstan.

EMPLOYEE BENEFITS

Employees social benefits

Categories	Canada	France	Kazakhstan	Mongolia	Namibia	Niger	Uzbekistan
Life insurance	●	●	●	●	●	●	-
Health care	●	●	●	●	●	●	●
Disability and invalidity coverage	●	●	●	●	Long-term disability	●	●
Parental leave	●	●	●	●	●	● Only for SOMAIR	●
Retirement provision	●	●	●	●	●	●	-
Stock ownership	-	-	-	-	-	-	-





Minimum notice periods regarding operational changes

	Canada	France	Kazakhstan	Mongolia	Namibia	Niger	Uzbekistan
Minimum number of weeks' notice typically provided to employees and their representatives prior to the implementation of significant operational changes that could substantially affect them	4 weeks	Between 1 and 3 months; 4 months if a major reorganization ensues (predetermined deadline that allows OS to use expertise) - e.g. Chatillon (France)	1 month	45 days prior notice in case of mass redundancy (Labor Code of Mongolia, Article 40.5) 14 days of prior notice in case of stand by (Collective Agreement)	4 weeks	2 weeks SOMAÏR 1 month for COMINAK	1 month
For organizations with collective bargaining agreements, report whether the notice period and provisions for consultation and negotiation are specified in collective agreements	Yes	Yes	The collective bargaining agreement may be supplemented or amended only upon the mutual agreement of the parties in the procedure prescribed for conclusion of the collective bargaining agreement in accordance with the legislation of the Republic of Kazakhstan. The party, taking a notice from the other party with a proposal to start negotiations on conclusion of a collective agreement, shall consider it and enter into negotiations in the manner prescribed by the Labor Code within ten days.	The parties shall begin negotiating the renewal of the existing Collective agreement 6 months prior its expiry (According to the Collective agreement signed between Badrakh Energy LLC and its Employee representatives, Article 9.2., reg. 2019.05.01.).	4 weeks	No for SOMAÏR Yes for COMINAK	1 month

RISK MANAGEMENT

Solvent extraction circuit,
McClellan Lake mill, Canada.



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MINING PRINCIPLE

Establish effective risk management strategies and systems founded on a sound scientific basis and which take into account how stakeholders perceive risks.

Information meeting, Zuuvcn Ovoo project, Mongolia.



PRINCIPLE 4.1

Assess the environmental and social risks and opportunities of new projects and major changes to existing operations in consultation with the interested and concerned stakeholders, and publicly disclose assessment results.

Within Orano, a campaign to identify and assess risks of all kinds is conducted annually using a Business Risk Model (BRM). This is used to adjust and update the action plans put in place to manage the risks.

The BRM lists, within a defined number of risk families, all foreseeable or unexpected situations or events that could have an impact on the health and safety of the staff, the environment, the operations, the strategy or the financial results of the group, its compliance with current regulations, as well as its reputation and image. The BRM is to be updated on a regular basis with best practices, feedback from experience and regulatory changes.

Due diligence and risks of bribery and trading in influence have been integrated into the group's mapping of risks since 2018 (More information on Orano annual report, chapter 3.2.1, p. 61 [📄](#)).

In all regions where Orano operates, special attention is paid to preventing serious violations of human rights, and to the health and safety of people and the environment, whether in relation to the activities of the parent company or the companies it controls, or activities undertaken by subcontractors or suppliers as part of their contractual relationship with Orano, it being understood that all these companies are required to comply with local laws.



Controls at the Tortkusuk South plant, KATCO, Kazakhstan.



The campaign to identify and assess risks has the following main objectives:

- The formal identification of risks of all types
- The qualification and classification of these risks
- The establishment and implementation of action plans to control these risks

The duty of care plan, incorporated into the annual risk mapping exercise, is subject to approval by the Board of Directors. It is drawn up in accordance with the provisions of French Law No. 2017-399 of 27 March 2017 on the duty of care requirements incumbent on parent companies and contracting companies, which transposed into French law the duty of care as defined by international CSR reference frameworks (notably the United Nations Guiding Principles on Business and Human Rights, and the OECD Guidelines for Multinational Enterprises). It is based on various approaches to identifying, reporting and monitoring that have been in place within the group for several years, and contains reasonable duty of care measures.



Laboratory, Muyunkum site, Kazakhstan.

MONGOLIA

In Mongolia, Badrakh Energy (a subsidiary of Orano Mining, Mon Atom and Mitsubishi*) finalized the construction of the facilities required for tests at the Zuuvch Ovoo site, where we have held three operating licenses since 2015. The mining method selected for extracting uranium from the ore is ISR.

For this new project, the environmental and social risks, as well as the opportunities, have been assessed and shared with local stakeholders.

CONTRIBUTING TO THE DEVELOPMENT OF THE REGION

The new project will contribute to local and economic development in the country. Currently, 93% of employees are Mongolian, with 30 having been hired locally. Almost 4000 hours of technical vocational training were delivered in 2020.


Part of this training was provided with the participation of the Dornogobi province Vocational Training Center, and with the support of the Governor of the Ulaanbadrakh district. The project also leads to the development of local infrastructure and generates significant purchasing and business opportunities.

More information on the methodology of extractive techniques



MEASURING THE ENVIRONMENTAL IMPACT

At each stage of the project, from exploration to site redevelopment, environmental studies are carried out in the fields of geology, hydrology, climate conditions, fauna, flora and biodiversity.

The results of these studies are shared with the authorities, and information is regularly shared with local stakeholders. (For more information, see the case study of Mongolia, chapter 6.2, p. 98 .

A PARTICIPATIVE MONITORING PROGRAM

Each year, Badrakh Energy organizes a participative environmental monitoring program with local citizens as part of the pilot. Water samples are taken at six points in the area of the Argalant, Bayanbogd and Zuunbayan settlements. The samples are sent to be analyzed at the Central Geological Laboratory and the Nuclear Research Center Laboratory chosen by the local population. Radioactivity measurements are also

performed on site, with the results being presented and reported to the stakeholders.

Badrakh Energy has already received recognition for “best practice” from the workshop on “Best practices in participative environmental monitoring” organized in April 2019 by the Mongolian Environment and Tourism Ministry.



More than 20 participative monitoring sessions since 2013

* Mitsubishi withdrew from Badrakh Energy shareholders' capital in 2021



The Innovation Center for Extractive Metallurgy, Bessines-sur-Gartempe, France.

The Internal Audit Department supports group entities with the mapping tasks (More information on Orano annual report, chapter 3.4, p. 75 [📄](#)).

In order to prevent serious harm to the environment, Orano carries out environmental studies throughout the life of mining and industrial projects.

Environmental impact studies (EIS) are performed for each new mining project and whenever a major modification to our industrial facilities is planned. They meet the regulatory requirements in force, and are submitted for public consultation in order to obtain approval from the local authorities.

These studies are used to map the impacts and improve understanding of the associated environment (e.g. biodiversity inventory, socioeconomic status of the region), and identify ahead of time any preventive or mitigating measures to be incorporated into our facilities to reduce risks at the source. These studies also report on the principles of rehabilitation to be deployed at the end of the mine's life, as well as any offset measures and the principles of environmental monitoring of activities.

In 2020, five impact studies were conducted at our sites in Central Asia:

- Preliminary (pZVOS) and final (ZEP) impact studies on the exploration projects under the North Dzhengeldi and South Dzhengeldi licenses (Uzbekistan)
- An update to our impact study on the Zuuvch Ovoo pilot (Mongolia)

Environmental impact studies (EIS) can also draw on more specific R&D work, where relevant, which makes it possible to demonstrate the relevance of rehabilitation solutions over the long term and provide the most suitable ecological offset solutions in the various countries where Orano works.

PRINCIPLE 4.2

Undertake risk-based due diligence on conflict and human rights that aligns with the OECD Due Diligence Guidance on Conflict-Affected and High Risk Areas, when operating in, or sourcing from, a conflict-affected or high risk area.

Orano does not intend to act as an importer of metals as defined in Regulation (EU) 2017/821 of the European Parliament and of the Council of 17 May 2017.



Muyunkum plant, Kazakhstan.



Tortkuduk plant, KATCO, Kazakhstan.



PRINCIPLE 4.3

Implement risk-based controls to prevent, minimise, mitigate health, safety and environmental impacts to workers, local communities, cultural heritage and the natural environment, based upon a recognised international standard or management system.

Nuclear safety is applied across the complete life cycle of facilities, throughout the design, construction, operations, shutdown and decommissioning phases.

In addition to the group's Nuclear Safety Charter, the Safety and Environment Policy formally identifies nuclear safety, industrial safety and environmental protection priorities.

This policy has the following objectives:


- Maintain a high level of nuclear safety for our facilities, our products, and our services over the long term.

- Strengthen operational discipline and make it, in practice, a matter of a daily concern for operational management and all those involved in conducting operations.
- Take into account the priority given to risk prevention and environmental protection in each of the processes that make up our activities.

Conformity check and classification, COMINAK site, Niger.



Within Orano Mining, group requirements are addressed through:

- Prior analysis of industrial risks during the design, construction and operation phases, but also whenever there are significant changes in operating conditions or construction work, by means of studies or ad hoc analyses.
- Mapping of major industrial risks encountered on our sites and estimation of the degree to which these risks are controlled via the preventive and protective barriers put in place to eliminate or mitigate these risks. Action plans are set up and regularly updated. These action plans are part of a broader process of risk reduction and continuous improvement.
- A crisis management organization (See Mining Principle 4.4, p. 63 ).

RISK MANAGEMENT SYSTEM

At most of our sites, health and safety risks are managed using a management system integrated and which meets the requirements of standard OHSAS 18001 (for occupational health and safety).

These systems make it possible to set up a process and procedures to control the main risks encountered on sites, prioritize them, monitor them, take corrective action and make improvements.



A NEW STANDARD FOR MANAGING SAFETY AND INDUSTRIAL RISKS

In September 2020, Orano Mining published a new standard on the management of safety and industrial risks. Its purpose is to improve and standardize the Process Safety Management at sites and reduce the risk of major accidents.

This standard, which will be implemented at McClean Lake in Canada, KATCO in Kazakhstan and SOMAÏR in Niger, describes the requirements regarding the seven elements of a Process Safety Management.



LEADERSHIP COMMITMENT

In 2020, the sites performed a self-assessment in relation to the requirements in order to identify their strengths and areas for improvement.

The sites then drew up a roadmap and defined performance indicators for the next two years, in order to consolidate their understanding, strengthen their industrial risk culture and reduce the risk of major accidents.

This work has been performed with the support of central teams.

AWARENESS CAMPAIGN REGARDING INDUSTRIAL RISKS

Orano Mining has launched a monthly information and awareness campaign regarding industrial risks. Each month, a document is produced containing an account of an industrial accident that actually happened in other industries, an analysis of its causes and the consequences, together with a reminder of the preventive measures that should be in place on our sites.



The aim is to share the lessons learned from real-life events and raise awareness among employees regarding the importance of strictly following the industrial safety rules and processes.

In addition, the teams have a quarterly update on the progress made and share their industrial risk performance with all Orano Mining employees.

More information on accidental spills
Mining Principal 6.3, p. 107





Crisis management exercise, Bessines site, France.



PRINCIPLE 4.4

Develop, maintain and test emergency response plans. Where risks to external stakeholders are significant, this should be in collaboration with potentially affected stakeholders and consistent with established industry good practice.

Within Orano Mining, each operating entity sets up an organization to manage emergency situations.

Having this organization in each entity provides for strong analytical and decision-making capability so that all necessary measures can be taken in the event of an emergency or crisis situation to make facilities safe, mitigate the impact of the event and deliver information internally and externally. Different levels of drills are conducted on a regular basis to test the effectiveness of this organization, involving external stakeholders such as local and national authorities, the Nuclear Safety Authority, local residents, etc.

We organized more than fifty drills at our sites in 2020 to test the effectiveness of the alert systems and the technical management of accidents and emergency situations.

Training during these exercises prepares Orano Mining staff and other stakeholders to act and to make use of the emergency systems provided. It is also an opportunity to teach all those present within the perimeter of the protected area what to do in the event of an incident.

Responsiveness, the resolution of the incident both technically and operationally, and the management of multiple interfaces are all elements that help to make our business a committed and responsible industrial player..



Detail of emergency drills performed in 2020: A level-3 emergency drill at the KATCO site in Kazakhstan, as well as three level-2 drills and more than 40 level-1 drills were organized at our sites.

Different levels of exercise are implemented:

- Level 1: Local exercises such as fire drills at least once per quarter.
- Level 2: Local exercises with involvement of the subsidiary's general management, at least once every two years.
- Level 3: Local exercises with involvement of the subsidiary's general management and Orano Mining headquarters. Level 3 exercises are performed once a year within the Mining BU.

Focus on the emergency drill at KATCO in 2020

The KATCO level-3 emergency drill took place in December 2020, at the Tortkuduk and Muyunkum sites:

- A first accident occurred between an ammonia truck and a van at the Tortkuduk compound, causing casualties and discharges of ammonia into the atmosphere.
- The second event happened in the ammonium nitrate storage area at Muyunkum. This was a fire that caused explosions and damage to several facilities.

HEALTH, SAFETY AND RADIATION PROTECTION



Radioactivity measurement, SOMAIR site, Niger.



MINING PRINCIPLE

Pursue continual improvement in health and safety performance with the ultimate goal of zero harm.

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PRINCIPLE 5.1

Implement practices aimed at continually improving workplace health and safety, and monitor performance for the elimination of workplace fatalities, serious injuries and prevention of occupational diseases, based upon recognised international standard or management system.



Operating mines involves hazardous activities, which must be identified and managed. Orano Mining employees carry out tasks that may include rock drilling and blasting, the use of heavy machinery or chemical products, work with live equipment, work at height, travel, or exposure to ionizing radiation. It is Orano’s people who make our group strong. Our priority is to protect their health and safety in all the countries where we work. The success of our strategic vision depends on it.

Orano Mining has implemented the Orano health and safety policy, with all its actions forming part of a continuous improvement approach.

POLICY AND ACTION PLAN

Orano Mining applies Orano’s Health, Safety and Radiation Protection Policy with the objective of harmonizing its practices and applying international standards:

- Safety culture and leadership
- Compliance with fundamentals
- Organization and skills
- Risk prevention

Numerous training and prevention actions are carried out, in order to:

- guarantee and maintain a high standard of occupational safety,
- prevent severe and fatal accidents,
- work towards zero lost-time occupational accidents and zero impact of our activities on the health and safety of our employees, our operatives from outside companies, and everyone living in close proximity to our sites – these are our constant goals.

The operational teams and the site Health, Safety and Environment (HSE) teams are supported by the Health, Safety, Environment and Remediation Department (DSSER), whose director is a member of the Orano Mining Management Committee.



Safety

OUR POLICY

The occupational safety objectives of Orano Mining aim to ensure the prevention and control of all risks related to our activities, for both our employees and our external operatives.

In practice, this involves:

- engaging our managers on a day-to-day basis in strengthening the safety culture of our teams;
- deploying applicable safety standards** and anchors* throughout the group;
- systematically evaluating risks in all our activities using a common methodology;
- involving all employees in the detection, elimination and control of hazardous and risky situations;
- collecting and exchanging bests practices in occupational safety;
- systematically analyzing any events with high severity potential, with the aim of anticipating any accident liable to have serious or fatal consequences;
- sharing the lessons learned from accidents and near-misses with group entities and our industrial partners.

The Health and Safety Policy is implemented by the sites through their management systems, which take into account specific features and regulations in local areas, as well as the requirements of standards ISO 14001 and/or ISO 45001. Operational health, safety and radiation protection action plans, with measurable results across all our sites, are also drawn up. These are regularly reviewed, approved and audited by the Orano Mining DSSR teams. Safety is always the first subject discussed at all Orano Mining Management Committee meetings.



* The anchors are an integral part of everyone's daily work, applied at all levels with strong involvement from management. They must be complied with to prevent employees and subcontractors being exposed to severe or fatal risks.

** The standards complement the anchors. They correspond to a rule or best practice whose application contributes to the management of risk and the prevention of accidents.

GOVERNANCE

Since 2019, Orano Mining has strengthened its governance system and transformed its Safety Steering Committee into a decision-making body. This Committee is formed of the members of the Orano Mining Management Committee, the site managing directors, the directors of operations, and the Orano Health, Safety and Radiation Director.

Its role is to prioritize and plan safety actions, and supervise their application, as well as monitor them and ensure continuous improvement in safety results across all sites where Orano Mining operates. In 2020, the Committee met twice, at the start of the year and midway through.

The occupational safety policy applies to everyone, including employees of Orano Mining subsidiaries, subcontractors and visitors.

In 2020, the Orano Mining Safety Steering Committee set the following objectives:

- Strengthen the assimilation of safety standards
- Identify the major risks for each site through self-assessment
- Continue the deployment of the Pareto principle* across all existing visual management charts (see explanations below)
- Launch a campaign to assess the compliance of power tools
- Define the KPIs to monitor to assess progress with the action plans and detect and resolve deviations.



* Pareto: The Pareto principle, also known as the 80/20 rule, is based on the observation that 80% of effects are produced by 20% of causes. Based on this principle, the aim is to target risks on which efforts are to be focused (prioritization and efficiency). The categories which occur most frequently are highlighted thanks to the accumulation of reported results.

Fatal accident at SOMAÏR

On June 2, 2020, an operator guiding stockpile operations at the SOMAÏR mine, who was working as a subcontractor, was struck by a rock that fell from a truck during a surface guiding operation.

The site emergency services took immediate action and he was transported to the SOMAÏR hospital, where he died of his injuries despite the care he received.

Several measures were introduced following this dramatic incident, such as the suspension of direct transfers from skips to stockpiles, and benchmarking against other mining companies. A guiding standard to improve the safety of operations was also reviewed.

In addition to these corrective actions, other major steps were taken to adjust operating practices. These will make it possible to eliminate the role of stockpile guide operator and deploy an ambitious plan to reduce the risk of collision between vehicles and pedestrians, and between vehicles.



OUR 2020 SAFETY TARGETS:

- 0 fatal accidents
- TF1 ≤ 1, i.e. no more than 14 lost-time occupational accidents
- TF2 ≤ 3.8, i.e. no more than 36 occupational accidents without lost time

OUR 2020 SAFETY RESULTS:

	2018	2019	2020
Fatal accident		0	1
TF1**	1	1.4	1
TF2***	3.3	4.2	4.4

Despite one fatal accident, the total number of lost-time accidents (TF1*) has fallen in line with the target. Our target has not been reached for TF2**, with a significant number of occupational accidents without lost time.

** TF1: Lost-time accident frequency rate

*** TF2: Frequency rate of accidents without lost time



IDENTIFYING ACCIDENTS WITH HIGH POTENTIAL SEVERITY

Work to identify deviations on the ground, weak signals, near-misses and high-potential incidents (“HIPOs”) continues and is monitored in a reporting tool, which is used to categorize and rank these elements. These deviations are also included in the visual management tool used by teams to structure their meetings.

Visual management tool for classifying deviations by category and frequency

Safety Pareto for team/zone

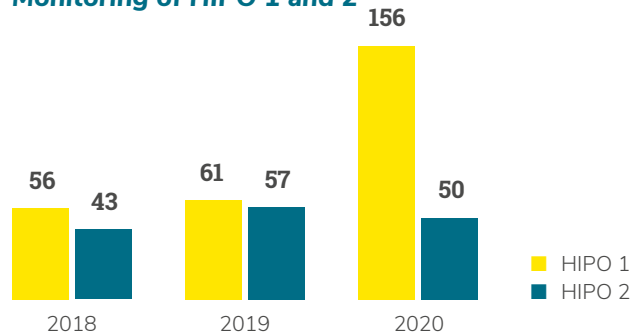


The systematic detection of deviations as close to the ground as possible strengthens team engagement and the involvement of each operator. The aim is to improve the prevention of severe and fatal accidents, and the Orano Mining accident figures in general.

There are systematic efforts to identify the causes of events with high potential severity. Action plans and follow-up measures are immediately introduced.

In 2020, this practice within Orano Mining was rolled out to all the Business Units in the Orano group.

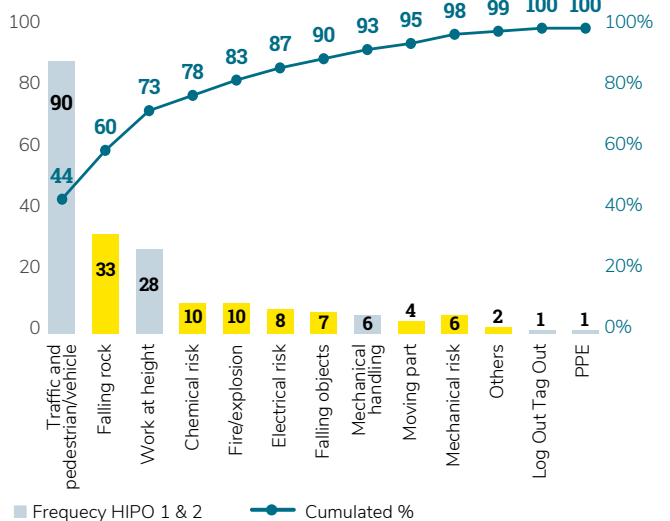
Monitoring of HIPO 1 and 2



The number of HIPOs reported in 2020 has more than doubled. This is mainly due to the fact that COMINAK’s HIPOs were systematically classified as level 1 in order to raise the level of vigilance of operators and management and to ensure systematic follow-up of these events.

The analysis of risks and near-misses reported in 2020 shows that they were comparable to those in the previous two years:

- 44% Traffic and pedestrian/vehicle co-activity
- 33% Falling rock
- 28% Work at height



* HIPO: A High-POTential incident
 HIPO 1: Could have led to one or more fatal accidents.
 HIPO 2: Could have led to one or more accidents resulting in lost time and irreversible effects.

Health policy

Orano Mining deploys a health service in all the countries where it works to meet the prerequisites for occupational medicine and healthcare, as well as provide support for medical evacuations for local people and expatriates.

In the course of our activities, various measures are taken to maintain a high level of occupational health and safety for all employees and subcontractors. Our actions are based on:

- Identifying and assessing risks at workstations
- Medical monitoring
- Preventive healthcare



MEDICAL MONITORING

Occupational medicine at sites complies with the regulations of the relevant country.

This comprises:

- A pre-employment medical check-up, and regular medical check-ups (at a frequency set according to the risks of the role)
- Vaccination monitoring
- First aid training and regular refresher courses

MEDICAL CARE FOR EMPLOYEES

Each site has its own health organization, with medical standards.

Medical care is provided in liaison with the site occupational physicians and human resources teams. The care pathway is defined via procedures following healthcare schemes and flow charts for the Medical Emergency Response Plans (MERP) and medical evacuations.



ASSESSING WORKSTATION RISKS

This is done at each site, and takes into account the risks identified at the workstation, whether these are chemical, physical, biological, ergonomic or psychosocial.

The analysis of these risks allows sites to draw up and implement an action plan incorporating local requirements and regulations, the risk of exposure of the personnel to the various hazards, and Orano's Health, Safety, Radiation Protection Policy.





PRINCIPLE 5.2

Provide workers with training in accordance with their responsibilities for health and safety, and implement health surveillance and risk-based monitoring programmes based on occupational exposures.

