

Orano Mining

Corporate Social Responsibility Report

2019 Edition



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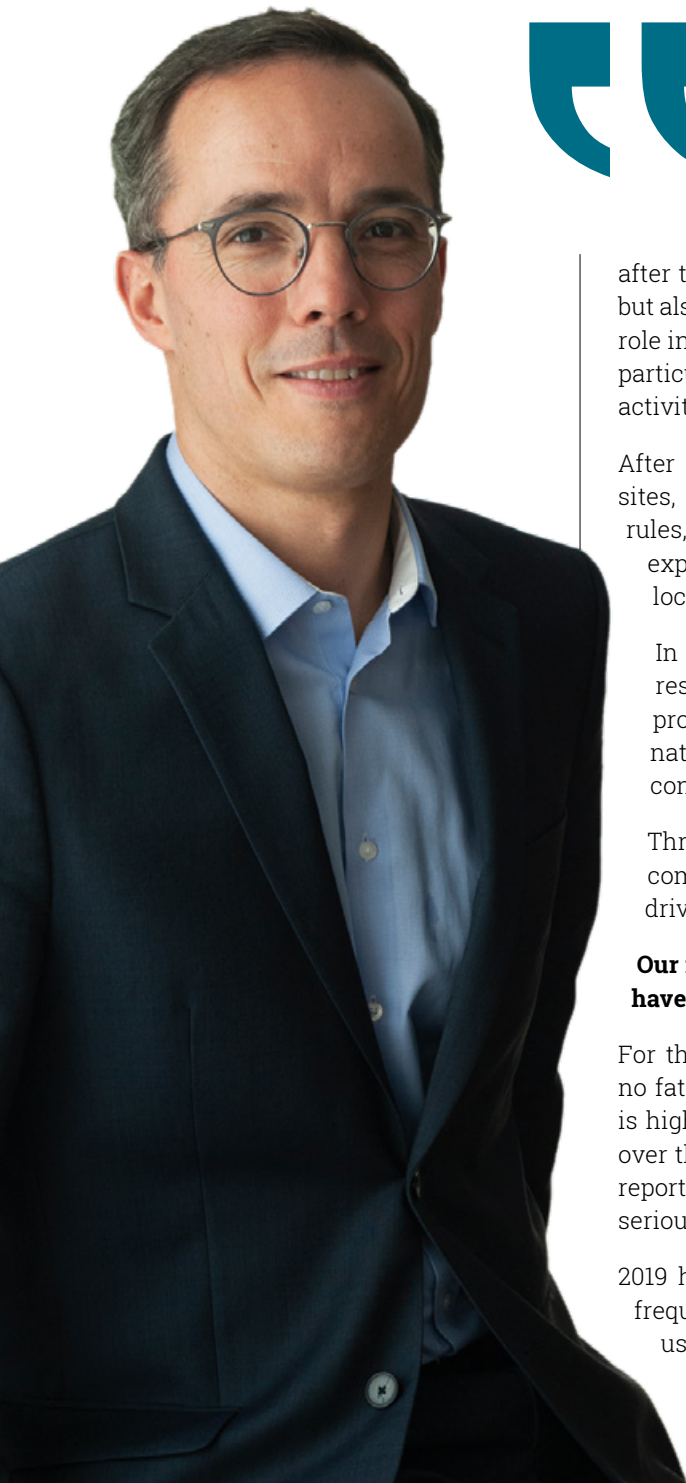
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MESSAGE FROM NICOLAS MAES

Orano Mining CEO



As we publish this report, the world is facing an unprecedented health crisis, the effects of which have never been seen before. COVID-19 is impacting all of us indiscriminately and has spread around much of the world, forcing governments and companies to implement protective and sometimes drastic measures. Our commitment to our stakeholders has taken on its full meaning during this global pandemic. Our primary responsibility is to look

after the health and safety of our employees, suppliers and subcontractors, but also, in conjunction with the relevant health authorities, to take an active role in combating the spread of the epidemic in the countries we work in. In particular, it's imperative that we give due consideration to the impact of our activities on the communities we operate in.

After implementing prevention and adaptation measures on each of our sites, we are continuing our efforts, in compliance with current health rules, to maintain our activities in order to meet the current and future expectations of all parties, including employees, customers, partners, local communities and civil society.

In addition to this unprecedented crisis and its impacts, it is our responsibility and our purpose as a company to contribute to the production of low-carbon electricity by supplying our customers with natural uranium. Combating global warming and the climate emergency continue to be fully embedded in our corporate mission and our DNA.

Through this report, we provide a fully transparent account of our commitments and our efforts to integrate our activities into a strategy driven by performance and continuous improvement.

Our first priority is to protect the health and safety of the employees who have contributed so much to the strength of Orano Mining.

For the second year in a row, we have achieved our primary objective of no fatal accidents among our employees or subcontractors, which in itself is highly satisfying. This result is a reflection of the efforts we have made over the last three years in terms of exacting standards, raising awareness, reporting, and training, especially with regard to situations that can lead to serious accidents.

2019 has been a mixed year, however, as we failed to meet our accident frequency targets. This number is still too high. This should encourage us to continue and intensify our efforts. To do this, we must continue

to take steps to control major risks on a systemic basis and improve identification of deviations as close to the ground as possible.

The performance of some sites nevertheless deserves a special mention, particularly the case of Mongolia and Gabon in 2019, and Namibia which has had no lost-time accidents since 2012.

Ethics and compliance are key issues for us and an integral part of our right to operate.

In 2019, we made significant progress in strengthening our compliance program, through application, under the Sapin II Law, of due diligence and of the regulations of the countries we operate in.

Our network of officers has allowed us to implement the program and train our teams, thus making us stronger and more experienced in an area that is integral to our license to operate, as shown by the increase in the number of alerts raised in the ethics report, proof that our system is functioning properly. 2020 should allow us to continue in this direction, in particular by systematically using traceability and complaint reporting tools on all sites.

In 2019, a systematic verification/validation process for new suppliers, adapted to the level of risk involved (compliance, corruption, due diligence), was deployed to complement the group's supply chain management system.

Dialogue and consultation with stakeholders (authorities, local populations, associations, media, etc.) are essential at all stages of our mining projects and guarantee the acceptability of our activities. Whether on our sites abroad or for former mining sites in France, CLIs (Local Information Committees), CSSs (Site Monitoring Committees) and all other participative committees are important forums for information and dialogue, allowing us to ensure constructive relations with local stakeholders and to identify their expectations and concerns.

In a similar commitment to transparency, at the World Conference of the EITI (Extractive Industries Transparency Initiative) on June 19, 2019 in Paris, I reaffirmed our support to ensure that the standard for disclosure of payments defined by the EITI will become

the worldwide standard, both voluntary and regulatory in character, in order to avoid the publication of different numbers on the same subject depending on variable baselines or regulatory frameworks. As was the case last year, this report includes a summary of the disclosures of Orano Mining subsidiaries in accordance with the different reporting methods required under French law, and EITI and ESTMA (Extractive Sector Transparency Measures Act) rules.

Sustainability is a key concern in our role as a responsible company: economic sustainability of our business together with good operational and financial performance, and sustainability of our production over the short, medium, and long term.

In commercial terms, with poor ongoing market conditions resulting in low uranium prices and the impossibility of releasing new production capacity, we have successfully met the challenges faced and signed major contracts in France and internationally, and maintained the profitability of our operations in an environment that continues to be difficult. We have met our delivery commitments in terms of lead times and quality to the satisfaction of our customers.

The production target of Orano Mining has been achieved, and costs controlled, thanks to work on our technical performance, and continuous progress in terms of the operational excellence of our production sites of SOMAÏR and COMINAK in Niger, KATCO in Kazakhstan and McClean Lake in Canada. This also requires good medium-term planning and solid discipline from the teams on a daily basis. It is also the result of innovation, research and development programs implemented on the ground.

As a responsible mining company, we look for innovative ideas throughout the life cycle of a mine to improve the environmental impact of our operations and our operational performance.

On September 10, 2019, the foundation stone of the new Center for Innovation in Extractive Metallurgy (CIME) was laid at our French site in Bessines-sur-Gartempe. The CIME develops scientific and technical solutions to meet the needs of its customers in the fields of energy, environment, industrial recycling, health, ore processing and engineering. This investment of more than €30

million underlines our commitment to innovation and modernization, and to the long-term future of our presence in the Limousin area of France where we have our roots.

The construction of CIME should be completed in 2021 and will house the center's existing teams and facilities in a single 8300 m² building. It will allow us to develop a broader range of services with high added value for our industrial customers, and also for the Orano group's activities in the back end of the nuclear cycle.

Another area of innovation is 3D modeling. 3D software is used to work on underground mines in operation to ensure better positioning of galleries and thus improve ore recovery, and on former mines to determine surface stability, better understand and anticipate possible risks, and lastly to achieve greater accuracy when positioning boreholes and conducting hydrogeological studies.

In terms of production over the short, medium, and long term, I would like to comment on two highlights from 2019.

In late July 2019, the government of Kazakhstan published a government decree granting KATCO the so-called "Kanjungan" land permit. This land permit covers 655 hectares of the Muyunkum deposit. This event marked an important milestone in our activity in Kazakhstan. It will allow KATCO to maintain its production levels before bringing the South Tortkuduk project into operation, which is currently under development and will then generate most of our Kazakh production from 2022.

One of our distinctive features and our strengths is the diversification of our mining methods and our geographical locations. In line with this philosophy, in 2019 Orano Mining strengthened its position in Central Asia and formalized its partnership in Uzbekistan with the creation of the joint venture "Nurlikum Mining". This joint venture will benefit from the know-how of our partner, Goscom Geology, and the feedback acquired by our teams on ISR technology in Kazakhstan and Mongolia, allowing us to increase our competitiveness and expertise in this field. Initial field work should start in 2020, once exploration licenses have been granted.

We have also kept our production commitments thanks to investments made to secure future production in Niger with the new heap leach pad at the SOMAÏR mine.

Post-mining is an important issue affecting the acceptability of our activity from a technical, environmental, and societal point of view.

2019 was marked by the decision taken by the COMINAK Board of Directors to stop production at the Akouta site on March 31, 2021. This difficult decision will have a major impact and was made in light of the mine's depleted reserves.

There is much that remains to be done over the long-term, but we are working in consultation with the Niger authorities and COMINAK shareholders to remediate the industrial site in a responsible manner, in accordance with Niger regulations and international recommendations, and to define the social transition plan regarding access to health, water, urban infrastructure management and support for entrepreneurship and local economic activity in the community of Arlit - Akokan. Successful implementation of this project will be a major challenge. We will use all of our expertise in post-mining management, backed up by more than 40 years of know-how in this field.

In other post-mining activity, also of note is the progress made in France with a view to transferring more than 100 remediated sites out of a total 200 potential sites, and in Canada decommissioning of the Cluff Lake site, management of which should shortly be entrusted to the authorities in the province of Saskatchewan.

This report reflects the day-to-day involvement of the employees of Orano Mining and its subsidiaries, and their dedicated commitment to our stakeholders and our sites. I would like to thank them for it. Their know-how and their determination to meet our challenges is what allows us to be a committed and responsible mining company.



COVID-19

During this crisis period, our sense of responsibility is our guide.

Every business today faces important and strategic choices, in terms of both economics and ethics. These choices must be made in a range of contexts, and often fast. They affect our interactions with our customers (nuclear utilities), our employees and our suppliers - but also with communities located near our mines and development projects.

Since the health crisis began, Orano Mining, its subsidiaries and its joint ventures have taken a variety of measures, with social initiatives that benefit communities, employees and their families, as well as subcontractors.

In Canada, Orano suspended production at its McClean Lake plant in North Saskatchewan and mothballed operations, even though there were no registered cases of infection. It took this step to preserve the health and safety of employees, service providers and local communities. Our priority is to minimize the risk of spreading the pandemic to the vulnerable indigenous communities in the north, some of whom suffer from chronic diseases and who often live far from medical facilities.

Orano Canada is supporting four First-Nation emergency response groups in North Saskatchewan. These groups have been established close to the communities for some long time, and are in contact with the most vulnerable people: the elderly and low-income families.

As an example, the emergency services near La Ronge Lake used donations from Orano Canada to prepare 14-day food kits for people who had tested positive for Covid-19.

Similarly, Orano Canada brought forward invoice payments for suppliers in the northern communities.

In Kazakhstan, our joint venture KATCO donated funds to Birgemiz, a public foundation, and also authorized the purchase of medical equipment such as respirators for the health authorities in the Turkestan region and the town of Shymkent.

Thousands of masks were also distributed to local communities. In addition, KATCO changed its rhythm of work to reduce the movement of employees to and from the site. Regarding business, payment facilities were granted to subcontractors to help them ride out the situation.

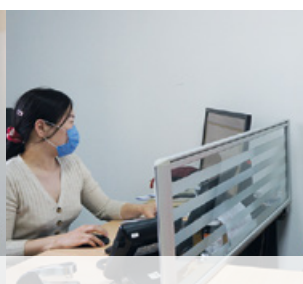
In Mongolia, preventive and regulatory measures were integrated into the business procedures as soon as the crisis began: protective masks and sanitizer solutions were made available, body temperatures were taken systematically, and remote working was generalized in March.



Niger



Canada



Mongolia



France



Kazakhstan



Niger

In addition, in terms of its societal responsibility, Badrakh Energy contributed to Mongolia's action against the pandemic by making donations to those involved locally (Province of Dornogobi) and nationally (Red Cross, Emergency Committees and the National Center for contagious diseases).

In Niger, our mining companies COMINAK and SOMAÏR concentrated on preparing the sites and local communities for the arrival of the epidemic, in support of the response plan established by the authorities.

Aid was allocated at national level, to the General Referral Hospital at Niamey (consumables and respirators donated), and to the Center for Medical and Health Research of Niger (CERMES) to strengthen its operational capacity.

At regional level, materials including Covid kits, respirators and masks were sent to the hospital at Agadez. At local level, equipment was sent to the Arlit District Hospital and to the SOMAÏR and COMINAK hospitals, which also formed part of the overall plan to counter the pandemic. Thus the mining companies made significant investment in emergency equipment, and local doctors were trained to diagnose and treat the disease.

Lastly, apart from equipping all our staff and subcontractors with masks, the mining companies were also concerned to supply the families of employees and the residents of Arlit with cloth masks made by local service providers.

In Namibia, Orano Namibia supported the government's efforts to counter the pandemic by using its desalination plant to provide almost 200,000 m³ of water free-of-charge to local communities during April and May.

In France, our Bessines site distributed masks and sundry emergency consumables to local health institutions at the height of the crisis.

The Orano Group also launched an ad-hoc structure, "Orano Solidaires", a dedicated platform where staff can actively show their solidarity. It collects their donations in support of medical research, care workers and those most disadvantaged, and these donations are topped up by the business. The platform is also used to share all the individual and collective initiatives taken by our teams within the Group, such as manufacturing hydroalcoholic gel and making protective visors using 3D printers.

For all the donations made, Orano Mining complied with the legal and regulatory requirements in the countries, with Orano's Code of Ethics, and with its compliance policies and procedures.

Orano is also committed as a member of the ICMM (International Council on Mining and Metals) and participates actively in various working groups related to Covid-19. 27 mining businesses and 30 associations use the ICMM to exchange and share their good practices.

In the face of the Covid-19 epidemic, the Orano Group is doing everything it can to protect the health and safety of its staff, safeguard its industrial facilities and extend its support to communities. To date, almost €2M have been committed to emergency and preventive action. Together, we have been working over the last weeks to get through this health crisis and put it behind us.

Our major concern has always been the safety of our employees and our communities, and the pandemic is strengthening our commitment and our solidarity. The fundamentals of our business remain untouched, and are helping us overcome this unprecedented crisis. The diversity of our portfolio also makes us less vulnerable than our competitors faced with a crisis of this magnitude. We are ready to continue our strategic mission: to produce and deliver the uranium necessary to supply our customers in complete safety.

Profile

“OUR MISSION:
transform nuclear
materials so that they
can be used to support
the development of
society

THE ORANO GROUP

The Group offers high value-added products and services for the entire nuclear fuel cycle, from raw materials to waste processing. Its activities, ranging from mining to decommissioning and including conversion, enrichment, recycling, logistics and engineering, contribute to the production of low-carbon electricity.

ORGANIZATION

Orano's governance is supported by a Board of Directors, an Executive Committee and four specialised committees that issue opinions and recommendations.

In 2019, the Board of Directors is chaired by Philippe Varin. Philippe Knoche is the Group's Chief Executive Officer.

Orano and its 16,000 employees place their expertise, their continuous search for innovation, their mastery of advanced technologies and their absolute requirements for safety and security at the service of their customers in France and worldwide.

More information on
Orano annual report



Mining



Uranium conversion
and enrichment



Used fuel
recycling



Nuclear
logistics



Dismantling
and services



Engineering

2019 KEY FIGURES



1,280 M€

revenue
(34% of Orano revenue)



3,452

employees*



8,101

tons of uranium **



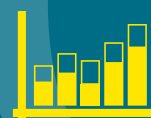
TOP 3

worldwide
in its businesses



5

operating sites in 3 countries



4.5 M€

community investments***



76%

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



98%

of our employees are
from the host country

* Number of Orano Mining employees - all types of contracts combined
 ** 7,738 tU, Orano's financially consolidated share + 363 tU Orano's share in COMINAK (34%)
 *** Including collaboration agreements with the indigenous communities in Canada

MINING **ACTIVITIES**

Being the first link in the nuclear fuel cycle, Orano's mining activities cover uranium exploration, production and commercialization throughout the world.

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.



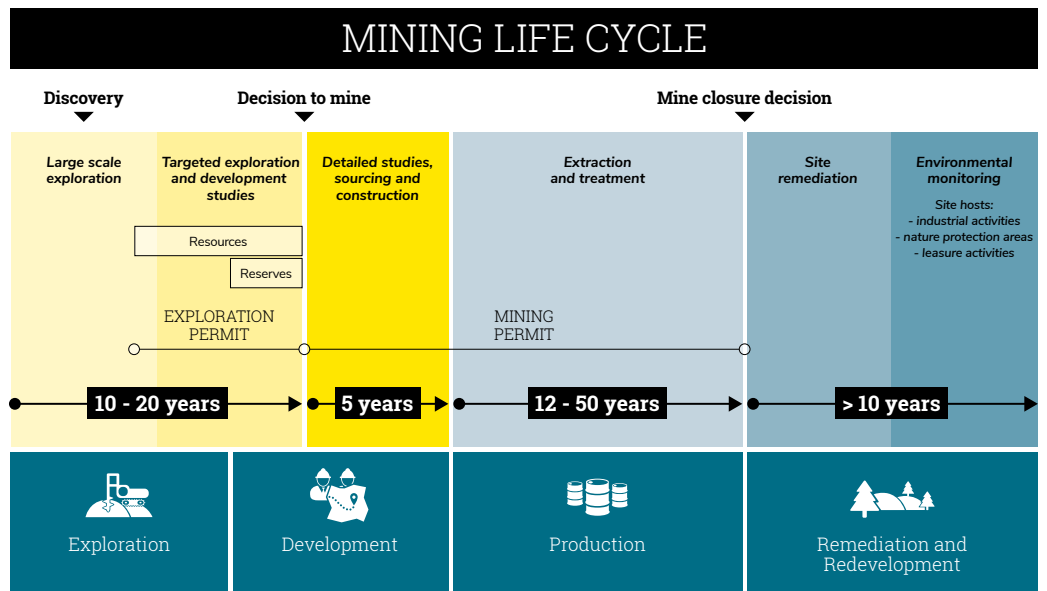
Committed to its role as a responsible mining company, Orano conducts its mining activities in a manner that fully respects people and the environment and contributes to the economic development of local regions and their populations.

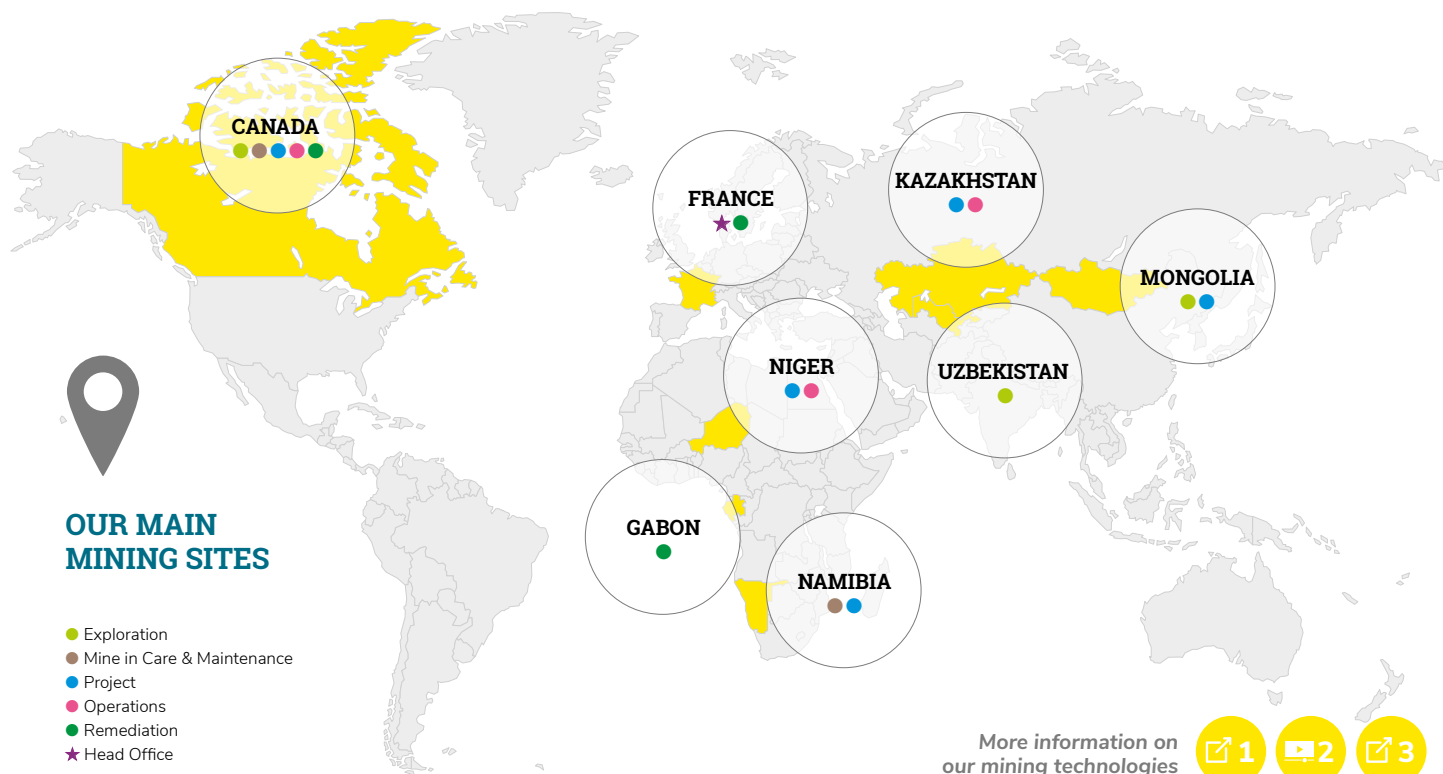
The amount of uranium produced annually by Orano is enough to supply the electricity needs of a country such as Spain.

The production of the same amount of electricity from coal would have resulted in the release of 300 million additional tons of GHG.

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

More information on Orano Mining innovation





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
- 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

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.

20% 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.

Occupational Safety Committee

In line with Orano's Health and Safety Policy, an **Occupational Safety Committee** was set up. It is made up of members of the Mining Business Unit Management Committee, Site Directors and the Safety Team. It is chaired by Nicolas Maes.

Its aim is to promote a **safety culture within mining operations**, establish and validate related objectives and ensure that the group's Health and Safety Policy is respected, along with its associated commitments.

More information:
www.orano.group



Staff Representative Bodies

Orano Mining's Human Resources Policy, in accordance with current regulations, is based on the principles of discussion and consultation. A responsible social dialogue, one that is both constructive and innovative, is considered to be a vital element in the healthy running of the company.

Agreements are regularly discussed and signed with staff representatives. Regular discussions have been held to keep representatives up-to-date with the latest developments concerning the company both via representative bodies and also at informal meetings organized on all of our sites.

The Social and Economic Committees and the Central Social and Economic Committee (CSEC) and union representatives form the representative bodies which engage in social dialogue in the various countries in which the Orano group is present.

Regarding collective bargaining, agreements can be signed with union representatives (trade union coordinators) at group level and also in each of the companies that make up the group.

The Orano group has chosen to formally and responsibly underpin its social policy with the signature of a number of group agreements which establish the foundations of this policy.

To date, several agreements have been signed at group level in France and the construction of social policy continues. Every year, the mandatory annual negotiations are organized with the staff representative bodies. These in particular relate

to wages, gender equality goals on careers and pay levels in the company, as well as measures to achieve them.