OUR MAIN ACTIONS

We raise awareness regarding occupational health and safety at all our sites through actions aimed at subcontractors and employees to encourage them to take the initiative.

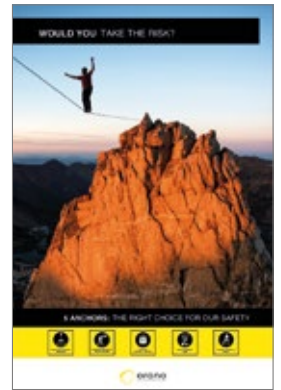
In addition, we perform participative safety inspections and share operating experience feedback and best practice through communication actions, which allows us to learn from our successes and our mistakes.

We assess occupational risks and implement a crisis organization which is fully documented. Events with high potential for severity (HIPOs) are identified, and preventive measures and their follow-up are prioritized (See section below).

Discussions are organized on the ground for employees and subcontractors, and all sites have a safety day. This is traditionally held in June and known as "safety month".

In 2020, an awareness campaign entitled "I make the right choice" was run for all employees and subcontractors at sites.

In going about our daily activities, there are rules that save lives, and everyone must know and comply with these rules, at all times. Eye-catching posters are used to illustrate occupational safety fundamentals and issues, and form the basis for team discussions during the "safety talks". A "spot the hazard" game also provided the chance to tackle in-depth subjects in a more playful way.



Examples

Power tools - making operations safer

In 2020, two lost-time accidents were related to the use of power tools (for cutting, drilling, grinding, etc.). Since 2014, almost 30 similar hazardous situations have been reported. To resolve these issues, a four-stage action plan has been in place since October 2020 and will continue throughout 2021:

1. Launch of a “clean-up session” at all Orano Mining sites, including subcontractors, in order to list all tools held on site and ensure that any non-compliant tools are withdrawn: the aim is to limit the risk at the source.
2. Development of a specific Orano Mining safety standard to bring together all the requirements and safety rules to be observed in one place.
3. Delivery of an awareness and communication campaign prepared by the corporate/central teams to recall the main risks and safety rules, as well as best practices.
4. Implementation of dedicated workshops at the sites.



Sites perform their safety self-assessments

In 2020, the KATCO, SOMAÏR, McClean Lake and Bessines sites performed their self-assessment for the five safety anchors using a dedicated tool.

The tool enabled them to systematize their approach by taking into account the following aspects: preparation, execution, resources and supervision, with an assessment of how well these anchors had been adopted.

Each site, comprising a multidisciplinary team led by a safety officer, identified critical points to correct and improve. They also drew up action plans with immediate corrective actions, or “quick wins”, together with longer-term actions to implement in 2020–2021.

The COMINAK site, which ceased operation on March 31, 2021, also performed an analysis to take into account the specific risks involved in the forthcoming dismantling phase.

PREVENTIVE HEALTHCARE

This takes place through constant health monitoring, regular communications (country health sheets and pathology data, and medical alerts). “Travel advice” training is organized every quarter for personnel undertaking international assignments.

Orano Mining applies actions to promote the individual and collective health of its employees in the countries where it works. Examples include the vaccination and testing campaigns for certain diseases (such as flu) that are run for employees. Actions to raise awareness of lifestyle risks (anti-smoking, alcohol campaigns, etc.) or preventive actions are also regularly deployed at sites.

FRANCE

Since 2019, the Orano group has been running a three-year campaign entitled "Santé Attitude" (Health Focus), with an action plan on an unprecedented scale. After the 2019 prevention campaign dedicated to eyesight, this program turned to dermatology and the prevention of skin cancer in 2020.

Online video sequences on the intranet encourage the adoption of healthy daily steps for the skin and offer a guide to a quick self-examination to check a suspect lesion.

Through nine videos produced with dermatologists, prevention specialists and insurance partners, key information has been provided about the epidermis, the protective layer, and how to care for it and protect it from external stresses, as

well as the reflexive action to take if a serious accident such as a burn or chemical splash occurs.



In addition, special attention is given to the prevention of Psychosocial Risks with the introduction of a listening and support service run by an independent consultancy. This service aims to offer a space to speak out and share any questions, difficulties or concerns freely and anonymously, in a caring environment.

Health observatory in Niger

The Health Observatory of the Region of Agadez (OSRA) was created in 2012 to ensure post-professional monitoring of former SOMAÏR and COMINAK* employees who might have been exposed to ionizing radiation at work.

The Health Observatory is a transparent, independent initiative run on a multi-party basis (involving the mining companies, the State and civil society in Niger). If occupational diseases caused by exposure to ionizing radiation were detected, care would be provided by the appropriate national entity or, failing that, by the Health Observatory.

Medical check-ups as part of this post-professional monitoring are organized every two years: they include an appointment with a doctor, and a clinical examination, chest x-ray and blood test. These check-ups are provided by independent physicians assigned to work for the Observatory.

In 2020, 413 check-ups were carried out covering the Dosso, Maradi, Zinder and Diffa regions.

In total, since its creation, 5155 post-professional monitoring check-ups have been performed for former employees of SOMAÏR and COMINAK, and no occupational diseases linked to exposure to ionizing radiation have been reported.



** After closure of the COMINAK site on March 31, 2021, the former employees will continue to benefit from this post-professional monitoring.*

Radiation protection of employees

To successfully carry out their activities at the group's facilities, as well as at those of its customers, in France and abroad, employees of Orano and employees of outside companies are protected against ionizing radiation and benefit from dosimetric monitoring suitable for the type of exposure.

The fundamental principles of radiation protection are observed during operations in radiological environments:

- Justification of practices: The use of ionizing radiation can be justified where its benefits are greater than the disadvantages it may bring.
- Optimization of protection: The equipment, processes and system for organizing work are designed in order to keep individual and collective exposure as low as reasonably possible, given the technical conditions and economic and societal factors (ALARA principle).
- Limitation of individual doses: Dose limits that must not be exceeded are set in order to guarantee the absence of deterministic effects, and that the likelihood of stochastic effects appearing remains at an acceptable level given the economic and societal context.



New dosimeter heads, COMINAK, Niger

At Orano facilities, measures to reduce exposure to ionizing radiation are incorporated from facility design. These measures aim to maintain an environment that is as "radiologically clean" as possible and protect operators from the ionizing radiation emitted inside facilities.

Radioactivity measurement, Dulaan Uul, Mongolia.



The radiation protection measures and level of personnel monitoring are the same for all workers exposed, in application of the principle of equity, which involves ensuring that individual doses are fairly distributed so as to minimize differences in exposure between workers.

In order to reduce the doses received by workers in controlled areas as far as possible, an in-depth study of the operating conditions and projected doses is performed prior to an operation, leading to measures such as the adaptation of exposure times, the use of protective screens, the integration of the physiological constraints of personal protective equipment (PPE) and the working environment.

In countries with less stringent legislation, Orano Mining is committed to applying a limit of 20 mSv/yr (over a rolling 12-month period) for the maximum individual additional dose received by workers exposed to ionizing radiation in its facilities. This is based on ICRP (International Commission on Radiological Protection) recommendations.

Orano Mining remains attentive to doses that exceed the internal alert limit of 14 mSv, in order to ensure that exposure is as low as possible, given the technical conditions, economic factors and the nature of the operation to be carried out, as required by French regulations (ALARA approach). In these situations, a systematic analysis is performed to introduce actions compatible with facility activities, in application of the radiation protection optimization principle.



IONIZING RADIATION

Radioactivity is a physical phenomenon related to the structure of material. Certain atoms, such as those of uranium, are unstable and emit ionizing radiation.

Such radiation is referred to as ionizing radiation as, when it interacts with material, it can result in ionizations, in other words tear away one or more electrons from its atoms.

Once again in 2020, special attention was paid to certain operating conditions associated with work in underground mines, notably during activities that create a dusty atmosphere, activities to extract higher-grade ore or tests to adjust ventilation (mechanical ventilation tests) that lead to an increase in radon.

- 0 workers with exposure of over 20 mSv**
- Maximum dose recorded in the Mining BU: 19.9 mSv* (for COMINAK, Orano Mining employee)
- Average dose for Mining BU employees: 2.8 mSv
- Average dose for subcontractors: 3.0 mSv

French regulations: effective additional dose limit of 20 mSv over a rolling 12-month period

RADIATION PROTECTION RESULTS (EMPLOYEES AND CONTRACTORS)

	2018	2019	2020
Workers exposed to a dose exceeding 20 mSv	0	0	0
Maximum radiation exposure (mSv)	16,6	15,9	19,9
Average occupational radiation exposure for employees	2,8	2,5	2,8
Average occupational radiation exposure for sub-contractors	2,5	2	3

* Reference period for maximum or average dose: July 2019–June 2020.

** In July 2020, it should be noted that 11 employees in the COMINAK underground mine (Niger) received a cumulative individual dose over a rolling 12-month period that exceeded the regulatory limit of 20 mSv over a rolling 12-month period. A loss of power was the cause of this one-off incident, which occurred in July 2020. It led to disturbances in the ventilation of the underground mine works, with a significant degradation of the working conditions in relation to radon. An in-depth analysis and review of this event has led to additional measures being put in place in terms of equipment (fan, beacons) and organization. This incident will be reported in the 2021 CSR report as the radiation reporting period starts on July N and closes on June N+1.

Dosimeters control by SEPA personnel, Bessines-sur-Gartempe, France.



ENVIRONMENTAL PERFORMANCE

Cluff Lake remediated site,
Canada.



MINING PRINCIPLE

Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change.

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Water quality monitoring in nomadic wells, Mongolia.



Throughout the life of the mine, the extraction and processing of uranium ore entail a need for raw materials and resources, especially water and energy. Our aim is to optimize our consumption of natural resources and our discharges, find ways to upcycle our waste and protect the ecosystems in which we operate.

We are convinced that environmental stewardship is key to the acceptability of our activities and our "license to operate" in the countries where we operate.

Orano Mining has designed dedicated action plans to tackle environmental performance such as water management, energy consumption and climate change.

POLICY AND ACTION PLAN/PROGRAM

Orano’s Safety & Environment Policy acts as a framework for all Orano Mining entities, both in France and internationally. As well as ensuring compliance with the regulations in force and international standards, the Orano Mining operational entities apply this Safety & Environment Policy in the form of an action plan to:

- Reduce technological and environmental risks by means of a proactive approach
- Minimize the environmental footprint of their activities
- Improve the management of environmental liabilities
- Coordinate effectively with the Environment and Industrial Risk teams
- Integrate environmental standards at every stage in the mining cycle
- Maintain or implement an environmental management system (ISO 14001 or equivalent)

GOVERNANCE

To respond to these issues, the Health, Safety and Environment (HSE) operational teams are supported by the Health, Safety, Environment and Remediation Department (DSSER), whose director is a member of the Orano Mining Management Committee.

At the central level, our teams of specialists train, develop and support our on-site teams and regularly carry out field controls. They ensure that environmental programs are consistent, make sure that best practices are shared and incorporate all actions into a continuous improvement approach.

Each site establishes an environmental management plan adapted to its specific challenges, with an environment team highly focused on field interventions and involved in operational issues. The HSE employees are integrated into the operational department teams and provide a link to HSE management, remaining close to teams on the ground and being as reactive and proactive as possible.

PERFORMANCE MEASUREMENT

The environmental results of Orano Mining activities are monitored using indicators throughout the life cycle of the mine. These indicators are available in our CSR reports. The environmental management systems at all our production sites have ISO 14001 certification.

The environmental objectives are adjusted according to changes in the mapping of risks, the expectations of stakeholders, internal and external best practices, the results of environmental monitoring and dialogue with operational entities.

In 2020, Orano Mining continued to distribute its environmental dashboard to all site employees in order to share environmental performance results and best practices.

Reporting for the various environmental indicators presented in this section is carried out using the Orano group's dedicated calculation tool. The methods used for the calculation of environmental indicators, as well as the associated procedures, are formally set out in a measurement and reporting protocol.



Water sampling, McClean Lake, Canada.

This protocol, which is updated every year, is sent out to everyone involved.

The scope of reporting encompasses all entities for which Orano Mining is the operator.

For this section of the report, by convention and as in previous years, we count 100% of the emissions and consumption at the sites where we act as operator, regardless of our percentage share or offtake. **The uranium production figure used for calculating the 2020 ratios is 9703 metric tons** (See *Mining Activities* p. 10).

The Group's mining activities have been affected by the COVID-19 emergency, which led to a fall in uranium production. Our sites have felt the impact, particularly the McClean Lake ore treatment plant in Canada, which was shut down from March to September, then once again in December 2020.

This drop in production has led to a general reduction in water and energy consumption, and the associated emissions. However, the industrial facilities have been kept operational and in-depth maintenance activities were carried out during these periods. As a result, the change in consumption is not proportional to the drop in production.

ENVIRONMENTAL STUDIES

Orano Mining carries out environmental studies throughout the life of mining and industrial projects.

Environmental impact studies (EIS) are performed for each new mining project and whenever a major modification to our industrial facilities is planned. They meet the regulatory requirements in force, and are submitted for public consultation before being approved by the local authorities.

These studies are used to map the impacts and improve understanding of the associated environment (e.g. biodiversity inventory, socioeconomic status of the region), and identify ahead of time any preventive or mitigating measures to be incorporated into our facilities to reduce risks at the source. These studies also report on the principles of remediation to be deployed at the end of the mine's life, as well as any offset measures and the principles of environmental monitoring of activities.

In 2020, five major impact studies were conducted at our sites in Central Asia:

- Four preliminary (pZVOS) and final (ZEP) impact studies on the exploration projects under the North Dzhengeldi and South Dzhengeldi licenses (Uzbekistan)
- An update to our impact study on the Zuuvch Ovoo pilot (Mongolia)

Environmental impact studies (EIS) can also draw on more specific R&D work, where relevant, which makes it possible to demonstrate the relevance of rehabilitation solutions over the long term and provide the most suitable ecological offset solutions in the various countries where Orano works (See *Mining Principle 6.1*, p. 80).



PRINCIPLE 6.1

Remediated mining site, Saint-Pierre du Cantal, France.

Plan and design end-of-life in consultation with the authorities and stakeholders concerned, implement measures to resolve the environmental and social problems associated with end-of-life, and have the financial resources needed to meet commitments taken for closure and remediation.

Mining site remediation and management of the post-closure phases of sites are an integral part of the mining cycle. It is our responsibility, as the operator, to limit the impact of former mining sites on the environment and the population.

Orano Mining undertakes to plan and design end-of-life of sites in consultation with the authorities and stakeholders concerned, implement all measures related to respect for the environmental and social challenges and guarantee the financial resources needed to meet commitments made for the closure and remediation of sites.

OUR POLICY

Mining operations require the development of infrastructure (supply of energy, roads, facilities for the processing of uranium ore, underground and open-pit mines, etc.) which has an impact on the natural environment which has to be assessed, minimized and controlled. In order to anticipate risks, remediation is taken into account right from the exploration and development phases of mining projects. Although some remediation work is carried



Visit of the Ecarpière remediated mining site, redesigned by Orano, France.



out while the mine is in operation, and studies are updated throughout the active period, most of the technical work takes place when mining operations cease. The employment-related and social implications of the closure of a site are taken into account as far upstream as possible in coordination with the competent authorities and in consultation with all internal and

external stakeholders. Finally, Orano Mining also pays particular attention to reconvert former mining sites to give them a new lease of life. This type of management is essential to maintain the confidence of local communities, authorities and all stakeholders involved. It is key to the long-term acceptability of our activities and our "license to operate" in the communities and in the host countries where we are made welcome.

Photovoltaic farm, Lodève, France.



OUR RESULTS

FRANCE MINING CLOSURE:

- **Regrouping of waste rock:** 100% of works carried out - work commenced in 2015 and most recent worksites completed in 2020
- **Site reversion accelerated:** in 2020, 4 construction permits obtained and 2 projects selected by the French energy regulation commission (*Commission de Régulation de l'Énergie*) for the creation of photovoltaic farms in France - 9 projects still in the finalization phase
- **Continuation of the program for the sustainable and diversified management of the Limousin forest** (more than 500 hectares managed within this framework to date)

REMEDIATION AND MINING CLOSURE FOR INTERNATIONAL SITES:

- **Niger:** finalization of the detailed design study for the remediation of COMINAK in order to cease operations on the site on March 31, 2021
- **Kazakhstan:** validation of revision to remediation plan to include future installations
- **Gabon:** construction of 45 houses as part of the Mounana 200 project - 100 houses built to date
- **Canada - Cluff Lake:** discussions at an advanced stage for the definitive transfer of the remediated site to the State


Objectives of mine remediation

The main objectives of a remediation plan are as follows:

- Ensure long-term stability in terms of public health and safety;
- Minimize residual impacts to levels that are as low as reasonably possible (ALARA);
- Limit the land surface subject to usage restrictions;
- Successfully integrate the site into the landscape of its environment in order to preserve local biodiversity and allow potential reuse of the site depending on the level of easement;
- Enable the site to be managed properly from a social perspective in the mine closure phase;
- Support the reconversion of the site.



All Orano Mining's sites are covered by a specific remediation plan. During the preparation and validation of detailed remediation plans, the latter systematically include technical, social and societal aspects. Since the beginning of its mining activities, Orano Mining has undertaken the dismantling of facilities, as well as the remediation and monitoring of former uranium mining sites in France, Gabon, the United States and Canada.

Orano Mining is currently implementing the closure plan for the COMINAK site in Niger, as approved by the competent authorities (See p. 91 )

The different remediation phases from a technical standpoint

There are several phases involved in the remediation of a mining site: a study phase, a works phase and a post-works monitoring phase.

STUDIES

The first study consists of defining the remediation strategy best suited to the site by taking into account its specific constraints: location, topography, climate, real estate and regulatory constraints, type of works, requirements from impact studies, environmental constraints, socio-economic environment, commitments made to different stakeholders (local authorities, residents) and by planning ahead to take into consideration new usages of the land for new agricultural, forestry or artisanal activities, etc.

This involves a detailed inventory of the site before (initial state) and after mining operations, its history, and additional technical studies (hydrogeological, geotechnical, radiological studies, etc.) to prepare a remediation plan and draw up a proposal to be submitted to the Authorities and forming a basis for dialogue with the stakeholders. Field tests may also be conducted during the operation phase to test out and refine assumptions in the remediation plan.

MINING WORKS

Measures for the making safe of mining works are determined depending on the nature of the mine and the facilities concerned.

For underground mines, the aim is to ensure the stability of the works and to seal off access to all pit bottom to ground level connecting structures: pits, cross-cuts, ascending and descending shafts. Stability calculations are done for works close to the surface and, depending on their results, reinforcement works may be conducted.

Open-pit mines may be either filled in with available waste rock and tailings or transformed into water features after partial filling-in. Waste rock stockpiles are remodeled and revegetated depending on the local context.





In the case of ISR (in situ recovery) operations, particular attention is paid to the quality of the water table in which the mined deposit is located. In general, regulations require that water quality be restored to a level close to its original level. It is worth noting that the initial quality of these waters (waters that may be naturally saline and radioactive due to the local geological context) is such as to prevent anything other than industrial use. The preferred method is natural attenuation: naturally-present or newly-formed minerals “trap” the pollutants by adsorption.

The majority of facilities on the surface are dismantled: processing plants, headframe, loading hoppers, etc. Some buildings (former offices and workshops) may be kept to allow a new activity to be developed on the site.

TAILINGS STORAGE

(See Performance chapter 6.3, p. 105 .



Ecarpière remediated site, France.

MONITORING OF SITES

The role of the mining operator is to limit the impact on populations and the environment to a level that is as low as possible and in regulatory compliance and to verify this through systematic and regular monitoring. This monitoring involves checking the ways in which uranium and its decay products, as well as various other substances related to mining activities, such as drained-off acid, may be transferred at sites and in the surrounding area. The monitoring network established concerns the checking of water (underground and surface water), the atmosphere (dose rate, radon, dust) on site and in its immediate environment, bio-indicators (sediments, aquatic plant life).

and the food chain (samples of vegetables, fruits, milk, and fish taken close to sites). If necessary, waters originating from mining works and storage areas are treated to correct one or more of their radiological and chemical characteristics before being released into the surrounding environment.

DID YOU KNOW



Orano manages 11 former gold mining sites in the Limousin

The Bourneix sector, located in the south of the Department of Haute-Vienne, was first mined between the 5th and 1st centuries BC, then at the start of the 20th century, before making way for the modern mine which operated from 1982 to 2002. The first works on the Cros-Gallet lode date back to the Gallo-Roman period, as evidenced by the numerous gold pits found in the area.

At the beginning of the last century, new exploration works were commenced, particularly in the area of the former Gallic gold pits, but were not able to discover any heavily mineralized lodes. The Second World War put an end to all works in the sector.

Further exploration works were undertaken in the sixties by the French Geological and Mining Research Office (*Bureau de Recherche Géologique et Minière - BRGM*). In 1979, the company SNC Le Bourneix was created to mine the deposit. A first ore processing plant is constructed on the site in 1982, and is replaced by a second plant in 1989.

In 1988, the *Société des Mines du Bourneix* was created, which has since become Orano Mining.

Mining of the sector was halted in 1995, due to depletion of the local deposits, while the plant remained in production until 2001.

Today, all the mines are closed and have been remediated. Each remediation operation was carried out in strict compliance with the environmental standards in force, in coordination with the Regional department for the environment, town and country planning and housing (*Direction Régionale de l'Environnement, de l'Aménagement et du Logement - DREAL*) and in consultation with local populations.

Water treatment and environmental continue to be carried out, to ensure compliance with release standards and guaranteeing zero impact on the environment.



Ancien site minier de la Commanderie, France.



Water sampling, Bessines-sur-Gartempe, France.

The results of all these checks allow the actual Effective dose (Dose Efficace Annuelle Ajoutée DEAA) added to the local background level of radiation (radiological impact) to be assessed on an annual basis for populations living close to sites. In France, in accordance with the French Public Health Code, this dose must be less than 1 mSv/year.

The French national plan for the management of radioactive materials and radioactive waste applied to Mining Closure France

The French national plan for the management of radioactive materials and radioactive waste (Plan National de Gestion des Matières et Déchets Radioactifs – PNGMDR) is a document that assesses existing methods of managing radioactive waste and materials, identifies foreseeable storage and disposal facility requirements and indicates the capacities needed for those facilities and the duration of storage.

It is prepared and updated, every three years, under the supervision of the French Nuclear Safety Authority (Autorité de Sécurité Nucléaire - ASN) and the French General Directorate of Energy and Climate (Direction Générale de l'Énergie et du Climat - DGEC).

Orano Mining has been participating in the PNGMDR since the plan came into existence. Several studies, conducted in response to the proposed program, have been carried out within this framework since the first of these plans was drawn up in 2007. Active participation in the different working groups has made it possible to strengthen interactions with the different players in the field.

Orano Mining is committed to continuing its active participation in the working groups concerning it, with a view to ensuring the transparency of its activities. 4 studies are to be submitted in 2021:

- 3 within the framework of the working group concerning the long-term upkeep of tailings storage encircling dyke structures,
- 1 study for the long-term assessment of evolution of tailings storage areas.

Examples

Management of waste rock from mining used in the public domain

In 2009, the French State entrusted Orano with the public service mission of carrying out a survey of waste rock from mining present in France in the public domain. This waste rock results from former mining sites, whether or not operated by Orano Mining.