On its production sites, Orano Mining also organizes meetings on a monthly or quarterly basis with staff representatives on a variety of topics such as wages, safety, training, quality of life at work, recruitment, etc.

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

In Niger, all employees are covered by an inter-professional collective bargaining agreement.

In Canada, workers are covered by a collective bargaining agreement and all other employees are covered by the Canadian Labour Standards Acts. A three-year collective agreement has been re-negotiated for the McClean Lake site (June 2019 - May 2022).

In Mongolia, a collective agreement was renewed for two years. It covers the following period: April 2019 - April 2021.

And finally **in Kazakhstan**, a new agreement was signed. It is effective from April 2018 until April 2021.

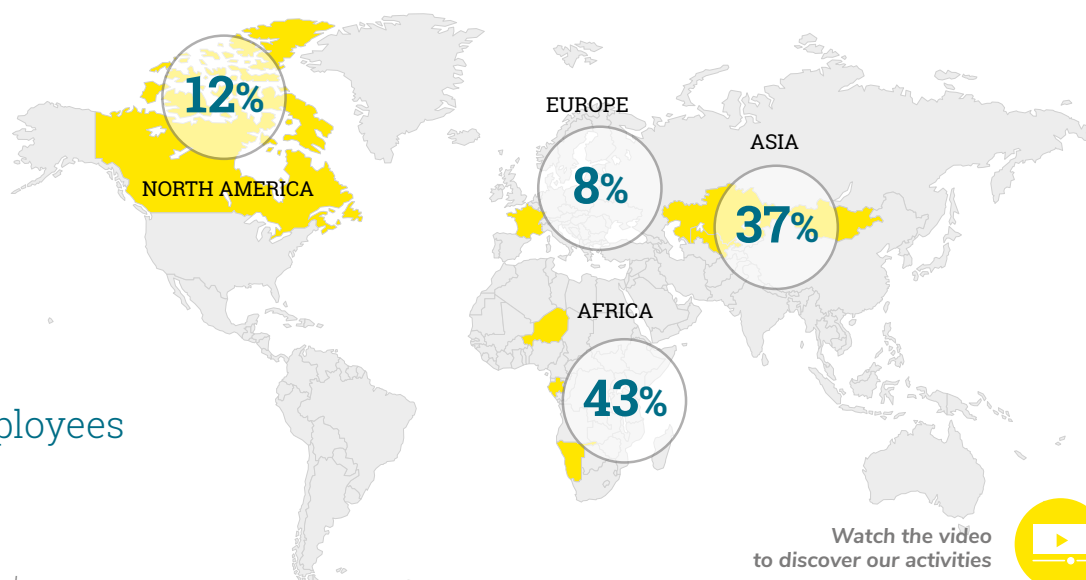
A presence on 4 continents

Orano Mining employees are present in various countries. There are uranium production sites in three Orano Mining countries: Canada, Niger and Kazakhstan.



3,452*
number of employees
worldwide

* Orano Mining employees - all types of contracts combined



Watch the video
to discover our activities



URANIUM MARKET IN 2019



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.

Programs to reduce production, launched at the beginning of 2018 in order to rebalance the market, resulted in a slight increase in the spot uranium price from the summer of 2018. Nevertheless, the price continued to fall during the first half of 2019, then rose slightly during the second half, reaching 24.9 US\$/lb by the end of the year (compared with 28.50 US\$/lb at the end of 2018), whereas the long-term indicator remained stable and was 32 US\$/lb at the end of 2019 (compared with 32 US\$/lb at the end of 2018).



Demand and supply

Reactor demand stood at around 67,600 tU in 2019 (source: WNA 2019), stable compared to 2018.

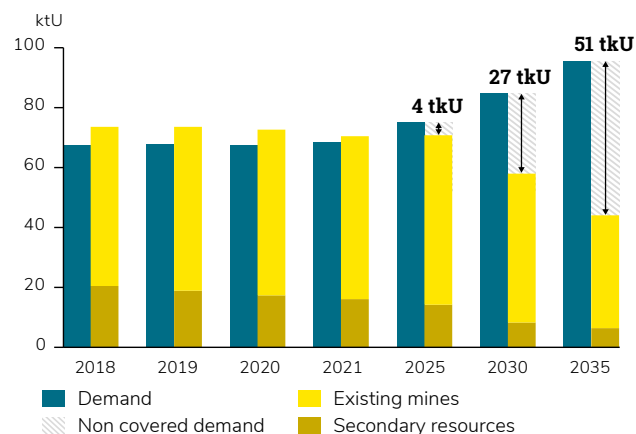
Supply worldwide consists of:

- **mining production**, which amounted to approximately 54,600 metric tons of uranium, a 3% increase compared with 2018: 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 19,000 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.



Uranium supply/demand scenario

WNA 2019 (tU/year)



Sources UxC UMO Q1 2020 & WNA 2019

Uranium market

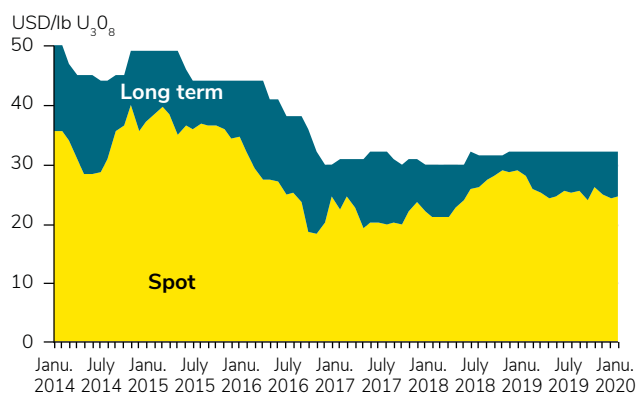
During the first half of 2019 the price continued to fall then rose slightly during the second half, reaching 24.9 US\$/lb by the end of the year (compared with 28.50 US\$/lb at the end of 2018), whereas the long-term indicator remained stable and was 32 US\$/lb at the end of 2019 (compared with 32 US\$/lb at the end of 2018).

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.

2014-2019 trend price index of uranium

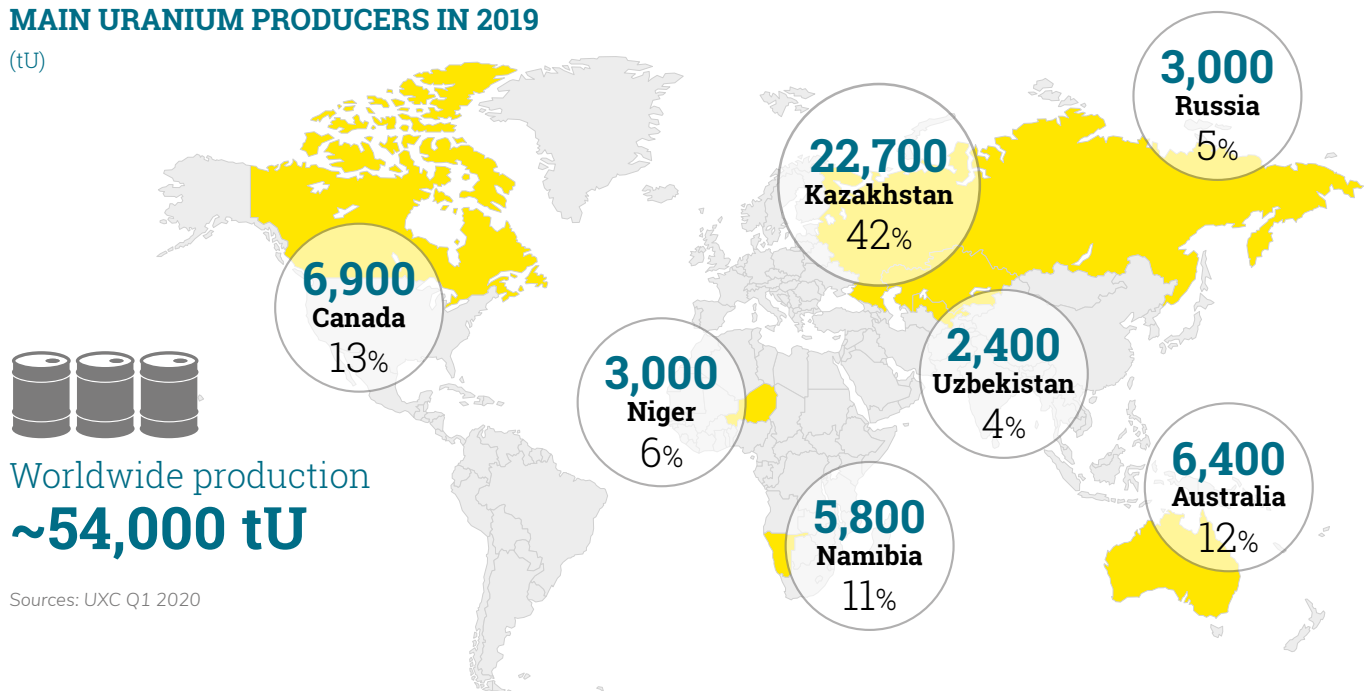
(in current dollars)



Source: UxC Q1 2020

MAIN URANIUM PRODUCERS IN 2019

(tU)



PRODUCTION OF ORANO MINING SITES IN 2019

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.

Production of mining sites

Through effective control over its production costs and its level of capital expenditure, the Mining business turned in good operating and financial performance in 2019, despite the persistence of low prices.

- SOMAÏR produced 1,912 metric tons of uranium (on a 100% basis), for an Orano share of 63.4%;
- COMINAK produced 1,070 metric tons of uranium (on a 100% basis), for an Orano share of 34%;
- KATCO produced 3,252 metric tons of uranium (on a 100% basis), for an Orano share of 51%;
- Cigar Lake produced 6,938 metric tons of uranium (on a 100% basis), for an Orano share of 37.1%.

At the request of its majority shareholder, activity at the McArthur mine and the Key Lake plant has been suspended since the end of January 2018 for an indefinite period, because of the market conditions for uranium.

Orano mines production in 2019 (tU)

Country	Sites	Financial consolidation 2019 tU	Type*
Canada	McArthur River	0	UG
Canada	Cigar Lake	2,574	UG
Canada total		2,574	
Kazakhstan	KATCO	3,252	ISR
Kazakhstan total		3,252	
Niger	SOMAÏR	1,912	OP
Niger	COMINAK**	363	UG
Niger total		2,275	
Total		8,101	

* 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.

CSR Approach



ORANO MINING, A RESPONSIBLE MINING COMPANY

As part of its strategic vision, Orano has defined the values that all its employees should embody. The Orano Group fulfils its commitments via its different policies in the areas of human resources, diversity, nuclear safety, occupational health and safety, environment and ethics.

These different policies and codes are used together to organize the business activities in ways that respect human rights and interests relating to environmental protection and the laws that govern them.

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.



Our stakes

Mining is an industrial activity that can have environmental impacts.

We therefore adopt stringent and statutorily demanding practices for the protection of people and the environment.

These are preoccupations that are taken into account at all stages of the mine's lifecycle over a number of decades: control the impact of liabilities and safeguard against long-term risks (over 50 years).

We operate in territories where contexts vary very widely, from an environmental standpoint as much as on political, economic, social and cultural levels.

More information
on Orano Mining
CSR policy



Our vision

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, our goal is to ensure sustainable, concerted and balanced development towards meeting the social, environmental, societal, technical and economic challenges at each stage of the mining cycle in the countries where we operate.



Watch the video of Gilles Récoché:
Orano, a responsible mining company



CSR governance

Our CSR policy, which was 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 actions:

- Anticipation and Prevention
- Pertinent local response
- Regulatory compliance and adherence to international standards
- Information, dialog and concertation with stakeholders
- Transparency and code of ethics

The CSR policy lends a precise framework to our social responsibility approach 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).

In order to ensure its deployment, a **CSR committee** has been set up in April 2017 and the Mining Social Committees of Orano Mining created in 2013 have evolved to adapt to this new governance.

- The **CSR Committee** is a body made up of the Orano Mining management committee, the site directors,

as well as representatives of the Remediation, Social Responsibility and Communication department. Its role is to review the main current and future CSR issues for the various subsidiaries and to ensure the consistency of the actions undertaken with regard to the Orano Mining CSR policy.

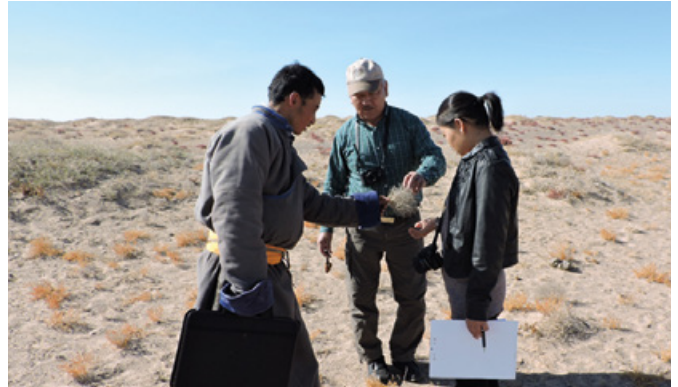
- The **Mining Social Committees** (CSMs) of Orano Mining are tasked with putting its social actions into practice at the local level in terms of partnerships and economic development aid:
 - choice of perimeters and topics to be given priority for the deployment of significant and sustainable courses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

The committees include the managing directors of subsidiaries, locally-based company officials, coordinating teams and head-office support. They meet at least annually, but otherwise the interval varies depending on the country and the requirements. All Orano Mining territory is covered by these bodies.



OUR STAKEHOLDERS

Our stakeholders are persons or groups of persons upon whom our activities have had or are having an impact.



Identifying stakeholders expectations

From a responsible mining perspective, it is essential to understand the environment in which we operate in order to be able to adapt our actions as effectively as possible.

Various frameworks and tools enable us 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.** In 2019, the cartography was completed in Kazakhstan and mapping took place in Niger on the impact of the closure of COMINAK.
- **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.
- **Local bodies for dialogue with stakeholders.** Bodies such as the Bilateral steering committee (CBO - Conseil Bilatéral d'Orientation, Niger), which brings 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.



Materiality

The materiality matrix that allows us to prioritize the main CSR issues with regard to company priorities and stakeholder expectations, was updated at the end of 2018. This involved a process of questioning Orano Mining management.

Regular stakeholder mapping also allows us to update our understanding of the expectations of external stakeholders.

This matrix is based on feedback from the mapping exercises conducted in 2016 in Namibia, in 2017 at Niamey, and in 2018 in Mongolia and in France, as well as on the annual opinion survey in Canada. Questionnaires sent to a panel of NGOs, suppliers and customers and published online through previous CSR reports in the “Participate” section were also fed into the feedback from the various stakeholders.

The materiality exercise that the Group has been running since the end of 2019 will be used to update the Orano Mining matrix in 2020. The interviews are organized to ensure that the stakeholders in each Business Unit are correctly represented in order to best include their expectations.

The identification of priority issues enables us to better address to the real expectations of stakeholders, target our actions more effectively and define the most relevant topics to cover in the context of our CSR reporting.

SELECTED TOPICS

- Transparency
- Environmental Footprint
- Health and Safety
- Risk Management
- Remediation
- Community Involvement
- Ethical Business
- Our Employees

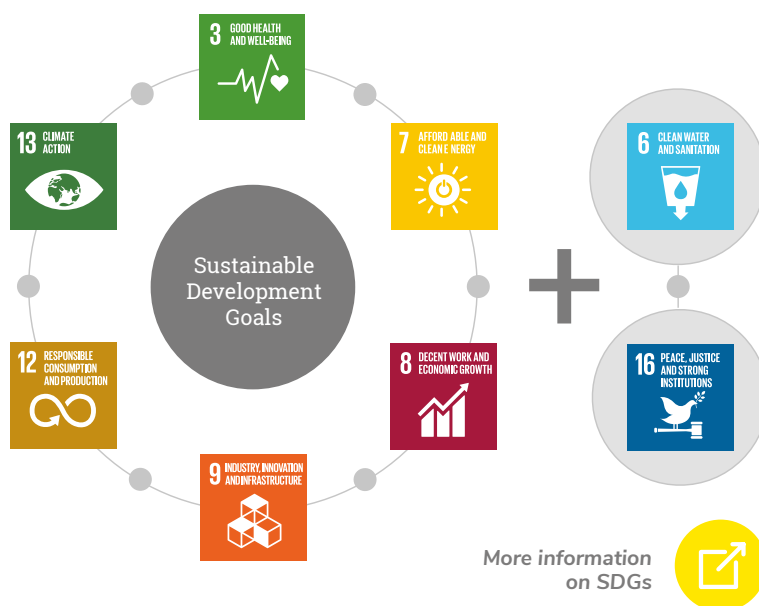
Our contributions to the Sustainable Development Goals (SDGs)

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

There will be icons at the head of each section indicating the objectives to which Orano Mining contributes, to bring out more clearly the relationship between Orano Mining activities and the SDGs.

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.**

The Orano Mining materiality exercise allowed us to identify **two additional objectives** relating to mining activity in 2018: SDG 6, Clean water and sanitation, and SDG 16, Peace, justice and strong institutions.



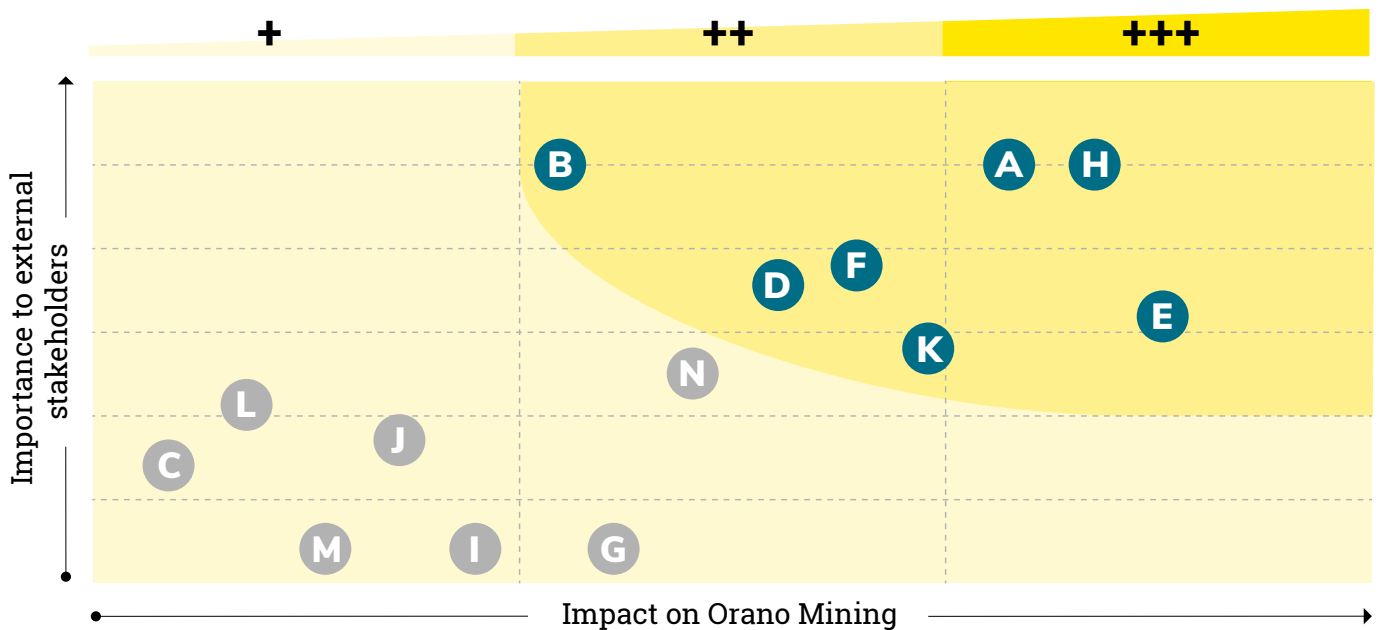
Partner organizations we voluntarily joined:



We support:



Materiality matrix



A

TRANSPARENCY

Share with stakeholders in a relevant, accurate and accessible manner, non-confidential information relating to decisions or activities having an impact on the economy, the general public or the environment (p.26).



B

ETHICAL BUSINESS

Adopt and maintain ethical business practices in order to avoid incidents of corruption or bribery (p.41).



C

RESPONSIBLE PURCHASING

Manage the supplier and product procurement chain in compliance with criteria conducive to protecting the environment, to social progress, to human rights and to economic development (p.45).



D

RISK MANAGEMENT

Reduce, analyze and assess industrial risks liable to lead to health and safety consequences for employees, or to harmful consequences for the general public and the environment (p.46).



E

COMMUNITY INVOLVEMENT

Contribute to meeting local socio-economic and healthcare needs, respecting fundamental human rights and the culture and heritage of indigenous peoples, throughout the lifecycle of the mining activity and in cooperation with stakeholders (p.32).



F

HEALTH AND PROTECTION OF EMPLOYEES

Protect the health and safety of employees and keep the radiation impact on neighboring communities to a minimum (p.78).



G

LABOR RELATIONS

Facilitate and safeguard dialogue between employees and general management (e.g. through staff representative bodies and internal communications) (p.13 and p.102).



H

ENVIRONMENTAL FOOTPRINT

Monitor and assess quality of air, water, soils and the food chain, and optimize consumption of resources (water, energy, etc.) and raw materials (reagents, etc.). Bring to the minimum the environmental impact (p.51).



I

BIODIVERSITY

Keep footprint to a minimum and preserve the flora and fauna in proximity to mining activities (p.66).



J

CLIMATE CHANGE

Help combat climate change by keeping greenhouse gas emissions to a minimum (CO₂ and VOCs) (p.62).



K

REMEDIATION - MANAGEMENT OF LONG-TERM IMPACT

Prepare for the end of life phase of the mine as far upstream as possible, in compliance with environmental, social and societal principles and the regulations in force (p.91).



L

OPERATIONAL PERFORMANCE

Ensure production is conducted on time, on budget and in accordance with Orano values.



M

SHIPMENTS AND TRACEABILITY OF URANIUM

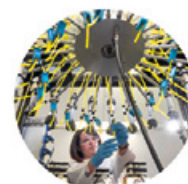
Guarantee the inspection and tracking of uranate concentrates, as well as the safety and security of shipments to converters.



N

R&D AND INNOVATION

Provisions implemented by the entity to enable teams to generate ideas, projects and patents aiming to contribute to the continuous improvement of activities (p.76).



Our commitments





- 1** Transparency and Consultation p.26
- 2** Community Involvement..... p.32
- 3** Ethicsp.41
- 4** Risk Management p.46
- 5** Environment p.51
- 6** Health, Safety and Radiation Protection p.78
- 7** Mine Closurep.91
- 8** Our Employees..... p.102

Transparency and Consultation



WHY?

The acceptability of our mining activities (our “social license to operate”), the contribution we can make to local development and the consultation of stakeholders are key areas of commitment for Orano Mining, both from a regulatory and a voluntary standpoint.

Building and maintaining trust is a constant challenge.



OUR APPROACH

Establishment of forums for dialogue and sharing in each country where Orano Mining operates.



OUR RESULTS IN 2019

About 100 meetings

were organized with the external stakeholders close to our sites

DIALOGUE WITH STAKEHOLDERS

A structured dialogue

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. Meetings of bodies to maintain dialogue in labor relations (internal to Orano Mining and intended for employees) are organized both on sites and centrally. A similar process is also deployed to maintain social dialogue with our external stakeholders.

The objective of this process of entering into dialogue and discussion with stakeholders and meeting with them on a regular basis is to maintain a constructive relationship with our stakeholders to understand their expectations and explain our activity to them. It is an approach which is essential in order to get to know each other better. We thus adapt our frameworks for dialogue depending on the stakeholders (authorities, local population, NGOs, media, Orano Mining employees).

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

CANADA

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. This forum for dialogue meets at quarterly meetings.

In 2019, the topics most frequently discussed with our stakeholders were related to the environment and the economy in northern Saskatchewan.

Northern Saskatchewan Environment Quality Committee (NSEQC)

The NSEQC, formed in 1995, has representatives from 37 communities in northern Saskatchewan and has a mandate to help bridge the information gap between northerners, government and the uranium mining industry. The NSEQC met three times in 2019 to discuss topics such as remediation efforts at Cluff Lake, environmental monitoring, exploration projects, and activities related to McClean.

Orano Canada also hosted a Cluff Lake site tour with the Metis Nation members from Buffalo Narrows and La Loche.



GABON



Continuous relationship with stakeholders

The Local Information Committee was not able to meet in 2019, but 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.

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 first tranche of 24 of the 124 housing units in the town started in June 2016 and is now complete. Similarly, of the 69 units in the commune that will be rebuilt, 31 houses have already been finished.



For more information, read our case study on PNGMDR, p.98



Link to the cartomines web application



For more information on cartomines, read our case study, p.94



FRANCE



Site Monitoring Committees (Comités de suivi des sites - 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 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, on an annual basis, the operator presents the different environmental outcomes and the work to be carried out to improve monitoring of former mining sites.