The survey is part of the French National Plan for the Management of Radioactive Materials and Waste (Plan National de Gestion des Matières et Déchets Radioactifs - PNGMDR). Supervised by the regional departments for the environment, town and country planning and housing (DREALs), the French Nuclear Safety Authority (ASN) and regional health agencies (ARS), this survey campaign began in 2009 and was completed in 2013.

Orano Mining conducted an aerial survey campaign by overflights with helicopters followed by measurements taken on the ground. As of 2015, the 60 zones with an effective annual dose increment of more than 0.6mSv/year have undergone work, on a department by department basis, to collect and consolidate the waste rock on "outlet" sites already accommodating waste rock and this is being done within the framework of a voluntary ALARA (As Low As Reasonably Achievable) initiative. The most recent work was carried out in 2020 in the Lozère.



Waste rock removal work in a private property, Lozère, France.

Environment and safety certification of our installations classified for environmental protection in France

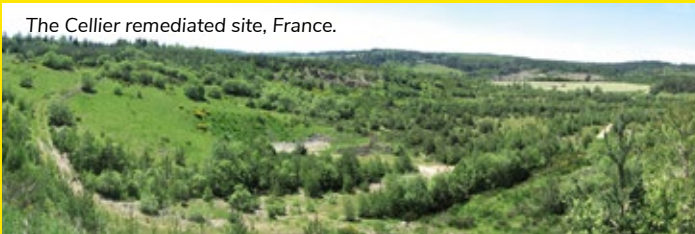
Mining Closure France has from the very outset always been committed to the continuous improvement of its former mining sites. Within this framework, 14 of our 15 sites with installations classified for environmental protection (*Installations Classées pour la Protection de l'Environnement - ICPE*) have been ISO 14001 and ISO 45001-certified

These certifications are the guarantee of a strong and permanent commitment to the environment and safety, and demonstrate a willingness to bring about continuous improvement in mining closure activities by listening to the needs of interested parties. Every year, an external body organizes a follow-up audit. Renewal audits are carried out every 3 years. Their aim is to confirm that the compliance and efficiency of the management system as a whole is being maintained.

The Cellier site, in Lozère, has successfully passed its initial certification audit. It is currently the most recent facility to come within the scope of certification.

The next facility to be brought within the scope of certification is the former mine at Bois Noirs Limouzat, the certification of which is planned for 2022.

The Cellier remediated site, France.



Modernization of water treatment stations

In 2019-2020, Mining Closure France undertook the modernization of 2 water treatment stations:

The Cros Gallet gold mining site in Haute-Vienne

The water treatment station was renovated in its entirety, with the creation of a new building equipped modern remote-control facilities, and a new water pumping system. More efficient and more reliable, the new station makes it easier to manage water treatment, in particular by allowing it to be done remotely and thus ensuring better responsiveness;



over zeolites, without the addition of chemicals, was implemented for the benefit of the environment.

These new techniques are the fruit of our policy of continuous improvement, research and development studies and the implementation of tests on site since 2012.

More efficient and more reliable, the new station uses the best existing techniques available.

The Bois Noirs Limouzat uranium mining site in the Loire

The water treatment process was entirely revised to take the specificities of the site into account more effectively. For mining waters, the reagents were modified for better efficiency, while, for waters from the large pond (ICPE-classified installation), an innovative passive treatment process by filtration



Information and transparency, one of the pillars of mining closure with the app CartOmines

Orano Mining has developed a new application for accessing complete data on old uranium mines in France, their environmental monitoring, and their redevelopment.

Since this application CartOmines was first put online in 2019, several actions were taken into 2020 to raise awareness of this public database.

CartOmines is aimed at the general public and in particular at municipalities, local residents and associations. It is the result of extensive preliminary work involving the digitization, 3D vectorization, and tablet-based gathering of data in the field.

The website is currently organized around two informational tools:

- a general map of old mine sites with a series of indicators such as production, volume of stored tailings, and redevelopment data.
- a map tool indicating all the regulatory sampling points (air, water, bio-indicators) located near the sites.

Aware of the importance of the transparency of this data for local stakeholders, several communications actions were conducted on social networks (Facebook, Twitter and LinkedIn) in 2020 to promote this application.

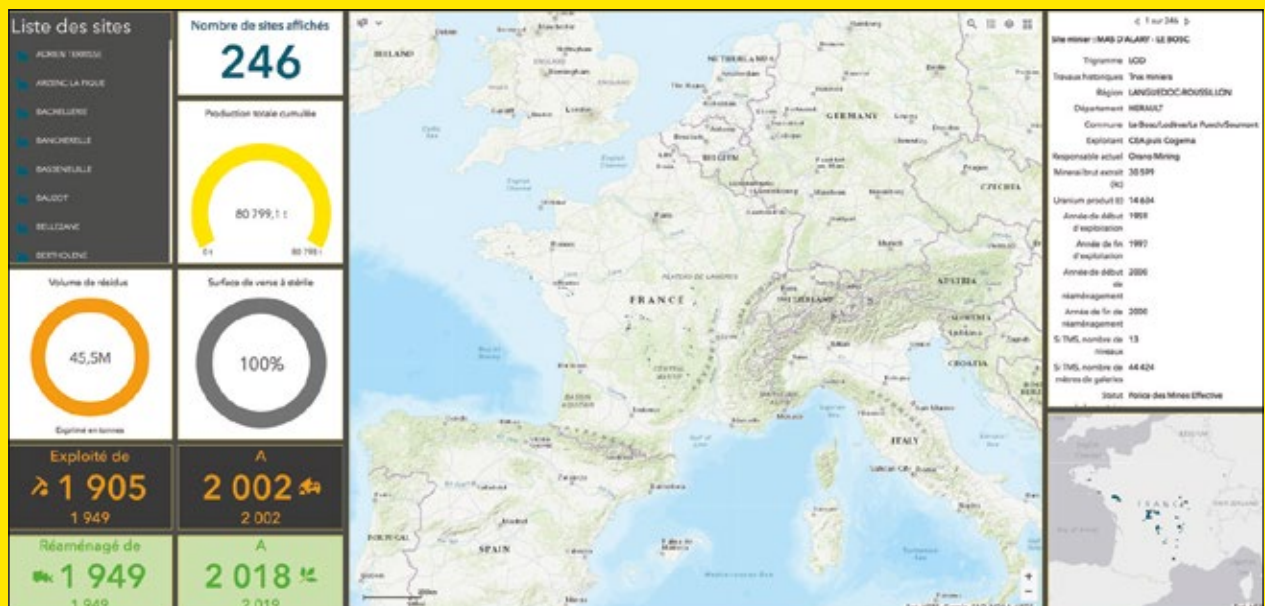
These actions will continue in 2021.

Orano Mining also took part in the Congress of the Société de l'Industrie Minérale (SIM) held in Angers in October 2020: this was an opportunity to showcase CartOmines and to organize a visit to the L'Écarpière site, in the Department of Loire-Atlantique, an example of a successful reconversion of a former mining site.

KEY DATA CATALOGED IN THE APPLICATION:

- 248 former mining sites, 118 of which are still under the responsibility of Orano Mining
- photographs taken during operation and after remediation
- 372 sampling points indicated: water, air, bio-indicators (sediments, soils, food chain, plants)
- educational content on mining operations and mining closure (videos, links, etc.)

[Link to the cartOmines web application \(available in French only\)](#)



Management of post-mining: major challenges of today and tomorrow



Open pit, SOMAÏR, Niger.



Muyunkum plant, Kazakhstan.

Planning for the rehabilitation of a mining site in operation for 15 years

EXAMPLE IN KAZAKHSTAN



KATCO site

- Creation of joint venture between Orano Mining (51%) and KazAtomProm (49%) in 1996
- The first uranium mining operation in the world to use the ISR technique

- More than 35,000 tU produced in total since 2006
- Mine in operation with production of 2,833 tU in 2020

Mine in operation and remediation of the site

- R&D program to confirm and speed up the remediation of the aquifers tested on-site, mainly through natural mitigation
- In 2019, carrying out of the "liquidation project" including the taking into account of future installations

Planning the remediation of a mining site in operation for more than 50 years

EXAMPLE IN NIGER



SOMAÏR site

- Mining of uranium deposit by open-pit mines and ore processing facilities (dynamic and static processing)
- Aggregate production of 73,714 metric tons since 1968, with production of 1,879 tU in 2020
- Projected date of end of operations in 2034 - Validation of the preliminary design phase of the remediation study (finalized in 2017) and gradual constitution of a physical uranium storage facility allowing the future costs of remediation to be covered

- Update of the study for remediation of the site and its costs in 2020 taking the change in scope of mining activities and initial feedback into account, in order to adapt to the decisions taken for the remainder of operation of the site, and taking the social aspect into account. Study validated (validation of these costs) in the last quarter of 2020 by the Nigerien authorities and the Board of Directors of SOMAÏR.



Uranium effluents settling pond, Niger.

the effectiveness of natural mitigation with regard to the aquifers of the areas mined

- Revegetation: Plantation of Saxauls (protected local trees) in rehabilitated areas and in neighboring areas as part of an environmental offset project
- Ongoing monitoring of water tables through a network of piezometers



Zuunbayan area, in the Zuuvch Ovoo pilot site environment, Mongolia.

Anticipating remediation right from the feasibility study phase

EXAMPLE IN MONGOLIA



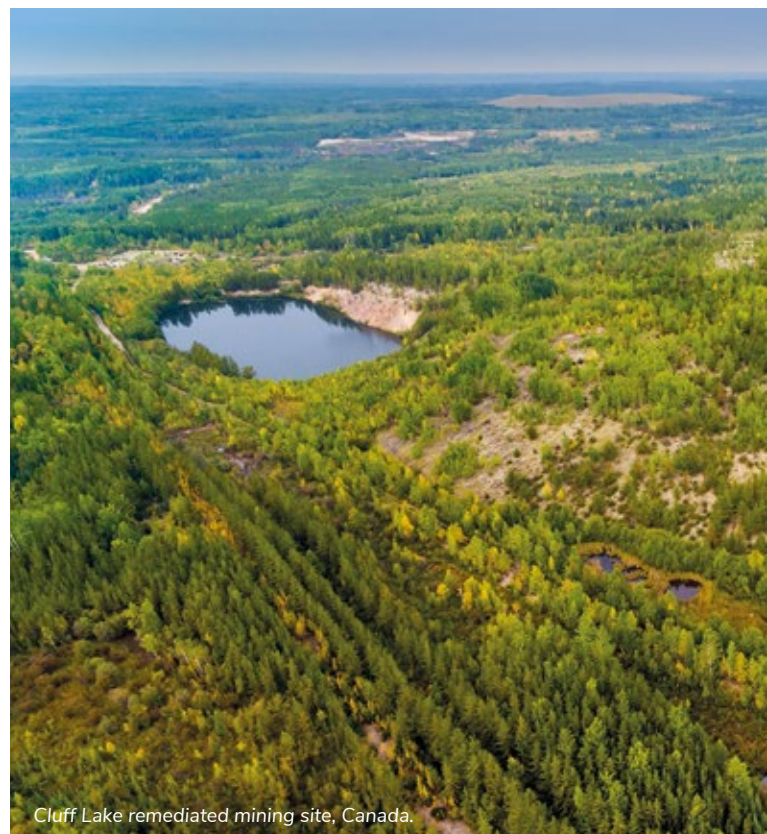
- Environmental and societal acceptability of uranium deposit exploration and mining projects
- Optimization of ISR (In Situ Recovery) technology

Mining project

- 2020: 1 exploration license and 3 mining licenses (Umnut, Dulaan Uul and Zoovch Ovoo)
- 77,800 tU of resources estimated in 2020
- ISR (In Situ Recovery) pilot conducted in 2010/2011 at the Dulaan Uul site
- Construction of an ISR pilot (extraction + processing) on the Zoovch Ovoo site completed in 2019 and pilot validated by the State
- Aim of the pilot: confirm and improve the technical and economic conditions of the project

Remediation plan for the project:

- Well field: filling-in of wells, dismantling of the surface facilities and rehabilitation of land
- Industrial facilities: dismantling, demolition and rehabilitation of land
- Water table: restoration by natural mitigation, based on various hydrogeological studies and studies demonstrating



Cluff Lake remediated mining site, Canada.



Preparing the transfer of a remediated site to a supervisory authority

EXAMPLE IN CANADA



- Cluff Lake: a site which was mined for 22 years, from 1980 to 2002, located in the Athabasca basin, in the north-west of Saskatchewan province, Canada
- Mining by underground mining works (2) and open-pit mines (4), and an ore processing plant
- Production of 28,000 metric tons of U3O8 and 250 kg of gold
- Main remediation works carried out between 2004 and 2006, in compliance with the conclusions of the impact study completed in 2004 – dismantling of the last facilities in 2014
- Plantation of around 500,000 trees and shrubs on the site

Monitoring

- Deployment of monitoring, in particular of the quality of underground waters and surface waters
- Demonstration of absence of impact of the site on the population and thus limitation of restrictions on usages on site
- Transfer of the remediated Cluff Lake site to the province of Saskatchewan in progress, with continuation of monitoring by the province, thanks to funding made available by Orano (balancing payment)

Conducting monitoring and oversight of remediated sites

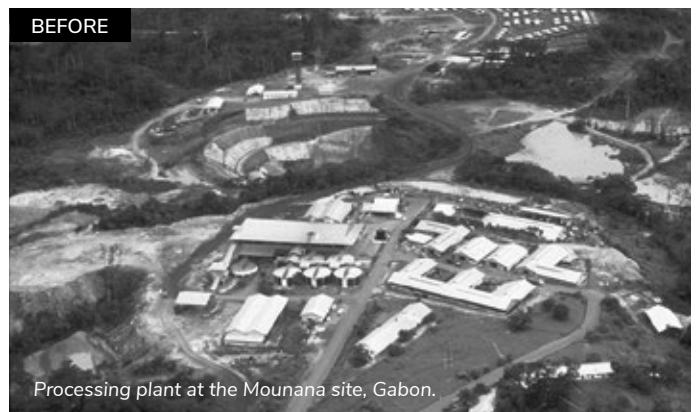
EXAMPLE IN GABON



- Ensuring environmental monitoring and safety of the closed site since 1999, according to a program updated on an annual basis
- Holding of local information committee meetings (Commissions Locales d'Information – CLIs) chaired by the Prefect, allowing the public to be kept informed

Remediated COMUF site

- Deposits in the Haut-Ogoué in Mounana mined from 1958 to 1999
- Open-pit mine and underground mining works with a processing plant
- 7,600,000 metric tons of ore extracted at 3.73 %
- Production of Yellow Cake: 26,600 metric tons
- Remediation carried out from 1997 to 2004
- Reconstruction of 201 dwellings for the local population following inspections and the detection of a radiologically contaminated dwelling in the former mining town, conducted in cooperation with the Gabonese State.
 - 100 houses rebuilt - continuation of the Mounana 200 construction program



Providing a second life for a rehabilitated site

EXAMPLE IN FRANCE

To achieve the reconversion of the former mining site in an economic framework such that new projects can be located at the site.



The remediated Bernardan site

The Bernardan mining site was the last site to be mined in France.

- Site located in the north of the Haute-Vienne and mined from 1978 to 2002, and remediated from 2001 to 2003
- Open-pit mines and underground mining works
- 1.1 million metric tons of ore extracted, 6,600 metric tons of uranium produced, corresponding to 8% of domestic production
- Environmental monitoring conducted by the team from Mining Closure France
- An efficient site water treatment station that can be controlled remotely from head office at Bessines-sur-Gartempe, 40 km away.
- The area of the former mill and of the mining quarry reconverted into a business park
- Projects for photovoltaic farms on the former site

Site reconversion and community involvement

The areas occupied by the former mill and the former mining quarry have been transferred to the *Communauté de Communes de Brame et de Benaize* (the local community of districts), with the creation of a business park independent of the former mining activities.

Since 2002, the Cherbois business park has hosted the company B.P.E (Bibliothèque pour l'Ecole), which specializes in the supply of school books, and since 2016 the company Golden Wolf Racing (motorcycle preparation shop).

In 2013, Orano Mining and NEOEN formed a partnership to develop a photovoltaic power plant project on the Bernardan site. This will consist of photovoltaic modules compatible with the current management of the site, and in particular with the integrity of the cover over the tailings on top of which it will in part be installed.

The installation, with a capacity of 12.3 MWc, should allow the production of 15,000 MWh per year, the average electricity consumption (excluding heating) of around 5,500 French households.

There is a project, in conjunction with the *Communauté de Communes*, for a second photovoltaic farm on the site in the area of the former mill and in the former mining works.



BEFORE

The Bernardan remediated site, France.



AFTER

The redesigned site of Bernardan, France.

COMINAK REMEDIATION PROJECT



Mine entrance.



COMINAK, created on June 12, 1974, has operated since 1978 the Akouta, Akola and Ebba deposits located in the Agadez region and produced approximately 75,000 tonnes of uranium from 1978 to the end of 2020. The depletion of its resources no longer allow the continuation of operational activities.

The Board of Directors of COMINAK, meeting on October 23, 2019, unanimously fixed the cessation of production at the Akouta site on March 31, 2021. The decree of cessation of exploitation of the COMINAK mine on March 31, 2021 was signed by the Minister of Mines of Niger on October 15, 2020.

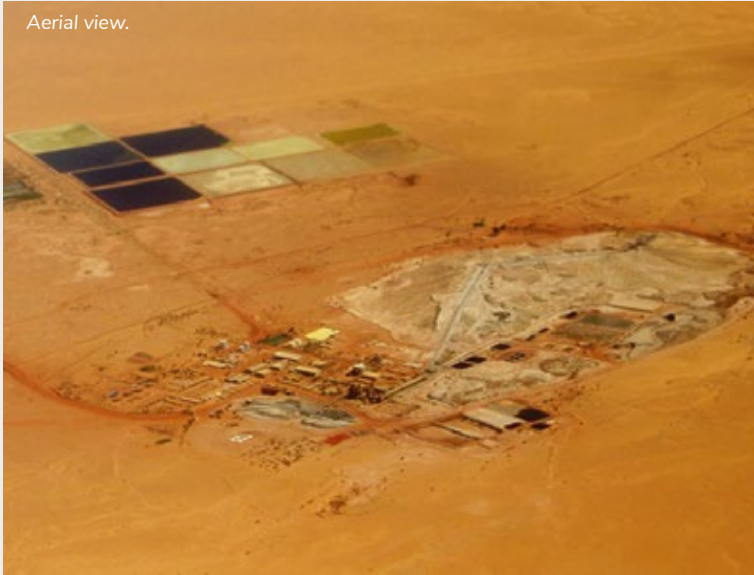
FOCUS

Our commitments

Within the framework of the remediation project at the COMINAK site, we undertake to engage in continuous and transparent dialogue and communication with stakeholders, to carry out remediation work that will make the site safe and non-polluting, in compliance with national standards and international guidelines, to support our employees and subcontractors in a conversion plan and in the development of eligible and viable entrepreneurial projects, and to act for a lasting, sustainable and useful social transition for the local communities.

More specifically, in the context of the end of mining operations at the Akouta site and the remediation works that will follow, COMINAK makes this series of commitments:

Aerial view.



On completion of the works, to have restored the site to a condition that is safe, healthy and non-polluting, in compliance with national standards and international guidelines

- Begin remediation work as soon as production activities are completed
- Implement an appropriate environmental monitoring period, extendable if conditions require
- Carry out a comprehensive diagnostic and treat the radiologically contaminated premises in the town of Akokan in accordance with the criteria defined in the radiation measurement that was validated on a tripartite basis in 2010
- Limit as far as possible the extent of radiologically contaminated land plots in the industrial zone
- Keep the total Annual Additional Effective Dose to within or below 1 mSv for the local population
- Ensure the physical stability of the storage facilities
- Guarantee the stability of the remediation work carried out on mine workings open to the surface
- Conduct treatment and monitoring of aquifers so that the drinking water supplied to Arlit meets national and international drinking water standards (WHO)

To support our employees and subcontractors in the reconversion plan

- Advise each employee on a professional reconversion
- Set up an appropriate support measures for each employee
- Accompany employees and subcontractors in eligible and viable entrepreneurial projects

- Provide former employees who were exposed to ionizing radiation with free post-professional medical monitoring within the framework of OSRA (the Health Observatory of the Region of Agadez)

To act for a long-term, sustainable social transition that is of practical benefit for the local Population

- Involve local stakeholders in the decision-making process prior to closure and in the monitoring of site remediation work
- Support the process through ongoing and transparent communication
- Transfer the mining town's electricity and drinking water networks to the companies in charge of water and electricity distribution in Niger
- Transfer housing and amenities from the mining town to the State
- Transfer the hospital from COMINAK to the State over a period of 3 to 5 years, and provide support for an additional 5 years
- Support the continuation and, if possible, the development of vegetable growing activities in Akokan
- Promote the reconversion of people economically impacted by the closure through support for entrepreneurship
- Set up an ambitious program calling on local and national sub-contractors and labor for the conduct of the remediation work



Project components

The remediation project includes technical, social and community challenges.

- 1 **technical challenges:** The technical component includes the remediation of all the source terms present at the site.
- 2 **Social challenges:** Social component of the remediation project aims to minimize the social impact of the closure of production activities and ensure fair and equitable treatment of all employees.
- 3 **Community challenges:** Community component aims at ensuring a sustainable transition, adapted to the needs of the local populations.



Miners coming up from the bottom of the mine after the final blasting, March

GOVERNANCE

A dedicated governance has been set up since April 2020 and enables stakeholders to be fully associated and informed about the project.

INTERNAL

- Project team
- External experts
- Steering committee

MIXED (COMINAK + ADMINISTRATION)

- Technical committee
- Stakeholders from among government, elected representatives, and civil society

ADMINISTRATIVE AND POLITICAL

- Orientation Committee
- Ministry of Mining
- National project follow-up

More information



Technical aspects

The objective when carrying out all the work will be to leave a site that is safe, healthy and non-polluting. The remediation activities will be subject to thorough environmental monitoring, which will extend for several years after the closure.





Employees aspects

COMINAK's social closure strategy is based on planning ahead for departures in order to minimize the social impact of the termination of production activities and, in so doing, guarantee fair and equitable treatment for all employees within a defined and formalized framework.

A Social Plan Agreement was signed with representatives of staff and Niger Labor Administration on November 20, 2020.

A RECLASSIFICATION UNIT

COMINAK has set up a framework for its employees that provides for additional internal and external redeployment measures in addition to the conventional, legal and regulatory provisions. This system is operational through a reclassification unit made up of dedicated HR professionals. It offers different types of reconversion. Reconversion and competencies development trainings are available for employees.