In 2019, Orano Mining sat on eight Site Monitoring Committees in the region. It is also involved in the public debate on the National Plan for the management of radioactive materials and waste (PNGMDR*) and has organized stakeholders' visits to the Bois Noirs site.

Starting this year, 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.

** PNGMDR : French National Plan for the management of radioactive materials and waste.

MONGOLIA



Local cooperation councils

In 2019, dialogue continued within the framework of “Local Cooperation Councils” which met on 4 occasions, bringing together representatives of the Soums and Bags of Ulaanbadrakh and Zuunbayan, and representatives of Badrakh Energy. These councils offer a forum for sharing information with the local communities in the areas where Badrakh Energy is present. At these meetings, our specialists present studies and review the state of progress on the programs currently underway: the cultivation of saxauls, the rebuilding of herds, wells being created or needing repair, etc.

Other actions scheduled through the year, such as the Open Days on the pilot site and a monthly program of visits for the families, also help to maintain the dialogue with our stakeholders.

2019 was marked by the deployment of the Cooperation Agreement establishing 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. 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.

- Areas for cooperation are specified in the agreement and these are the environment, employment and the development of community projects.
- The agreement provides for a shared governance framework between Badrakh Energy and community representatives through the establishment of a “Relationship Committee” which met once in 2019 and an “Implementation Committee” which met three times in 2019.
- 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.



KAZAKHSTAN



Various bodies involved

In Kazakhstan, one feature of our constant dialogue with stakeholders is the roll-out of stakeholder mapping. This involves interviews with representatives of national and local authorities, international organizations, NGOs, the media, partners and subcontractors, and also focus groups arranged locally with the inhabitants of villages in the Sozak District (Tasty, Shu, Taukent and Sholakorgan).

The stakeholders mapping highlighted the following recommendations :

- Develop and improve the accessibility of information in general, on the uranium mining industry and on uranium mining activities for Orano and KATCO
- Valuing KATCO's role in the local economy as an investor, employer and taxpayer, but also as a modern company introducing the latest technologies to Kazakhstan
- In the social field, focus on the training and development of KATCO's local employees and managers
- Facilitate access to culture, education and sport for the local population and in particular its youth.

Moreover, monthly meetings are organized with the Akimat of Sozak District. Ongoing dialogue with stakeholders is also characterized by participation in public hearings and events organized by the communities, representing some 15 operations altogether in 2019.

NIGER



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.

Discover our brochure: 10 years of social involvement in Niger (available only in French)



More information on COMINAK closure program, p.96



Exemple

In Arlit, the latest CLI (Local Information Committee) organized at the very beginning of 2019 brought together representatives of the administrative authorities, local elected officials, the mayors of Arlit and those of the rural districts within the departments of Arlit, traditional chiefs, members of the civil society, representatives of NGOs, and representatives of the SOMAIR and COMINAK mining companies.

During this meeting of the Local Information Committee, discussion among the stakeholders focused on occupational safety, health and radiation protection matters.

Another hot topic of the day was Mining Closure. The stakeholders discussed the major issues of remediation, decommissioning of industrial facilities and site monitoring, and the need to take into account social, societal and economic aspects. On this last point, the participants identified alternatives, such as the promotion of agricultural activities and the development of processing centers for farming and livestock products.

Around twenty meetings have also been organized during the year with our stakeholders in Niger.



TRANSPARENCY OF REVENUE IN THE EXTRACTIVE SECTOR

Committed to promoting greater transparency, Orano Mining publishes its revenues and has supported the Extractive Industries Transparency Initiative (EITI) since its creation in 2003.

For more information:



Fact sheet:

- Description of applicable French law, EITI and ESTMA
- List of declarations per subsidiary
- List of declarations per reporting method



The Orano report on payments made to governments in accordance with Article L 225-102-3 of the French Commercial Code (available in French only)



The EITI website



The ESTMA website

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 2019. 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.

Mining activities include exploration, development of mining projects, production of uranium concentrates, and remediation of mining sites. In 2019, these operations were performed

in the following countries: France, Gabon, Niger, Namibia, Kazakhstan, Mongolia, Canada and Uzbekistan.

At December 31, 2019, 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, 2019).

Subsidiary	Country	State or State-owned entity	Percentage ownership
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%

Community Involvement



WHY?

At every stage of our mining projects, our social actions are conceived to respect the rights, interests, aspirations, culture and livelihoods of the local communities.

Beyond mitigation measures, our actions aim to promote sustainable responses in terms of economic development and growth for the communities involved in our projects.



OUR APPROACH

Our social involvement is structured around the following pillars:

- Access to water
- Human health
- Education
- Culture
- Access to energy
- Economic development



OUR ACTIONS IN 2019

4.5 million euros*

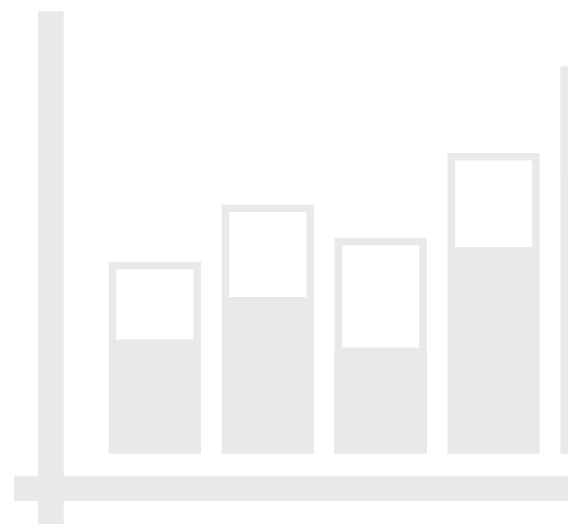
were invested to meet our stakeholders' expectations in the areas listed above.

* Including collaboration agreements with the indigenous communities in Canada

COMMUNITY INVESTMENTS

IN 2019

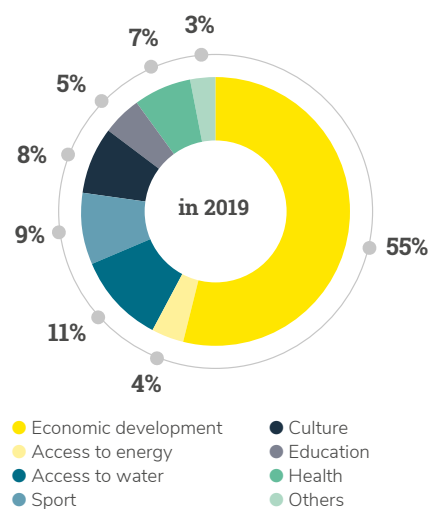
Given the diversity of contexts, past events within our activities and the nature of our projects, our aim is to promote a trusting dialogue and long-term partnership with our stakeholders.



Our strategy

We define community investments as the setting up of projects and actions with the aim of meeting the expectations of our stakeholders.

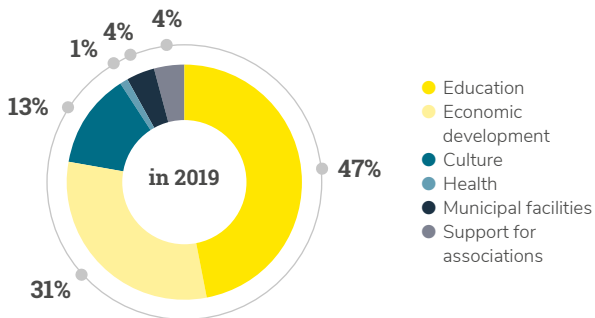
Type of investments



The funds for community investments are directly allocated by the subsidiaries and/or by the CSR Department of Orano Mining.

MONGOLIA

€280 K



- **Support for women's associations, associations of young herders** in Zuunbayan and Ulaanbadrakh, located in Dornogovi province, for local NGOs, and participation in events such as traditional festivals which are important for the Mongolians;
- **Multi-year operations** to renovate local infrastructures in the following areas:
 - **Culture:** continuation of work on the restoration of the cultural center in Ulaanbadrakh with the renovation of its exterior facade
 - **Education:** after repairs to the roof of the school in Ulaanbadrakh in 2018, the dormitory was renovated in 2019. Works were also carried out in the kindergarten and on the sports field of the school in Zuunbayan
 - **Health:** repairs to the windows of the medical center in Ulaanbadrakh
- **Help to reconstitute livestock** herds for 5 additional families from Zuunbayan
- Relaunch of the three-year program of the Association FXB to combat extreme poverty
- Expansion of the **school bursaries** program

Examples

The student scholarship program to access higher education

To prepare the professional workforce, to support the higher education of the student youth from the region, Badrakh Energy has created a scholarship program since 2010.

The scholarship covers the entire period of the bachelor's course (3 years).

In 2019, a total of 39 students from Ulaanbadrakh sum and Sainshand sum of Dornogovi Province benefited from a scholarship, bringing to 81 the total number of beneficiaries since the creation of this program.



TESTIMONY

I am a citizen of Sangiin Dalai bagh of Ulaanbadrakh sum, Dornogovi province. I completed my full secondary education in 2017 in Sainshand sum and came to Ulaanbaatar to study at the National Sports University. Now I am in my third year. I participated in the student scholarship program implemented by Badrakh Energy as part of its social responsibility for the academic years of the 2018-2020.

My family and I are very grateful that the company provides an opportunity of gaining a higher education to children of herders who have poor financial possibilities, but honestly yearn to acquire a profession. I want to return to work in my sum after becoming a sports teacher.

Orano Mining supports livestock reconstitution project in Mongolia

In 2007, when Orano Mining started the livestock reconstitution project, there were 800 heads of livestock in Ulaanbadrakh sum of Dornogovi province. Now it reached 3,700 heads of livestock and there are more than 80 beneficiary families.

Pursuant to the request issued from the Local Cooperation Council of Zuunbayan bagh, located near our pilot site, five households were additionally included in the livestock reconstitution project in 2019, enabling them to improve their livelihood and revenues.

The eligibility criteria of the livestock reconstitution project were defined in the region with the involvement of herders. The livestock for the project was bought from the herder citizens of the bagh at a market rate and transferred to the project households.



TESTIMONY FROM A HERDER OF ZUUNBAYAN

I have been enrolled into the 3-year livestock reconstitution project. I aspire to improve my quality of life through the animal products that my livestock will provide.

Escape permanently from poverty and live decently: 100 families benefit from a new program run by Association François-Xavier Bagnoud (FXB)

Encouraged by the good results obtained by Association FXB, Orano Mining has continued to finance the program of support to 100 poor families in the rural province of Dornogovi in Mongolia.

The objective of the project is to enable destitute people to escape permanently from poverty by working simultaneously in four areas over the three years of



the program: strengthen economic capacity; consolidate food security and eradicate child malnutrition; improve access to medical care and hygiene; facilitate access to education for children and young people and develop the autonomy of adults.

By the end of 2019, the first year of the program, 9 of the 100 beneficiary families had decided not to continue and were replaced by three new families, bringing the number of beneficiaries to 468.

During the first year, 53 of the 94 households had begun activities that generated income, and had benefited from dedicated training sessions. Regarding health, diagnostic tests (for AIDS and syphilis) had been offered and workshops on psychological support been held.

School supplies had been given to 97 pupils, looms and thread or wool had been distributed and training sessions given: 12 people had attended workshops on baking, and 10 women had learnt to weave carpets.

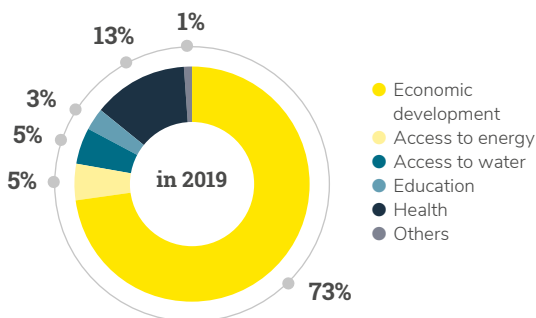
A total of over 168 beneficiaries had been trained. During the first half of 2020, schemes targeted more at young people will be initiated.

In addition, 25 beneficiaries of the program were able to visit the Orano Mining facilities at the Zooch Ovoo site in Ulaanbadrakh.

In 2019, FXB received a distinction from the local governor recognizing it as being the best civil social and humanitarian organization.

NIGER

€2,788 M



● Irhazer

- Development of 11ha and improvement of 83 ha
- Production of 400 tonnes of cereals and 163 tonnes of alfalfa
- 50,000 heads of cattle vaccinated and treated
- Finalization of the selection process of private promoters

- Bilateral steering committee** (Conseil Bilatéral d’Orientation – CBO): rate of completion of nearly 100%; the 19 projects validated have all been completed

- “The Desert Wells”** (“Les Puits du Désert”): continuation of three-year partnership

- Health:** finalizing equipment projects for establishments at Niamey

- **Gamkalley:** multi-year support to the clinic; and in 2019 funding for an item of digital radiological equipment
- **Lamordé:** building of a new complex to receive patients undergoing dialysis



Examples

An information and outreach caravan goes to meet the people of Arlit

SOMAÏR arranged for an information and outreach caravan to travel the streets of the town of Arlit throughout December 2019, to meet the people who lived there and their representatives.

Among the topics discussed at the forum were the importance of following the health pyramid; what SOMAÏR has achieved in the urban community in social and societal terms; the arrangements for managing the health and safety of SOMAÏR personnel; and preserving the environment at Arlit.

The 300 people present included members of local associations and local authorities, women’s groups, local representatives, representatives from the law and religious leaders.

After the forum, the participants said that overall, they were satisfied. Of a panel of 52 people questioned, 96% said that they had liked the quality of the exchanges, and 88% thought the topics were relevant.



“The Desert Wells”

“The Desert Wells” (LPDD - Les Puits du Désert) is an association that was founded in 2000 and is active in Niger in the region of Agadez, together with the NGO Tidène, working for the most disadvantaged nomadic and sedentary populations. Orano Mining has financed the association since 2014.

Watch the video





Irhazer

Funded by Orano and developed in partnership with the State of Niger, the Irhazer agro-pastoral project aims to contribute to sustainable food security by developing irrigation systems in the desert areas of the Agadez region.

The total project represents over 11,4 billion CFA francs (€ 17 million) of investments with from:

- **2011-2012: feasibility studies**
- **2013-2015: test phase.** This allowed the possible systems of plant and animal production to be tested and the investment models for the development phase to be validated.
- **2015 and on-going: development phase.** The cultivation of alfalfa was introduced as part of the project, making it possible to cover foraging needs in Niger that are currently unmet.

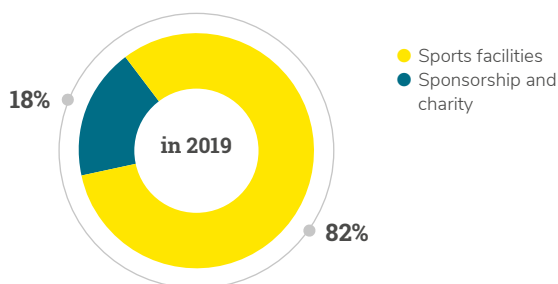
In 2019, the program made significant progress, developing 11ha and improving the use of 83ha. A total of over 400 tonnes of cereals and 163 tonnes of alfalfa were produced. 50,000 heads of cattle were vaccinated and treated in the Departments of Ingall and Arlit (Gougaram).

The process of selecting private promoters from the project's nine communes also began.

In 2020, we plan to increase the plots granted to private producers and to diversify the crops. Techniques that use less water (such as micro-irrigation) will be deployed to improve yields and reduce production costs, as well as support for irrigation and the promotion of farm products. We also intend to extend the project to the commune of Arlit.

KAZAKHSTAN

€365 K



- **Health:** continued supply of sporting equipment to communities, and construction of four additional sports grounds
- **Education:** help for pupils to acquire school supplies
- **Cultural:** landscaping in Turkestan and support to the restoration of the town of Arys
- Support to the celebration of **various events** in the communities located near our establishments

The KATCOAthleTour program celebrates 5 years of existence

Launched in 2015, the annual KATCOAthleTour program aims to provide additional support to children from low-income families in the district of Sozak.

Since its creation, employees of KATCO and sub-contractors have covered a total distance of 60,785 km, raising a sum of 6,078,500 tenges. Thanks to this money, the company has funded six social development projects in the villages of Tasty and Shu.

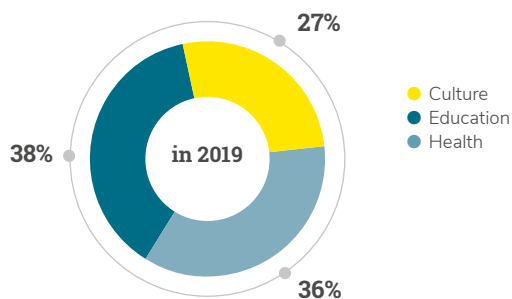
In 2019, representatives of other uranium mining companies in Kazakhstan also took part in the marathon. On June 7, 2019, more than 100 participants turned out to run distances of 21 km, 14 km or 7 km.

In total, a combined distance of over 1,000 km was covered. Congratulations to all the runners for their unflinching commitment.

CANADA

€1,2 M*

* including collaboration agreements with the indigenous communities



- On-going collaboration with the **communities and First Nations** near the operations;
- **Social projects** via both direct investment and contributions under the Collaboration Agreements;
- Financing for projects related to **education, culture, health and well-being**.



Examples

Hector Thiboutot Hot Breakfast Program - A solid breakfast to perform well in class

The Province of Saskatchewan has the third highest child poverty rate in Canada. Indigenous children make up a large percentage with approximately 45% living in low-income homes. Orano Canada strives to work with communities to provide some relief in areas that can make a difference. In 2019, Orano Canada partially funded the Hector Thiboutot Breakfast program in Sandy Bay, Saskatchewan.

Sandy Bay is a unique community made up of both Provincial and Federal jurisdictions, located on the banks of the Churchill River (580 kms north-east of Saskatoon). Most people living there are Indigenous. Hector Thiboutot School is a K-12 school with approximately 400 students.

The partnership between this school and Orano Mining included food purchases for hot breakfasts for students to access prior to starting their learning day. Research suggests that a healthy start to child's day can impact their learning, and Orano Mining was a part of making this positive impact.

Hector Thiboutot School was granted \$10,000 for their program. Principal, Randy Mallory and Superintendent, Jackie Durocher were grateful for Orano's generous donation.



Nutrien Wonderhub - Saskatchewan's Children's Discovery Museum

Opened in Saskatoon, during summer 2019, the WonderHub is a hands-on children's museum that encourages kids to explore, get creative and experiment. Orano Canada supported the development and launch of the WonderHub with \$250,000 over four years starting in 2016. Orano's funding is recognized through a beautiful northern lights display that is motion activated by the children. There is also a mock mine in which children can try on safety equipment, ride in a "cage" elevator underground, drive a mine vehicle and operate a boring machine.

LOCAL PURCHASES FOR GOODS, WORKS AND SERVICES

Purchasing by Orano Mining breaks down into five main categories: energy, logistics, materials, services and reagents. Orano Mining works with some 2,000 suppliers in the countries where it operates.

The fact that preference is given at equal competencies to local suppliers during the bidding process enables the creation of **a network of companies and numerous jobs in the region where the mining site is located**. In 2019, **76% of our purchasing volume came from the countries in which we are based**.

It is not always easy to define the meaning of “local”, and the term varies depending on the country, its stage of economic development and the population density around the site. Orano has therefore implemented specific purchasing policies in the countries in which it has mining sites.



For 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 the community living in northern Saskatchewan. Service contracts such as site catering or monitoring, which require a large workforce, have only been awarded to suppliers from this region.

Since 2019, the Nigerian company TOUTJANI MAZOU based in Arlit has been in charge of food management at COMINAK. Its service scope encompasses the purchase, stocking and delivery of food supplies provided by COMINAK to its employees.

The external service provider must at the same time hold sufficient stock (3 months minimum), maintain fixed prices over two years and manage distribution to employees. Despite the Covid-19 pandemic, deliveries and service have been provided without interruption. This crisis situation has enabled this local company to strengthen its role in supporting COMINAK.

A winning strategy of local focus in Kazakhstan

ISR technology is used to mine uranium in Kazakhstan, and requires the use of flowmeters to check the volume of solution injected into and recovered from the shafts. Previously, this equipment was bought abroad.

Following its local strategy, the purchasing team at KATCO approached a Kazakh supplier.

At the end of 2018, our teams took the trouble to redefine the technical specifications for the product and their requirements before issuing an invitation to tender.

Once the responses had been reviewed, the company Omega Pribor, which produces over 70% of its flowmeters in Kazakhstan, was selected, thus **generating local jobs and reducing greenhouse-gas emissions, as transport has less impact**. An initial order for approximately 850 flowmeters was placed in 2019.

This strategy of local focus* has enabled us to reduce our purchasing costs (by over 30%) while safeguarding quality of the supply chain.

The initiative is considered a success and promises well for future projects.

* In 2019, 76% of our purchasing volume came from the countries in which we are based.

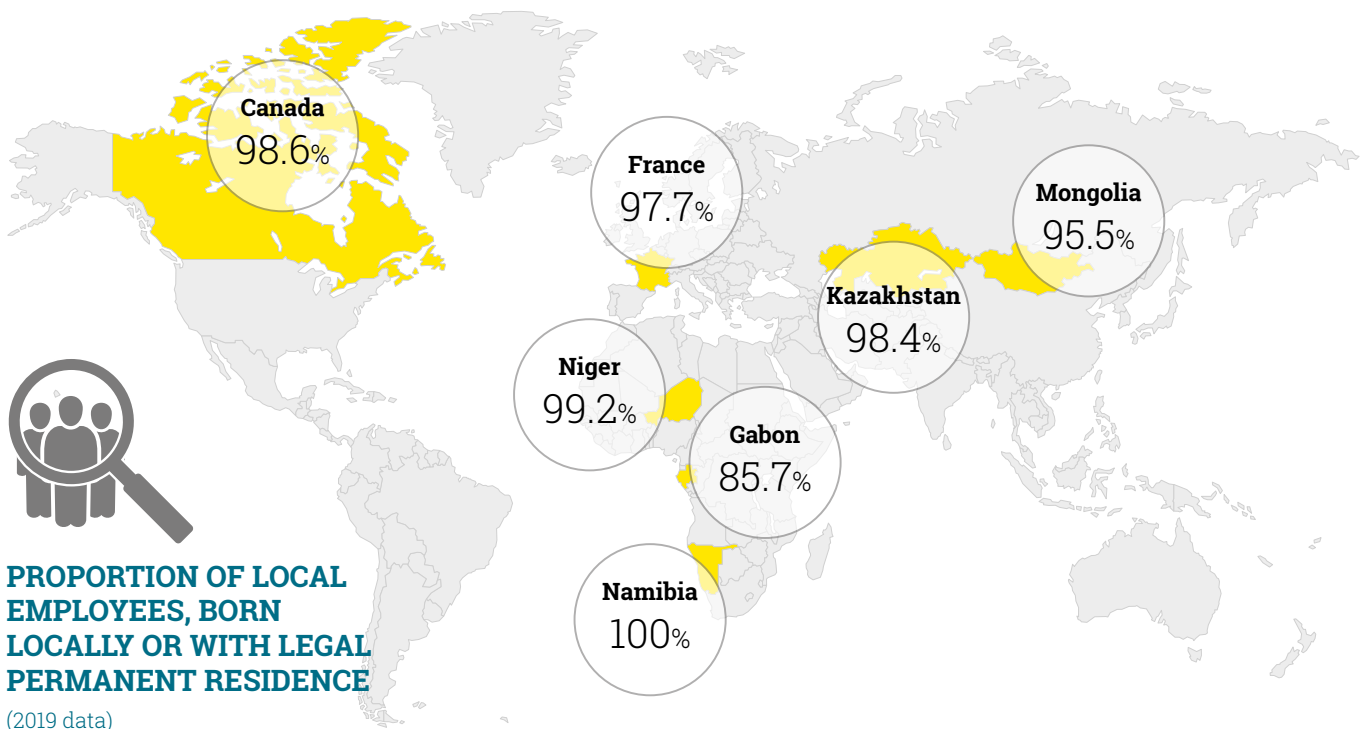
LOCAL RECRUITMENT OF OUR EMPLOYEES

Orano Mining’s social policy expresses a commitment to promoting the local recruitment of our employees. More than 98% of our employees on our sites are from the host country.

We also pay particular attention to indigenous communities, to facilitate their access to our employment opportunities.

This situation exists in Canada, for example, in North Saskatchewan, a region that has seen numerous initiatives to promote access to employment within the northern communities.

Currently, across all the countries in which we work, the vast majority of employees are local nationals.



Ethics



WHY?

As a socially responsible mining company, we are committed to operating ethically and with integrity and to establishing and following processes and behaviors that support this commitment.



OUR APPROACH

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



OUR ACTIONS 2019

We have continued to apply and adopt the requirements imposed by the French Sapin II Law and its eight key measures at all our sites in both France and abroad, including refining the criteria for verifying third parties, applying specific accounting controls and using face-to-face training sessions on the corruption risk for our management teams and for exposed departments.

We have issued an e-learning course developed and based on Orano's Code of Ethics **for all staff** (mandatory for all employees with, or with access to, a computer, and new recruits). We have also launched an externalized, secure platform for receiving ethics reports, accessible to all group employees and guaranteeing the confidentiality in information processing and protection of whistleblowers.



CODE OF ETHICS

Available on the Orano website (www.orano.group) and issued to all of our employees and industrial partners (subcontractors, suppliers, service providers, etc.), the Orano Code of Ethics sets out Orano's ethical commitments to its stakeholders, as well as what it expects from its internal and external stakeholders; it specifies the rules of conduct that everyone must follow and comply with at all times.

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 pursue 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), a number of complementary processes have been carried out since 2018, including:

- mapping of Orano Mining corruption risks (updated each year)
- updating of the **anti-corruption code of conduct** (annex to the Code of Ethics) and its incorporation into the internal regulations of Orano Mining and all its subsidiaries
- design of an e-learning course specifically developed on the basis of the Orano Code of Ethics, and its deployment to all employees
- a face-to-face training course deployed to the employees most exposed to risk
- systematization of the third-party compliance verification process in accordance with a Group procedure
- 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

Since 2018, the corruption risk and influence peddling have been assessed on all of our sites every year.

These measures were continued and strengthened in 2019, and in particular:

- we issued a policy on gifts and invitations, with a SharePoint for declaring them,
- Orano improved its ethics alert mechanism via an outsourced platform, accessible to all Group employees (with a poster campaign in all Orano Mining 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.

According to the Code of Ethics, it should be a reflex and is 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 this Code of Ethics or of compliance policies and procedures is observed (see system for alerting and issuing complaints in case of discrimination, p.44).

The rules of conduct of the Code of Ethics deal with the action we are to take in relation to the following situations: compliance with international treaties; conflicts of interest; insider trading; corruption, gifts and unfair advantage; influence peddling; payments and relations with third parties; competition; advocacy and lobbying; political funding; protection of persons and assets; philanthropy, sponsoring, donations.

At Group level, the Orano Board of Directors has set up four specialized committees including the **Audit and Ethics Committee**. Its mission includes overseeing group compliance with the best international ethical practices, reviewing the Code of Ethics and its updates and where appropriate making recommendations to the Board of Directors. More specifically, it conducts the review of the annual internal control campaign INCOME following the internal audit assessments, as well as reviewing the Group's risk mapping and action plans, with follow-up of the audits carried out and validation of the annual audit plan.

The role of Compliance Officer for Orano Mining is held by the General Counsel for our activities, supported by local in-country officers. The Compliance Officer works with the Senior Vice President for Compliance of the Orano Group on the Group Audit and Ethics Committee.

Find out more:
Orano Code of Ethics



ETHICAL REPORT

Orano Mining, like all the group's business entities, 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 sanctions taken.



Each campaign opens with a letter from the Senior Executive Vice President of Orano Mining, in application of the letter of instruction from the Orano group CEO. 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).

This reporting 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 counter to the Orano Code of Ethics, they are entitled not to comply and must report the matter to the Compliance Department immediately.

The nature of corrective actions and/or sanctions proposed varies depending on the severity of the failure to comply with the Code. These actions may range from training to dismissal of the personnel concerned.

All members of the Orano Mining Management Committee and the subsidiaries management committees have followed or will follow training in ethics and human rights.

Similarly, all of our subcontractors and suppliers, in subscribing to our General Purchasing Conditions, make a contractual undertaking to uphold the Orano Code of Ethics.

Since 2016, monitoring of ethical incidents and associated action plans have been conducted within the Orano Mining Management Committee at least twice yearly.

SYSTEM FOR ALERTING AND ISSUING COMPLAINTS IN CASE OF DISCRIMINATION

A system for alerting and issuing complaints in case of discrimination has been in place since February 2013. It guarantees the confidentiality and protection of whistleblowers acting in good faith. A description of the system and how it works is available on the Orano intranet.

Since April 2, 2019, a dedicated, secure external web platform for collecting alerts has been implemented to strengthen the system.

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

In 2019, the system was used three times within the scope of mining activities. All substantiated cases were subject to an internal investigation, were processed and resulted in action plans. Apart from the ethics-alert mechanism, many instances were either reported via the managerial chain or were alerts raised by partners. They were all escalated via the Orano Mining ethics report and either have been or are being processed. In some cases, disciplinary measures have been taken, and individuals even dismissed for misconduct; in others, those involved have resigned.

Furthermore, a new procedure for the management of claims and complaints in particular concerning any risks of human rights violations will be deployed on all the sites by the end of 2020.

INDIGENOUS PEOPLES' RIGHTS



The right of indigenous peoples to decide on the basis of prior and informed free consent is one of the undertakings necessary for the acceptability of our activities and for building a constructive dialogue over the long term.

More specifically, in Mongolia and in Canada, we seek to uphold compliance with these fundamentals at the earliest possible stage in the life cycle of mining activities.

The way in which we approach and deal with the questions surrounding this complex issue in concrete terms is currently being examined by our different functions.

OUR RESPONSIBLE PURCHASING PROCESS

Orano Mining purchases are compliant with Orano's Purchasing and Supply Chain process.

Suppliers are assessed and monitored as regards their quality, compliance, sustainability, ethics, respect for human rights, economic competitiveness, and ability to provide products/ services that are compliant with the specified needs and requirements.



Purchasing Managers must factor in economic and ethical aspects, as well as fair competition practices, specifically by promoting competition, plurality of bids and emergence of alternative offers, taking care to exclude any form of discrimination. When identifying needs, they must factor in the local situation, the impact on jobs and the local economy (see chapter *Community involvement* p.32).

The Orano group has made provision for project monitoring and operational oversight to make sure that health-safety-environment and sustainable development requirements are properly managed by subcontractors.

The various documents and processes making up the Supply Chain Management System (Code of Ethics, GTCP, Sustainable Development Commitment, etc.) include:

- deployment of a compliance questionnaire;
- supplier performance metrics and the required improvement plans;
- Ethics and Sustainable Development Commitment aspects in the contract clauses;
- studies performed by the Group's Economic Intelligence Division, specifically for all new suppliers in the countries where we operate.

In 2019, a systematic compliance assessment process for suppliers, adapted to the level of risk involved (corruption, due diligence), was deployed in coordination with the Compliance Department.

Depending on the results obtained within the framework of the third-party assessment procedure, and if necessary, a questionnaire is sent to the supplier (containing in particular questions concerning the subsidiaries of the company concerned and existing capital links) and, where applicable, an investigation by the Economic intelligence unit is carried out, covering all the themes stipulated in the diligence plan.

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



Risk Management



WHY?

Maintaining the highest level of nuclear safety has always been an absolute imperative for Orano. The Group's Nuclear Safety Charter states the Executive Management's undertaking regarding the priority to be given to risk management and establishes the pertaining principles of organization and action.



OUR APPROACH

An all type risk identification and assessment campaign is conducted annually using a Business Risk Model (BRM). This is used to adjust and update the action plans implemented to manage the risks.



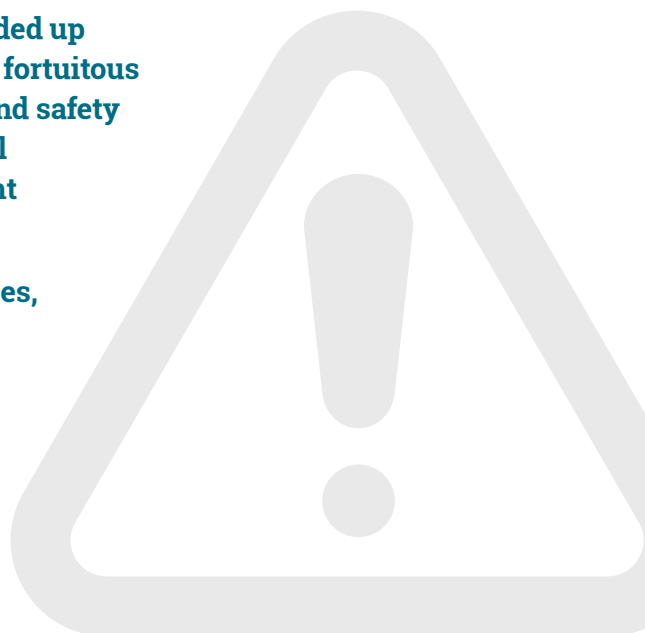
OUR RESULTS IN 2019

- **Greater convergence between the bribery and influence-peddling prevention system** and the Orano Business Risk Model.
- **Level 3: crisis exercise** conducted at McClean Lake in Canada
- **Level 2: 5 crisis exercises** conducted on sites: 1 at SOMAÏR in Niger, 1 at Bessines in France, 1 at Orano Canada, 2 at KATCO in Kazakhtan
- **Level 1: More than 40 crisis exercises** across the sites
- **1 exercise** conducted with other mining companies in Namibia

The Business Risk Model (BRM) provides an annual list, divided up into a defined number of families of risk, of all foreseeable or fortuitous situations or events that may have an impact on the health and safety of the staff, the environment, operations, strategy or financial operations or results of the Group, its compliance with current regulations, as well as its reputation or image.

The BRM is to be updated on a regular basis with best practices, feedback from experience and regulatory changes. Duty of care and the risks of bribery and influence peddling have been included in the group's risk mapping since 2018.

Details on risk mapping, the risk management policy and the cross-reference table of the data required in the statement of non-financial performance and those required by the French Corporate Duty of Care Law can be found in Appendix 8.9 of the Orano annual activity report.



FOCUS ON THE DUTY OF CARE PLAN

The group draws on strong ethical principles that form the basis of its policy on compliance, social and environmental responsibility and respect for basic rights.

Orano Annual Activity
Report Chapter 3.4
and cross-reference table
annex 8.9



Due to the regulated nature of its activities, the group is subject to strict prior authorization processes and supervision by the competent authorities. These authorities take into account potential impacts with regard to both local populations and the environment. The group also applies high ethical and corporate responsibility standards, laid out in its Code of Ethics.

In all of the regions in which the group operates, it applies heightened care and diligence with regard to the prevention of serious breaches of human rights and the health and safety of people as well as the environment, for the activities of its directly and indirectly controlled subsidiaries as well as the activities of its subcontractors and suppliers with whom it maintains an established commercial relationship where these activities pertain to this relationship, it being understood that all of these companies are also obliged to

comply with the applicable local laws, especially with regard to the prevention of the aforementioned risks.

However, as the group cannot act in the name and on behalf of its co-contractors and suppliers, in particular, it cannot guarantee the total absence of the risks mentioned in this corporate duty of care plan.

The **duty of care plan** is based on various identification, alert and monitoring procedures that have been in place within the Group for several years and contains reasonable care and diligence measures.

A campaign is launched annually to assess the risks of serious violations, notably with regard to human rights, fundamental freedoms and the environment, and to take into account the impact of potential events on the achievement of the group's strategic and operational targets, as well as the health and safety of people and risks of damage to the environment (see section 3.4.2 of Orano annual activity report).

Its main objectives are:

- formal identification of every type of risk;
- characterization of these risks in order to prioritize them;
- and definition and implementation of action plans to mitigate them.

The Orano Risk and Internal Audit Department, in collaboration with the Risk Managers of the Business Units (each of which has a network of risk managers in their operating entities), coordinates the deployment of the risk mapping process, and consolidates the risk assessment at group level. The risks identified are analyzed and ranked on three axes: impact, likelihood and degree of control.

Lastly, several systems of monitoring and assessment within the group make it possible to ensure that measures in the duty of care plan are being deployed effectively and the multi-channel whistleblower system is used to gather any reports or alerts concerning its implementation.



FOCUS ON INDUSTRIAL RISKS



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

As an extension of the Group Nuclear Safety Policy, the current Safety and Environmental Policy formalizes priorities as regards nuclear safety, industrial safety and environmental protection for the 2017 to 2020 period.

Find out more: Nuclear Safety Charter and Nuclear safety and environment policy 2017 - 2020



The objectives pursued by the policy are:

- sustainable assurance of a high level of safety for our facilities, our products and our services;
- strengthening of operational discipline, to be made a practical daily concern for operational management and all parties involved in operations;
- inclusion of risk prevention and environmental protection as priorities in each of the processes implemented for the conduct of our activities.

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 works, by means of hazard studies or ad hoc analyses.
- mapping of major industrial risks encountered on our sites, an estimation of the degree of control of these risks via preventive and protective barriers implemented 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.



We organized approximately fifty exercises at our sites in 2019 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.

- a crisis management organization: each operating entity sets up an organization to manage emergency situations as part of the Group's overall crisis organization. The implementation of this organization in each entity provides for strong analytical and decision-making capability so all necessary measures can be taken in the event of an emergency or crisis situation to make safe facilities, 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.

In 2019, the actions focused on:

- continuation of the review of industrial risks and their potential accident scenarios. Measures include installation of ammonia gas detection system at the

McClellan Lake site in Canada and study of engineering solutions to reduce the risk of ammonia gas release.

- risk analysis during the study phases of projects being developed (CIME in France – Innovation Centre for Extractive and Metalworking Industry-, South Tortkuduk project in Kazakhstan, etc) and remediation (Bauzot in France, COMINAK in Niger, etc).
- a level 3 crisis exercise was organized at McClellan Lake in Canada, as well as five level 2 crisis exercises and more than 40 level 1 crisis exercises were organized on our sites.
- as a complement to external specialist training, in-house course on Industrial and Environmental Risk were held at SOMAÏR and COMINAK sites in Niger.

RISK MANAGEMENT SYSTEM

Work to prevent professional risks is carried out at most of our mining sites using a management system that standard meets the requirements of OHSAS 18001 (for occupational health and safety) and the ISO 14001 integrated management system.

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



Environment



WHY?

Our environmental responsibility is an ongoing commitment firmly rooted into Orano's core values. As such, our actions seek to reinforce mitigation of the risks, management of the environmental footprint of our activities, and ensure that mining sites are well integrated into their environment. This is a legitimate expectation on the part of our stakeholders.

OUR APPROACH

We build precise and scientific knowledge of impacts on the environment, take the appropriate mitigating measures, invest in research and development to improve our

practices, and take account of issues identified and knowledge gained by our stakeholders, as well as of societal aspects directly related to the environment of our sites.



OUR INDICATORS 2019

Water Consumed: + 7.4%

Energy Consumed: - 5.1%

Greenhouse Gas Emissions: - 3.0%

Conventional Waste: - 29%

Very Low Level Radioactive Waste: + 55%

The commitment of Orano Mining's activities is shaped by the Orano group's Safety & Environment policy for 2017-2020. Our teams therefore base their work on meeting current regulatory practices, international standards and the sharing of experience.

Consult the Orano Safety and Environment Policy 2017-2020



OUR POLICY

The group's Safety & Environment policy applies to all entities of Orano Mining, both in France and abroad. Each operational entity deploys it in the form of action plans in accordance with the following commitments:

- Prevent the technological and environmental risks of our operational activities by means of a pro-active approach.
- Minimize our environmental footprint.
- Improve management of environmental liabilities.
- Interface effectively members of the environment and industrial risks networks.
- Ensure that environmental standards are taken into account at every stage of the mining cycle.
- Maintain or implement an environmental management system (ISO 14001 or equivalent).



OUR ENVIRONMENTAL PERFORMANCE



Throughout the life of the mine, the extraction and processing of uranium ore entail a need for raw materials and natural resources (water, energy, etc.). Our main challenge therefore consists in optimizing consumption and waste over time, and in looking for possible ways of recovering waste.

The environmental objectives are adjusted depending on changes in the mapping of risks, the expectations of stakeholders,

internal and external best practices, environmental reporting and dialogue with operational entities.

In 2019, Orano Mining deployed an Environment Management Chart, shared with all employees of Orano Mining and of its subsidiaries. This document, managed on a quarterly basis, is used to monitor indicators of environmental performance such as consumption of fossil fuels, electricity and water, and reporting on the number of accidental spills. It also provides a way of sharing information about major events, the state of progress and environmental studies at the level of Orano Mining.



Reporting for the various environmental indicators presented in this section is carried out using the Orano group's dedicated application. The methods used for the calculation of environmental indicators, as well as the associated reporting procedures, are formally set out in a "Sustainable Development and Continuous Improvement" measurement and reporting protocol. The latter, which is updated every year, is sent out to everyone involved in the preparation and reporting of data.

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

In 2019, Orano Mining recorded good operational performance with the production of 13,172 metric tons of uranium (total tonnage produced by mines where Orano is an operator). This tonnage is used as a basis for calculations for the assessment of our environmental performance in 2019.



2019 RESULTS

Water

THE CHALLENGE OF WATER MANAGEMENT

Precious natural resource, management of water is one of Orano's core environmental and social concerns. Mining activities 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.



The management of water resources is an even bigger challenge given that, out of all of our 10 sites (in operation, or in project or mine closure phase), 7 are located in arid desertic areas (Niger (3), Kazakhstan, Mongolia, Namibia, Uzbekistan).

While aridity signals a climatic phenomenon where precipitation is less than evapo-transpiration, water stress provides an indication of the ratio between the need for water abstraction to meet the needs of local activities and the water reserves available (at the surface and underground). Types of water abstraction include domestic and industrial needs, as well as needs related to irrigation and watering of livestock.

In 2019, Orano Mining assessed the level of water stress on all of its ten sites worldwide using the "Aqueduct Water Risk Atlas" tool from the World Resources Institute (WRI). This showed that:

- 2 sites are subject to a high level of water stress (40-80%) (Kazakhstan and Namibia)
- 1 site is subject to a medium to high level of water stress (20-40%) (France)
- 2 sites with a low level of water stress (<10%) (Gabon and Canada)
- Half of our sites are not classified as being subject to water stress but are in arid regions where usage of the resource is low (Mongolia, Uzbekistan and Niger).

To find out more about the Aqueduct Water Risk Atlas



Volume of water taken, consumed, returned - in m ³	2018	2019	Trend 2018-2019
Volume of water taken from surface waters (includes rainwater)	566,501	573,327	+ 1.2%
Volume of water taken from the distribution network	30,856	36,649	+ 18.8%
Volume of exhaust water intake	6,834,411	6,769,525	- 0.94%
Volume of groundwater taken via pumping wells	3,984,972	3,801,176	- 4.6%
Volume of exhaust water consumed on site for industrial and domestic usage	5,040,030	5,382,983	+ 6.8%
Volume of water returned to the environment	2,140,981	1,735,617	- 18.9%
Total volume of water consumed	6,447,811	6,924,338	+ 7.4%

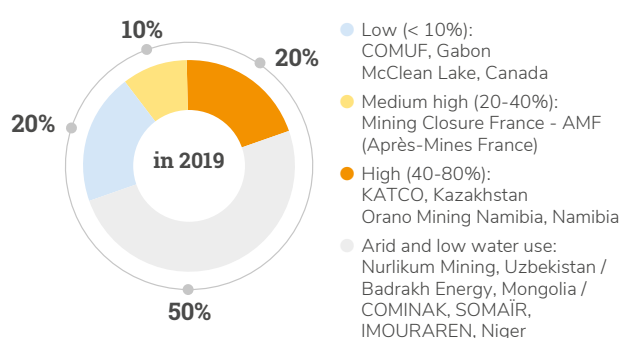
* Note: during the first quarter of 2020, our Canada site integrated the ICMM standard to report the water balance of the treatment process, the site has therefore readjusted its calculation and reporting methodology. To take this new method into account, the data have also been recalculated for the year 2018 in order to allow the comparison of different water volumes.

Refer to our Safety Security Radiation Protection Policy 2017 - 2020 (available only in French)

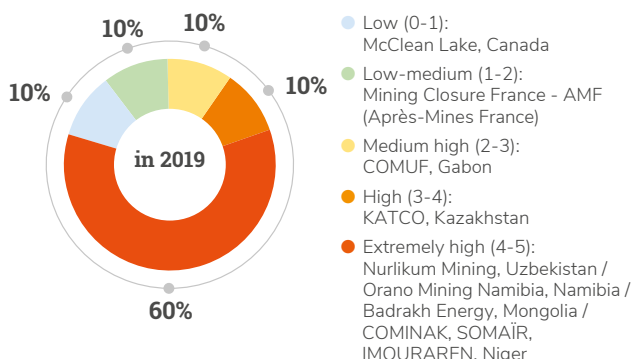


As part of its approach, Orano Mining also assessed water risks using the same “Aqueduct Water Risk Atlas” tool.

Water stress



Overall water risk



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 that is unsuitable for use, by aggregating 2 indicators: the existence (or lack) of treatment of connected wastewater and the potential for coastal eutrophication.
- The regulatory and reputational risk which assesses the risk related to the management of water by local bodies (availability of drinking water, sanitation), but also potential conflicts with the public concerning access to water.

Finally, the overall water risk results from the combination of these three risks.

For each risk, the higher the value, the stronger the risk is.

Teams from Orano Mining provide entities with support in order 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.

Multidisciplinary teams made up of environmental specialists, experts in hydrogeology, process engineers, legal experts,

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)	low-medium (1-2)	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)	high (3-4)

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	high (40-80%)

specialists in R&D and social responsibility managers are involved in the management of water resources.

This management is always conducted in close consultation with the population and the authorities, based on the needs of local activities.

Regarding monitoring and discharges into the environment, one of the prerequisites of the management plan is compliance with regulatory requirements and with the policy common to all entities of Orano Mining. All our sites comply with these obligations.

Each site, in view of the specificity of the challenges, risks and regulatory requirements, draws up a plan for the management of water resources and objectives are set to optimize consumption within Orano Mining.

The pumping of groundwater is essential to allow access to the deposit in the open-pit and underground mines in Niger. Groundwater pumping also allows uranium to be put into solution so it can be retrieved from In Situ Recovery mines, like those in Kazakhstan. Whatever the site under consideration, the processing of uranium ore is always carried out by wet process. Moreover, the sprinkling of sites also enables dust suppression, and thus to limit the atmospheric and radiological impact to the maximum extent possible, particularly in desertic areas. Last but not least, Orano Mining is committed to providing all of its employees with access to good quality drinking water and appropriate sanitary facilities.

The site in Canada and our former remediated sites in France and Gabon have the following features:

- They discharge mining or process water into the environment (of course after having been treated if the quality of this water does not allow for it to be discharged directly).
- They are not located in water risk areas.



The preservation of water resources mainly involves ensuring its quality is maintained, and, by extension, protecting related ecosystems.

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

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

The objective is to assess and propose solutions for managing the risks related to water resources in the area where mining activities are conducted.

Coordinated by three companies from the region, one of which is Badrakh Energy, this working group meets on average four times a year to share its knowledge on the use of water by mining companies, best practices in water management and, to the extent that it is possible to do so, to respond to the expectations of the local government authorities and population. It also proposes training in water management and preservation for the local population and members of the local authorities, as well as campaigns to raise their awareness on the related issues.

In Niger, since 2003, Orano is maintaining the commitment of its working group called “Aman”, which has been carrying out periodic additional monitoring campaigns on a wider scale than those conducted by site operators. The aim of this group is to refine our understanding of the regional hydrogeology and guarantee the quality of supply to sites and nearby towns.

Within the framework of the works being conducted by the Aman group, the scheme for the containment of marking of groundwater from the Teloua aquifer, downstream of the COMINAK industrial area, was maintained in 2019. This pumping allows the spread of the marking to be stopped and any impact on health and the environment to be avoided. Further studies are in progress concerning management over the medium and long term.

Orano Mining is committed to sustainable, transparent and inclusive management of water resources, and adheres to **the ICMM's position statement on water stewardship**.

Orano Mining also participates in the ICMM working group with the aim of improving the performance of mining sites in the area of water management.



MONITORING OF PERFORMANCE

The “water consumed” indicator corresponds to the quantity of water specifically consumed for the needs of the site, which implies a quantitative reduction (consumption during the treatment process and involvement in the finished product, consumption by employees, any losses) and/or a qualitative reduction (physical-chemical degradations) of the resource.

This indicator is calculated from data from sites, by calculating a mass balance: volume of water consumed = volume of water abstracted – volume of water returned. This environmental performance monitoring indicator is set at Orano group level.

The “volume of water abstracted” indicator is subject to regular monitoring at site level, but also by Orano Mining, in particular by means of the management chart for the monitoring of environmental performance indicators. If this indicator deviates the cause is immediately investigated.

Depending on their needs, sites are liable to use three qualities of water: drinking water, sanitary water and industrial water. These categories are fixed in accordance with the regulations in force (national, regional, WHO - World Health Organisation - regulations), and, failing that, depending on the type of use which can be made of them. Depending on the location of sites, the (quality) classification of the aquifers does not always allow for the production of drinking water. This is in particular the case for KATCO (Kazakhstan) and Badrakh Energy (Mongolia) sites, where bottles or containers of drinking water are made available to employees.

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

FOCUS ON SITES LOCATED IN REGIONS OF WATER RISK

KATCO's water consumption has decreased thanks to actions to optimize consumption, including the introduction of a drilling mud recycling process and a recycling loop at the Tortkuduk plant. Moreover, in 2019, the site saw a net decrease in the number of technical wells drilled, and thus a reduced need for water for the production of drilling muds.