FOCUS ON RECONVERSION AND COMPETENCIES DEVELOPMENT TRAININGS

245

Driving Licence for heavy goods vehicles & public transport

40

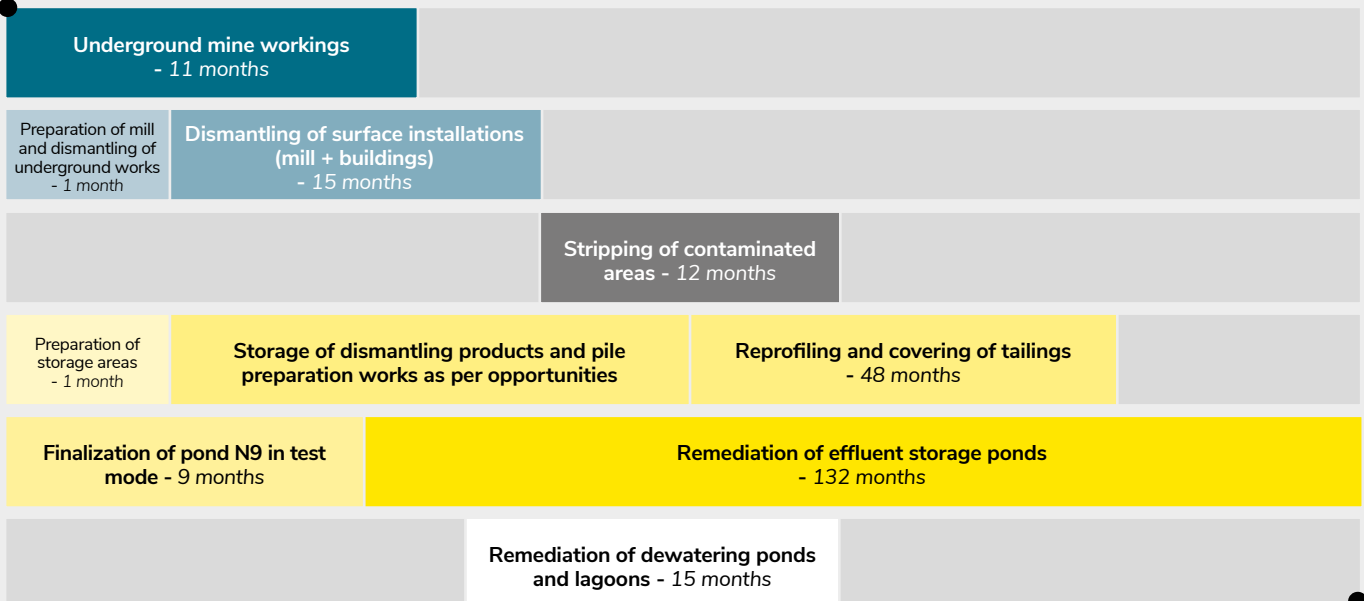
Driving public works machinery

161

Office equipment & software

REMEDIATION PHASES

APRIL 1, 2021



DECEMBER 2032

SOCIAL STAGES SCHEDULE



Watch the testimony of Ali Soffo, HSE manager at COMINAK (available only in French)



MAPPING OF IMPACTS

An initial official consultation of all local and national stakeholders in the remediation project took place in 2019.

This was used to map the closure's societal impacts, classified by criticality. Between 50 to 70 stakeholders were met.

A SOCIETAL TRANSITION PLAN

The socioeconomic transition plan stems from this mapping, with each action aimed at minimizing the identified impacts.

It was prepared in conjunction with the Ministries concerned (Mining, Environment, Town Planning, Health, Agriculture & Livestock, etc.), the administrative and traditional authorities, elected representatives, civil society and partners.

The transition plan extends over 5 - 10 years depending on the action, so that support can be tailored to the circumstance, and the transition can be as gradual as possible.

For more information, watch the video of the Director of the Operations at la Maison de l'Entreprise (available only in French)



Community aspects

The objective of the community component is to achieve a long-term and sustainable social and economic transition to serve the interests of the local community. To achieve this objective, it is essential that all stakeholders be involved.

THE CHALLENGES

Today, COMINAK is a major player in the economic life of the town of Akokan, supporting 650 employees and their families, subcontractors, and the induced trade. The closure will therefore have a significant economic impact on the town community.

The success of the social transition which will be taking place depends first of all on the handover of the infrastructure currently managed by COMINAK, while limiting the impact on the population.

- Mining town: The employees of the mine are housed free of charge and COMINAK provides them with free water, electricity and upkeep,
- Health: COMINAK built a hospital in Akokan in 1978. Medical care is free for employees, subcontractors and eligible beneficiaries, and outsiders also have access to it.



Communication and transparency

Each project stage is supported by targeted communication actions. Leaflets explaining the different aspects are distributed and available for all.

On the technical side, a dedicated brochure is devoted to the redevelopment work. A practical guide for subcontractors is also available.

On the societal side, a specific brochure has been produced to present the entrepreneurship support program.

In addition, a dedicated website has been created.

Visit the website



March 25, 2021, Shortly before midnight on Thursday March 25, at 11:46 exactly, the last blasting was fired at the COMINAK by a dedicated team. At dawn of Friday, March 26, the last team of miners came up from the bottom of the mine. The employees, the General Director of COMINAK and the Prefect of the Arlit Department, paid a tribute to the miners.



For Nicolas MAES, CEO of Orano Mining warmly thanked the teams for the work they have accomplished during all these years at COMINAK. « Your work made it possible to avoid the emission of 1 billion tonnes of CO₂. From Akouta, you have had a positive impact on the planet. Thank you for a great human community that you have created. Skills, solidarity, humility in the face of the nature and the machine, all of these characterize the COMINAK teams. »



Akokan Information Center

The Information Center is located in the Akokan urban area.

The center is also used for all COMINAK's community activities (meetings with representatives of the communities and other support to local residents). This center will remain operational throughout the mine remediation phase.



Meetings and information workshops

COMINAK, in collaboration with the Ministry of Mines of Niger, organized on March 4, 2020 on its industrial site of Akouta an information and sharing workshop with the stakeholders of the site (authorities, elected officials, representatives of civil society, trade unions, representatives of subcontractors, market gardeners, etc.).

The objective was to discuss the redevelopment options retained for the three components of the redevelopment project (APD-RDS): technical, social and societal. COMINAK was represented by its General Manager, the General Secretary, the Director of Operations and the members of the APD-RDS project.

Each project stage is supported by targeted communication actions.

For more information: see the video on the Local Information Commission of December 9, 2020, a meeting to share information on the progress of the project (available in French only)



PRINCIPLE 6.2

Implement water stewardship practices that provide for strong and transparent water governance, effective and efficient management of water at operations, and collaboration with stakeholders at a catchment level to achieve responsible and sustainable water use.

Water

A precious natural resource, water is essential to the well-being of the communities and environment where Orano Mining operates, as well as to the smooth running of its mining operations.

Mining activities can have a significant impact on water resources, not only in terms of quantity, but also potentially on their quality.

In order to preserve this resource, the question of water is a subject of constant attention at Orano Mining.

Sampling on water towers, COMINAK, Niger.



POLICY

As a member of the ICMM, Orano Mining endeavors to implement the requirements listed in the ICMM principles regarding the management of water resources in terms of performance, namely the application of strong, transparent governance and effective management that enables collaboration with stakeholders in order to successfully share use of the resource in a responsible and sustainable way.

OUR INTERACTION WITH WATER

The Orano Mining sites use water for their operations, not only for operational needs but also for workers and the use of surrounding populations, as in Niger.

On all Orano Mining sites, the processing of uranium ore is carried out by wet process, which requires a water supply. The pumping of groundwater is essential to allow access to the deposits in the open-pit and underground mines in Niger. At ISR (In Situ Recovery) sites, like those in Kazakhstan, pumping allows to recover dissolved uranium.

In addition, water is also used at sites for dust suppression, thereby limiting, as far as possible, physical, chemical and radiological impacts on the environment and workers. Last but not least, Orano Mining is committed to providing access to good quality drinking water and appropriate sanitary facilities to all of its employees, but also to their families living close to operating sites.

On all Orano Mining, the main mining activities consuming water are:

- Extraction and processing of ore by wet process, via static or dynamic leaching
- Evaporation from production or effluent storage ponds

- Steam production for facilities heating or ore treatment for ore heating or treatment
- Dust control
- Production of drinking and/or sanitary water

The water used for our industrial and mining processes comes from various sources depending on the site: surface water (lakes, rivers, the sea, etc.), groundwater (aquifers), mine drainage water and recycled industrial water.

Depending on their needs, sites are likely to use water of three quality levels: drinking water, sanitary water and industrial water. These categories are set in accordance with the regulations and recommendations in force (national, regional or WHO – World Health Organization – regulations) or, failing that, according to their use.



Wells, Mongolia.

Depending on the location of sites, the classification (natural quality) of the aquifers does not always allow for the natural supply of drinking water. For such sites like in KATCO (Kazakhstan) and Badrakh Energy (Mongolia), bottled water is provided to employees for drinking water usage.

Some sites must also actively manage water that is not used in operations ("non-operational water"), in order to maintain regulatory water levels in remediated pits, for example, or to channel and discharge uncontaminated run-off water from sites.

DISCHARGES INTO THE ENVIRONMENT

At the SOMAÏR and COMINAK sites in Niger, the effluents produced during ore processing are stored in evaporation ponds, and are therefore not discharged into the environment.



Sampling, Kazakhstan.

In Kazakhstan, the ISR mining process used by KATCO involves the management of solutions in a closed loop. Effluents do not exist as such: upon leaving the plant, the uranium-free leaching solution is reinjected into the mineralized aquifer and reintegrates the mining process.

At sites where there are aqueous discharges into the environment (former mining sites in France and in Gabon, the McClean Lake site in Canada), in addition to rigorous monitoring of water quality, regular internal and third party studies are carried out to prove that the quantity and quality of aquatic ecosystems are not affected by the activities.

The effluents, receiving bodies of water and receiving ecosystems are subject to dedicated and regular measurement, sampling, and chemical and ecological monitoring, which is reported to the authorities and checked on a regular basis.

At McClean Lake, in Canada, all the effluents are treated by a dedicated unit prior to discharge. Effluents are discharged into the natural environment in batches, ensuring compliance with discharge standards and that their compatibility with the natural environment is checked in advance. The McClean teams also perform studies to optimize the treatment of selenium and arsenic in effluents, in response to increasing levels of these elements in the ore being processed.

For Mining Closure, in France, water is also of key importance, at the center of the monitoring of former sites and installations.

Meteoric water forming surface run-off from rehabilitated sites can be drained, collected and discharged directly into the natural environment unlike waters collected from some decommissioned mine works and/or mine tailings storage areas at our Environmentally Regulated Facilities (ICPE), for example.



After passing through our water treatment stations, this water is checked and discharged into the natural environment in accordance with the standards imposed by prefectural order.

The teams from Mining Closure France, working in collaboration with the Center for Innovation in Extractive Metallurgy (Centre d'Innovation de Métallurgie Extractive - CIME) at Bessines-sur-Gartempe, are conducting numerous studies on how to optimize mining water treatment stations by using fewer chemical reagents, notably thanks to passive filtration systems. These systems make it possible to simultaneously reduce the energy footprint of the water treatment stations and minimize the use of chemical reagents, while maintaining treatment effectiveness, which protects the receiving ecosystems. The treatment of water in zeolites ponds at our Silord and Bois Noirs sites are the outcomes of these innovations (See Mining Principle 6.1, p. 80).

RISKS AND OPPORTUNITIES

The management of water resources is an even bigger challenge given that, of our eight sites in operation or undergoing exploration, seven are located in arid or desert areas (Niger (three sites), Kazakhstan, Mongolia, Namibia and Uzbekistan).

In this context, with what can be locally decisive issues regarding how this resource is shared, and in areas where climate change risks having major consequences on the environmental and societal balance, the challenges and opportunities associated with water management must be assessed and anticipated.

METHODOLOGY

Since 2019, Orano Mining has assessed the level of water stress at all ten of its sites worldwide using the "Aqueduct Water Risk Atlas" tool from the World Resources Institute (WRI). At the end of 2020, WRI updated its tool (revising the aridity indices and integrating new databases from the World Bank and Available Water Remaining (AWARE), which led to changes in our assessment of water stress at our KATCO (Kazakhstan) and COMUF (Gabon) sites.

For 2020, it emerged that:

- two sites were experiencing low water stress (<10%) (Gabon and Canada)
- one site was subject to high water stress (40–80%) (Namibia)
- the rest of our sites were classified as "arid and low water use" (Kazakhstan, Mongolia, Uzbekistan and Niger), which corresponds to the highest level of water stress on the risk scale

Site	AMF / France	COMUF / Gabon	Nurlikum Mining / Uzbekistan	Orano Mining Namibia / Namibia	OCI / Canada	Badrakh Energy / Mongolia	COMINAK / Niger	SOMAÏR / Niger	IMOURAREN / Niger	KATCO / Kazakhstan
Water stress	medium-high (20-40%)	low (<10%)	arid and low water use	high (40-80%)	low (<10%)	arid and low water use	arid and low water use	arid and low water use	arid and low water use	arid and low water use

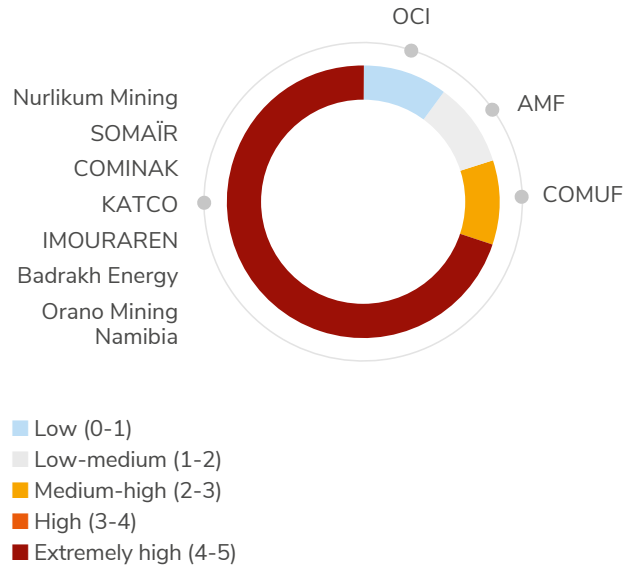
As part of its approach, Orano Mining also assesses water risks using the same “Aqueduct Water Risk Atlas” tool.

This assessment distinguishes between:

- the physical risk related to quantity, which is assessed based on the following eight indicators: water stress, water depletion, interannual variability, seasonal variability, groundwater table decline, riverine flood risk, coastal flood risk, and drought risk;
- the physical risk related to quality, which assesses the risk of access to water which is unsuitable for use, by aggregating two indicators: the existence (or lack) of treatment of connected wastewater and the potential for coastal eutrophication;
- the regulatory and reputational risk, which includes the risk related to water management by local organizations (drinking water, sanitation), as well as potential conflicts with the public concerning access to water.

The overall water risk combines these three risks.

Overall water risk



Overall water risk and water stress (WRI classification)

Site	AMF / France	COMUF / Gabon	Nurlikum Mining / Uzbekistan	Orano Mining Namibia / Namibia	OCI / Canada	Badrakh Energy / Mongolia	COMINAK / Niger	SOMAÏR / Niger	IMOURAREN / Niger	KATCO / Kazakhstan
Physical risks quantity	high (3-4)	extremely low (0-1)	extremely high (4-5)	high (3-4)	low (0-1)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)
Physical risks quality	low-medium (1-2)	high (3-4)	extremely high (4-5)	high (3-4)	low (0-1)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	medium-high (2-3)
Regulatory and Reputational Risk	low (0-1)	extremely high (4-5)	low-medium (1-2)	high (3-4)	low (0-1)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	medium-high (2-3)
Overall water risk	low-medium (1-2)	medium-high (2-3)	extremely high (4-5)	extremely high (4-5)	low (0-1)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)



Checking of the basins area, COMINAK, Niger.

General information										
Site	COMINAK	KATCO	McClean	SOMAÏR	Badrakh Energy	IMOURAREN	Nurlikum Mining	Orano Mining Namibia	Après-Mines France	COMUF
Countries	Niger	Kazakhstan	Canada / Saskatchewan	Niger	Mongolia	Niger	Uzbekistan	Namibia	France	Gabon
Climate Köppen Classification	Warm desert	Cold desert	Sub-arctic	Warm desert	Cold desert	Warm desert	Semi-arid cold	Warm desert	Mild oceanic climate	Equatorial
Activity	Underground mining and uranium processing	ISR extraction and uranium processing	Processing uranium	Open pit extraction and processing uranium	Exploration	In care and maintenance	Exploration	In care and maintenance	Remediate site	Remediate site
Context										
Main uses of water in 2020	Mine drainage water, dust control, Uranium processing, production of sanitary and drinkable water	Production of sanitary water, elution process, drillings	Uranium processing, production of sanitary and drinkable water	Mine drainage water, dust control, Uranium processing, production of sanitary and drinkable water	Sanitary use production	-	Sanitary use	Sanitary water use, dust control	Reagents preparation for mining water treatment	Sanitary use
Water consumption patterns	Evaporation, process losses, sanitary use	Evaporation, process losses, sanitary use	Process losses, sanitary use	Evaporation, process losses, sanitary use	Sanitary use	-	Sanitary use	Evaporation, sanitary use	-	Sanitary use
Risks and Opportunities										
Water stress*	arid and low water use	arid and low water use	low (<10%)	arid and low water use	arid and low water use	arid and low water use	arid and low water use	high (40-80%)	medium-high (20-40%)	low (<10%)
Overall water risk*	extremely high (4-5)	extremely high (4-5)	low (0-1)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	extremely high (4-5)	low-medium (1-2)	medium-high (2-3)

WATER RESOURCE ISSUES AT OUR SITES, SUMMARY OF MATERIAL WATER RISKS

In this context, and regardless of the site, preserving water resource mainly involves maintaining its quality, and, by extension, protecting related ecosystems.

Thus, the main stakes regarding water management for Orano Mining are therefore, in both the short and long term:

- for countries in desert areas with "traditional" mining operations, preservation of the resource in terms of quantity and quality;



Water quality control, Mongolia.

* Source Aqueduct 2021

- for countries in desert areas with ISR mining operations, preservation of the quality of the groundwater outside of the license area;
- for countries in low water risk areas, where discharges are made into the environment, preservation of the quality of the water and receiving ecosystems.

SHARING INFORMATION ABOUT WATER MANAGEMENT

Orano Mining is committed to sustainable, transparent and inclusive water management, by:

- providing drinking water to its employees (and mining cities at the Niger sites);
- running programs to raise awareness among employees and populations about preserving water resources;
- involving local populations in water quality monitoring;
- promoting water recycling and reuse, both internally and for local populations (to supply vegetable gardens in Niger, for example).

At the site level, water resources are systematically managed in close consultation with the population and the authorities, based on the needs of local activities.

Multidisciplinary teams made up of environmental specialists, experts in hydrogeology, process engineers, R&D specialists and social responsibility managers are involved in the management of this resource.



The water resource management plans of sites are presented to and discussed with stakeholders on a regular basis, during site monitoring committee and management committee meetings, and, for certain sites, by participatory monitoring.

Orano Mining continues to seek new levers to minimize the consumption of water at its sites, particularly of good quality water; new studies are planned from 2021 to identify new ways to reduce consumption and increase the recycling and reuse of water at sites.

These studies will use innovative technologies that should make it possible to reduce not only water consumption, but energy consumption and greenhouse gas emissions too.

Orano Mining is setting up management plans integrated into its sites strategies to:

- optimize water consumption, in particular for sites in areas of high and extremely high water risk;
- protect water quality;
- facilitate initiatives to improve access to water for local populations.

Each site draws up a water management plan, taking into account its own specific challenges, risks and regulatory requirements, and setting appropriate objectives.



GOING FURTHER/ OUR PARTNERSHIPS

IN NIGER

Since 2003, Orano Mining has had a joint structure for the three companies (COMINAK, SOMAÏR and Orano Mining Niger), named "Aman". Its purpose is to refine our knowledge of the regional hydrogeology and guarantee the quality of water supply to the sites and surrounding towns.

Periodic monitoring campaigns have been carried out since its creation, on a wider scale than those traditionally conducted at sites.

The Aman group also monitors the groundwater marking containment system for groundwater from the Teloua aquifer, downstream of the COMINAK industrial area, which was maintained in 2020. This system prevents the spread of the groundwater marking, thereby ensuring that there is no impact on health or the environment. Additional studies combining sampling and modeling, in partnership with the R&D teams, are under way for its medium- and long-term management.

IN MONGOLIA

Working group for the Voluntary Codex on Water Use hosted on site by the Badrakh Energy teams

In order to gain further experience, since April 2018, Badrakh Energy has been a member of the "South Gobi Water & Mining Industry Roundtable" working group*. This group brings together fifteen or so companies from the Gobi region who want to optimize their water management and water sharing practices, in a way that is fully transparent and above all coherent with the needs of all activities in the region.

In July 2020, 12 specialists from the Erdenes Mongol, Energy Resources, SGS, Steppe Gold, Bayan Airag, Erdenes Tavan Tolgoi and Oyu Tolgoi mining companies visited our Zuvch Ovoo site to talk to our teams about policies, rules and best practices regarding environmental, radiological protection, and occupational health and safety, and share the results of site environmental monitoring. The group visited the production cells and the new Zuvch Ovoo pilot processing plant, with discussions continuing during a Q&A and experience-sharing session.

* This group, which was launched and supported by the IFC (International Finance Corporation of the World Bank), is also promoted by the ICMM (International Council on Mining and Metals).



PERFORMANCE MONITORING

Orano Mining uses three indicators to monitor performance: water consumed, water abstracted and discharges.

Volume of water consumed

The "water consumed" indicator corresponds to quantity of water specifically consumed for the needs of the site and leading to a quantitative (consumption during processing or by end product entrainment, by the employees, any losses) and/or a qualitative (physical-chemical degradations) resource reduction.

Volume of water abstracted / withdrawn

The "volume of water abstracted" indicator is regularly monitored at site level, but also by Orano Mining, in particular by means of the management chart for the monitoring of environmental performance indicators. If there is a deviation in this indicator, an effort is immediately made to identify its cause to correct it.

The quantity of water abstracted is measured by flowmeters; however, certain points of withdrawal cannot be equipped with measurement equipment, in which case the quantity is estimated or simulated based on models.

Volume of water discharged

The discharge volume corresponds to the volume of water returned to the environment, excluding evaporation and losses or other reasons.



Exhaust water treatment plant, SOMAÏR, Niger.

Taking water from former mines, treating it and then discharging it improves the quality of the resource without reducing its quantity; pit water from former mining sites is not therefore included in these figures.

OUR RESULTS

In 2020, the « consumed water » indicator of Orano Mining has dropped by 3% compared to 2019, with a total consumption of 6,689,602 m³ of water.

The global water consumption ratio per metric ton of uranium produced by Orano Mining is 689 m³/tU, i.e. a 31% increase in 2020 in comparison to 2019. The drop in uranium production has generally led to a reduction in water consumption. However, the industrial facilities have been kept operational and in-depth maintenance activities were carried out during these periods. As a result, the change in consumption is not proportional to the drop in production.



ORANO MINING COMMITMENTS FOR 2025:

- Reduce water consumed per metric ton of U produced by 10%*
- Reduce overall water consumption by 10%*
- Provide each site facing water issues with a **water management plan** shared with its stakeholders
- Develop **predictive models regarding natural attenuation** for ISR through dedicated R&D
- Maintain R&D actions on passive water treatment

The "volume of water consumed" indicator is calculated from site data, by calculating a mass balance: volume of water consumed = volume of water abstracted - volume of water discharged. This environmental performance monitoring indicator is set at Orano group level.