In contrast, on both the SOMAÏR and COMINAK sites (Niger), there was an increase in water consumption:

- At SOMAÏR, the ore mined in 2019 was of lower grades than in 2018. To meet its production objectives, SOMAÏR had to process a larger quantity of ore, with the associated increases in water consumption.
- At COMINAK, underground mining operations led to certain old mining districts to be re-opened, and thus to the dewatering of these areas being resumed. On the scale of Orano Mining as a whole, this accounts for the largest volume of water abstracted.

The quantities of water consumed in Namibia and in Mongolia are marginal.

Our site in Namibia, which is in a location of high water stress and of extremely high overall risk, has built a sea water desalination plant to avoid having to pump water up from underground water tables. Part of the water produced is used to supply industries and local populations in the region of Erongo with water.



Quantities of water abstracted are measured by flowmeters; however, some points of withdrawals cannot be equipped with a flowmeter, in which case the quantity is estimated or simulated based on models.

Our teams are continuing their efforts to reduce their consumption in particular by taking actions to recycle and optimize consumption of water.

All of our sites are assessing opportunities for reuse of water. One example that can be cited is that of McClean Lake in Canada, where, in 2019, studies were launched to reuse effluents from the plant. Previously, these effluents from the ammonia crystallization plant were not recovered

but treated and then discharged into the environment. The tests conducted showed that the quality of the effluents could allow them to be reused in the processing of ore, and thus replace the use of fresh water.

Overall, for Orano Mining, the change in the volume of water consumed indicator, based on updated values, shows a rise in water consumption of 7.39%.

In 2019, the water consumption of all sites of Orano Mining can be expressed as a ratio of 526 m³ of water consumed per metric ton of uranium produced (based on the group protocol, the equivalent for 2018 was 480 m³).

This higher ratio in 2019 is explained by the increase in water consumption on the two sites in Niger. The 2020 objective set by the management of Orano Mining is to achieve a 5% decrease in this ratio.

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

WATER BALANCE

In accordance with ICMM recommendations, Orano Mining has in recent years launched a plan to improve its knowledge of management and expertise in water resources on its sites. In 2019, this resulted in the drawing up of a water balance for the McClean Lake site, according to the criteria common to members of the ICMM.

The objective is to improve knowledge of the flows on a site which may be highly complex, and to identify areas for improvement in water management performance.

2019 water balance of McClean Lake site, Canada

Metric	Type	Source/Destination	Volume of water by quality		
			High (m ³)	Low (m ³)	Total (m ³)
Withdrawal	Surface Water	Precipitation and Runoff		327,277*	327,277
		Rivers and Creeks			0
		External Surface Water Storages	528,616		528,616
	Ground water	Aquifer Interception	1,454,429**		1,454,429
		Bore Fields	236		236
		Entrainment			0
	Third Party Water	Contract/Municipal			0
Water in ore slurry			63,000*	63,000	
			1,983,281	390,277	2,373,558
Output	Surface Water	Discharge		1,735,617	1,735,617
	Ground water	Environmental Flows			0
		Seepage			0
	Supply to 3rd party	Reinjection			0
			0	1,735,617	1,735,617
Consumption	Other	Evaporation	375,980*		375,980
		Entrainment			0
		Other (task loss)		7,754	7,754
			375,980	7,754	383,734
Efficiency	Reuse efficiency				36%
	Recycle efficiency				0%

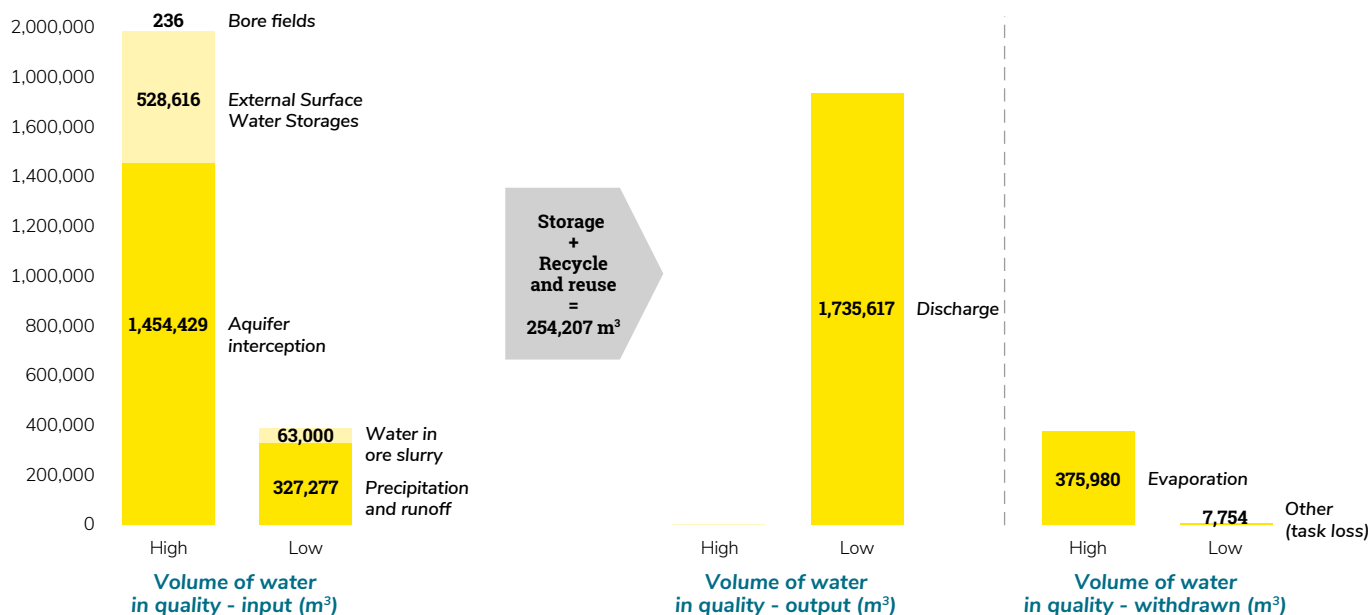
* estimated data - ** simulated data

Compliance with ICMM minimum disclosure requirement: water consumption metrics

« To promote consistency, and reinforce sector-specific best practice, ICMM has amended the minimum disclosure requirement for consumption metrics to require reporting of a total value, by two categories of quality (high and low). The amendment was effective from 1 January 2020, with an implementation period of 12 months – with the expectation that ICMM member sustainability reports issued from 1 January 2021 will include the amended disclosure requirement.

For more information on the ICMM's consumption definition and minimum disclosure requirements, please see ICMM A Practical Guide to Consistent Water Reporting (March 2017), p11, 14-15, 29; and associated Amendment to the Minimum Disclosure Requirement: Water Consumption Metrics (January 2020). »

2019 water balance of McClean Lake site, Canada



Note: The processes for the mining and processing of ore vary by location. The activities of the McClean Lake site in Canada are focused on the processing of ore and not on its extraction.

The incoming and outgoing flows are referenced and classified by category of water quality. Consumption is monitored, based on this reference base, via the sum total of consumption items on the site. Where it is not possible to measure these precisely, certain of these flows are either estimated, or modeled (as in the case of evaporation, in our example).

The balance of flows, combined with the quality of discharges, allows one to assess the site's performance in water management and its footprint in terms of use of the resource.

This approach also makes it possible to explain fluctuations from one year to another by variations in storage of water.

The volumes of water are reported in this balance based on the standardized criteria recommended by the ICMM, based on two categories of quality:

- “Water of high quality” is water of high socio-environmental value, used for multiple beneficial purposes, and / or intended for usage within or outside

the catchment area. For example: water supplies (drinking, agricultural, agro-food, industrial), bodies of water serving a decorative purpose, water essential for the correct functioning of ecosystems. This category is of key interest in the description of water management performance, in particular from the point of view of management of a shared resource.

- “Water of low quality” is water that is of lower socio-environmental value, as its physical and chemical properties are such that they limit its possible uses. However, such water can be used by mining sites when its properties allow for such use, as a substitute for water of good quality. The monitoring and correct usage of water of this type are key factors in determining the mining site's performance.

It should be noted that these categories do not correspond to the national declaration standards currently used by the sites, which are most often based on a classification either according to criteria of potability, or according to objectives of compatibility with their environment / receiving ecosystems. It is thus possible that the figures presented here do not coincide with those in the individual declarations made by sites in their own publications.

The drawing up of this balance makes it possible to determine a level of water reuse in processing of 36% for McClean Lake. The rate of reuse is calculated for all operational units by considering the sum of flows reused divided by the sum of all incoming flows.

Part of the water is also recycled (after active treatment) for internal reuse. As these flows are not currently measured by the site, we cannot therefore precisely assess the actual rate of recycling. By default, we are reporting it as zero.

The large variation between the incoming flows and the outgoing flows of the system (consumption and discharges) is explained in 2019 at McClean Lake by an increase in the volume of storage of water, related to works on extension of the Tailings Management Facility.

The exercise will be extended in the years to come to other Orano Mining sites in production.

DISCHARGES INTO THE ENVIRONMENT

On the SOMAÏR and COMINAK sites in Niger, the effluents, upon leaving the processing plant, are managed in evaporation ponds.

In Kazakhstan, the ISR mining process used by KATCO entails the management of solutions in a closed loop. Effluents do not exist as such, because, upon leaving the plant, the leaching solution, which is free of uranium, is reinjected into the deposit.

On 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 ecosystem studies are carried out to prove that the quantity and quality of aquatic ecosystems are not affected by the activities.

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

For Mining Closure France (Après-Mines France - AMF), water is also of key importance, at the center of monitoring of its installations. Depending on their physical and chemical characteristics, these waters have to be characterized, checked and regrouped together or isolated.

Meteoric waters forming surface run-off from sites can be drained and discharged directly into the natural environment, in contrast to water from mine works and/or mine tailing storage areas at our Environmentally Regulated Facilities (Installations Classées pour la Protection de l'Environnement - ICPE) for example.



After passing through our water treatment stations, these waters are 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), are conducting numerous studies into how to optimize these water treatment stations, with, for example, the installation of a sludge blanket treatment pond on our Augères site or the water treatment in ponds containing zeolites on our Silord and Bois Noirs sites.

Energy

Whether it originates from fossil fuels or renewable sources, the energy consumed by Orano Mining's sites is monitored on a constant basis. The goal: to continue to reduce and optimize our energy consumption, and to reduce the associated carbon footprint.

To ensure the continuity and security of their activities, it is essential for sites to secure their supply of energy. However, the electricity production of the networks to which several of our sites are connected can be very carbon-intensive today.

In this respect, improving the energy efficiency of our sites, and reducing greenhouse gas (GHG) emissions and therefore our impact on climate change is a priority for us.



This is among the commitments taken at the highest level of the Group.

An energy efficiency project was launched 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 (France) and KATCO (Kazakhstan) sites, in 2016 and 2017 on the sites of McClean Lake (Canada), of SOMAIR and COMINAK (Niger).

The actions taken by Orano Mining also include the deployment of performance indicators making it possible to determine which units consume the most, as well as to deploy “low consumption” operating procedures and action plans which are put into application in the strategies of sites.

In this way, every year, new improvement actions resulting from these diagnostics are implemented on mining sites and have made it possible to achieve notable energy savings.

The main levers for action lie in:

- investment in new equipment which consumes less energy and is more efficient
- reconfiguration of certain processes to promote the recovery of energy
- change in the mode of operation of the workstations which consume the most energy
- raising awareness among operators

In combination, **these actions have made it possible to achieve a saving of over 17% on energy consumed since 2015.**

Actions to develop energy performance implemented on the COMINAK site (Niger) over the past few years have made it possible to achieve a significant reduction in energy consumed in 2019, whether originating from fossil fuels or electricity. This reduction in consumption at COMINAK accounts for 48% of the decrease observed across all of Orano Mining's sites.

The other decreases in consumption can be attributed both to the energy performance actions taken on sites and to a certain decrease in activity (winter that was not as cold as in 2018 requiring less calorific capacity in the facility, less drilling operations carried out on the KATCO site in Kazakhstan for example).

Orano Mining's energy consumption is down once again in 2019, by around 5.1% compared to 2018, which brings the ratio down to 49.6 MWh/metric ton of uranium.

Energy (MWh)	2017	2018	2019
Energy consumed	752,225	688,043	652,728
Fossil energy consumed	513,385	442,997	397,325
Electricity consumed	238,840	245,046	242,709
Electricity consumed from non-renewable sources	238,412	244,663	242,324
Electricity consumed from renewable sources	428	383	386

Ratio (MWh/tU)	2018	2019	Trend 2018-2019
Energy consumed	51,25	49,59	- 3,3%

Between 2018 and 2019, thanks to the implementation of different levers, it has been possible to achieve a significant decrease in the following:

- fossil fuel consumption: - 10.3% (diesel, propane)
- electricity consumption: - 0.95%

The share of renewable energies still remains modest due to the lack of availability of viable renewable alternatives where sites are located.



Greenhouse Gas Emissions

The main source of global warming, greenhouse gases (GHGs) are subject to a global monitoring by Orano, whether directly produced by mining activities, or resulting from the energy consumption necessary for the proper running of the company.

As a major player in the supply of low-carbon energy, Orano is conducting a transverse process of reflection across its subsidiaries in order to reduce the GHG footprint of its activities, and to contribute to meeting the objective of achieving carbon neutrality by 2050, in accordance with the goals of the Paris Agreement.

Mining activities consume a large amount of energy, on sites which are geographically isolated and in countries where the energy mix is sometimes very reliant on carbon. This is why, in 2020, Orano Mining is launching an ambitious program to reduce its carbon footprint, by identifying major levers for the decarbonization of its activities.

Direct greenhouse gas emissions are mainly due to:

- The burning of fossil fuels: the quantities of emitted GHGs are deduced from the quantities of fuel consumed and the corresponding CO₂ emission factors.
- Decarbonation during phases involving the chemical leaching of ore using acid, and reagents (containing carbonates) put into contact with acid solutions. The quantities of CO₂ emitted can then be calculated based on the quantities of carbonate contained in the ore and the quantities of reagents used.
- Greenhouse gas emissions related to processes used in processing (oxides of nitrogen, mainly) and to the

decomposition of waste (methane). The greenhouse gas emissions are deduced from the quantities of waste produced, from the monitoring of emissions for oxides of nitrogen, and from their associated GWP (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 fluids consumed and their associated GWP (Global Warming Potential).

To successfully reduce greenhouse gas emissions, several levers are being employed by sites, such as the replacement of existing equipment by HFC-free equipment and the optimization of consumption of fossil fuels.

By way of example, it is also possible to cite the preventive maintenance operations carried out at SOMAIR to improve the capture of nitrous (NO_x) vapors resulting from acid etching and thus to limit GHG emissions.

Even if it remains difficult to have an effect 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 etching phases. These studies which are currently in the development phase already show promise.

Lastly, actions to improve energy efficiency such as the raising of operator awareness, compliance with performance objectives, the monitoring of equipment which consumes the most energy, the replacement of hardware with equipment that performs more efficiently and optimization of operating methods for items of equipment which are the source of the most emissions, have been deployed successfully since 2016. The effectiveness of these measures is clearly visible in the monitoring of sites' energy consumptions.

Globally, in 2019, a slight decrease in greenhouse gas emissions was observed.

In order to continue to optimize its energy consumption, in 2019, the Orano group launched a transverse and systemic action on the topic of energy, in particular reactivating the network of energy mentors.

More specifically, it is possible to note a significant drop in GHG emissions for the KATCO site (Kazakhstan) of nearly 35% compared to 2018. This drop is directly related to the decrease in electricity consumption.

Lastly, for emissions of ozone-depleting gases, a slight increase is to be seen compared to 2018, in particular due to maintenance works on air conditioning systems in Niger which resulted in an increase in consumption of R22 gas.

Greenhouse gas emissions (t of CO ₂ eq)	2017	2018	2019
Direct greenhouse gas emissions (GHG) - scope 1	182,888	169,440	162,093
Direct Greenhouse gas emissions (GHG) linked to the transportation of freight and personnel - scope 1	9,650	9,380	10,471
CO₂ emissions from processes including waste incineration	45,367	48,314	47,428
Direct Greenhouse gas emissions (GHG) linked to fossil energies - scope 1	133,058	114,974	102,879
Indirect Greenhouse gas emissions (GHG) - scope 2	143,774	148,531	131,883
Emissions of ozone-depleting gases	31	26.25	41.48

Ratio (t of CO ₂ eq/tU)	2017	2018	2019	Trend 2018-2019
GHG - scope 1	13.17	12.68	12.30	- 2.95%
GHG - scope 2	10.35	11.06	10.01	- 9.50%



ORANO MINING AND CLIMATE CHANGE

As a member of the International Council on Mining and Metals (ICMM), Orano Mining supports the ICMM's position on climate change. In conducting its mining activities, Orano Mining undertakes to limit greenhouse gas emissions in accordance with the environmental policy of Orano Mining and to carry out social projects and take action to conserve water and biodiversity in order to meet the challenges faced due to the consequences of climate change.

The McClean Lake site in Canada reinforced its approach to reduce GHG emissions in 2019, setting itself short- and medium-term objectives for the reduction of its various forms of consumption and its discharges.

The objectives and the results are directly transmitted to the Federal Government of Canada within the framework of a protocol binding upon all industrial operators in the mining sector.

Waste

Orano Mining assumes responsibility for its waste, whether it is conventional or radioactive waste. The company must therefore ensure that waste is traceable up to its definitive disposal or recovery.

CONVENTIONAL WASTE

Conventional waste is related to normal activity (as part of normal production) or exceptional activity and falls into two categories:

- hazardous waste (e.g. batteries, packaging for toxic substances, electronic waste, etc.),
- non-hazardous waste (e.g. household waste, rubble, scrap metal, tires, plastic, etc.).

In Kazakhstan, at KATCO, the majority of hazardous or non-hazardous conventional waste is recycled or reused - 100% of hazardous waste and 74% of non-hazardous waste.

In Niger, at SOMAÏR, over 57% of non-hazardous waste is recovered.

For all mining activities where Orano Mining is the operator, the tonnage of conventional waste decreased by more than 29% in 2019 in relation to 2018. This variation is mainly explained by better management of incoming flows and the absence of any exceptional dismantling works on sites. Moreover, the share of waste recovered increased by 47% in 2019 compared to 2018. Thus, not only are the mining sites producing less waste, but they are also improving their processes to recover this waste.



Quantity in tons	2017	2018	2019
Conventional waste	10,368	7,526	5,340
Hazardous waste*	7,214	4,749	3,439
Non-hazardous waste**	3,154	2,777	1,901
Hazardous conventional waste recovered	34	71	65.5
Non-hazardous conventional waste recovered	1,105	1,449	1,526

	2017	2018	2019
Share of waste recovered related to normal activity	10.9%	20.2%	29.8%

Example

Canada, McClean Lake site

Actions for the “in situ” treatment of soils polluted by hydrocarbons is making it possible to limit the quantity of soils taken away to be dumped.

This treatment by bioremediation consists of breaking down the hydrocarbons contained in the soils thanks to the action of bacteria over a period of 12 to 18 months. This treatment also limits the emission of GHGs which would have occurred if the soils had to be transported by truck to a storage site.

These biotertre (or biopile) bioremediation schemes are also being deployed on the Bessines (France) and Trekkopje (Namibia) sites.

Recyclable waste may also be reused externally after undergoing a radiological inspection to certify that it is not contaminated.

* 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 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

Mining waste is classified as Very Low Level Waste (VLLW) and only contains naturally-occurring radionuclides.

Such Very Low Level Waste is either put into specific surface storage, or, possibly after processing, is rendered safe for disposal via normal channels, when it is below the release thresholds defined by national regulations (if applicable).

Directives sent out to each of the operational units likely to produce radioactive waste remind them of objectives and specify the resources to be deployed in terms of organization and performance to ensure such waste is managed safely. In particular, they take action in the following areas: the strict separation of conventional and radioactive waste, the exhaustive management of such waste, the taking into account of improvements, risks related to transport, the use of any final disposal channels. These directives are in particular based on local regulations, supplemented where necessary by IAEA guides and standards.

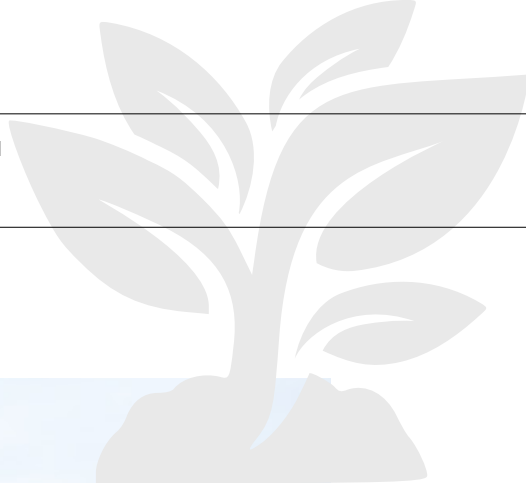
In 2019, 1,217 metric tons of radioactive waste was produced by mining entities where Orano Mining is the operator, which represents an increase of 58% compared to 2018. This increase can mainly be attributed to the works carried out on the KATCO site in Kazakhstan to treat a historical case of pollution on the site where operations are conducted.

It should also be noted that numerous remediation works carried out on our sites in operation or undergoing remediation have led to the production of a significant volume of waste.

The case of the Mounana 200 project can for example be cited (3,324 m³ of waste produced) (cf. p.28) and the recovery of soils marked on the surface (66,054 m³) related to the accidental spill which occurred on the SOMAIR site in Niger (cf. p.76). This waste is stored directly on the sites under conditions of safety and security which comply with the regulations in force in the countries where we operate.

Tons	2017	2018	2019
Total mass of operational radioactive waste, recovered or disposed of in approved channels	698	772	1,217





Biodiversity and classified sites

As a responsible mining company, Orano Mining attaches a great deal of importance to the protection and conservation of biodiversity. This is why, right from the exploration stage, Orano Mining takes action to minimize its impact on biodiversity as much as possible.

For example, for several years in Mongolia, the road network has been optimized to ensure that the number of tracks used is kept to a strict minimum. These tracks are maintained on a regular basis to reduce the dispersal of dust which may collect on vegetation by the side of the road. Access to them is now sealed off when they are not necessary, to allow vegetation to grow back.

In the same way, the entire drilling process has been improved to reduce its environmental footprint. Optimized platforms have been installed in order to:

- avoid the need to cut down trees or at least allow the number of trees cut down to be reduced.
- reduce the consumption of natural resources, water in particular.

Migration routes of animals and in particular livestock are also taken into account in the exploration program.

Taking action to protect biodiversity

Some mining sites are located close to zones which are rich in biodiversity. In 2019, we undertook studies and actions to preserve sensitive zones with third parties, such as local communities, consultancy firms, university specialists or nature conservation bodies.

In Canada, teams have started to work on a study project concerning the caribou, its habitat and its movements in collaboration with the University of Saskatchewan.

In Mongolia, we are pursuing our project to replant saxauls, iconic shrubs of the Gobi Desert, in collaboration with a consultant who is an expert in the field, with the national University of Mongolia and with a French international research and cooperation agency.

Thus, among the GRI's list of indicators, we have selected GRI 304-4, deemed particularly relevant today for monitoring the potential impacts of our activity on biodiversity. GRI 304-4 reports 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) and whose habitats are situated in areas affected by our activities, classified by level of risk of extinction:

- critically endangered
- endangered
- vulnerable
- near threatened
- least concern

In the same way, we list UNESCO World Heritage sites around our sites and the actions we take to preserve them.

These two indicators allow us to determine whether our activities are liable to pose a threat to certain plant and animal species or to World Heritage sites and to take the necessary measures to avoid harming them and to prevent their degradation.

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)

Examples

In Kazakhstan, in the KATCO subsidiary

An inventory was carried out in 2010 to cover the scope of our licenses

The table below lists the species present in these zones and listed in the IUCN Red book. We note that since then, employees of the company have spotted the great bustard (*Otis tarda*), a bird that was not observed during the 2010 inventory but is classified as Vulnerable on the IUCN Red list.



In close proximity to KATCO's license areas, there are not specifically any areas of high value in terms of biodiversity.

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

In Kazakhstan, there are 3 cultural heritage sites and 2 natural heritage sites on UNESCO's World Heritage List. The closest of these sites is located nearly 200 km from our mining operations

In Canada, in the Athabasca Basin region

Located more than 400 km away from our surface lease, the Wood Buffalo National Park was classified, in 1983, as a UNESCO World Heritage site. One of the most ecologically complete examples of the North American Great Plains-Boreal Grassland ecosystem, it is home to a great concentration of migratory wildlife and an important wild bison population, as well as being a breeding habitat for the endangered whooping crane (species recognised as Endangered). Its landscapes, the large inland delta, salt plains, and gypsum karst are natural phenomena representative of their kind.

But in close proximity to the license areas of Orano Canada Inc., there are not any areas of high value in terms of biodiversity.

The survey of habitats which was 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 species as Endangered; but also 38 plants in the Least Concern category and one plant species classified as Vulnerable which may potentially grow in the region. At local level, within the perimeter of McClean Lake, including our surface leases, 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 surface leases 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. Surveys have found only 2 animal species of Special Concern in the local assessment boundary (watersheds) and no plants classified under SARA.

In France

Sibthorpia europaea is a species of high conservation importance as its area of distribution is very limited. The Monts d'Ambazac are home to a population isolated from the main bastion located in Brittany, which it is particularly important to protect.

The catchment area of the Étang de la Crouzille includes several former sites of uranium mining operations. Ahead of the redevelopment works scheduled to be carried out by Orano on the Ruisseau des Sagnes stream which flows into the lake, the decision was taken to draw up an exhaustive inventory of the species of fauna and flora in the area of the wetlands of the Ruisseau des Sagnes that could be impacted by these works.

The surveys revealed the presence in this zone of sites¹ where the species *Sibthorpia europaea* is present in isolation from the main areas where it can be observed which are located in Brittany.

With the consent of the State authorities, the decision was taken to move this plant to new sites with similar conditions of hygrometry and sunlight that will not be impacted by the works.

This action, which started in 2017, was a test, as no experience feedback was available. These measures required a survey of the *Sibthorpia* sites impacted by the works to be carried out in advance, with nursery plantings and reintroduction tests with monitoring of the progress of the new reintroduction sites. The results obtained in 2019 show that the *Sibthorpia europaea* has developed exceedingly well in the areas of reintroduction. Regular annual monitoring will continue to confirm the success

of the test to reintroduce a species of high conservation importance and to add to the data already available.

This project, carried out by our teams in collaboration with the CEN² and the CBN MC³, illustrates the complexity and the periods of time necessary to conduct a study of the reintroduction of a plant species, which it is important to protect.

- 1 The sites correspond to the locations where *Sibthorpia europaea* was found to be present in a previous study.
- 2 Conservatoire d'Espaces Naturels de Nouvelle-Aquitaine (Nature conservation body for Nouvelle-Aquitaine)
- 3 Conservatoire Botanique National du Massif Central (National conservatory and botanical garden for the Massif Central)



Large development of *Sibthorpia europaea* - 2019
(Picture CEN Nouvelle-Aquitaine - 2019)



In 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 entered on the IUCN red list for risk of extinction.

In Mongolia

In Mongolia, protection of saxauls and inventories of animal species in proximity to our project

On the boundaries of the Zoovch Ovoo license areas is the forest of Khar Zag, which is protected locally, and consists of 2,512 hectares of saxauls (species which are iconic symbols of Mongolia). Campaign to raise awareness about protection of the saxaul are organized on a regular basis for project employees and subcontractors. 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 part of its lands.

Inventories of animals present on our Zoovch Ovoo and Umnut sites have been carried out as part of baseline studies.

Thus, if we take the class of the Aves (birds, IUCN status): 11 species classified as of least concern and 1 species classified as near threatened were observed.

Inventories of other animal species have been drawn up in accordance with the classification of the red list for Mongolia. These notably include the presence of the gazella subgutturosa (vulnerable) and equus hemionus (endangered), of 7 species classified as least concern and 4 classified as near threatened. It should be noted that the gazella subgutturosa is also classed as vulnerable by the IUCN, but equus hemionus is recognized by it as near threatened.

In close proximity to Badrakh Energy's license areas, there are not specifically any areas of high value in terms of biodiversity.

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 in French as the Avoid, Reduce (Restore), Compensate sequence ("séquence ERC" - "Éviter Réduire (Restaurer) Compenser") is implemented from the very first phases of the project, in particular in accordance with the recommendations of the Environmental Impact Studies. Our objective being to achieve, at least, no net loss of biodiversity.

Within 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. This first step of the preliminary study has allowed us to define research goals which will enable us to adjust our offset principles.





Environmental Studies

Orano Mining conducts environmental studies throughout the life cycle of the mining and industrial projects, whether in response to regulatory requirements or voluntarily in order to better understand the impact of our activities.

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 must be submitted for public consultation to be approved by the local authorities.

These studies make it possible to map the impacts generated by a new project, improve understanding of the associated environment (e.g. biodiversity inventory, socio-economic status of the region), identify preventive or mitigating measures to be integrated preventively into our facilities in order to reduce risks at the source. This study also reports 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 2019, several impact studies were conducted on our sites:

- **In Namibia**, the impact study relating to the desalination plant has been validated by the competent authorities.
- **On our Mining Closure France (AMF) sites**, an update to the impact study has been carried out for the perimeter of La Ribière (at the scheduled frequency), as well as concerning photovoltaic facility projects.
- Lastly, **in Kazakhstan** the impact study for the Tortkuduk South mining project has been finalized and validated by the authorities during the course of 2019.
- For the perimeter of our exploration licenses **in Uzbekistan**, the future impact studies will start to be carried out in 2020.

Though this is not an exhaustive list, a few examples of studies conducted across our different sites is provided below.



Examples



Canada, McClean Lake

In 2019, we have worked on the studies below:

- The potential of passive treatment of selenium (Se) and arsenic (As) in the water – preliminary research conducted in 2019, which is to continue in 2020
- Studies of transfer of metal from sediments in a benthic environment – research in progress with the University of Saskatchewan
- Further reduction in greenhouse gas (GHG) emissions thanks to the maintenance and replacement of steam traps in the plant
- Submission of the notification for the extension of the Tailings Management Facility (TMF) (note: this is not a full Environmental Impact Statement (EIS), as the project does not require a full EIS)
- Collaborative research concerning the caribou with the University of Saskatchewan
- Analysis of the in-situ tailings samples collected in 2018 and study of the results with a view to making progress on the Tailings Optimization and Validation Program (TOVP), which will be included in the technical information document on tailings for submission in 2020

Mongolia, Badrakh Energy

- Replantation offset project (saxaul)
- Preliminary study of an ecological offset scheme in an arid ecosystem in an area of woodland and pasture
- Census and study of movements of populations of mammals and aves
- Third party study of the environmental monitoring program



ENVIRONMENTAL MONITORING

As part of its CSR initiative, Orano Mining has implemented environmental monitoring tools on its mining sites. Thanks to this initiative, Orano Mining is able to ensure that the impact of its mining activities is managed and that they do not pose any risk to the environment or local populations.

The basic principles of monitoring are recommended in the impact studies. On the strength of several years of sharing of experience, an annual environmental monitoring program is drawn up by the teams of each site. These programs are validated by the authorities.

Periodically, inspections or audits carried out by a third party, required by the authorities or initiated on a voluntary basis, are conducted 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 act in response to even the slightest alert.

AIR MONITORING

Air monitoring chiefly consists in measuring exposure to ambient radioactivity, but gaseous discharges from ore processing operations are also monitored. Measurements are taken, depending on the site, of concentrations of gas either in the air or at the outlet of chimney stacks. Measurements of radioactivity are taken continuously, both at the site and in the nearby area, using specific dosimeters.



Measurements of dust (PM) may also be taken in particular during worksite phases or where there is planned to be heavy traffic in proximity to residential areas.

WATER MONITORING

We are running campaigns to monitor the quality and quantity of aquifers and surface waters using a piezometric monitoring system upstream and downstream of our activities.

Hydrological and hydrogeological studies are performed at all sites, well before mining operations begin. These studies allow a better understanding of the environment type and the composition of the natural water so that we can adapt

our projects accordingly. At all sites where it is necessary, the water is first sent through a treatment station before being released back into the environment in conformity with the environmental and health standards in force. Our experts are also studying the various water treatment methods to improve the environmental efficacy of the processes applied.

MONITORING OF PLANTS AND THE FOOD CHAIN

Sampling and analysis are regularly carried out in the food chain and on plants, including aquatic and land fauna, aquatic flora, the fruit and vegetables produced in nearby gardens, and the milk supplied by animals that have grazed in meadows near sites or drunk from receiving water courses.



SOIL MONITORING

Soil monitoring allows any zones where there are anomalies to be identified. If such zones are pinpointed, soil decontamination measures are applied to restore the zone to levels which comply with regulations.



Monitoring of Orano Mining Structures

Two types of structures are taken into consideration: uranium tailing facilities dams and effluent storage ponds.

URANIUM TAILING FACILITIES DAMS

List of uranium tailing facilities dams (Orano Mining)

For 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 independent 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	2018	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	2015	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	2015	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	2015	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	2015	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	2015	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)	Operating	a/c 1978	Waste rocks / banco / Vertical	5 to 11/1,400	18	-	-	Inspection, pond levels	Yes - by reprofiling and cover

* according to geotechnical recommendation > 1.5

IN FRANCE

There are 9 structures of 15 to 65 m in height and 110 to 1,700 m in length but only one with the presence of a cover water (Bois Noirs Limouzat site). All these sites are remediated ones.

The structures are constructed using sand from the cycloning of tailings, or mining waste rock. Only the Bois Noirs structure (H max.: 42 m, L: 508 m) is considered to be a type A dam subject to internal monitoring and regulatory monitoring. The other structures in France are subject to internal monitoring by Orano and are inspected by an external expert every 5 years.

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

In addition, within the framework of the French national plan for the management of radioactive materials (PNGMDR, see p.98), a working group, gathering both experts and associations, continues its work on the definition of the criteria to be taken into account to conduct a study of the structures very long-term stability.



INTERNATIONALLY

In Gabon, Canada and Niger, the structures, made of waste rock, are lower in height. In Gabon, the remediated site is the only dam with a cover water. All these structures meet regulatory requirements and are subject to internal monitoring by the Group, with certain structures undergoing inspection by an external expert.

EFFLUENT PONDS

To store effluents, ponds are constructed as superstructures or semi-underground. They are subject to regular monitoring, on a daily or weekly basis, depending on the case concerned.

- **KATCO:** 4 ponds to manage drilling muds constructed out of sand, a material present on the site, and of around 5 m in height.
- **SOMAÏR:** 4 ponds are in operation, constructed out of waste rock of around 7 m in height.
- **COMINAK:** 6 ponds are in operation, constructed out of waste rock of around 7 m in height.

INTERNAL AUDIT

Since 2014, the Internal Audit Department of Orano has conducted two studies and issued recommendations concerning the organizational measures to be implemented for the monitoring of structures.

A notable effort has been conducted in recent years on sites to improve their monitoring in operational and organizational terms. The general state of structures is satisfactory but some of them need to be monitored more closely.

Subsequent to the recent events which occurred in the mining industry (Canada, Brazil) and in accordance with ICMM commitments, we provide details here above of information concerning Orano Mining's structures and dams.

Accidental spills

Preventing accidental spillages is something our teams Orano Mining have been working on for several years.

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

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

- Adopt a proactive approach (as of the phases of design and construction 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 specific electronic tool known as AHEAD. The Orano group has also developed a new severity classification scale named "ASSESS" for near-events and environmental events which has been tested in Orano Mining. It aims at encouraging return of experience and feedback within the group.

Example

Rupture of dike on the SOMAÏR site in Niger

In August 2019, as a result of exceptional rains, an accumulation of water was observed at the north-west corner of the North dike enclosing the tailings pile of the SOMAÏR mine. This accumulation resulted in the rupture of a small section (10 linear meters) of this dike with a spill of a mixture of rain water, rocky materials and production solution into the plant area. This incident did not result in any injury or contamination to personnel on the site. The crisis organization put in place from the start of the incident made it possible to cordon off the impacted area and rapidly deal with the rupture of the dike and the recovery of the spilled substances. These actions made it possible to limit infiltrations of water into the soil and prevent any pollution outside the site. The results of radiological measures taken after treatment of the spill show a return to the normal situation.

This dike rupture is a rare event on our sites in operation. It was declared to the competent authorities in Niger (National Bureau of Environmental Assessment of the Ministry of Environment of Niger) which conducted an inspection on site.

An action plan founded on the lessons learned from this incident is currently being deployed for the purposes of water management in the event of heavy precipitation on the different structures of the site and to improve the resilience of the site to the consequences of climate change.

This type of incident is subject to feedback and a lessons learned process, in particular with the COMINAK site, to help us to improve our procedures and our practices.

During the course of 2019, accidental spillages (effluents, acid solution) related to our operations took place. They remained within the sites concerned and had no significant environmental consequences and no impact outside our sites. Corrective clean-up measures were taken at the sites.

Innovation serving the environment

While our mining activities comply with regulations in force and follow the best practices in the sector under a continuous improvement approach, it is also our responsibility to implement scientifically-proven innovative solutions that are in line with the expectations of our stakeholders (authorities, associations/NGOs, employees, governments, the scientific community, etc.).



The environmental issues on which we concentrate our research efforts are:

- issues relating to water management and treatment
- understanding, predicting and modeling contaminant migration over the long term,
- anticipating regulatory changes and the requirements of the authorities,
- developing new sampling and analysis tools to effectively manage environmental impacts.
- biodiversity management

Our expertise, applied on site through close collaboration with operating teams, has been developed thanks to our international teams of researchers and our college of experts, and in partnership with external bodies from academia and the professional world (the universities of Poitiers, Paris VI, Paris VII, Granada, Brussels, Manchester and Washington, and the Ecole Polytechnique Fédérale de Lausanne, as well as the CEA, CREGU, NAGRA, Mines ParisTech, CIRAD).



“Envir@Mines” program

Our teams of researchers and experts are currently working in the following fields under our “Envir@Mines” research and development program:

- the long-term future of processing waste in France, Niger and Gabon,
- the environmental footprint of waste rock in France under the French National Plan for the Management of Radioactive Materials and Radioactive Waste (PNGMDR),
- water treatment, notably in preparation for regulatory changes in France,
- understanding the long-term rehabilitation of aquifers used for in situ recovery in Kazakhstan and Mongolia,
- the development of new measurement technologies.

13 collaborative partners

163 scientific communications

10 theses defended

13 public reports

1 Accreditation to Supervise Research (HDR)

4 patent applications file

Consult the list of scientific studies published by our teams



FIND OUT MORE on the French legal framework

Since 2014, actions relating to the circulars of July 22, 2009, and August 8, 2013 (the completion of environmental assessments and inventories of mining waste rock reused outside mining sites), and to the French National Plan for the Management of Radioactive Materials and Radioactive Waste (PNGMDR) (regarding the stability of dikes, water treatment, the effectiveness of coverings with respect to radon, waste rock stockpile surveys and the study of sedimentary accumulations downstream of sites) have been ongoing, resulting in a number of reports being submitted to the public authorities.

Health, Safety and Radiation Protection



WHY?

Our strength lies in the men and women who make up Orano. Our priority is to protect their physical and mental health. The success of our Group development plan relies on it.



OUR APPROACH

Our employees may be exposed to several risk factors that could affect their health, whether on industrial sites, in office premises or during business trips to countries where Orano Mining operates.

To maintain a high level of occupational health and safety, a great number of information and prevention actions are undertaken. The Orano group aims for excellence in occupational safety. Our permanent goal ultimately is to prevent fatal or serious accidents, achieve zero lost-time accidents and zero impact of our activities on the health and safety of our employees, external staff and everyone living close to our sites.



OUR RESULTS IN 2019

2.5 mSv* average occupational radiation exposure for employees

0 employees exposed to a dose exceeding 20 mSv (over 12 rolling months)

Lost Time Injury Frequency Rate (LTIFR): **1,4**

* Timeframe July 2018 - June 2019

HEALTH, OCCUPATIONAL SAFETY AND RADIATION PROTECTION OF MINING ACTIVITIES

Orano Mining has proactively appropriated and applied the 2017 - 2020 Orano policy to ensure the health and safety of its employees.

Refer to our Safety Security Radiation Protection Policy 2017 - 2020 (available only in French)



More information on Orano Annual Activity Report: chapter 3.3.4 "Risks related to Health and Safety" / chapter 4.3.2.3 "Specific measures relating to subcontracting"



The objective of Orano Mining is to harmonize our practices as much as possible and to apply international standards in the field, whilst rolling out the Orano group policy with the aid of the following four pillars:

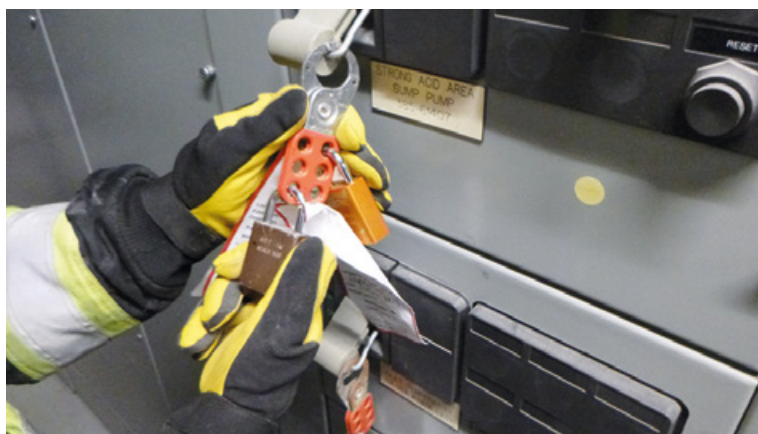
Leadership and safety culture

To strengthen safety governance, we foster interaction in the field between management and employees and we organize a day dedicated to safety on all sites. We have steering Safety committees to meet at the highest level of Orano Mining and we implement a health, safety, environment and radiation protection action plan for each site. Lastly, we have just finalized a three-year training cycle for intermediate managers, in order to strengthen the safety culture.

In order to raise awareness on occupational health and safety on all sites, we have targeted actions concerning subcontractors, communication campaigns, mobilization to encourage our employee initiatives and participative safety visit.

We learn from our successes and from our errors by stepping up the analysis and sharing of operating experience and best practices.

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



Compliance with fundamentals

We are implementing the 5 safety anchors and 7 safety standards common to the whole Orano group, and we are harmonizing practices. We are also implementing procedures specific to the mining business, and strengthening management systems at the sites.

At the same time, dedicated projects are implemented for the most accident-prone activities (health, safety and industrial risks).



Organization and skills

We develop Health, Safety, Environment and Radiation Protection skills among managers and employees and set individual safety targets.

Audits of medical facilities are also conducted to better organize and optimize health schemes.

Each local action plan is challenged by the team from Orano Mining's Health, Safety, Environment and Radiation Protection Department to ensure coherence, resources and leadtimes.

Risk factor prevention

Our employees are exposed to different categories of health risk, including conventional risks that may occur on an industrial or mining site, but also the exposure to ionizing

radiation, which is intrinsic to uranium ore mining and the production of uranium oxides (U_3O_8 - Yellow Cake).

Our employees may also be exposed to psycho-social risks, noise, dust, or chemical substances that may potentially lead to work stoppage or occupational illnesses.

This is why risk prevention is among our priorities.

Other factors may be directly linked to risks that are endemic in the country.



OCCUPATIONAL HEALTH

We deploy, through our health policy, a health service in all the countries where we operate by ensuring prerequisites for occupational health and healthcare. We also provide support for medical evacuations for local staff and expatriates.

In the course of our activities, a range of provisions are designed to maintain a high level of occupational health for all workers*.

MEDICAL MONITORING

Occupational medicine:

- Each site has set up an organization for the staff medical monitoring, starting with a pre-recruitment medical examination and continuing with periodic check-ups (whose frequency is determined by the risks associated with the job), always complying with the regulations of the country
- Immunization monitoring is organized according to the country regulations
- Employees receive regular first aid training and refresher courses.

Healthcare:

Each site has its own health organization, with medical standards. The healthcare process is defined, with procedures and flow diagrams for medical evacuations.

PREVENTIVE HEALTH

Preventive health is also conducted, through permanent health surveillance, regular communications (country health sheets, pathology data for endemic diseases, medical alerts). A quarterly "Advice for travelers" training session is organized for staff leaving on international missions.

WORKSTATION RISK ASSESSMENTS

Workstation risk assessments are taken into account on each site in accordance with local country regulations and the Orano health, safety and radiation protection policy. Special attention is also paid to psycho-social risks.

HEALTH OBSERVATORY

The Health Observatory deployed in Niger (Health Observatory for the Region of Agadez - OSRA), was set up at the end of 2011 to carry out post-professional monitoring of retired employees of SOMAÏR and COMINAK likely to have been exposed to ionizing radiation in the course of their activities.

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). Were cases of occupational illnesses attributable to exposure to ionizing radiation to be brought to light, care provision would be provided by the competent body of the country in question or, failing that, by the Health Observatory.

The medical consultation that forms part of this post-professional monitoring is organized every 2 years and includes an interview with a doctor, a clinical examination, a chest x-ray and a blood test. It is carried out by independent doctors whose services are provided to the Observatory.

At the end of 2019, in total more than **4,732 post-professional monitoring consultations have been carried out for former employees of SOMAÏR and COMINAK** in Niger and no occupational diseases related to exposure to ionizing radiation have been declared.

Examples of actions

Uzbekistan

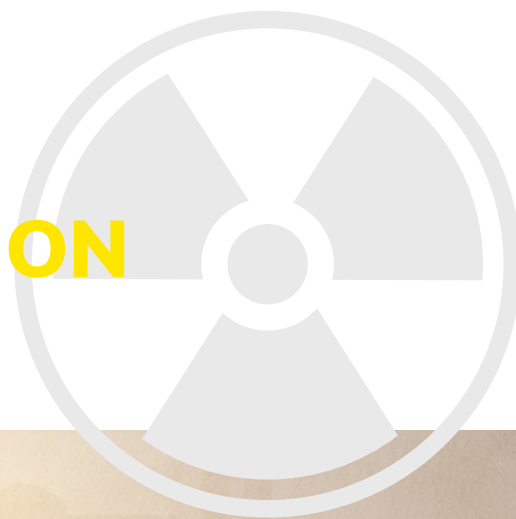
In 2019, we visited national, regional and local public hospitals in the area of our future activity, in order to define the entity's health organization, as regards both occupational medicine, and the care chain providing treatment when a health incident occurs.

France

We strengthened the preventive work on Health for workers posted internationally, closely coordinating with independent occupational health centers: Communication, training, procedures to inform before departure (providing contacts, country health sheets and other information on specific features of the country).

* Employees and subcontractors

EMPLOYEES' RADIATION PROTECTION



In terms of radiation protection, as stated in the Group's nuclear safety charter, Orano is committed to a proactive approach and emphasizes the priority it places on risk management based on the "environmental safety" and "health, safety and radiation protection" policies.

Orano is committed to keeping personnel exposure to ionizing radiation in its facilities as low as reasonably achievable in application of the ALARA principle (As Low As Reasonably Achievable), and has adopted a continuous improvement program to that effect.



In countries with less stringent legislation, Orano is committed to apply the International Commission on Radiological Protection recommendations which sets a limit of 20 mSv (over 12 rolling months) as the maximum individual dose received by workers exposed to ionizing radiation in its facilities.

Radiation protection is taken into account from the design phases of projects. Facilities are built to limit exposure at workstations. Zoning, ventilation and structural components are the most important factors for sound design.

OUR RESULTS IN 2019

0 employee exposed to a dose exceeding 20 mSv (over 12 rolling months*)

2.5 mSv**
average occupational radiation exposure for employees

15.9 mSv**
maximum radiation exposure within Orano Mining

2.0 mSv**
average occupational radiation exposure for sub-contractors

* French regulations: dose limit applied on all sites over 12 rolling months

** Timeframe July 2018 – June 2019

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.

ALARA

ALARA is the acronym for “As Low As Reasonably Achievable”. It is one of the three main fundamental principles of radiation protection.

The purpose is to reduce worker exposure to the lowest level possible, taking into account technical, economic, and social factors.

The Group adheres to this approach and applies this principle throughout its facilities.

In the uranium mining sector, as in other sectors, such as the nuclear industry, some fields of medicine, or research, ionizing radiation are an integral part of an employee's everyday work.

Exposure to ionizing radiation is a form of occupational risk like any other, such as exposure to noise or risks of falls from height. It does however have a number of features which make it specific, in particular that of being an invisible risk that requires high-performance equipment to measure individual exposure to it.

The radiation protection of workers includes the whole coherent set of activities with the purpose of preventing and controlling any risk of exposure of workers to ionizing radiation by guaranteeing adapted and relevant dose rate monitoring under all circumstances.

Therefore, it is necessary not only to assess occupational risks of a radiological nature and to improve working conditions to optimize the exposure of personnel, but also to foster a culture of radiation protection by offering training and expertise.

For more information on radiation protection:



Means of exposure to ionizing radiation



Radiation protection: principles and regulations

Examples of actions recently implemented

Niger

Equipment to monitor the activity concentration of radon has been installed in the underground mine at COMINAK (Niger).

It means that workers can know directly the proportion of radon in the atmosphere, and thus can take action faster if the ambient conditions degrade. The time limit for jobs at the underground mine changed in April 2018, and the impact on the radiation protection of workers has been reviewed. Our sustained efforts to control the radon, dust and gamma radiation in the atmosphere have allowed us to maintain the dose objectives for underground working, in a demanding operational environment.

A number of important radiation protection measures, taken in 2018 and continued in 2019, have contributed to the optimization approach by helping to reduce the average and maximum doses. They included more detailed count maps, control of atmospheres and improvements to the preventive maintenance of the plant equipment that presents the greatest radiological challenges.