To date, we have not yet achieved the adoption of the ICMM reporting methodology, as it has not been possible to draw a distinction, at some of our sites, between the flows of operational water and non-operational water, due to Covid-19 and the need for our teams to redefine priorities. If sanitary conditions allow it, this will be done for 2021.

Quantity of water abstracted, discharged and consumed - m ³	2018	2019	2020	Trend 2019-2020
Volume of water abstracted from surface water (including rainwater)	566,501	573,327	339,841	-41%
Volume of water sourced from distribution network	30,856	36,649	34,472	-6%
Volume of exhaust water withdrawn	6,834,411	6,769,525	6,700,352	-1%
Volume of groundwater withdrawn via pumping wells	3,984,972	3,801,176	3,261,429	-14%
Volume of exhaust water used on site	5,040,030	5,382,983	5,275,643	-2%
Volume of water discharged	2,140,981	1,735,617	1,560,574	-10%
Volume of water consumed	6,447,811	6,924,338	6,689,602	-3%
RATIO of water consumed per metric ton of U produced (m ³ /tU)	480.28	525.6862284	689.4364557	+31%

* Reference year 2019

Former open-pit mine McClean Lake site, Canada.



PRINCIPLE 6.3

Design, construct, operate, monitor and decommission tailings disposal / storage facilities using comprehensive, risk-based management and governance practices in line with internationally recognised good practice, to minimise the risk of catastrophic failure.



Monitoring of Orano Mining structures

Launched in August 2020, the Global Industry Standard on Tailings Management developed by the United Nations Environment Programme (UNEP), the Principles for Responsible Investment (an investor network supported by the United Nations) and the International Council on Mining and Metals (ICMM) following the tragic Brumadinho tailings facility collapse in Brazil aims to achieve the ultimate ambition of zero harm to people and the environment.

Underpinned by an integrated approach to tailings management, this Standard aims to prevent catastrophic failure and enhance the safety of mine tailings facilities across the globe. It represents a radical change in terms of transparency, responsibility and the protection of the rights of people affected and involved in projects.

The Standard has six topic areas: affected communities; integrated knowledge base; design, construction, operation and monitoring of the tailings facility; management and governance; emergency response and long-term recovery; and public disclosure and access to information. These topics contain 15 principles and 77 specific auditable requirements with which operators must comply.

This Global Industry Standard is directed at operators and applies to mining tailings management facilities, both existing and planned.

As of the 5 August 2020, all ICMM members including Orano Mining are committed to implement the Global Industry Standard on Tailings Management.

All tailings facilities operated by Orano Mining with “extreme” or “very high” risks will be compliant with the Standard by August 2023.

All other tailings facilities operated by Orano Mining that have not been remediated will be compliant by August 2025.

Two types of structure are taken into consideration: tailings storage and effluent storage ponds.

TAILINGS STORAGE STRUCTURES

IN FRANCE

Of the 17 tailings storage sites, all of which have been redeveloped, nine have structures measuring 15 to 65 m in height and 110 to 1,700 m in length, but only one has a water cover (Bois Noirs Limouzat site).

The tailings storage structures are constructed using sand from the cycloning of tailings, or mining waste rock. Only the Bois Noirs structure (max. height: 42 m, length: 508 m) is considered under French regulations to be a class A dam subject to internal monitoring and regulatory monitoring. Under the regulations, the other structures in France are subject to internal monitoring by Orano Mining and are inspected by an external expert every five years.

List of uranium tailing facilities dams (Orano Mining)


More information



Name of the tailings facility	Location: town Department/ Country	Status	Operating years	Building materials and raising method	Dimensions (m) Maximum height/length	Stored tailings tonnage (Mt)	Date of the last independant expert review	Safety factor*	Internal and external monitoring	Is there a remediation plan?
Bois Noirs Limouzat	St Priest la Prugne (42 - FR)	closed	1958/1980	Waste rocks / Vertical	42/508	1.3	2020	1.6	Inspection, maintenance, topo, piezo / expert review each year, authorities review	Already remediated / Water cover (18 ha)
Ecarpière	Gétigné (44 - FR)	closed	1958/1990	Cycloned sands / Vertical then upstream	60/1.100	11.5	2020	2.76	Inspection, maintenance, topo, piezo, flows / expert review (5 years)	Already remediated / Solid cover
Brugeaud	Bessines sur Gartempe (87 - FR)	closed	1978/1987	Cycloned sands / Upstream and vertical on the sides	22/500	7.3	2020	2.07	Inspection, maintenance, topo, piezo / expert review (5 years)	Already remediated / Solid cover
Lavaugrasse	Bessines sur Gartempe (87 - FR)	closed	1958/1978	Cycloned sands / Vertical	36/1.400	7.5	2020	2.76	Inspection, maintenance, topo, piezo / expert review (5 years)	Already remediated / Solid cover
Montmassacrot	Bessines sur Gartempe (87 - FR)	closed	1987/1990	Cycloned sands / Vertical	20/200	0.7	2020	1.69	Inspection, maintenance, topo, piezo / expert review (5 years)	Already remediated / Solid cover
Bernardan	Jouac (87 - FR)	closed	1978/2001	Cycloned sands / Vertical	22/1.700	1.9	2020	1.81	Inspection, maintenance, topo, piezo / expert review (5 years)	Already remediated / Solid cover
St Martin du Bosc	Bosc et Soumont (34 - FR)	closed	1978/1997	Waste rocks / Vertical then upstream	45/400	4.1	2017	1.53	Inspection, maintenance, piezo, flow / expert review (5 years)	Already remediated / Solid cover
Bertholène	Bertholène (12 - FR)	closed	1985/1991	Waste rocks / Vertical	50/110	0.5	2017	1.96	Inspection, piezo, flow / expert review (5 years)	Already remediated / Solid cover
Saint Pierre du Cantal	St Pierre du Cantal (15 - FR)	closed	1976/1985	Waste rocks / Vertical	15/140	0.6	2017	3.14	Inspection, maintenance / expert review (5 years)	Already remediated / Solid cover
COMUF	Mounana (Gabon)	closed	1990/1997	Waste rocks / Vertical + downstream	13/200	0.7	2017	-	Inspection, maintenance, topo, flows / expert review (5 years)	Already remediated / Water cover (20 ha)
SOMAÏR	Arlit (Niger)	Operating	a/c 1971	Waste rocks / banco / Vertical	5 to 11/3.500	23	-	-	Inspection, pond levels	Yes - by reprofiling and cover
COMINAK	Akokan (Niger)	Closed	1978/2021	Waste rocks / banco / Vertical	5 to 11/1.400	18	-	-	Inspection, pond levels	Yes - by reprofiling and cover

* According to geotechnical recommendation > 1.5

The results of structure monitoring show that they are in a satisfactory state as far as their stability is concerned.

In addition, a working group, set up under France's national plan for the management of radioactive materials and radioactive waste (PNGMDR) and run by the French Ministry for the Ecological Transition and the French Nuclear Safety Authority (See page 84 ) , continued its work in 2020 to establish the criteria to take into account when assessing the stability of structures over the very long term. This group brings together which brings together numerous experts and groups, including Orano Mining.

INTERNATIONALLY

In Gabon, Canada and Niger, the structures made of waste rock from mining are lower in height. Only the structure in Gabon, which is a remediated site, has a water cover. All of these structures meet regulatory requirements and are subject to internal monitoring by the group, with some of them undergoing inspection by an external expert.

EFFLUENT STORAGE PONDS

Industrial effluent ponds are constructed either as superstructures, or partially buried. They are subject to regular monitoring, on a daily or weekly basis, depending on the case.

- KATCO: Four ponds are in operation to manage drilling mud; these are built out of sand, sourced on the site itself, and are 5 m high.
- SOMAÏR: Four ponds are in operation, constructed out of waste rock and measuring around 7 m in height.
- COMINAK: Six ponds are in operation, constructed from argillite present on the site, measuring 7 m in height.

INTERNAL AUDIT

The Internal Audit Department of Orano has conducted two studies (in 2014 and 2018) and issued recommendations regarding the organizational measures to be implemented for the monitoring of structures.

In recent years, there has been a significant effort at sites to improve the monitoring of structures in operational and organizational terms. Their general condition is satisfactory, but some structures require closer attention.



McClean Lake mill, Canada.



ORANO MINING COMMITMENTS FOR 2030:

- Shift towards passive management of mining tailings storage at new mining sites.

ACCIDENTAL SPILLS

Preventing accidental spills is a major subject the Orano Mining teams have been working on for several years.

Thanks to these efforts and the sharing of experience, such spills are limited and handled very swiftly and safely.

Incident involving drums of sodium chlorate on the COMINAK site in Niger

At the COMINAK site, on July 11, 2020, a fire an explosion occurred on drums of sodium chlorate. Usually stored in a hangar, the 1700 drums had been transferred to an outdoor area dedicated to reagents but exposed to the sun and to high temperatures.

The emergency response was activated, and firefighters brought the fire under control. The personnel was evacuated, and the industrial facilities were shut down. No personnel members were injured. Nigerien authorities have been notified. An investigation has been initiated to determine the causes of the incident. In order to prevent such a situation from happening again, an action plan has been deployed. It recalls the need to ensure compliance with the storage requirements described in the safety data sheets and to involve experts upstream in order to properly assess the risks.

In order to prevent accidental spills, we encourage our operational teams to:

- adopt a proactive approach (from the design and construction phases through to the monitoring and operation of the facilities);
- analyze and share lessons learned from potentially significant accidents to ensure that they do not occur again;
- conduct rigorous monitoring of facilities.

Environmental events are fed back at group level via a dedicated internal digital platform named "AHEAD". The Orano group has also developed a severity classification scale for environmental near-misses and events, ASSESS, in order to promote operating experience feedback and sharing within the group.

During the course of 2020, we recorded no environmental events leading to a major environmental impact. We incurred no fines or litigation arising from regulatory matters.

One example of an accidental spill that occurred in 2020 was at our McClean Lake site in Canada (See box).

Emissions of anhydrous ammonia gas during a maintenance operation at the McClean Lake site in Canada

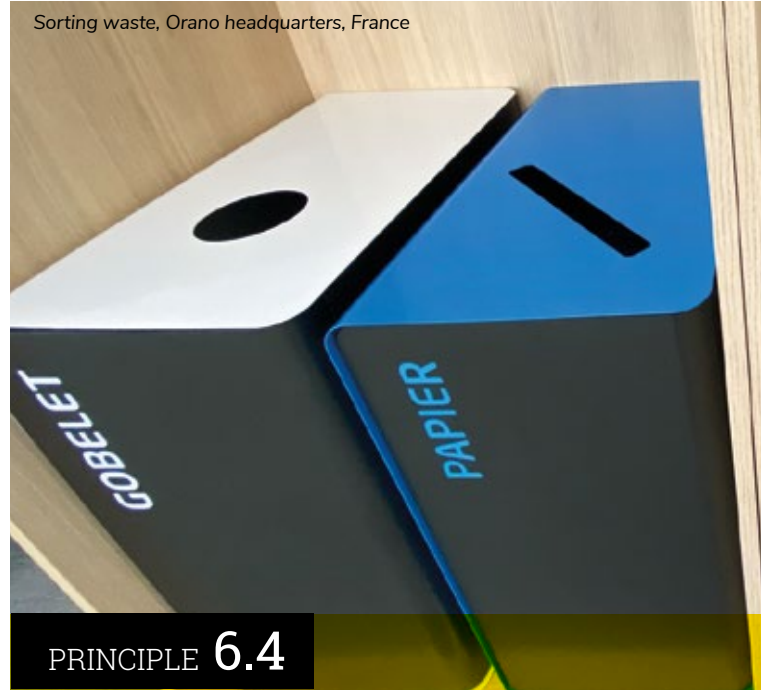
In July 2020, during a preventative maintenance activity on a temperature sensor on the anhydrous ammonia storage system at the McClean site, a release of anhydrous ammonia occurred which resulted in discharge of about 35 m³ anhydrous ammonia in gaseous form to the atmosphere.

The Emergency Response Team was immediately mobilized and was able to control the anhydrous ammonia release using the existing fire water network within minutes and subsequently isolate the leak. As a precautionary measure the plant personnel were evacuated to the base camp which is situated about a kilometer away from the plant facilities.

This incident did not result in any injuries to the personnel on the site. Most of the discharged anhydrous ammonia was mixed with water and reported to the site Tailings Management Facility. Subsequent environmental sampling did not indicate any impact on fresh water aquifers. The Event was reported to the regulatory agencies (Canadian Nuclear Safety Commission, Ministry of Labour Relations and Workplace Safety, Saskatchewan Ministry of Environment).

After the incident, a thorough investigation was conducted to determine the root causes of the event. A benchmarking exercise against the code requirements and the best practices for anhydrous ammonia storage facilities was also conducted to ensure compliance and determine possible opportunities for improvement. Besides, a detailed risk analysis was done on the entire anhydrous ammonia system to identify any other potential weaknesses. As a result of these activities, a robust improvement action plan was developed to increase the level of safety and further reduce the likelihood of such events in the future.

Sorting waste, Orano headquarters, France



PRINCIPLE 6.4

Apply the mitigation hierarchy to prevent pollution, manage releases and waste, and address potential impacts on human health and the environment.

Waste management and the circular economy

Mining activities generate waste. This waste needs to be managed effectively, as much to comply with environmental regulations and minimize any impacts as to maintain the acceptability of activities.

POLICY

Orano Mining assumes responsibility for its own waste and manages it effectively, in accordance with the regulations, whether it is radioactive or conventional waste.

The volume of waste and its treatment varies from one site to the next. It is identified, classified and stored before being recycled



recycled where possible, in line with national regulations. Our site teams ensure that waste is traceable through to its definitive disposal or recovery. This is part of their environmental management plan (ISO 14001).

We apply the waste management hierarchy (prevent, reuse, recycle and dispose) to prevent pollution, manage discharges and waste, and respond to any impacts on human health and the environment.

GOVERNANCE

Our central and operational teams regularly examine ways to reduce the quantity of waste produced and optimize its reuse/recovery and recycling, as part of a continuous improvement approach. They also discuss the best practices in use, monitor regulatory changes and ensure the coherence of programs introduced.

PERFORMANCE

Our waste is divided into conventional waste and radioactive waste:

Conventional waste

Conventional waste is divided into two categories, set according to the national regulations of the countries in which we work:

- Hazardous waste, such as batteries and packaging for toxic substances, electronic waste, used oil, etc.
- Non-hazardous waste, such as household waste, rubble, scrap metal, tires, etc.

Our teams make sure that waste is collected and disposed of in conditions that do not present any risk of harm to our employees, neighboring populations or the environment. Facilities for the storage and disposal of waste, and hazardous materials more generally, undergo periodic reassessment as part of the review of the HSE risk management plan for our sites. A prior risk assessment is performed for each hazardous waste storage or disposal facility to determine the most suitable and safest management method.

Quantity in tons	2018	2019	2020
Conventional waste	7,526	5,340	3,824
Hazardous waste*	4,749	3,439	2,867
Non-hazardous waste*	2,777	1,901	957
Hazardous conventional waste recovered	71	65.5	37.8
Non-hazardous conventional waste recovered	1,449	1,526	1,015

	2018	2019	2020
Share of recovered waste linked to a normal activity	20.2%	29.8%	27%

For all mining activities operated by Orano Mining, the global tonnage of conventional waste decreased by more than 28% in 2020 in comparison to 2019. This reduction is linked to the overall drop in production, but is also thanks to efforts to optimize waste management at each site.

In addition, the share of waste recovered stood at 27%, which is broadly comparable to the results from the previous year.



* Hazardous waste generated by our sites are mainly: used oil, filters of fuel, unnecessary antifreeze agent, superfluous batteries. They are collected in indicated containers and transported for the internal or external recycling. Empty barrels or canisters which contain typically the residue of products as oil, antifreeze agent and grease are returned to the suppliers or dedicated channels for recycling.

** Our most significant non-hazardous waste includes scrap, used tires, internal industrial waste and the organic waste. All our scrap and a part of tires are recycled. When it was possible, our operational sites implemented recycling schemes of materials such as paper, plastic, pallets and glass.



Radioactive waste

Our mining waste (excluding tailings from ore processing) only contains naturally-occurring radionuclides and is classified as very low-level waste (VLLW).

This very low-level waste is either put into specific surface storage, or possibly, after processing and inspection, rendered safe for disposal via normal channels, when it is below the release thresholds defined by national regulations (if applicable).

Directives are sent out by the central teams to each of the operational units likely to produce radioactive waste to remind them of the objectives and specify the resources to be deployed in terms of organization and performance, in order to ensure this type of waste is managed safely. These directives are in particular based on local regulations, supplemented where necessary by IAEA (International Atomic Energy Agency) guides and standards. Sites apply them in the form of operational procedures adapted to their own context.

At our sites in countries where there is no centralized disposal route for radioactive waste, the waste is stored directly at the sites under conditions of safety and security that comply with the regulations in force.

Tons	2018	2019	2020
Total mass of radioactive waste linked to operation, recovered or disposed of via approved routes	772	1,217	879

In 2020, 879 tons of radioactive waste were produced by the mining entities operated by Orano, which represents a 28% decrease from 2019. This fall can chiefly be explained by the return to a normal situation in comparison to 2019, which was when the KATCO teams processed pollution that had been produced prior to the KATCO licenses being granted.



ORANO MINING COMMITMENTS FOR 2025:

- **Contribute to policies to reduce plastic waste in the areas where we are based**
- **Reduce our production of non-recycled waste (-25% by 2030)**

DID YOU KNOW



A key aim of the waste management program is to encourage the three “Rs” - Reduce, Reuse and Recycle - to minimize the quantity of waste thrown away

Waste must be sorted at the source by the producer before being transported to specific areas for suitable disposal.

Before starting the program, a set of operating instructions is drawn up.

This specifies how to collect and dispose of the waste. These documents are updated in line with regulatory changes, the development of waste management routes and any internal operational modifications. Site personnel are trained to follow the recommendations and any updates.

WASTE CATEGORIES



To facilitate waste identification and sorting, the following categories have been established:

- Domestic waste
- Industrial waste
- Hazardous waste
- Low-level radioactive waste

For each waste type, the following information is specified:

- Waste description and characterization (chemical, physical, quantity, etc.)
- Waste classification according to local and international regulations
- Waste inspection and monitoring procedures
- Mitigation measures used to prevent the waste having a negative impact on the environment
- Collection, storage, transportation and disposal measures

PRINCIPLE 6.5

Implement measures to improve energy efficiency and contribute to a low carbon future, and report the outcomes based on internationally recognised protocols for measuring CO₂ equivalent (GHG) emissions.



Climate

GREENHOUSE GASES (GHGS) AND OZONE-DEPLETING GASES

Convinced of the role that nuclear energy can play in the energy transition to low-carbon electricity, since 2004 Orano has been conducting a transverse process to reduce its GHG footprint, and contribute to meet the goals of the Paris Agreement.



Photovoltaic panels, KATCO site, Kazakhstan.

CONTRIBUTING TO CARBON NEUTRALITY BY 2050

Orano plans to strengthen its contribution to carbon neutrality with a new target of reducing its direct and indirect (scope 1 and 2) GHG emissions by 40% by 2025*.

GOVERNANCE

Orano's Board of Directors ensures that climate issues are taken into account in the group's strategy, and annually examines progress towards the targets to reduce GHG emissions.

These targets are applied within Orano Mining and at its sites. In addition, as a member of the ICMM, Orano Mining supports the position statement on principles for climate change policy design and is committed to implementing the requirements set out in the performance expectations.

This notably involves implementing a governance system, disclosing greenhouse gas emissions (scope 1 and 2*) on an annual basis, setting emission reduction targets at corporate level and advancing adaptation and mitigation solutions at our sites, taking into account local opportunities and challenges.

More information, see ADEME site



* Reference year 2015.

PERFORMANCE MEASUREMENT

Energy-consuming mining activities are generally located on isolated sites in countries where the energy mix is sometimes very reliant on fossil energy sources.

To reduce its GHG emissions, Orano Mining prioritizes action on its main sources, which chiefly come from:

- Burning fossil fuels: the quantities of GHGs emitted are calculated from the quantities of fuel consumed and the corresponding CO2 equivalent emission factors.
- Decarbonation during phases involving the chemical leaching of ore using acid, and reagents (including carbonates) put into contact with acid solutions. The quantities of CO2 emitted are then calculated based on the carbonate contents of the processed ore and quantities of reagents used.
- Processing methods used (emission of nitrogen oxides, mainly) and the management of waste (methane and CO2). The greenhouse gas emissions are deduced from the quantities of waste produced, from the monitoring of emissions for nitrogen oxides, and from their associated GWPs (Global Warming Potential).
- Emissions of halogen compounds (electrical insulating materials), and of coolant, refrigerant and fire-retardant fluids used on industrial sites. The greenhouse gas emissions are deduced from the quantities of the different refrigerating fluids consumed and their associated GWPs (Global Warming Potential).



PERFORMANCE/RESULTS

To meet our GHG reduction targets, we act on several levers simultaneously, such as the replacement of equipment with better-performing technology that does not use refrigerating fluids containing hydrofluorocarbons, the optimization of fossil fuel consumption, or programs to raise awareness among our employees.

Although it is still difficult to take action on emissions related to the decarbonation of ore, which are dependent on the geology of the areas mined, innovative studies are being carried out by Orano Mining to limit the quantities of reagents used during the chemical leaching phases. These studies, which are currently in the development phase, already show promise. One example is the project to partially replace carbonates with sodium hydroxide in ore processing at SOMAİR, which will make it possible to minimize the release of CO2 due to decarbonation.

Other areas of action are being examined to:

- limit energy needs on the one hand, such as by limiting steam requirements at McClean using a filtration membrane system;
- use a low-carbon electricity supply, on the other, through solar panel projects.

At the end of 2020, the Orano group updated all the emission factors for electricity production according to the locations and activities of its sites.

The modified factors are taken from the most recent update of the ADEME "Base Carbone" carbon database, v19.

The following factors are applied by Orano Mining for the calculation of GHG emissions:

Site	Country	EF _{elec} (in tCO ₂ e/MWh)
KATCO ⁽²⁾	Kazakhstan	0.766
Badrakh Energy ⁽²⁾	Mongolia	1.492
Nurlikum Mining ⁽²⁾	Uzbekistan	0.734
Orano Resources Namibia ⁽²⁾	Namibia	0.197
Orano Mines Niger ⁽³⁾	Niger	0.990
COMINAK ⁽³⁾	Niger	0.990
SOMAİR ⁽³⁾	Niger	0.990
COMUF ⁽²⁾	Gabon	0.383
Orano Resources Canada ⁽⁴⁾	Canada / Saskatchewan	0.657
Orano Mining HQ ⁽¹⁾	France	0.039

Where:

- (1): ADEME Base Carbone, v18 (fuel, front end and losses being considered as scope 3, i.e. 24.3 gCO₂e/kWh for industrial sites in France and 39 gCO₂e/kWh for service sites in France)
- (2): Base Carbone ADEME, v19
- (3): Sonichar data
- (4): Source: emissionfactors.com for Saskatchewan (same for province/ Saskatchewan).