Continued work on the radiation-protection culture

The Group is continuing to work on the radiation-protection culture via the Department for Health, Safety and the Environment (*Direction Santé, Sécurité, Environnement - DHSE*). The work typically includes communication media, such as the “Are you sure?” fact sheets covering topics such as failing to wear dosimetry equipment in the regulated areas, or checking that personal protective equipment (PPE) is worn correctly.



The objectives are to encourage useful dialogue so that everyone can make sense of measures and information relating to radiation protection; to broaden the approach and address local challenges by drawing from more varied information sources; and to promote a global approach to radiation protection issues.

Training is required under the regulation and must be given to each worker subject to dosimetric monitoring. Apart from these requirements, we also want to respond to particular requests for information and training, in line with regulatory obligations.

Thus in 2019, training in radiation-protection fundamentals was organized in our Paris establishment for Orano Mining staff (33 people trained).

Mongolia

In December in Mongolia, over 45 people with a variety of perspectives, Mongolian officials, scientists and other stakeholders in the activities of Badrakh Energy (Orano's subsidiary in Mongolia) were invited to take part in a radiation-protection seminar organized in Ulaanbaatar. It was led by the radiation-protection manager from Orano Mining and trainer at the Mining College.

KATCO (Kazakhstan)

Preventive maintenance helps restrict operators' exposure to ionizing radiation even further.

KATCO, Orano's joint venture in Kazakhstan, is continuing its preventive maintenance program at its Tortkuduk plant, covering equipment crucial to the uranium treatment process such as the calciner, the crystallizer and the packing unit.

The program is improving overall operational performance, and has also proved very worthwhile in reducing operators' exposure to radiation.

Although staff exposure at KATCO is low, because the ISR technique is used (the average exposure of a KATCO employee in 2018 was 1.5 mSv and the maximum dose at the end of that year was 3.1 mSv), the most significant radiological issues are in the areas downstream of the process, where employees precipitate, dry, calcinate and condition the uranium.

It was therefore important to reduce the number and duration of interventions to cut down exposure in the plant. The calciner building has also been renovated, so that dust accumulation on the floor is better controlled and the



work of the decontamination services is easier. Operator procedures have also been reviewed with the same objective, to improve the area's radiological cleanliness.

Between 2016 and 2018, KATCO reduced operators' average radiation dose by 30% and the maximum dose by 45%.

This level of control over exposure was confirmed in 2019, when the average exposure of a KATCO employee was 1.4 mSv and the maximum dose 3.1 mSv.

OCCUPATIONAL SAFETY

A commitment at all levels within the company

The occupational safety objectives of Orano Mining are to ensure the prevention and control of all industrial risks related to our activities, both for our employees and our external staff, through:

- daily involvement of our managers in strengthening the safety culture of our teams;
- deploying applicable safety standards and safety anchors in all entities;
- evaluating risks in all our activities using a gradual approach and a common methodology;
- involving all employees in the detection, elimination and control of dangerous and risk-prone situations;
- collecting and exchanging best practices in occupational safety;
- an innovative safety organization, by systematic analysis of any event with high severity potential, known as HIPOs*, with the objective of anticipating any event liable to have serious or fatal consequences;
- sharing the experience feedback from our accidents among the entities of the Group and with our industrial partners.

A specific Safety governance structure

Governance has been strengthened by refocusing on a restricted number of players, and is administered by a steering Safety committee. Made up of the main directors of Orano Mining, this reflection and action committee gathers two to three times a year.

The steering Safety committee is responsible for planning actions (roadmap), the supervision of their application, as well as for monitoring them and ensuring continuous improvement in safety results.

The safety representatives of Orano Mining are responsible for deploying these actions in the territories where it is based, with the assistance of managers and all employees who are responsible for their implementation. This occupational safety policy applies to everyone, including employees of Orano Mining subsidiaries, sub-contractors or visitors.

Every year, with a view to achieving continuous progress towards the goal of zero accidents, the steering Safety committee of Orano Mining sets intermediary objectives, which apply to everyone.

In 2019, the Orano Mining Safety Committee established four priority actions:

- Finalize the training cycle to improve the safety culture, by ensuring that good practices are in place
- Improve the monitoring of the actions decided after analyzing HIPOs* and serious accidents, so that the actions are better and more effectively implemented, and good practices are shared
- Reinforce the questioning attitude, and bring the detection and treatment of safety deviations down to the most local level, returning to basics to ensure the rules are strictly followed and the anchors automatically applied
- Strengthen the use of pre-job briefings



* HIPO: A High-POtential incident: one that could under other circumstances have been serious

Our successes and principal actions in 2019



- Instituting pre-job briefings at sites
- Strengthening the procedures for tagout/lockout and lifting tagout/lockout
- Monitoring the action plans resulting from the HIPOs review, with over 85% resolved
- No fatal accidents or accidents leaving permanent disability
- Making numerous support visits to on-site teams, and maintaining a good dynamic during participative safety inspections, including a safety support and assessment mission at COMINAK and SOMAÏR, performed jointly

- by health & safety teams from Orano and Orano Mining
- Governance, re-scoping the steering committee, with three meetings held in 2019
- End of the safety-culture training cycle: over 1,400 staff trained in 3 years on 6 sites. Target participants were intermediate managers, so that the actions decided would be more than transient, teams' commitment would be challenged and positive steps to safety highlighted
- The launch of the Pareto principle for safety as part of participatory visual management
- Improving the sharing of good practice: more than 12 sets of experience fed back/shared via the sites' Health & Safety network, and 3 good practices via the Executive Committee (COMEX)
- Reinforcing the supervision of subcontractors (Mounana 200 work site in Gabon)
- Efficiency in the field: steps to simplify and improve the approach to managing action plans resulting from field inspections (participative safety inspections (Visite Sécurité Participative - VSP)/Manager in the Field - MIF). Pilot completed at Bessines
- Implementation of the Safety passport in Canada
- Strengthening our fundamentals with a maintenance workshop on safety and associated actions, a review of PPE (Personal Protective Equipment), chemical risk, work at height and tagout/lockout at the KATCO site in Kazakhstan, detailed review and revision of the traffic plan and the safety anchors when moving around at SOMAÏR in Niger.

FOCUS ON ANCHORS AND STANDARDS

In 2018, the Orano group updated its program devoted to safety culture, involving all employees and subcontractors.

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

5 safety anchors:

- Protected mechanical handling
- Walking safely
- Safe LOTO (lock out - tag out)
- Work at height with protection
- Personal protective equipment (PPE) worn

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

7 standards:

- Pictogram strict compliance
- Floor free of loose cables
- Smoking only in dedicated areas
- Alcohol and drug prohibition
- Safety induction and training
- 5 minutes safety
- Hold on to handrails

Working together for safety!

5 anchors

- SAFETY EQUIPMENT WORN
- PROTECTED MECHANICAL HANDLING
- SECURED WORKING AT HEIGHT
- PEDESTRIAN AND VEHICLE TRAFFIC SECURED
- SAFE LOTO (LOCK OUT - TAG OUT)

7 standards

The 5 anchors must be complied with to prevent employees being exposed to severe and fatal hazards.

7 standards correspond to a rule or best practice whose application contributes to the management of risk and the prevention of accidents.

5 anchors and 7 standards to ensure the safety of everyone!

orano

The targets assigned for 2019

0 fatal accidents

LTIFR ≤ 0.7 i.e. no more than 10 lost-time occupational accidents.

TRIR ≤ 3.2 i.e. no more than 36 accidents without lost time.

2019 safety results

0 fatal accidents

LTIFR = 1.4 which corresponds to 19 accidents with lost time during the year.

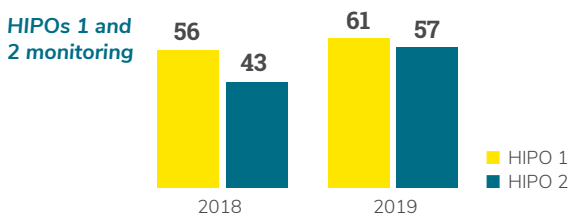
TRIR = 4.2 The corresponding Orano severity rate is 0.03.

In 2019, the safety results showed for the second consecutive year in this decade that there had been neither a fatal accident in Orano Mining nor a work-related accident resulting in permanent disability. All Orano Mining sites have continued to demonstrate a good dynamic in reporting near-misses and HIPOs so that we have been able to continue our efforts to analyze these incidents and adopt preventive measures.

Nevertheless, we did not meet our ambitious safety objectives this year. There were a significant number of work-related accidents, both with and without lost time, and the frequency rates for both lost-time accidents per hours worked (LTIFR/TF1) and all accidents per hours worked (TRIR/TF2) were higher than the defined objective.

Main risks of lost-time occupational accidents

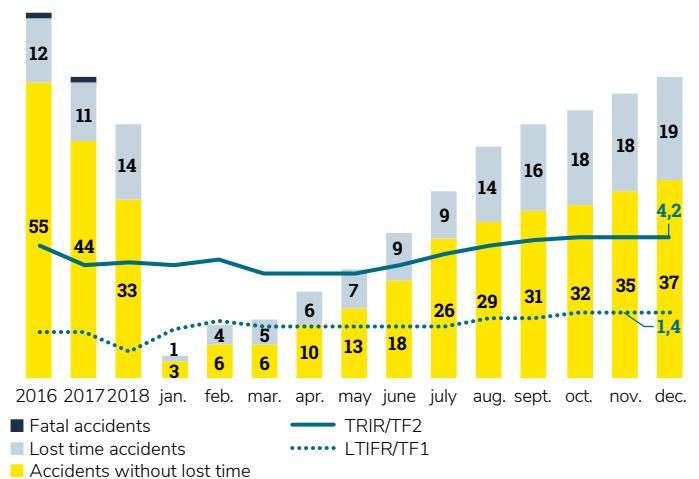
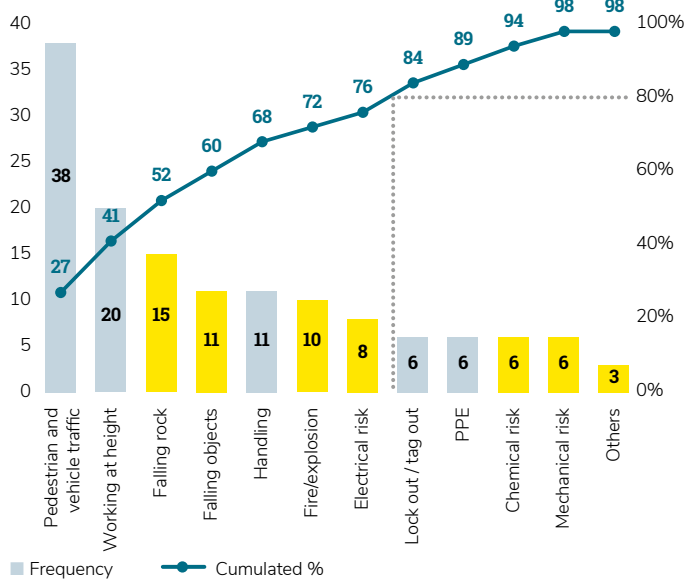
We continued to identify deviations in the field, to report emerging trends and near-misses, and to implement corrective actions, so that the level of HIPOs* reporting remained buoyant.



An analysis of events and near-events reported in 2019 shows clearly that too many safety anchors are involved in HIPOs.

The main risks in events that actually or nearly happened and that had high potential for a serious accident are:

- 27%** Pedestrian and vehicle traffic
- 14%** Working at height
- 11%** Falling rock
- 8%** Falling objects
- 8%** Handling
- 18%** Other



* HIPO: High Potential Incident
 HIPO 1: Could have resulted in 1 or more fatal accidents
 HIPO 2: Could have resulted in 1 or more lost-time accidents with permanent disability

Examples



A connected stick to assist prospector geologists

The Assistant Prospector (AP) geologist intervenes prior to loading into trucks in order to perfect the sorting of ore identified during the probing survey.

Thanks to a newly developed smart tool currently being tested, he can now measure gamma radiation more precisely on a tablet. Beyond operational gains allowing for real-time visualization and a better quality of sorting thanks to greater homogeneity of the ore loaded into trucks, this equipment also helps to improve working conditions for APs by reducing difficult postures and by decreasing exposure to gamma radiation

by putting distance between the operator and the ore measured.

Until now, in the SOMAÏR mine (Niger), the AP has determined his location using printed maps and taken selectivity measurements on the belt and at ground level. He is assisted by a Geiger-Muller Tube (GMT)-equipped gamma detector without location logging.

The new equipment developed is part of the modernization of the site's geological inspection tools.



Monitoring of safety deviations: from analysis to action in the field

Deployment of Pareto* safety as part of the visual management systems of entities of Orano Mining.

This best practice has been deployed on two of our sites, COMINAK (Niger) and Bessines (France). This tool allows our teams to report Safety deviations observed, as well as any situation generating a risk in an area potentially resulting in bodily injury to an employee of Orano or a sub-contractor.

It is the operators who report these situations in the course of carrying out their daily activities with a view to encouraging the monitoring of deviations as close to the ground as possible. At each team meeting based around Visual Performance Management (VPM), the supervisor takes stock of the reported situations and places each deviation in a category of at-risk situations, which will have been defined in advance with the team and the help of an employee from the local HSE team if necessary.

The 5 safety anchors must be featured among these categories.

This visual tool, from which so many lessons can be learned, is easy to implement and has the following objectives:

- Simplify and improve the process of handling deviations and action plans identified in the field
- Strengthen the commitment of teams and discussions about safety

- Highlight, at first glance, recurrent issues and the priorities to be tracked
- Facilitate decision-making and discussions

In Orano Mining's strategy to improve the prevention of serious and fatal accidents and Occupational safety more generally, the decision has been taken to deploy a Pareto* for each VPM existing in our sites' facilities. This deployment has been underway since the second half of 2019.

*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.





Taking action to make compliance with safety anchors unavoidable: Focus on the Pedestrian and vehicle traffic safety anchor at SOMAÏR (Niger) and at Bessines (France)

CONTEXT

The “Pedestrian and vehicle traffic” safety anchor has been the leading source of danger at Orano Mining for several years now. A large number of events with a high severity potential have been reported by sites. To remedy this, dedicated action plans, with strong and adapted solutions, have been deployed on our sites, such as at SOMAÏR in Niger or at Bessines in France, for example.

The main solutions deployed at SOMAÏR concern:

- **Review of the circulation plan for the whole site in order to make getting around the site safer:** re-definition of pedestrian areas, closing off of gutters and marking of ditches, addition of platforms and walkways in certain locations and inventory and review of circulation plans for perimeters of activity (guardrails, steps)
- **Reinforcement of measures to prevent risks to road safety with speed checks on the road in the industrial area.** This involves the setting up of:
 - a team responsible for installing radars on a daily basis
 - a points system and mechanical restriction of trucks to limit speed to 50 kph.
- **Better care and maintenance of machinery** including:
 - a check of the compliance of any light vehicle or HGV, including trucks for the delivery of goods and the loading of finished products, prior to accessing the industrial area
 - a “daily 5 safety minutes” prior to commencing work on any worksite
 - a systematic monthly inspection of external contractors' vehicles.



Solution deployed at Bessines: installation of a pedestrian/machinery anti-collision system

To better manage the risk of collision between pedestrians and machinery, teams from Bessines have installed an anti-collision system in a storage area, the U₃O₈ warehouse, identified as being the area most at risk.

This anti-collision system is made up of 3 parts, an individual battery-powered kit for the pedestrian operator responsible for the operation, equipment to be fitted to the machinery with a warning device which emits a light signal with a detection radius of 8m and a base station for non-hazardous areas which makes it possible to create an area where the system is not activated.





Safety commitment: how to boost our employees' commitment? The "Pathway to Safety" program deployed at Orano Canada

CONTEXT

With a view to strengthening the commitment of employees to safety, a program called "Pathway to Safety" has been set up at McClean Lake in Canada. The objective of this program is to give employees the means of taking their safety in their own hands and making them want to identify with and participate in the management of risks.

This program is based on the issuing of a safety passport to all employees, as well as on the organization of "safety talks" based on the "STOP Think Act" tool.



Safety passport in the form of a "Your Pathway to Safety" booklet

All employees working on the McClean Lake site have a booklet entitled "Your Pathway to Safety" that they have to keep on them while exercising their functions on a daily basis.

This booklet contains information about safety in the form of cards that slide into plastic pouches providing reminders of:

- How to react in the event of an emergency
- The list of risks
- The list of chemical products on the site and the measures to take in the event of exposure

This booklet also contains a section concerning opportunities for improvement of safety where employees can record any risk identified along with the proposed solutions and submit them to their supervisor.

Safety talk about the "STOP Think Act" tool

The safety talks are created by the safety team and based on safety topics connected to an incident that has occurred recently or to experience feedback to be shared.

They are proposed to supervisors for implementation with their team. This time for discussion is intended to reinforce "STOP, Think, Act" mindset, and can be organized before or after a meeting. The supervisor creates a discussion by asking his team a series of predefined questions about the chosen situation and by filling out the group's answers on the Safety talk form. Once the safety interview is complete, the form is sent back to the safety team.



"Safety support and expert assessment mission in Niger"

In a context of the recurrent occurrence of high severity potential events, Orano Mining and the Health and Safety Department of Orano carried out a Safety support and expert assessment mission on the COMINAK and SOMAÏR sites in Niger, targeting the deployment of three safety anchors: Handling and lifting, Lockout and lockout release and Working at height.

This mission was conducted from March 22 to 28, 2019 with the objectives of identifying at-risk situations and deploying solutions that would be operational rapidly.

These "Quick Win" solutions are for the most part compensatory measures enabling the occurrence or severity of an event to be limited. The observations, interviews and analyses carried out confirm the need

to continue to pay particular attention to aspects related to safety and to equip oneself with the resources to have the necessary agility to deal with difficulties in the economic situation.

26 "Quick Wins" were identified for the COMINAK site and 13 were identified for SOMAÏR. These were communicated to local managers. Certain of them were deployed immediately.

Mine Closure



WHY?

Mining site remediation and mine closure are integral parts 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.



OUR APPROACH

Remediation is taken into account right from the exploration and development phases of the project. Although some remediation work is carried out while the mine is in operation, and studies are updated throughout the active period, most of the remediation work takes place when mining

operations end. In the mine closure process, beyond the technical parameters, it is also essential to address social and societal aspects, to mitigate the socio-economic effects of the closure. To do so, Orano Mining is attached to reconverting former mining sites to give them a new lease of life.



OUR ACTIONS IN 2019

In France:

- Regrouping of waste rock: 92% of works carried out to date - completion forecasted in 2020
- Site reconversion accelerated: 7 new projects awarded under a Renewable Energies request for proposals with a production target set for 2021 for some projects
- Validation of the sustainable and diversified management program of the Limousin forest (more than 500 hectares)

Around the world:

- Niger: the detailed design study for COMINAK remediation was finalized in preparation for the shutdown of operations on March 31, 2021
- Kazakhstan: remediation plan review validated to include future installations
- Gabon: construction of 55 houses as part of the Mounana 200 project
- Canada - Cluff: discussions well advanced for the transfer of the 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.

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.



Discover the video “Remediation, a question of improved forward planning and cooperation”
Cluff Lake remediated site



Watch the video on Waste rock and mining tailings



More information on waste rocks and mining tailings



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

They are stored in former open-pit mines, in ponds enclosed by containment dikes or behind a tailing dams blocking a thalweg (valley, former river bed). These storage areas may cover tens of hectares and hold millions of tonnes of tailings. These pose a major challenge when it comes to remediation.

The remediation of tailings storage areas: given their dimensions and the tonnages involved, the storage areas formed during the operating period of plants are kept in place at the end of operations. A cover, generally in solid form, is placed over the tailings to form a geo-mechanical and radiological protective barrier, with a low level of permeability making it possible to limit risks of intrusion, erosion, dispersion, infiltration and radiological exposure of surrounding populations. This cover, of around 2 m thick, is, where possible, made of the materials available on site (waste rock from mining), creating a topography favorable to the proper management of meteoric waters and taking account of risks of future settling of the ground.

A final covering layer of topsoil can be added to allow the site to be revegetated or it can also be covered by a cover water, which offers considerable radiological protection, in particular with regard to air quality.

It is worth noting that one of the benefits of the ISR method of mining is the absence of tailings to be managed.

Each tailings storage area in France is monitored in a way which is adapted to the particular challenges of each of the

sites concerned. These are ICPE-classified environmentally regulated storage facilities (ICPE = Installation Classée pour la Protection de l'Environnement) and therefore covered by the French Environmental Code.

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.

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.

ENVIRONMENTAL MONITORING IN FRANCE

+ 6,500 samples & 35,000 analyses are performed each year on air, water, and bio-indicators

€ 6 million/year on water treatment, monitoring and maintenance of former mining sites

€ 4 million/year for waste rock/radon management projects, the renovation and improvement of water treatment stations, and additional remediation works

Work in progress in order to adapt the surveillance plan and transfer the mining facilities to the State

Examples

CartOmines, an application that tells all about the former mining sites

Our teams have developed a new application for accessing comprehensive data on the old uranium mines in France, their environmental monitoring and their conversion.

It is aimed at the general public, and in particular at local authorities and local residents and associations. Significant preliminary work was required to digitize, 3D vectorize and collect the data from tablets in the field, in order to assemble and secure it.



The site is currently backed by two information systems:

- a **general mapping of former mining sites**, with a series of indicators such as the production achieved, the volume of stored tailings, and data on remediation.
- a **mapping system** that defines all points near the sites where regulatory samples (air, water and bio-markers) are taken.

Other functionalities are planned for the future, for instance to map the conversion of French sites for new agricultural, industrial or leisure activities, or even for solar power plants, etc.

KEY FIGURES REFERENCED IN THE APPLICATION:

- **246** mining sites
- **372** sampling points: water, air and bio-markers (sediments, earths, food chain, vegetation)

To reach the application





Photovoltaic power plants are set up on former mining sites

Orano Mining has been committed to sustainable development for some years now. The Orano group is now highlighting the complementarity between nuclear and renewable energies and contributing to the COP 21 goals, while giving a second life to former mining sites.

By partnering with project sponsors, Orano is promoting the set-up of photovoltaic farms on former mining sites and tailings storage facilities.

Today, 4 photovoltaic power stations are already in production on former mining sites remediated by Orano. In 2018, the Soumont-Le Bosc site in the south of France hosted its second photovoltaic plant over an area of 6 hectares. The total production of the site is today equivalent to the consumption of 9,000 households.

The Group's objective is to have 16 photovoltaic farms in operation in France by 2022, covering an area of nearly 200 hectares, with a maximum power output of 150 MWp and producing the equivalent of the average consumption of around 65,000 households.

In selecting the sites and in order to achieve a rational, diversified and balanced management of its former mining sites, the group rules out the most environmentally sensitive areas.

For the next 11 projects, Orano has undertaken to prepare the necessary documentation together with the project sponsors. Examples include:

- **For the former mining sites:** the applications to withdraw from mining regulations,
- **For classified facilities:**
 - requests to create public-utility easements (for ICPEs: establishments classified for environmental protection). These easements require technical (radiological, hydraulic and geotechnical) proof that a project for a solar power plant is compatible with storing mining tailings
 - the administrative documentation for requesting changes to ICPE use
 - the validation of the impact studies (regarding the environment, social issues and the landscape) that the sponsor carries out in relation to the project.

Orano Mining rolls out a plan to optimize the management of its forests. Example in the Haute-Vienne Department

As part of its approach to the responsible management of its land assets, the Orano group has been extending its forest-management program to all its wooded property in Haute Vienne.

Currently, 763 hectares of plots located on former mining sites in France are already managed using a simple management plan (Plan Simple de Gestion - PSG). The PSGs are validated by Forest Property's Regional Centers, and used to plan the felling and other work to be carried out over a ten-year period, by defining forestry goals that aim to achieve sustainable management.

This type of management combines respect for the environment and the needs of local stakeholders (including residents and businesses) throughout the forest life cycle, while ensuring that forested areas are economically viable.

In environmental terms, this means choosing endemic species when planting to maintain the forests' biological diversity, managing its upkeep so that the forest does not become overgrown during its growth phase, and felling judiciously to ensure that ecosystems are maintained.

In 2020, 535 more hectares were managed in Haute Vienne using a Simple Management Plan, bringing the total area in France to approximately 1,298 hectares.

Later on, agreements for the social use of the forests, for instance by organizing walking trails, will be discussed with neighboring communities.

CLOSURE OF THE COMINAK MINE IN NIGER AFTER FORTY YEARS OF OPERATION

COMINAK's* Board of Directors met on October 23, 2019, and set March 31, 2021 as the final date for production at the Akouta site. The preparatory work is under way in close collaboration with the State of Niger.

The reasons prompting the decision were:

- the mine's diminishing reserves, so that operational activities can no longer continue;
- very high operating costs; the sharp drop in uranium prices;
- and COMINAK's loss-making position (since 2017), even after the implementation of cost-saving programs.