CO₂e emission factor, by fuel

Fuel	Density (t/m ³)	GJ NCV/t	tCO ₂ e/GJ NCV	tCO ₂ e/MWh NCV	tCO ₂ e/t	tCO ₂ e/m ³
Natural gas H	6.54 10 ⁻⁴	49.6	0.0519	0.187	2.574	0.00168
Natural gas B	6.54 10 ⁻⁴	38.2	0.0519	0.187	1.983	0.0013
Propane/LPG	0.538	46	0.0648	0.233	2.981	1.6
Heavy fuel	0.980	40	0.0786	0.283	3.144	3.08
Domestic fuel	0.845	42	0.0755	0.272	3.171	2.68
Pure diesel	0.845	42	0.0757	0.273	3.179	2.69
Pure gasoline	0.755	44	0.0742	0.267	3.265	2.47
Aviation turbine fuel	0.800	44	0.0719	0.259	3.164	2.53

The CO₂e emission factors for each fuel have also been updated.

These emission factors (linked to burning fuel only) are either taken from the ADEME carbon database, v18, or calculated by the Orano group).

Updating these emission factors relative to the consumption of both fuel and electrical energy made it possible to update the calculation of the Orano Mining carbon footprint for 2018 and 2019 during the 2020 calculation.

Emissions (tCO ₂ e)	2018	2019	2020
Direct GHG emissions - scope 1	169,440	153,422	146,232
CO ₂ emissions from processes	47,428	39,239	47,249
Direct GHG emissions linked to fossil energies - scope 1	114,974	102,397	90,393
Indirect GHG emissions - scope 2	199,692	195,840	191,637
Emissions of ozone-depleting gases	26	41	30

In 2020, a slight overall reduction in greenhouse gas (GHG) emissions was observed at the Orano Mining sites, except for those related to CO₂ emissions from processes. This last increase is notably explained by the fact that our SOMAÏR and McClean units processed more highly carbonated ore than in previous years, which generated higher CO₂ emissions from decarbonation during the ore leaching and extraction phases.

Nevertheless, systematic cross-cutting actions on the subject of energy, and the establishment of a dedicated working group in 2020, allowed Orano Mining to keep on track towards its targets to reduce greenhouse gas emissions.

Global Orano Mining activities generated total greenhouse gas emissions (scope 1 + scope 2 GHGs) of 337 869 t of CO₂ equivalent, down by 3% in comparison to 2019.

Emissions (tCO ₂ e)	2018	2019	2020	2020 change vs 2019
Direct and indirect GHG emissions (scope 1 + 2) in tCO ₂ e	369,132	349,262	337,869	-3%

These figures show that the emission intensity ratio for direct and indirect GHGs is 34.82 t CO₂ equivalent per metric ton of uranium produced.

The drop in uranium production led to a general reduction in water and energy consumption, and the associated emissions. However, the industrial facilities have been kept operational and in-depth maintenance activities carried out during these periods.

As a result, the change in consumption is not proportional to the drop in production.

Ratio (tCO ₂ e/tU)	2018	2019	2020	2020 change vs 2019
GHG scope 1	12.68	11.65	15.07	29%
GHG scope 2	11.06	14.87	19.75	33%
GHG scope 1 + 2	23.74	26.52	34.82	31%



ORANO MINING COMMITMENTS FOR 2025:

- Reduce the emissions of CO₂ equivalent from activities as operator in scope 1 and 2 (-40%)*
- Work to decarbonize our electricity supply where relevant to increase the share of low-energy carbon at our operating sites - (SOMAÏR: 5 MWp of solar installed)

* Reference year 2015

COMINAK Site, Niger.



Energy

To ensure the continuity and safety of our activities, it is essential for Orano Mining sites to secure their energy supply while continuing to optimize their consumption and reduce their carbon footprint.

Whether it originates from fossil fuels or renewable sources, the energy consumed by the Orano Mining sites is monitored on a constant basis.

POLICY

Since 2015, Orano Mining has been operating an energy efficiency program with the objective...of reducing consumption. Diagnostics were performed on our sites in France and internationally, and performance indicators were set up to identify the units with the highest consumption. Action plans are then implemented and low-consumption operating procedures incorporated into our site strategies.



Orano Mining participates in a dedicated working group led by the Orano group, in which the energy referents from each BU share the results of diagnostics, best practices and operating experience feedback, and draw inspiration from industrial examples that are tried and tested, or which show promise for application at our sites.



PERFORMANCE

An energy efficiency project was launched at Orano Mining at the end of 2015, with the objective of reducing consumption on our mining sites. To achieve this, energy efficiency assessments were carried out in 2015 at the Bessines site (France) and the KATCO site (Kazakhstan), and in 2016 and 2017 at the McClean Lake site (Canada), and SOMAÏR and COMINAK sites (Niger).

Continuing on this path, a review was performed in 2020 to assess the maturity of energy performance at production sites, taking into consideration the extent to which the following were integrated:

- Energy performance measurement
- An initiative to identify energy losses
- Optimization of energy performance
- Management of energy performance

The results of these assessments were not only shared among the sites concerned, but also at Orano group level, so that best practices could be pooled and areas for improvement identified for each site.

The maturity summary was used as a basis to launch a review of the leads identified during diagnostics, return to certain progress actions that had become more relevant, and reflect on new actions. Thanks to these new leads, the Orano Mining sites are able to continuously improve their energy performance, with the aim of making significant energy savings.

The main levers for action lie in:

- investing in new equipment that consumes less energy and is more efficient,
- reconfiguring certain networks to favor energy recovery,
- changing the operating mode of the workstations that consume the most energy,
- raising awareness among operators.

The energy consumed stood at 595 118 MWh for 2020, which takes the intensity ratio of energy consumed to 61.3 MWh per ton of U produced by Orano Mining.

Between 2019 and 2020, the fall in production due to the pandemic coupled with the different levers implemented, led to a reduction of energy consumption by 8.7%, divided between:

- Fossil fuel consumption: -12.5% (diesel, gasoline, propane)
- Electrical energy consumption: - 2.5%



Energy (MWh)	2018	2019	2020	Change
Energy consumed	637,849	637,683	582,192	-8.7%
Fossil energy consumed	442,997	394,974	345,543	-12.5%
Electricity consumed	245,046	242,709	236,639	-2.5%
<i>Electricity from non-renewable sources consumed</i>	244,663	242,324	236,594	-2.4%
<i>Electricity from renewable sources* consumed</i>	383	386	46	
Ratio of energy consumed/tU	51	48	60	23.94%

* Change in reporting methodology in 2020.

Environmental Monitoring

Environmental monitoring takes place at each mining site and the surrounding area. Thanks to this approach, Orano Mining ensures that the impact of its mining activities is controlled, and that there are no associated risks for local populations and the surrounding ecosystems.

Orano Mining maintains or implements an environmental management system at its sites in line with the standard ISO 14001 or equivalent.

The basic principles of monitoring are recommended in the impact studies. On the strength of several years of sharing their experience, an annual environmental monitoring program is drawn up by the teams of each site. These programs are validated by the supervisory authorities.

Inspections or audits carried out by a third party, required by the authorities or initiated on a voluntary basis, are conducted periodically to ensure the transparency of our results.

In addition, in order to keep our local stakeholders informed and involve them more closely, we also conduct participatory monitoring, particularly in Mongolia and in Canada.

Multiple physical, chemical and radiological parameters are checked, in the air, the water, the soil, the vegetation and the food chain, with the objective of ensuring that impacts of the activity on the environment are properly managed and being ready to respond to even the slightest alert.



Laboratoire de KATCO, Kazakhstan.



In 2020, Orano Mining and its subsidiaries worldwide did not identify any cases of non-compliance with environmental legislation and/or regulations in force that resulted in a financial penalty in the countries where it works.

AIR MONITORING

Air monitoring chiefly consists in measuring exposure to ambient radioactivity, but gas discharges from ore processing operations



are also monitored. Measurements are taken, depending on the site, of concentrations of gas in the air, in the environment or at the outlet of chimney stacks (e.g.: SO_x). Radioactivity measurements are taken continuously, both at the site and in the nearby area, using specific dosimeters.

Measurements of dust and fine particles (PM) may also be taken in particular during construction or remediation phases or where heavy traffic is planned to happen near residential areas or work sites.

WATER MONITORING

Campaigns to monitor the quality and quantity of aquifers and surface water, and sampling of surface water is carried out using a piezometric monitoring system installed upstream and downstream of our activities.

Hydrogeological and hydrochemical studies are performed at all sites, well before mining operations begin. These studies allow a better understanding of the groundwater and surface water, and their quality, so that we can adapt our projects accordingly. At all sites where it is necessary, discharged water is first sent through a treatment station in order to comply with the environmental and health standards in force.

MONITORING OF THE FOOD CHAIN

Sampling and analyses are regularly carried out in the food chain and on plants, including aquatic flora and fauna, and fruit and vegetables produced in gardens.



Market gardener, COMINAK, Niger.

SOIL MONITORING

Soil monitoring allows any contaminated zones to be identified. If such zones are pinpointed, soil decontamination measures are applied to restore the zone to levels which comply with regulations or the original values.

MONITORING OF FLORA AND FAUNA

Mining activities are likely to modify and disturb natural habitats.

Biodiversity inventories or studies of biological indices are performed regularly at our different sites to monitor the potential impact of Orano Mining activities on local flora and fauna.



Environmental technician, France.

PRESERVING BIODIVERSITY





MINING PRINCIPLE

Contributing to the conservation of biodiversity.

- 1
- 2
- 3
- 4
- 5
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- 7
- 8
- 9
- 10

PRINCIPLE 7.1

Avoid prospecting or developing new mines on sites classified as World Heritage Sites, respect areas recognized as “protected areas” by legislation, design and operate all new developments or modify existing mines so that they are compatible with the value attached to these areas.

Environmental control, Namibia.



By their nature, our mining activities can be located in sensitive natural environments and may disturb ecosystems. Aware of this issue, Orano Mining takes biodiversity and ecosystems into account from the exploration stage in order to minimize its impact.

This proactive approach to management is essential to maintain the acceptability of our activities in the countries where we work.



POLICY

Orano Mining undertakes to:

- avoid prospecting or developing new mines in areas classified as World Heritage Sites by UNESCO;
- respect areas recognized as “protected areas” by legislation, design and operate all new developments or modify existing mines so that they are compatible and do not adversely affect the value attached to these areas;
- identify, assess and mitigate risks and impacts on biodiversity and ecosystem services by applying the mitigation hierarchy with the aim of moving towards zero net loss of biodiversity.

Orano Mining’s approach is fully in line with the recommendations of the IFC (International Finance Corporation) Performance Standard 6 on “Biodiversity Conservation and Sustainable Management of Living Natural Resources”. At the heart of this approach, the protection of biodiversity, the maintenance of ecosystem services and the sustainable management of living natural resources remain among the priorities for ensuring the sustainable development of all Orano Mining activities.

Orano Mining strives to identify the total number of threatened species on the global Red List of the IUCN (International Union for the Conservation of Nature) and its national equivalent whose habitats are situated in areas affected by its activities, classified by level of risk of extinction:

- Critically Endangered
- Endangered
- Vulnerable
- Near Threatened
- Least Concern



PRINCIPLE 7.2

Assess and resolve the risks and impacts on biodiversity and ecosystem services by applying the mitigation hierarchy, with the aim of moving towards zero net loss of biodiversity.

Our central and operational teams work together to “avoid - minimize - remediate/restore - offset” and preserve ecosystems. They share best practices used by mining companies that are members of the ICMM, while specific actions are carried out at each site in accordance with regulatory requirements.

UNESCO-classified World Heritage Sites near our mining operations are also identified, in order to assess the potential impact of our activities on certain plant and animal species or on classified sites, and take the necessary measures to avoid harming them and prevent their degradation.

We have identified 56 UNESCO-classified World Heritage Sites within 500 km radius from our mining operations.

More information, see the sheet and visit the UNESCO website



In the context of new projects, areas identified as a key area for biodiversity are excluded from license applications as a matter of principle.

Zuuvch Ovoo site, Mongolia.



Steps have also been taken to raise awareness among employees regarding biodiversity and the associated issues. In Kazakhstan, for example, employees launched a photo competition, which allowed them to show the diversity and wealth of the flora and fauna near the site. The snaps were displayed and shared on social media networks, and the winners received prizes.

TAKING ACTION TO PROTECT BIODIVERSITY

Certain mining sites are located close to zones which are rich in biodiversity. In 2020, studies and actions were undertaken to preserve sensitive zones alongside third parties, such as local communities, consultancy firms, university specialists or nature conservation bodies.

As an example:

At our Mining Closure France sites, many inventories of flora and fauna have been drawn up or updated, as well as Global Biological Index (IBG) estimates. Former mining sites now provide special habitats for certain rare animal species, while in others rare plant species have been replanted. These sites undergo ecological monitoring by independent bodies and associations, with an annual inventory taken of flora and fauna.

In Canada, the caribou census study project running since 2014, in collaboration with the University of Saskatchewan, has been completed and the results used to inform the Federal Caribou Habitat Recovery Strategy. Our Canadian teams have also started a long-term study of benthic sediments and invertebrates



present in Fox Lake and Pat Lake, which neighbor the McClean Lake site, to check whether industrial activities have had an impact on the invertebrates and their habitat.

At our Central Asian sites that are known for their forests of saxauls, the iconic shrubs of the region, work has begun on a doctoral thesis on ecosystem compensation in collaboration with CIRAD, the French Agricultural Research Centre for International Development. Partnerships with local organizations will also be developed.

In Mongolia, we are continuing our project to replant saxauls, in collaboration with a consultant who is an expert in the field and the National University of Mongolia. As part of this project, a nursery has been built in the area covered by our Zuvch Ovoo license.

Lastly, in order to assess the impact of mining activities on biodiversity, our subsidiary KATCO started a new flora and fauna inventory at the end of the year. The results will be compared to those from 2010. Regarding the rehabilitation projects, campaigns have also been launched to plant saxaul saplings and seeds in the test areas.



OUR ORANO MINING COMMITMENTS

- Each operating site will have an inventory of flora and fauna dated within 10 years by 2025.
- Integrate a biodiversity element into each remediation plan.



IUCN categories for the Red list



Extirpated species	Species threatened with extinction	Other categories
EX: Extinct worldwide	CR: Critically endangered	NT: Near threatened (species close to threshold of threatened species or which could be threatened if specific conservation measures are not taken)
EW: Extinct in the wild	EN: Endangered	LC: Least concern (species for which the risk of extinction is low)
RE: Regionally extirpated	VU: Vulnerable	DD: Data deficient (species for which evaluation could not be carried out due to insufficient data)



MONGOLIA

An independent study to determine the causes of livestock deaths

A livestock farmer in Mongolia suspected that the deaths of some of his animals were caused by the ISR tests performed between December 2010 and June 2011 to extract uranium from the Umnut area or from the Dulaan Uul area, where drilling mud is stored.



In 2019, Badrakh Energy tasked an independent American consultancy (Stantec Consulting International) with examining the possible causes of death of the livestock.

An expert assessment of the documents and ecological risk estimates calculated according to recognized protocols in the field enabled the toxicology expert to conclude that the activities of Badrakh Energy could not have been the principal cause of death of the animals raised within the site environment. The deaths were most likely linked to combination of factors, notably including, among other things:

- environmental stress due to the cold winter conditions at the time of death;

- potential malnutrition due to a lack of sufficient, healthy fodder;
- the ingestion of metals, via plants or water, known to be naturally present in high concentrations in this part of the Gobi Desert;
- the young age of the animals (8 months), which would have made them more sensitive to the toxic effects of the metals in the plants and/or water;

Exposure to metals from the consumption of earth, mud or plants from the Dulaan Uul mud pit cannot be excluded, but this is unlikely as this pit was closed when the death of the livestock was reported.

** It should be noted that the mortality rate of these animals corresponds to the standard mortality rates in this part of the Gobi Desert.*

KAZAKHSTAN

In Kazakhstan, at our KATCO subsidiary

A new inventory was launched in 2020, and will continue in 2021, covering the scope of our licenses. It will supplement the one completed in 2010 and allow the data to be compared.

Table lists the species present in these areas that are included in the IUCN Red List. It should be noted that since then, employees have spotted great bustards (*Otis tarda*), a bird that was not observed during the 2010 inventory but is classified as Vulnerable on the IUCN Red list.

There are no specific areas of high value in terms of biodiversity close to KATCO's license areas.

Name of species	Type	IUCN classification
Saiga tatarica	Plant	Critically endangered
Selevinia betpakdalensis	Animal	Deficient of data
Felis manul	Animal	Near Threatened
Gazella subgutturosa	Animal	Vulnerable
Mustela (Putorius) eversmanni	Animal	Least Concern
Aquila chrysaetos	Animal	Least Concern
Circaetus gallicus	Animal	Least Concern
Otis tarda	Animal	Vulnerable, observed by employees

Examples

MONGOLIA

In Mongolia, implementation of an approach to offset by plantation

In order to deal with the erosion of biodiversity related to mining projects, the "mitigation hierarchy", also known as the "avoid - minimize - remediate/restore - offset" sequence, is implemented from the very first phases of the project, notably in accordance with the recommendations of the environmental impact studies. Our objective is to work towards no net loss of biodiversity.

With the framework of an approach to offset by plantation, we are working on the optimization of the principles of plantation (methodology, choice of species, etc.) by taking into account not only the landscapes and the surrounding

ecosystems but also the usages and customs of the local population.

A first study has been conducted in Dornogobi province, a region of woodland and pasture, where the license areas of Badrakh Energy are located. The inventory of ecosystems coupled with an ethnobotanic study has made it possible to highlight the need for different varieties of plants essential not only to feed the population and livestock but also for domestic or medicinal usages. The finalization of this first step has enabled us to broaden our understanding of the offset principles. In 2020, we launched a doctoral thesis

for closer examination of this subject in cooperation with CIRAD, the French Agricultural Research Centre for International Development, with the aim of generalizing this ecosystem services approach across the areas concerned.



CANADA

In Canada, in the Athabasca Basin region

There are no areas of high value in terms of biodiversity close to the license areas of Orano Canada Inc.

The nearest site, the Wood Buffalo National Park, is located more than 400 km away from our operating area. This site was classified as a UNESCO World Heritage Site in 1983, and is highly representative of the ecosystem of the prairies of the Northern Great Plains. It is home to a high concentration of migratory wildlife and a large wild bison population, as well as being a breeding habitat for the whooping crane (an endangered species). These landscapes, the large inland delta, salt plains, and gypsum karst are natural phenomena representative of their kind.

The survey of habitats carried out on the basis of the IUCN Red List and on a regional scale across the Athabasca Basin (100 000 km²) brought the inventory to 26 animal species classified as of Least Concern, 1 species recognized as Vulnerable and



1 recognized as Endangered. There were also 38 plants in the Least Concern category and 1 plant species classified as Vulnerable that may potentially grow in the region. At local level, within the perimeter of McClean Lake site, including our license areas, 1 Vulnerable animal species and 1 species of Least Concern were observed, as well as 7 plants of Least Concern. Within the perimeter of our license areas themselves, very few of these species were actually observed.

The same inventories done under the Canadian Species at Risk Act (SARA) protocol indicate the potential presence of 7 Special Concern Plants plus 1 Endangered, 3 Threatened, and 5 Special Concern Animals. Within the area of our operations, field surveys have only confirmed the existence of 2 animal species of Special Concern, and no endangered plant species.



FRANCE

Orano Mining decided, on the advice of the ecologist in charge of monitoring flora and fauna at the Lavaugrassse Storage Unit (USL), to install five bat boxes on the north side of the facility in October 2020.

This measure forms part of the “avoid - minimize - remediate/restore - offset” mitigation hierarchy approach.

The monitoring of flora and fauna is governed by the prefectural order that authorizes the operation of USL. A three-year ecological management plan was introduced in 2020, with inventories to be performed annually. The reports are submitted to the authorities, associations such as the Limousin mammal, reptile and amphibian group (Groupe Mammologique et Herpétologique du Limousin) and the French Office for Biodiversity.



NAMIBIA

The Trekkopje project is located near the Dorob National Park in the central Namib Desert and close to the Namib-Naukluft National Park. This park, which encompasses the Namib sand sea, is listed as a UNESCO World Heritage Site. The Namib is thought to be the oldest desert in the world.

It contains many species that have adapted to the harsh and extremely arid environment over several million years. The Namib central desert may seem empty, but its climate, its soils and its diverse landscapes are home to a great variety of animal species. This area is considered a “hotspot” of biodiversity for reptiles and invertebrates, especially for geckos, sand lizards, beetles, scorpions and camel spiders. However, no species of fauna or flora surveyed in the region is on the IUCN Red List for risk of extinction.

MONGOLIA

Protection of saxauls and inventories of animal species in proximity to our project

On the boundaries of the Zuuvch Ovoo license areas is the forest of Khar Zag, which is protected locally, and consists of 2512 hectares of saxauls (species which are iconic symbols of Mongolia). Other protected natural areas are located more than 100 km from the project zone.

Overlapping with the perimeter of our license areas, the Bayanshiree is a site known for its richness in dinosaur fossils from the Cretaceous period. In December 2014, the Mongolian government proposed that this site be inscribed on the UNESCO’s Tentative List of World Heritage Sites. Orano then handed back the parts of the license areas concerned.

Inventories of animals present on our Zuuvch Ovoo and Umnut sites have been carried out as part of baseline studies.

So, if we take the class Aves (IUCN status), 11 species classified as Least Concern and 1 species classified as Near Threatened were observed.

Inventories of other animal species have been drawn up based on the Mongolian Red List. These notably include *Gazella subgutturosa* (Vulnerable species), *Equus hemionus* (Endangered), 7 species classified as Least Concern and 4 classified as Near Threatened. It should be noted that *Gazella subgutturosa* is also classified as a Vulnerable species by the IUCN, but *Equus hemionus* is recognized as a Near Threatened species.

However, there are no specific areas of high value in terms of biodiversity close to Badrakh Energy’s license areas.



RESPONSIBLE PRODUCTION





MINING PRINCIPLE

Facilitate and support the knowledge base and systems for the responsible design, use, re-use, recycling and disposal of products containing metals and minerals.

PRINCIPLE 8.1

In project design, operation and de-commissioning, implement cost-effective measures for the recovery, re-use or recycling of energy, natural resources and materials.



Ore conveyors' construction at the maxi plant, Namibia

Extracting uranium ore and producing uranium concentrate are activities that consume raw materials and energy, as do the infrastructure construction, dismantling and remediation phases. It is therefore important, from both an economic and environmental point of view, to limit the consumption of natural resources.

Orano Mining is working to reduce its consumption of water and electrical power, as well as of hydrocarbons, by taking action to improve performance, raise awareness and use new processes where possible. Examples of these actions are available in Sections 6.2 (Water) and 6.5 (Energy) (See p. 98 [↗](#) and p. 111 [↗](#)).

During project planning, prior impact studies assess the natural resource consumption necessary. This phase of the study then allows Orano Mining teams to optimize the project in order to minimize the consumption of resources and energy.

On construction sites, certain national regulations (as in France) call for specific recovery rates of inert construction waste. The production of this waste is anticipated from the planning phase in order to reduce its levels. During construction, waste undergoes appropriate collection and sorting at the source, with incentives to encourage recovery and recycling, locally if possible. The compliance of disposal routes and waste traceability are guaranteed, to ensure that the applicable regulations are met, as well as the objectives set as part of this work.

Ore extraction and processing also consume mineral and metal resources at various points.

During the extraction and processing of ore, sites are likely to use nitrates (explosives for extraction, oxidants for processing), sulfur or sulfuric acid, lime, sodium hydroxide, carbonates, and iron and manganese oxides.

The procurement of these reagents represents a significant operational cost, and the environmental footprint varies depending on their geographical origin, the type of product and the quantities used.

The Orano Mining sites constantly strive to optimize their procurement and rationalize their consumption, while ensuring that their processes remain effective.

Where possible, these reagents are regenerated during processing. This is the case, for example, with nitric acid in the impregnators at the COMINAK and SOMAÏR sites.

At the SOMAÏR site, a study is under way to replace some of the carbonates with sodium hydroxide, which will make it possible to limit the CO₂ emissions associated with ore processing.

At drilling sites, Orano Mining is working to introduce the recycling of drilling mud, which will help limit the consumption of both water and clays. In addition, this process reduces the safety risks and environmental footprint.

Where possible, metal waste (such as drums or batteries) is reused on site, or recycled internally or externally. Although this does not concern Very Low-Level Waste (VLLW), a radiological inspection is carried out before the external recovery of metal waste.

At the SOMAÏR open-pit mines, products from stripping operations (during mining) may be used either as mining backfill, or as construction or reinforcement materials for infrastructure (the base of dikes or superstructures, rock pile remodeling, infill, etc.) during remediation.

Lastly, the dismantling sites themselves also undergo prior studies so that as much inert mineral waste can be recovered as possible, in accordance with the applicable regulations and health, environmental and radiation protection standards (For more information about radiation protection, see Mining Principle 5, p. 65).

These practices are dictated by regulatory requirements (construction waste), production cost considerations (mineral inputs), safety issues (avoiding substances that are carcinogenic, mutagenic or toxic for reproduction - CMR substances, ensuring that storage and handling activities are safe for operators, etc.) and environmental considerations, and implemented with a view to contributing to the local economy.

Orano Mining has set itself the target of reducing its non-recycled waste by 10% by 2025 in comparison to 2019, which will notably be achieved by reducing the production of waste at the source, and prioritizing the use of recyclable or reusable materials. This goal forms part of the Orano group's initiative to preserve resources (For more information, see Orano annual report, chapter 3.4.2.3.6 Preserving biodiversity, p. 80).

Zuuvch Ovoo ISR Pilot's construction works, Mongolia.



PRINCIPLE 8.2

Assess the hazards of the products of mining according to UN Globally Harmonised System of Hazard Classification and Labelling or equivalent relevant regulatory systems and communicate through safety data sheets and labelling as appropriate.



Radiation control of uranate drums, COMINAK, Niger.

In line with our group procedures, our operating sites comply with international and national requirements regarding the classification and labeling of the chemical products used and/or produced. All hazardous substances are regularly inventoried, labeled appropriately and stored correctly. Safety data sheets are systematically available and regularly checked. The regular review and management of these products and the integration of risk assessments into site HSE management plans is governed by the site integrated management systems, ISO 45001/OHSAS 18001, ISO 14001 (operations and post-mining) or equivalent (planned sites).

EMPLOYMENT PERFORMANCE



Ulaanbadrakh kindergarten,
Dornogobi, Mongolia.



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MINING PRINCIPLE

Seek continual improvement of our employment performance and contribute to the social, economic and institutional development of host countries and communities.



Information meeting, Mongolia.

PRINCIPLE 9.1

Implement inclusive approaches with local communities to identify their development priorities and support activities that contribute to their lasting social and economic wellbeing, in partnership with government, civil society and development agencies, as appropriate.


Orano is fulfilling its commitment to integration by working to improve the attractiveness and aid the economic development of the countries in which it operates.

To do this, Orano deploys mapping. Mapping aims to identify the expectations and power of each group of stakeholders at national and local level, and to determine how they perceive Orano, the project, etc. It makes it possible to establish strategic priorities on environmental, labor relations, social, economic and governance-related questions, and define an action plan associated with the results.

This consists first of a preparatory phase, with the validation of the method with internal stakeholders, the creation of information

gathering tools (interview guide), the delimitation of the area and of stakeholders: state and local structures, NGOs/Associations, Suppliers, and the Media. This is then followed by what is known as the information gathering phase, including the conducting of interviews and documentary research. The third step is that of data processing and analysis, with the transcription of interviews, the exploitation of documentation, the production of graphs and comments on them, and the preparation of the plan of action. The exercise concludes with the phase of feedback to Stakeholders and of deployment of the action plan.

Stakeholder mapping is carried out on a regular basis. In 2019, mapping was completed in Kazakhstan and mapping of the impact of the closure of COMINAK was carried out in Niger.

In 2020, no exercise was carried out for the scope of the BU. However, we did participate in the Orano materiality exercise by interviewing several external stakeholders on each of our sites (See Orano annual report chapter 4.1.2, p. 90 .

Orano is a committed member of trade associations in its field, including:

More information on Orano annual report 



Orano supports:



BE INVOLVED IN LOCAL STRUCTURES AND SOCIAL PROJECTS

Orano is involved in the life of the communities near its operations in France and abroad. Orano’s principal industrial sites work proactively to make their areas of intervention part of the local industrial fabric. Their senior management are active members of local and regional administrative and economic bodies. Our stakeholders’ expectations are taken into account in our projects in particular in the form of regular discussions with local economic players allowing us to interact with them on how they see the challenges associated with our activities.

2020 was a year marked by the COVID crisis. It seriously disrupted such exchanges and held back the development of key projects. It was above all notable for the commitment made by all our sites to the national and local authorities to help with the acquisition not only of healthcare equipment but also of consumables to help fight the pandemic. Local initiatives were also encouraged in this area.

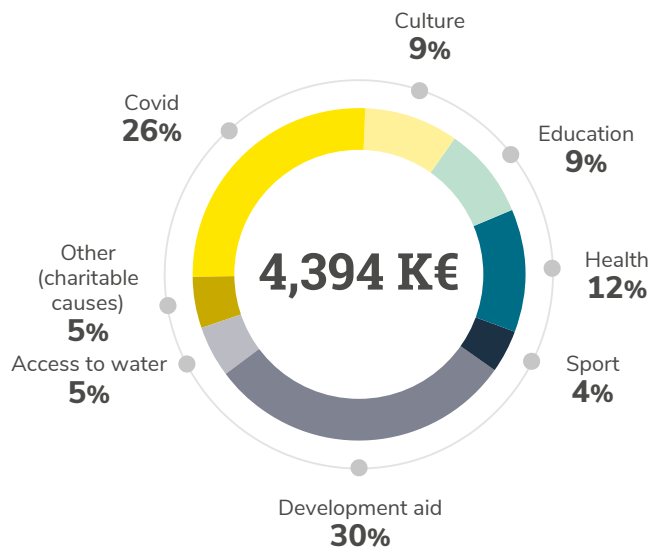
In one of the notable initiatives taken in Niger to combat the pandemic effectively, apart from equipping our staff and sub-contractors with surgical masks for professional use, the mining companies were also concerned to supply the residents of Arlit with masks for private use. In this way, it was possible for 100,000 textile masks made to a pattern approved by the French Standards Authority, AFNOR, to be manufactured by local service providers and be made available to the families of COMINAK and SOMAÏR personnel, as well as to sub-contractors and to residents of the town of Arlit and of Akokan, including to school teachers and pupils. This initiative was taken at a time when the authorities



Medical equipment donations, Arlit, Niger.

issued a decree making the wearing of masks mandatory when on the move in urban areas. The decision was taken provide each family with 20 washable masks. The masks were produced by two workshops in Arlit which already manufacture work clothes for the mining companies and have been doing so for 20 years now and by one other workshop based in Niamey.

Breakdown of expenditure on social actions including those related to “COVID”



SOME EXAMPLES OF PROJECTS SUPPORTED BY ORANO MINING AND ITS SUBSIDIARIES IN 2020

CANADA EXAMPLES

COVID 19 - (Wichihitahnik-Kihwichiwahkanahk) Helping our Partners

When the Covid-19 pandemic first arrived in Saskatchewan in March 2020, the Orano Canada CSR Department was quick to start communicating with the Indigenous leaders of northern Saskatchewan about the ongoing operations at its McClean Lake site and on the measures to be taken.

A CSR team member participated in a daily north- wide conference call with leaders, northern health officials and community command centre personnel. Based on the information gathered at these conference calls, Orano was able to offer support for four northern emergency response teams who supplied food hampers, cleaning supplies and hand sanitizer, rubber gloves and masks to northern Saskatchewan communities where needed.

At two other points during the year Orano delivered cleaning supplies, masks, and hand sanitizer to communities in the Athabasca Basin.

At the close of 2020 Orano made year-end donations to the seven Athabasca communities to assist with COVID-19 expenses.

Considering the remote location of these communities and the need for Orano to keep its workforce and workplace healthy and safe, this investment of over \$170,000 over the course of the year was well placed and appreciated.

2020: Supporting End-of-Life Care

Orano contributed \$250,000 over two years to help build the facility, including an endowment that will be used to advance staff and volunteer cultural responsiveness training as it relates to end-of-life care.

The 15-bed hospice serves residents and their families with compassion and high quality end-of-life care.

There was a significant gap in this type of care in the city and with the support of many partners the hospice will provide care and comfort for families experiencing a difficult time.

KAZAKHSTAN EXAMPLES

COVID crisis: A show of solidarity in Kazakhstan with the donation of computers to students

During the pandemic, many students and school children in Kazakhstan completed their courses of study remotely. KATCO donated 100 computers to schools in Sozak District and to children from low-income families to help them continue their studies. The total amount allocated to the project was 15 million tenge (30,000 euros). Education is one of KATCO’s strategic objectives in the area of social development. It provides support for a variety of projects aiming to help students from low-income families in Sozak District.

At the same time, on the healthcare front, KATCO donated 6 ventilators worth more than 180,000 euros to hospitals in the regions of Shymkent and Turkistan. This equipments was of vital importance for patients with COVID 19.



Deployment of a leisure infrastructure project for young people in Kazakhstan

Following the construction of sports facilities in each of the villages of Sozak District, KATCO’s new project is to create leisure infrastructure for children in the villages of Tasty, Shu, Taukent and Sholakkorgan. It will also provide facilities for the accommodation of veterans. The project, designed in conjunction with the authorities of Sozak District has been somewhat delayed in the design phase in 2020. But it is expected to be completed in 2021.



FXB project beneficiary, Mongolia



MONGOLIA EXAMPLES

Mongolia: “FXB village”

This project designed in conjunction with the NGO FXB aims to improve all aspects of life of beneficiaries of the program simultaneously over a period of three years.

The program, deployed for the benefit of populations located in the region of Sainshand, in the Gobi desert, has 5 objectives:

1. Strengthen the economic capabilities of 100 vulnerable families;
2. Consolidate the food security of participants and eradicate child malnutrition
3. Improve the families' access to medical care
4. Improve living and hygiene conditions for participants
5. Improve access to education for children and young people and improve the knowledge and capabilities of adults.

This three-year partnership with the NGO FXB started in 2016. It was renewed for a second time in 2019. In 2020, due to the COVID pandemic, implementation with beneficiaries was made particularly difficult with nearly 10 months of lockdown.

It is worth noting that, despite this context, Income-Generating Activities (IGAs) were still started for 19 families. The results obtained at the end of this second year of the program show there to have been an improvement in the economic situation of the participants. The results are very encouraging as participants were able to adapt to the difficult situation.



Study grants, a multi-year program in Mongolia

Since 2010, grants are being provided for studies lasting for a period of 4 to 6 years.

Since the start of this program, 47 studies have benefited from grants. The selection process is transparent and known to the communities: It is carried out by an ad-hoc commission consisting of representatives from the school, a social worker, and members of the local information committees (Commissions Locales d'Informations - CLIs). Upon completing his/her studies, the student has to return and work in the region.

NIGER EXAMPLES

IRHAZER project

Initiated in 2011 in partnership with the State of Niger, the IRHAZER project aims to contribute to food security through the development of irrigated agriculture. This program allows the development of a 1,000-ha area (private and community irrigation) to be improved and accelerated by making it available for livestock farming and by promoting the value chain for farming and livestock products.



Irhazer-Tamesna project, pastoral cattle farm of Agharous, Niger.

At community level, 2020 was notable for the transfer of 3 farming operations to the National Office for Hydro-Agricultural Development (Office National des Aménagements Hydro-Agricoles - ONAHA) which is now responsible for ensuring the continuity of the actions taken within the framework of the project. In terms of support for the promotion of private initiatives, 84 sub-projects accounting for 150 ha were analyzed and validated in the category of small private irrigation projects and 8 others in that of livestock projects. Extending the scope of this project to the Arlit area, close to the SOMAÏR and COMINAK mining sites, a feasibility study was able to be carried out for a pilot private irrigation scheme.

Lastly, as far as animal production is concerned, 9 new livestock wells were created, with a further 4 renovated, and 1 now with solar power equipment. In addition, more than 30,000 animals were vaccinated.

Irhazer project, Niger.



3 years of partnership with “Les Puits du Désert”

In 2018, Orano Mining signed a second agreement with the "Les Puits du Désert" [Desert Wells] association.

The purpose of this partnership is to finance a project aiming to improve the living conditions of nomad populations in the north of Niger in 5 villages: Intawagre, Tafagak, Karsana, Korim Limina and Waraguiss, corresponding to 2,500 beneficiaries.

2 objectives were defined:

- Secure sustainable access to drinking water in this area;
- Create the conditions for the schooling of children in the village of Intawagré.

At the end of this 3-year partnership, the renovated hydraulic structures were made permanent. Conditions of hygiene have been improved by equipping the wells so as to limit risks of contamination. Children are now able to study under good conditions with the construction of a classroom in the village of Intawagré, as well as housing for the teacher.

More information, visit the association website



“Les Puits du Désert”, Niger.

COVID crisis Niger: supply of medical equipment to the Center for Medical and Health Research (Centre de Recherche Médicale et Sanitaire - CERMES)

Orano Mining purchased medical equipment on behalf of CERMES in Niamey to allow it to increase its capacity to carry out COVID-19 screening tests, as well as a glove box (Isolator) allowing hazardous compounds to be handled in total safety.

Orano and the mining companies SOMAÏR, COMINAK and Orano Mines Niger, have been mobilized and committed to working to fight against the spread of the epidemic in the country since mid-March 2020, investing over 1.3 million euros:

- At national level by donation of equipment to the CERMES in Niamey in order to strengthen its operational capacity and the donation of consumables to the General Referral Hospital in Niamey;
- At regional level by means of support in the form of equipment provided to the regional hospital in Agadez;
- At local level in Arlit by donation of equipment to the district hospital in Arlit, along with donation of consumables.

In addition to the aforementioned community actions, other actions, in particular purchases of equipment and consumables were taken by SOMAÏR and COMINAK as part of the fight against COVID 19 to provide support to their hospitals.



CERMES, Niger.

Entrance to the McClean Lake mill, Canada.



PRINCIPLE 9.2

Enable access by local enterprises to procurement and contracting opportunities across the project life-cycle, both directly and by encouraging larger contractors and suppliers, and also by supporting initiatives to enhance economic opportunities for local communities.

The fact that preference is given - providing skill levels are comparable - to local suppliers during the bidding process enables the creation of a network of companies and numerous jobs in the region around each mining site.

In 2020, 73% of our purchasing volume came from the countries where Orano Mining operates.

By 2025, Orano Mining has committed to maintain a rate of local purchasing of at least 75%.

How the idea of "local" is to be understood varies depending on the country, its stage of economic development and the population density around the site. Specific purchasing policies have therefore been implemented in the countries in which it has mining sites.

Orano Mining is thus setting itself the following rules:

- pay attention to include local suppliers in calls for tenders
- prefer, all other capacities being equal, a local supplier whose proximity ultimately constitutes an advantage over its competitors
- always be vigilant to ensure local suppliers adapt to "Western" standards (safety, transparency, etc.)
- support local suppliers with their development

By way of example, in Canada, for similar contract bids, preference is systematically given to "local" northern suppliers, as per their status under provincial legislation in Saskatchewan.

A company has "local" northern status if it belongs to or operates within a community situated in northern Saskatchewan.

Contracts for services such as site catering or site monitoring, which represent a significant number of jobs, have, for example, been awarded to the suppliers in this region.

COVID-19 focus

In the current context of the economic crisis resulting from the COVID-19 pandemic, the supply chain identified sensitive third parties from the start of March 2020, then deployed regular status updates to gather information on risks and weak signals identified for rapid processing (early payments, making of downpayments, etc.) in conjunction with the Finance Department. This was in particular the case in Kazakhstan and in Canada where Orano Mining proceeded with the accelerated payment of invoices or set up payment facilities.

An action plan to organize monitoring and assistance for sensitive suppliers in 2021 has been defined and validated. The pandemic has also contributed to the reinforcement of the process to ensure compliance with payment deadlines and internal control to anticipate potential delays which may have an impact on the supplier.

Examples

CANADA

Orano Canada supports its suppliers over the long term

Athabasca Catering Limited Partnership (ACLP) has been a supplier to Orano Canada for over 20 years. The company provides catering and cleaning services on our McClean Lake site. ACLP is a company in the north of Saskatchewan which recruits its employees from "First Nations" peoples. It gives them the opportunity to develop their skills, to create new opportunities locally and play an active part in the economic development of the region.

Athabasca Basin Security (ABS) provides security and cleaning services for offices on Orano's McClean Lake site. Like ACLP, ABS is a long-time supplier to Orano Canada. Originating from the north of Saskatchewan, its employees provide an excellent quality of service on a daily basis.

Orano Canada makes 66% of its purchases in the Saskatchewan region.

MONGOLIA

Badrakh Energy aids local development by providing support to suppliers in the region

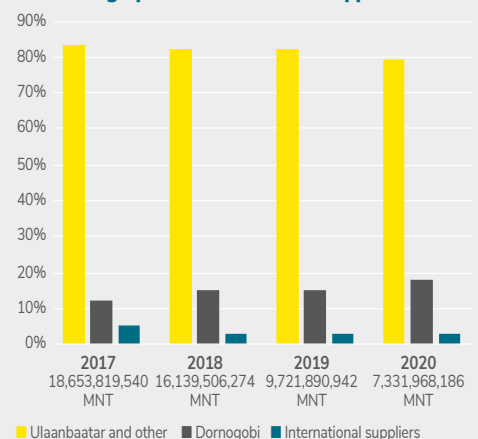
In Mongolia, Badrakh Energy is making the majority of its purchases from Mongolian suppliers and is thus helping to support the country's economic development.

According to the statistics for the last four years, 95-97% of goods and services have been supplied by Mongolian enterprises with a gradual strengthening (from 12% in 2017 to 18% in 2020) of purchases made in the province of Dornogobi where Badrakh Energy's operational activity is located.

Within the framework of the catering contract concluded with its contractor, Badrakh Energy wished to procure meat and dairy products from herding families in neighboring areas.

Supply Chain teams are committed to an approach to ensure transparency with suppliers over the long term and encourage the building of their teams' skills, in particular in safety, quality, respect for the environment, and sustainable development. Training sessions have been organized with our experts in order to share best practices and help local businesses to meet the Orano group's requirements.

Geographical distribution of suppliers





Information meeting, Niger.



PRINCIPLE 9.3

Conduct stakeholder engagement based upon an analysis of the local context and provide local stakeholders with access to effective mechanisms for seeking resolution of grievances related to the company and its activities.

Orano Mining complies with international best practices in the extractive industries and values transparency and dialogue with its stakeholders. The management of grievances plays an essential part in the quality of our relations with our stakeholders.

With this in mind, Orano Mining deployed a grievance mechanism on all of its sites in 2020 to resolve complaints at an operational level. The purpose of this procedure is to process a complaint, a request for an explanation on a specific problem, or a remark about one of the company’s activities. The process is managed by

Corporate Social Responsibility (CSR) teams but may also include contributions from other company departments. The aim is to respond to grievances within a reasonable timeframe and to keep the complainant informed throughout the process.

Learning from our stakeholders’ observations and grievances allows us to improve and strengthen our relationships based on trust. A summary of reporting on the processing of grievances will be drawn up at the end of 2021.

PRINCIPLE 9.4

Collaborate with government, where appropriate, to support improvements in environmental and social practices of local artisanal and small-scale mining (ASM).

→ Not applicable

ENGAGING WITH STAKEHOLDERS



Meeting with Indigenous populations from Northern Saskatchewan, Canada.



MINING PRINCIPLE

Proactively engage key stakeholders on sustainable development challenges and opportunities in an open and transparent manner. Effectively report and independently verify progress and performance.


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PRINCIPLE 10.1

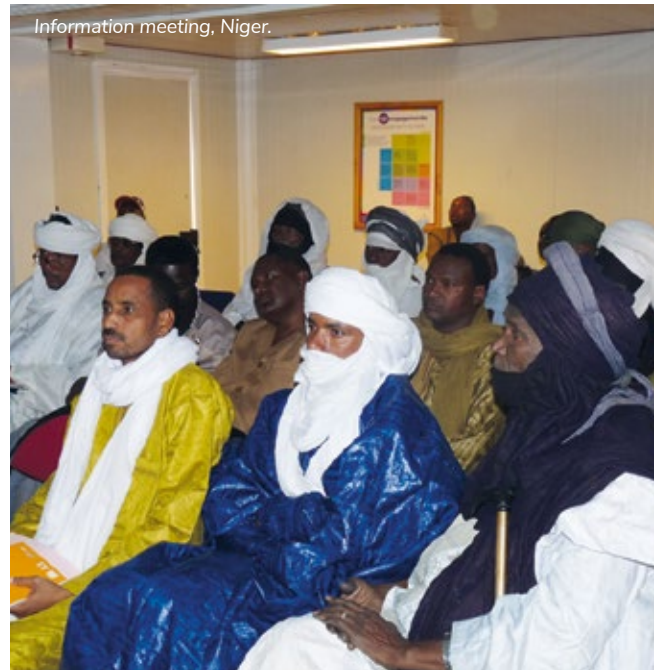
Identify and engage with key corporate-level external stakeholders on sustainable development issues in an open and transparent manner.

To ensure the acceptability and sustainability of its business activities, Orano Mining is committed to a process of dialogue, consultation and sharing with its stakeholders.

Various frameworks and tools enable Orano Mining to identify our stakeholders expectations:

- Regulations in force, whether national or international. These may designate, depending on the type of mining project, the stakeholders to be consulted as part of a clearly established dialogue and consultation process.
- Mining agreements, specific partnership agreements or special provisions in our contracts, may lay down a framework for investments and dialogue for the benefit of communities or other local players with a view to socio-economic development.
- Frameworks and standards set by professional organizations in the sector and bodies in charge of voluntary transparency and responsibility initiatives.
- "Stakeholder mapping" are done on a regular basis and specific actions plans are then defined.
- Risk management exercises (e.g. the Business Risk Model). These are internal methodological principles. These systems help our teams identify and analyze the commitments to be made with regard to groups impacted by our mining and industrial projects.
- The materiality exercise that helps us to identify the main expectations of our stakeholders (See CSR Approach, p.17 .
- Local bodies for dialogue with stakeholders. Bodies such as the Bilateral steering committee (CBO - Conseil Bilatéral d'Orientation, Niger), which bring together local elected officials, relevant authorities and civil society, alongside Orano Mining Niger and our subsidiaries SOMAÏR and COMINAK, serve to elicit local stakeholder expectations.

Dialogue and consultation with our stakeholders are among the fundamentals of our approach. Our teams at headquarters and/or on site are their primary contact.



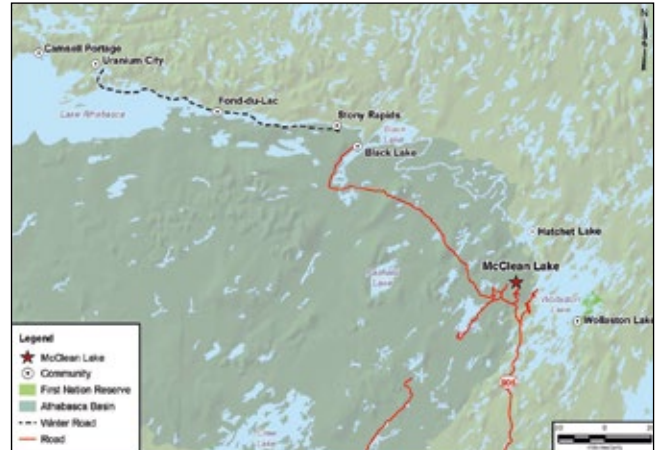


These formal exchanges may take the form of face-to-face discussions, public meetings, or communication in writing and are adapted to the environment in each of the countries in which we are based. The topics most frequently addressed are those relating to the environment and the economy. The frequency with which we enter into dialogue depends on the results of the stakeholder mappings carried out on a regular basis.

DEDICATED DIALOGUE BODIES ARE IN PLACE THROUGHOUT THE MINING LIFECYCLE FROM EXPLORATION TO MINE CLOSURE, ON ALL OUR SITES

CANADA

In Canada, several committees are set up to ensure dialogue with stakeholders because of the size of the territory and the diversity of the communities.



Athabasca Joint Engagement and Environmental Committee (AJES)

Since its creation in 1993, this body has been made up of representatives of the mining companies Orano Canada Inc. and Cameco Corporation and seven signatories: 3 First Nations and 4 communities in northern Saskatchewan, commonly referred to as the Athabasca Basin Communities. For Orano Canada, the focus of this body is primarily to discuss the McCrean Lake Operation and our exploration projects in or near the communities' Traditional Territories. This forum for dialogue meets quarterly.

In 2020, the topics most frequently discussed with our stakeholders were related to Community Investment, Business Development, Environmental Stewardship and Workforce Development. Due to Covid19, all meetings were virtual.

The McCrean Lake Tailings Management Facility (TMF) expansion project was discussed at AJES meetings, and one meeting was held on site to facilitate a tour of the TMF. A regulatory hearing is scheduled for September 2021 to consider the expansion project. 2020 was the fourth year of our five-year collaboration agreement and we will be reviewing the agreement in 2021.

Northern Saskatchewan Environment Quality Committee (NSEQC)

The NSEQC, formed in 1995, has representatives from 34 communities in northern Saskatchewan and has a mandate to help bridge the information gap between northerners, government and the uranium mining industry. The NSEQC did not meet in 2020 due to the expiration of the committee membership.

Due to Covid 19 and a provincial election, the provincial government was not able to finalize the committee members. We are hoping that the Committee will be functioning by the first quarter of 2021.

Community Based Environmental Monitoring Program (CBEMP)

The CBEMP was developed to provide confidence to Athabasca Basin Communities that their traditional country foods will remain

safe to eat today and into the future. If the monitoring program demonstrates an adverse impact on traditional country foods has resulted from the mining operations in the area, Cameco and Orano Canada will seek the feedback of AJES with respect to appropriate measures to mitigate such impacts on the communities.

The CBEMP is evaluated by AJES to ensure that the program is meeting the objectives of the parties. In addition to other factors, the evaluation will consider:

- program design;
- sample selection locations;
- sample types; and
- Indigenous knowledge

In 2020, Canada North (CanNorth) Environment Services staff and the AJES committee met with the Hatchet Lake and Wollaston Lake Community Leadership to introduce the CBEMP and to get feedback on what country foods they want to be sampled and sample locations.

CanNorth and the AJES committee also met with the Fond du Lac Dene Nation Leadership to share the findings of the CBEMP results in their communities and to present the report for their further use. There has been a total of 3 studies done since the inception of the collaboration agreement and all have shown that country foods continue to be safe to eat. Two more communities will be in the process in 2021.

FRANCE

118 former mines sites are under the responsibility of Orano Mining

Site Monitoring Committees (CSS)

Set up on the initiative of local Prefects (government representatives), Site Monitoring Committees are bodies to promote dialogue and consultation between the operator and local stakeholders (residents, employees, elected officials, NGOs, etc.). Their aim is to inform the people on and around our sites about the effects of activities relating to tailings storage facilities, on public health and the environment.

The Prefect is entitled to set up a CSS for each waste treatment facility for which a permit is requested and is obliged to set up a CSS for all storage facilities for the collection of final waste or special industrial waste, or where a request is made by one of the municipalities located within the area covered by the public enquiry.

Through these Committees, Orano Mining presents the different environmental outcomes and the work to be carried out to improve monitoring of former mining sites.

In 2020, Orano Mining sat on two Site Monitoring Committees in the region: the first one in Bertholène (Aveyron), the second in Ecarpière (Loire-Atlantique). Several meetings were cancelled because of the pandemic. It should also be noted that there has

been a gradual decrease in the regularity of the CSS meetings. With the fall in number of requests for information from the stakeholders concerned, some Préfectures no longer organize them annually.

Since 2019, Orano Mining has also made generally available an interactive mapping application for accessing relevant data relating to the old uranium mines for which it is responsible in France, how they are monitored environmentally and how they are redeveloped. The interactive map gives access to a wealth of data on the sustainable management of former sites, and thus forms part of our approach of overall transparency, making clear our commitments as a responsible mining company (See *Mining Principle 6.1*, p. 80 ).

MONGOLIA

Mongolia Cooperation Agreement

In 2020, meetings with local stakeholders were hampered by the COVID crisis. Nevertheless, dialogue continued with visits to families and meetings with the local authorities (Bagh).

Badrakh Energy (a joint venture between AREVA Mongol LLC and Mon-Atom LLC) also organized a visit of its pilot for representatives of the main mining companies operating in the country and another dedicated to the "Implementation Committee", a working group appointed by the Mongolian government to propose societal investment projects.



Donation of seeds to flood-affected populations.



Meeting with stakeholders, Mongolia.

At the end of July 2020, a meeting of the “Implementation Committee”, the decision body of the Cooperation Agreement, was dedicated to the contract renewal for one additional year.

During the implementation phase of the pilot phase, the Cooperation Agreement, signed for the first time in 2018, established a formal framework for dialogue and discussion between the teams of Badrakh Energy (joint venture between AREVA Mongol LLC and Mon-Atom LLC) and the communities. Themes of cooperation were specified: water, human health, animal health, education, culture, access to energy and economic development. This agreement sets out, for duration of the “Operating Pilot” test phase, an organization for governing relations between Badrakh Energy, the local authorities and local citizens.



The contribution to be allocated to the community projects is programmed for the duration of the Agreement. Projects are structured around seven pillars of commitment: access to water, human health, animal health, education, culture, access to energy and economic development.

GABON

Continuous relationship with stakeholders

The Local Information Committee scheduled in March was cancelled due to COVID-19. However, on-going exchanges were organized with local stakeholders, including the elected representatives of the Mounana commune, in the context of the roll out of the “Mounana 200” project. In 2020, a dedicated committee gathering the Préfecture, the Townhall and owners’ representatives was set up.

As previously reported, this is a project to build 201 housing units replacing those both radiologically marked and identified by the Gabonese Nuclear Safety and Security Agency (Agence Gabonaise de Sûreté et de Sécurité Nucléaires - AGSSN), and also validated by a technical committee comprising the different stakeholders.

The work to build the 93 housing units were finalized (a subdivision of 24 houses and 69 houses in the municipality). A program to built 100 houses has also started (*For more information, see Mining Principle 3.2 p. 40*).

KAZAKHSTAN

Various bodies involved

In Kazakhstan, one feature of our constant dialogue with stakeholders continued with about thirty meetings with local and national authorities, and local representatives of the Sozak district (Tasty, Shu, Taukent and Sholakorgan). 2020 saw discussions surrounding the deployment of actions designed to support the population in the face of the COVID crisis and to implement a significant educational infrastructure.

In the societal sphere, KATCO was distinguished in 2020 by winning the regional “Generous Heart” competition in August. The company was nominated as the “best company of the year” for the implementation of these social projects.

NIGER

Support for affected communities

From April onwards, discussions with local stakeholders focused on actions to be undertaken in collaboration with the mining companies to address the COVID pandemic. On the ground, these actions involved strengthening the capacity of the Arlit urban authority to respond to the COVID-19 crisis, in particular

by donating important equipment such as respirators, masks, and Covid kits to the mining hospitals.

Apart from the COVID health crisis, the Nigerien authorities also appealed to the mining companies to provide emergency aid and support to the Nigerien populations facing floods in September 2020. Tents, pharmaceutical products, water purification kits, impregnated mosquito nets, solar lamps, soap and various accessories were distributed to the flood victims.

Bilateral Steering Committee (Conseil Bilatéral d’Orientation - CBO)

This body was set up in May 2006 to help strengthen the local governance of social projects of benefit to the community.

The CBO counts local elected officials, relevant administrations and representatives of civil society alongside Orano Mining. They define local development policies, identify priority areas for intervention, issue opinions on projects and ensure financing for the latter.

COMINAK closure: the economic challenge

Issues related to the closure of COMINAK were the subject of numerous meetings with stakeholders at the national and local levels throughout 2020.

The meetings with stakeholders addressed the major tasks of remediation, decommissioning of industrial facilities and site monitoring, and the related impacts on social, societal and economic issues.

The many meetings included notably the Local Information Commission held on December 9, 2020 to review the preparations for the remediation of the COMINAK site. Organized under the chairmanship of the Prefect of the Département of Arlit, it brought together representatives of COMINAK, the Mayor of the urban commune of Arlit, the Secretary General of the Préfecture of Iférouane, the Departmental Directors of Arlit, representatives of the Defense and Security Forces, representatives of civil society, trade unions, and other Arlit stakeholders.

The talks offered participants the opportunity to be informed about the progress made in the preparations for the remediation of the COMINAK site with regard to all its technical, social and societal aspects. The participants expressed their interest and their desire to be closely involved in the decisions.

Learn more about the COMINAK remediation project, see Mining Principle 6.1, p. 80



PRINCIPLE 10.2

Publicly support the implementation of the Extractive Industries Transparency Initiative (EITI) and compile information on all material payments, at the appropriate levels of government, by country and by project.

TRANSPARENCY OF REVENUE IN THE EXTRACTIVE SECTOR

Orano Mining is committed to transparency and supports the EITI (Extractive Industries Transparency Initiative) framework since its creation in 2003.

Orano Mining publishes its earnings from mining.

See the income publication of Orano Mining



CONTRACTS TRANSPARENCY

As of June 2019, on the occasion of the EITI Global Conference held in Paris, Nicolas Maes, CEO of Orano Mining, made a commitment to work with our public and private co-shareholders or counterparties and the States of the countries in which we operate and for the projects where we intervene as operators, to aim for publication, by 2021, of the mining contracts and agreements entered into with States.

For more information visit our website to review the publication of mining contracts and licenses of our subsidiaries engaged in exploration, development and production activities concluded with local governments, insofar as these are not subject to legal, regulatory or contractual confidentiality obligations.

See Orano mining contracts and licenses list



True to our values of continuous progress and integrity, we are committed to pursuing work with our partners and the governments of the countries in which we operate to encourage them in the disclosure of contracts, in accordance with the EITI principles.

Signing of the partnership agreement between Orano Mining and Goskomgeology, Uzbekistan.



PUBLIC FINANCIAL ASSISTANCE

Within the framework of their mining activities, neither Orano Mining SA nor any of its subsidiaries included in the financial consolidation scope have received public financial assistance for the financial year 2020, except for SOMAÏR and COMINAK in Niger.

Items not considered as public assistance for the purposes of this statement include incentives, in particular financial incentives, automatically applied to all mining operators, as expressly provided for by the legislation, including mining legislation, of the countries concerned.

In 2020, SOMAÏR and COMINAK benefited from safeguard measures in the form of tax exemptions and/or reliefs for an estimated amount of CFAF 2,101,375,991, granted because of the

need to maintain activity in Northern Niger, a constrained uranium market and the end-of-life financial situation of these entities.

Mining activities include exploration, development of mining projects, production of uranium concentrates, and remediation of mining sites. In 2020, these operations were performed in the following countries: France, Gabon, Niger, Namibia, Kazakhstan, Mongolia, Canada and Uzbekistan.

At December 31, 2020, the company Orano Mining SA is wholly owned by Orano SA, which is 80% owned by the French State (50% directly and 30% indirectly of which 20% through AREVA SA and 10% through the Caisse des Dépôts et Consignations, the French public deposits and consignments office).

In addition, the following subsidiaries have stock held by a State other than the French State or by companies controlled by a State other than the French State (as at December 31, 2020):

Subsidiary	Country	State or State-owned entity	Pourcentage de participation
KATCO	Kazakhstan	KAZATOMPROM company (81.28% owned by the Kazakh State)	49%
SOMAÏR	Niger	SOPAMIN company (100% owned by the State of Niger)	36.6%
COMINAK	Niger	SOPAMIN company (100% owned by the State of Niger)	31%
		ENUSA company (100% owned by the Spanish State)	10%
IMOURAREN SA	Niger	SOPAMIN company (100% owned by the State of Niger)	23.35%
		State of Niger	10%
COMUF	Gabon	Gabonese State	24.75%
BADRAKH Energy LLC	Mongolia	MONATOM company (100% owned by the Mongolian State)	34%
NURLIKUM MINING	Uzbekistan	State of Uzbekistan	49%



PRINCIPLE 10.3

Report annually on economic, social and environmental performance at the corporate level using the GRI Sustainability Reporting Standards.

GRI ET VÉRIFICATION EXTERNE

Within the 2019 scope of mining activities, our teams have applied the guidelines set out in version Standards of the Global Reporting Initiative (GRI), as well as the Mining and Metals Sector Supplement (MMSS).

We therefore meet the commitments made as part of our involvement in the International Council on Mining and Metals (ICMM). This process is being carried out in accordance with the Grenelle 2 environment law, which lays down regulations with regard to the topics to be dealt with in nonfinancial reporting by companies.

We have conducted an independent verification of the content of this report in compliance with the ICMM Audit procedure. The acknowledgement received from the auditing firm is available for “download” (in French only) [📄](#).

Each year the Orano group conducts an audit on a sample of extra-financial indicators as part of the independent verification of the Annual report. As such, a number of our mining sites may be selected for the review of these indicators. KATCO, a subsidiary of Orano Mining in Kazakhstan, was audited in 2021.

PRINCIPLE 10.4

Each year, conduct independent assurance of sustainability performance following the ICMM guidance on assuring and verifying membership requirements.

Besides the independent verification of the content of this report, we have commissioned the third party to audit a set of extra-financial indicators in compliance with the ICMM Audit procedure and the AA1000 ethical auditing principles.

SOMAÏR was audited in 2020 without any non-compliance. In 2021, the KATCO site and Orano Mining headquarters will be part of the audit that will be conducted by the third party.



Meeting with the Technical Committee delegation, Niger.

Each year the Orano group conducts an audit on a sample of extra-financial indicators as part of the independent verification of the Annual report. As such, a number of our mining sites may be selected for the review of these indicators.



The 2020 CSR Report is the eleventh edition of this annual exercise. The previous reports are available for download in the box "Annual report archive".

Consult the CSR reports



2020 CSR Report is a report with the following characteristics:

- it covers our responsible commitments performance for the year 2020, which means the reporting ran up to December 31, 2020;
- it has been prepared in accordance with the orientations of the materiality exercise realized at the end of 2018 and is also based on the results of the new materiality exercise conducted by Orano in 2020;
- it is based on the essentials or core criteria of the Standards version of the GRI.

SCOPE OF INFORMATION

While complying with the GRI guidelines, Orano Mining has sought to meet, as of this year, the performance expectations set out in the ICMM's ten mining principles, which are as follows:

Business Ethics, Decision-making, Human Rights, Risk Management, Health and Safety, Environmental Performance, Biodiversity Preservation, Responsible Production, Social Performance and Stakeholder Engagement.

This first exercise will allow us, in a continuous improvement process, to progressively supplement our reporting in order to meet the requirements of this new standard when its application becomes effective in the ICMM certification and validation procedure.

The data given cover, as did the previous CSR Report, the assets for which Orano Mining acts as operator in uranium mining activities: exploration, project development, production and remediation.

The consolidated data target activities in France, Canada, Niger, Kazakhstan, Mongolia, Gabon, Namibia and Uzbekistan. When the scope only covers one given country, this is mentioned.

REPORTING PROTOCOL

For environmental, social, economic and ethical topics, internal technical protocols have been available for several years. They enable us to answer to several indicators proposed in the GRI guidelines.

French regulatory constraints do not allow us to report on categories of indicators relating to diversity and covered by other national regulations.

Finally, as far as possible, for all topics on which we do not have or are updating technical protocols, we strive to take the GRI approach into account when relevant and applicable to the scope of our activities.



GRI STANDARDS AND DUTY OF CARE

The Orano Mining's CSR Report 2020 has been prepared in accordance with the GRI Standards guidelines. The Mining and Metals Sector Supplement (MMSS) has also been used.

More information on
ICMM Mining principles



PROFILE

	GRI Standard
Name of the organization	GRI 102-1
Activities, brands, products, and services	GRI 102-2
Location of headquarters	GRI 102-3
Location of operations	GRI 102-4
Ownership and legal form	GRI 102-5
Markets served	GRI 102-6
Scale of the organization	GRI 102-7
Information on employees and other workers	GRI 102-8
Supply chain	GRI 102-9
Significant changes to the organization and its supply chain	GRI 102-10
Precautionary Principle or approach	GRI 102- 11
External initiatives	GRI 102-12
Membership of associations	GRI 102-13
Statement from senior decision-maker	GRI 102-14

STRATEGY

	GRI Standard
Key impacts, risks, and opportunities	
Values, principles, standards, and norms of behavior	

REPORTING PROTOCOL

	GRI Standard
	GRI 102-45
	GRI 102-46
	GRI 102-47
	GRI 102-48
	GRI 102-49
	GRI 102-50
	GRI 102-51
	GRI 102-52
	GRI 102-53

Concordance table ICM Mining principles, GRI Standards, and Duty of care



**MINING PRINCIPLE 1 -
ÉTHIQUE PROFESSIONNELLE**

Apply ethical business practices and sound systems of corporate governance and transparency to support sustainable development

	GRI STANDARD	DUTY OF CARE
1.1	GRI 102-16	✓
1.2	GRI 205-1	
	GRI 205-2	
	GRI 205-3	✓
	GRI 201-4	
	GRI 406-1	
1.3	GRI 102-16	
1.4	GRI 102-18	✓
	GRI 102-26	
1.5	GRI 415-1	



**MINING PRINCIPLE 2 -
DECISION-MAKING**

Integrate sustainable development in corporate strategy and decision-making processes

	GRI STANDARD	DUTY OF CARE
2.1	GRI 102-31	✓
	GRI 102-32	
2.2	GRI 308-	✓
	GRI 414-1	



**MINING PRINCIPLE 3 -
HUMAN RIGHTS**

Respect human rights and the interests, cultures, customs and values of employees and communities affected by our activities

	GRI STANDARD	DUTY OF CARE
3.1		✓
3.2	MM9	
3.3		✓
3.4	GRI 401-1	
	GRI 401-2	
	GRI 401-3	
	GRI 402-1	✓
	GRI 102-41	
	MM4	
3.5		✓
3.6		
3.7	GRI 411-1	
	MM5	
3.8	GRI 404- 1	
	GRI 404-3	
	GRI 405-1	✓
	GRI 405-2	



**MINING PRINCIPLE 4 -
RISK MANAGEMENT**

Establish effective risk management strategies and systems founded on a sound scientific basis and which take into account how stakeholders perceive risks

	GRI STANDARD	DUTY OF CARE
4.1	GRI 102-15	✓
	GRI 102-30	
4.2		
4.3		✓
4.4		✓



MINING PRINCIPLE 5 - HEALTH, SAFETY AND RADIATION PROTECTION

Pursue continual improvement in health and safety performance with the ultimate goal of zero harm

	GRI STANDARD	DUTY OF CARE
5.1	GRI 403-1	✓
	GRI 403-2	
5.2	GRI 403-3	✓



MINING PRINCIPLE 6 - ENVIRONMENTAL PERFORMANCE

Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change

	GRI STANDARD	DUTY OF CARE
6.1	MM3	✓
	MM10	
6.2		✓
6.3	GRI 307-1	✓
6.4	GRI 306-4	✓
	GRI 306-5	
6.5	GRI 302-1	
	GRI 302-3	✓
	GRI 305-1	
	GRI 305-2	



MINING PRINCIPLE 7 - PRESERVING BIODIVERSITY

Contributing to the conservation of biodiversity

	GRI STANDARD	DUTY OF CARE
7.1	GRI 304-1	✓
7.2	GRI 304-4	✓



MINING PRINCIPLE 8 - RESPONSIBLE PRODUCTION

Facilitate and support the knowledge base and systems for the responsible design, use, re-use, recycling and disposal of products containing metals and minerals

	GRI STANDARD	DUTY OF CARE
8.1		✓
8.2	GRI 417-1	✓
	GRI 417-2	



MINING PRINCIPLE 9 - EMPLOYMENT PERFORMANCE

Seek continual improvement of our employment performance and contribute to the social, economic and institutional development of host countries and communities

	GRI STANDARD	DUTY OF CARE
9.1	GRI 102-42	
	GRI 102-42	
	GRI 102-44	
	GRI 203-1	
9.2	GRI 204-1	✓
9.3	GRI 102-43	✓
9.4	Non applicable	



MINING PRINCIPLE 10 - ENGAGING WITH STAKEHOLDERS

Proactively engage key stakeholders on sustainable development challenges and opportunities in an open and transparent manner. Effectively report and independently verify progress and performance

	GRI STANDARD	DUTY OF CARE
10.1	GRI 102-26	✓
	GRI 102-40	✓
10.2	GRI 201-4	✓
10.3	GRI 102-54	✓
	GRI 102-55	✓
10.4	GRI 102-56	✓

As a recognized international operator in the field of nuclear materials, Orano delivers solutions to address present and future global energy and health challenges.

Its expertise and mastery of cutting-edge technologies enable Orano to offer its customers high value-added products and services throughout the entire fuel cycle.

Every day, the Orano group's 16,500 employees draw on their skills, unwavering dedication to safety and constant quest for innovation, with the commitment to develop know-how in the transformation and control of nuclear materials, for the climate and for a healthy and resource-efficient world, now and tomorrow.

Orano, giving nuclear energy its full value.

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Energy is our future, don't waste it!