OUR OBJECTIVE

Because we have taken this decision and made it known eighteen months before the closure, we can prepare in advance, in consultation with the affected stakeholders.

So that the closure program is conducted responsibly, we are complying strictly with the national and international regulatory frameworks and relevant standards, and are involving the stakeholders.

Orano is working with the State of Niger on a continuity plan for activities in the north of the country. In particular,

operation at the mining site at SOMAÏR will continue, and IMOURAREN will remain under development, to start operation later when SOMAÏR reaches the end of its life.

The reorganization has three components: technical, social and societal to cover the different aspects.

Technical component

The technical component includes the remediation of all the site's identified source terms, the main ones being the underground-mine works, the plant and surface facilities, the tailings dam and the pools. The detailed design studies necessary to prepare for the work will continue until 2021. The remediation works will start when operation stops on 03/31/2021, with the underground-mine works. An initial phase of around 5 years will also include the remediation of the tailings dam, the processing plant and the surface facilities. The remediation of the effluent pools will also start in 2021 and will take about 11 years: it is scheduled for completion in 2032.

The objective when carrying out all the work will be to leave a site that is safe, sound and does not contaminate. The remediation activities will be subject to thorough environmental monitoring, which will extend for several years after the closure.

* Shareholders: SOPAMIN (Niger, 31%), Orano (France, 34%), OURD (Japan, 25%) and ENUSA (Spain, 10%)

Social component

Following the workforce mapping, an action plan was drawn up. This is a framework document setting out the main lines of the action plan, the re-deployment work, the work preparatory to the closure and the actions to be taken during closure.

This support plan for employees during this transitional phase is being reviewed with the social partners. It includes:

- assistance in moving towards a new way of life (maintaining posts during remediation, internal redeployment or outplacement, and retirement)
- practical and financial support in addition to the legal provision
- life-long post-occupational medical monitoring under the auspices of the Agadez Regional Health Observatory (OSRA) (see p 81)

Societal component

The objective of the societal component is to achieve a long-term and sustainable transition in the societal system that

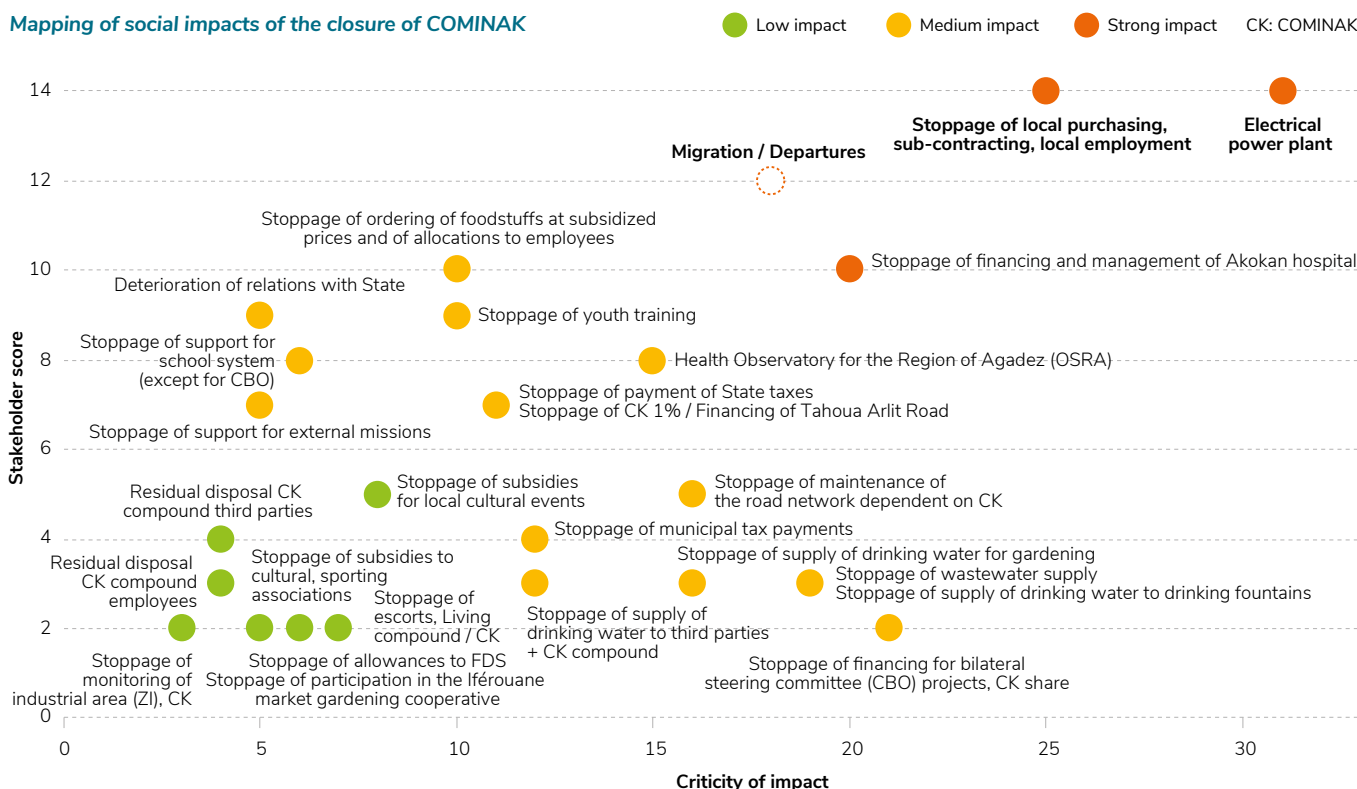
is useful to residents. Clearly, to achieve this objective, it is critical that all stakeholders are involved.

To this end, there was an initial official consultation in 2019 of all local and national stakeholders in the remediation project, which was used to map the closure's societal impacts, classified by criticality.

The transition plan for the societal system then flows naturally from the mapping, the aim of each action being to minimize the identified impacts. It includes the conditions for access to health and to water, the management of urban infrastructures, support for economic activity and help in converting the economy, particularly via entrepreneurship. 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. It was prepared in consultation with the Ministries concerned (Mines, Environment, Town Planning, Health, Agriculture & Livestock, etc), the administrative and traditional authorities, elected representatives, civil society, and partners.

Following that, a workshop was organized in March 2020 to present to the stakeholders all the societal initiatives that had been decided.

Mapping of social impacts of the closure of COMINAK



MANAGEMENT OF MINE CLOSURE: MAJOR CHALLENGES OF TODAY AND TOMORROW

FRANCE

Public debate on
the PNGMDR: focus
on the old uranium
mines



PNGMDR - what does it mean? It's the French National Plan for the management of radioactive materials and waste.

Updated every three years, the PNGMDR draws up a balance sheet of the existing methods of managing radioactive materials and waste, identifies the foreseeable requirements for intermediate and permanent storage facilities, and quantifies the necessary storage volumes and storage periods.

It is prepared under the auspices of the French Nuclear Safety Authority (Autorité de Sûreté Nucléaire - ASN) and the French Directorate-General for Energy and the Climate (Direction Générale de l'Énergie et du climat - DGEC). For the first time this year, a particular public consultation was organized by the Special Commission for Public Consultation (Commission Particulière du Débat Public - CPDP) before the new five-year plan was prepared (its preparation is currently underway).

Orano Mining has been involved in the PNGMDR since its inception, working on preparing the program, carrying out studies and participating actively in the different working groups.

In 2019, a public national consultation was thus organized based on the PNGMDR.

In order to reach a wide public, the consultation took a number of forms, from a "traditional" debate to a café discussion group, and including a cinema forum with film screenings, serious games and radio broadcasts.

To illustrate post-mining activities, the French Ministry for Ecological transition and Solidarity (Ministère de la Transition écologique et solidaire) chose as an example the management of the site of Bois Noirs Limouzat, located in the commune of Saint Priest-la-Prugne in the Loire. An initial site visit was organized for the members of the Special Commission for Public Consultation, followed by two more open to local residents, associations and local representatives. They were an opportunity to assess the work completed and in progress, itself the outcome of the various studies carried out over a number of years in order continuously to improve the site's monitoring and management.

A public meeting organized by the CPDP was held on September 4, 2019 at Saint-Etienne, and attended by the French Minister for Ecological transition and Solidarity, the ASN, local representatives, associations and interested stakeholders.

The conclusions from the debate were made public at the beginning of 2020, and will guide the revision of the new five-year plan. Orano Mining seeks to be transparent in its activities, and undertakes to continue to participate actively in working groups where relevant.

FRANCE

Giving a second life to the remediated site

Successful conversion of the former mining site with a business context that supports the foundation of new projects



La Commanderie video



THE REMEDIATED MINE AT LA COMMANDERIE

- Site located between the Vendée department and Pays de la Loire, active between 1955 and 1990, and remediated between 1997 and 2003
- Open-cast and underground mining work
- 3 million tonnes of ore extracted; 4,000 tonnes of uranium produced
- Financing the closure of the mine on the company's own funds
- Site converted to a solar power plant and industrial area
- Open-cast mine converted to a reservoir for water that irrigates neighboring farms

CONVERTING THE SITE AND INTEGRATING IT INTO THE REGION

- The artificial lake on the site of the former open-cast mine is now a reservoir of water for local agriculture (potatoes, maize and livestock) and industry
- In 1994, the old mine workings were transferred to Ixapack, a business that designs and creates packing machines
- Since 2014, the La Commanderie site has hosted a solar power plant on the old waste rock pile operated by Photosol:
 - 11 hectares
 - Power 3.7 MWp = annual electricity consumption of approximately 1,500 households

NIGER

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



SOMAÏR SITE

- Site operated since 1968
- Mining of uranium deposits in open-cast mines, followed by processing in a dynamic and static processing plant
- Total accumulated uranium production since 1968 over 73,715 tonnes; annual production in 2019 1,912 tU
- Operation end date scheduled for 2034

MINE IN OPERATION BUT OUTLINE REMEDIATION PLAN VALIDATED

- Site under environmental surveillance and in operation
- Outline project design finally validated in 2017 and physical stock of uranium gradually being compiled to cover future remediation costs
- Cost estimate for remediation currently being updated for 2020 (then every 2 years)

CANADA

Preparing the transfer of a remediated site to a supervisory authority



- Cluff Lake: a site operated for 22 years, from 1980 to 2002, located in the Athabasca Basin, in the north-west of Saskatchewan Province in Canada
- The operation included two underground mines, four open-cast mines and a mineral-processing plant
- Production of 28,000 tonnes of U₃O₈ and 250 kg of gold
- Main remediation work done between 2004 and 2006, in line with the conclusions from the impact study completed in 2004; last facilities demolished in 2014
- Financing the closure of the mine on the company's own funds
- Around 500,000 trees and shrubs planted on the site

MONITORING

- Monitoring implemented, in particular of the quality of the ground water and surface water
- The absence of impact of the site on residents has been demonstrated, so restrictions on use of the site are limited
- The remediated site of Cluff Lake is currently being transferred to Saskatchewan Province. The Province will continue the monitoring, with funding from Orano (monetary compensation)

Read Cluff Lake leaflet



Watch Cluff Lake video



GABON

Conducting monitoring and oversight of remediated sites



- Conducting environmental monitoring of a site closed since 1999
- 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

COMUF REMEDIATED MINE

- 5 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 tonnes of ore extracted at 3.73%
- Production of Yellow Cake: 26,600 tons
- Financing the closure of the mine via the European fund, SYSMIN (fund for the stabilisation of export earnings from mineral products)
- 55 houses rebuilt – Mounana 200 building program continued

MONGOLIA

Anticipating remediation right from the feasibility study phase



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

MINING PROJECT

- 2019: 3 exploration licenses and 3 mining licenses (Umnut, Dulaan Uul and Zoovch Ovoo)
- 73,749 tU of resources estimated in 2019
- ISR (In Situ Recovery) pilot conducted in 2010/2011 at the Dulaan Uul site
- Construction and operation of an ISR pilot (extraction + processing) on the Zoovch Ovoo site between 2017 and 2019 and validated by the State
- Aim of the pilot: to confirm and improve the technical and economic conditions of the project

REMEDIATION PLAN

- Periodic monitoring through a network of piezometers
- Remediation of drilling platforms
- Study for dismantling of the industrial facilities and well fields
- R&D Program: demonstration of natural mitigation in aquifers
- Hydrogeological studies
- Plantation of Saxauls (protected local trees) in remediated areas and neighbouring areas, as part of the environmental compensation project

KAZAKHSTAN

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



KATCO SITE

- Creation of joint venture between Orano (51%) and Kazatomprom (49%) in 1996
- The first uranium mining operation in the world to use the ISR technique
- Total aggregate volume of more than 36,000 tU produced since 2006
- Mine in operation with production of 3,252 tU in 2019
- Financing the mine closure: gradual establishment of a remediation fund "liquidation fund"

MINE IN OPERATION AND REMEDIATION WORK ON SITE

- R&D program to confirm and speed up the remediation of the aquifers tested on-site, mainly through natural mitigation
- Carrying out the liquidation project in 2019, including thought as to future facilities

Our Employees



WHY?

The development of women and men is one pillar of the Group's strategic plan.

At Orano, the wide range of career paths and cultural and generational diversities are a reality, truly energizing its people. They enable everyone to develop and thrive naturally, through contact with one another.



OUR APPROACH

Anticipating future needs in terms of skills and developing our employees through mobility between disciplines and countries is the aim of our policy as well as strengthening professional and gender diversity. We also offer high quality training both in the technical and managerial fields.



OUR RESULTS IN 2019

3,452 employees*

Almost **95%** are permanent

Over **98%** of our employees are from the host country

Our Mining College: **34** theoretical and practical training courses delivered

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

MANAGEMENT SKILLS

The Master Plan defines the strategy of the Group, of Orano Mining and the functions.

The content of this chapter addresses provisions implemented for all Orano Mining employees with the exception of points of detail that are specific under the French regulations applicable to Orano Mining as a company governed by French law.

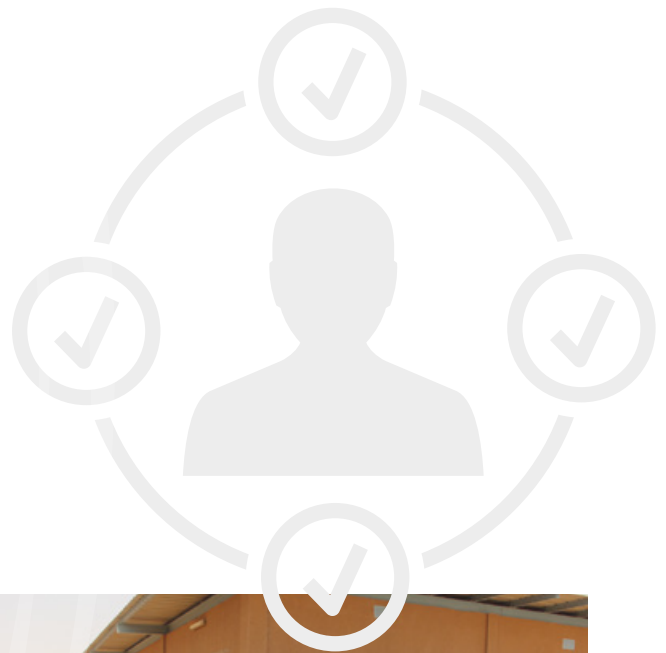
Split of employees by gender and contract type

Type of contract	Men	Women	Total
Permanent	2,700	449	3,149
Temporary	227	76	303
			3,452

Split of employees by contract type and by country

Countries	Type of contract		Total
	Permanent	Temporary	
Niger	1,364	55	1,419
France	277	27	304
Kazakhstan	1,008	160	1,168
Namibia	16	0	16
Mongolia	63	26	89
Germany	5	0	5
China (HK)	1	0	1
Gabon	14	0	14
Canada	401	35	436
			3,452

More information: www.orano.group

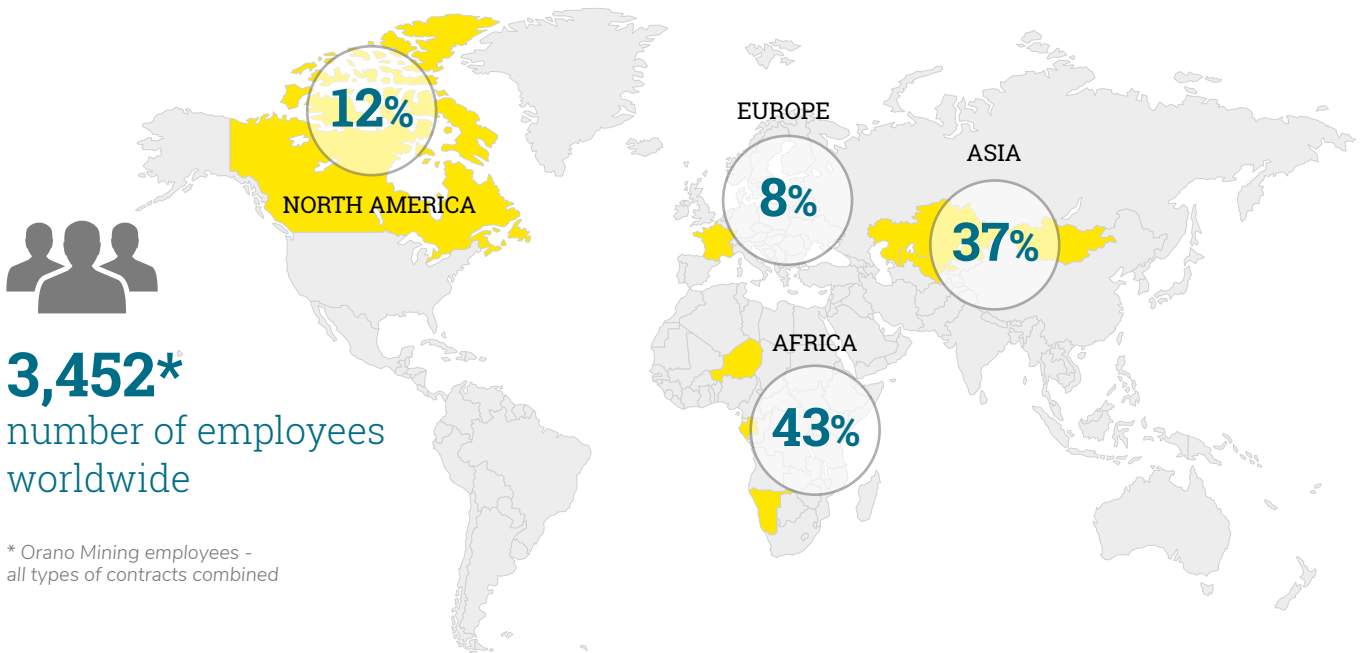


In 2019, its implementation within the human resources function made it possible to ensure that all the key talents and key positions in the organization were given special attention, particularly in terms of training and support.

Each year, every employee benefits from a performance review, and sets objectives for the coming year.

Over the 2019-2020 campaign, a performance review was held for 100% of the executive staff worldwide.





Following these interviews, specific meetings (called people reviews) are organized between managers and HR to examine the potential and career development prospects of their staff. The resulting action plans make it possible to define training pathways and succession plans for “the talents” and “Key Positions” in all Orano Mining’s countries, thus safeguarding organizational flexibility over time.

Access to training

Training remains one of the main ways of adapting employees to the ongoing requirements of their jobs. In France and in all the countries where we are based, a training plan is drawn up for each employee every year.

The managerial and change management training programs were a priority in 2019 and they have been deployed in all the countries where we operate. Some courses bring together employees from different sites and countries.

Employees average number of training hours (excluding Namibia and Mongolia)

Number of hours	Number of staff	Rate
75,056	2,035	
	Executive	42.8
	Non-executive	57.2
		100

For more information



Example

Orano Mining employees from Kazakhstan and Canada share best practices

In March 2019, employees from the McClean Lake site in Canada were welcomed by their colleagues on the KATCO site in Tortkuduk. The objectives of this inter-site training was to share information about the best practices implemented in the area of operational excellence.

During the course of the three days, the Kazakh employees shared their experiences and talked about the way they apply Lean management tools. It was also an opportunity to address technological maintenance processes, as well as to visit the workshops and warehouse of the KATCO site.

Employees from KATCO also presented the ISR* (in situ recovery) mining process, a very different technique from the one employed in Canada. Indeed, this technology made quite an impression on the Canadians, with some commenting that it was like “a mine without a mine”.

In this way, this inter-site sharing of experience makes it possible to optimize the operational excellence of our sites.

*ISR see the production method information sheet



Learning program

Created in January 2018, this program is aimed at a pool of employees identified as “talents”.

Its aim is to strengthen their knowledge of Orano, Orano Mining and its different sites, and to help them boost the development of their internal network. In 2019, the third session involving 10 Orano Mining employees from all over the world was held in Paris.

Mining College

The Mining College (our in-house training college) offers training courses in technical areas (geology, evaluation of resources and reserves, exploitation), health, safety and radiation protection, CSR and remediation, to employees of Orano Mining and Orano, in France and on our subsidiaries' sites (Canada, Kazakhstan, Mongolia and Niger).



THE MINING COLLEGE HAS

25 training courses provided in 2019 to **250 trainees**

34 theoretical and practical training courses, organized into 2 levels (“fundamentals” & “advanced”), designed and facilitated by Orano Mining employees, experts and specialists in our activities

When it was founded in 2006, the aim of the Mining College was to train and develop the professional skills of engineers newly recruited by Orano Mining

Today, our needs have evolved, and the Mining College supports the maintenance and development of technical skills in our core businesses, and, above all, the mining lifecycle from exploration to mine closure.

The Mining College is aimed at mining engineers, managers and technicians in both technical and support disciplines who wish to bolster their knowledge.

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 more than ten years, the Group has been committed to promoting work-study programs, offering annual apprenticeship. In 2019, Orano Mining France hosted 24 employees on work-study contracts for periods ranging from 1 year to 3 years.

In France, the Group is committed to a work-study contract rate representing 5% of the total workforce. At the end of 2019, the rate for Orano Mining in France was running at 7.9% of the workforce.

Age distribution (Orano Mining worldwide staff)

19-23 years	24-28 years	29-33 years	34-38 years	39-43 years	44-48 years	49-53 years	54-58 years	59-63 years	64-68 years	69-73 years
34	157	494	898	682	387	271	371	142	15	1



Turn over

In 2019, in a difficult market context, the control of employee numbers and the end of the Voluntary Departure Plan in France and Niger have enabled Orano Mining to adapt the workload while maintaining and developing skills.

Countries	Entries	Departures	Turn over
Niger	88	41	4.59%
France	42	21	12.12%
Kazakhstan	147	126	12.08%
Namibia	1	0	2.94%
Mongolia	2	0	1.39%
Germany	0	0	0.00%
China (HK)	0	0	0,00%
Gabon	0	0	0,00%
Canada	94	88	23,82%
Total	374	276	9,89%

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

For more information



Example



Renewal of collective agreement at McClean Lake in Canada

In 2019, Canada renewed its collective agreement for the McClean Lake site for a three-year period (June 2019 – May 2022).

The negotiations were conducted with representatives of the only union at McClean, Unifor Local-48S. Throughout the course of the discussions, non-unionized employees of the site were kept regularly informed of the advances being made and then participated in meetings and discussions in order to be informed of the changes and the direct impacts on their working conditions.

This agreement is of particular importance as it contains a revision to the pace of rotation of operations: previously the teams worked “one week on site” and had “one week of rest”. Now the pace of work is “two weeks on site for two weeks of rest”.

This change allows Orano Canada to increase the safety of its employees by reducing the number of flights taken a year. It also allows the company to bring itself into line with other players in mining in the region and to make major energy savings.

This change of working conditions at McClean Lake has resulted in the voluntary departure of 13.5% workforce from the site between December 2019 and February 2020.

To find replacements to fill a good part of the vacant positions, Orano has given preference to internal candidates, thus creating new opportunities for development and mobility for its employees. For external recruitments, if possible, Orano Canada has given preference to applications from local communities (North of Saskatchewan province), in order to comply with the agreements signed with these regions.

In 2019, more than 98% of the workers employed by Orano Mining in Canada are from these territories.

QUALITY OF LIFE AT WORK

Programs for work-life balance

WORK LIFE-PRIVATE LIFE BALANCE

The work-life balance holds an important place in the “Quality of Life at Work” agreement.

Conventional provisions currently in force in Orano Mining and the Group favor its development. Provisions on parenting are one example ; they aim to reconcile professional and personal life and to ensure that the exercise of parental responsibility hinders access to certain positions or functions as little as possible.

In 2019 in France, within the framework of the removal of headquarters, several agreements aimed at strengthening measures to support personal services and facilitate childcare were signed.

In 2019, there were no strikes nor locks-out exceeding one week's duration on Orano Mining sites.



TELEWORKING

In 2019 in France, a new agreement on “Quality of life at work” was negotiated and includes measures to safeguard the right to disconnect and guidance on new working methods such as teleworking.

In France, 36% of the Orano Mining employees work remotely on a regular basis (51% women/49% men).

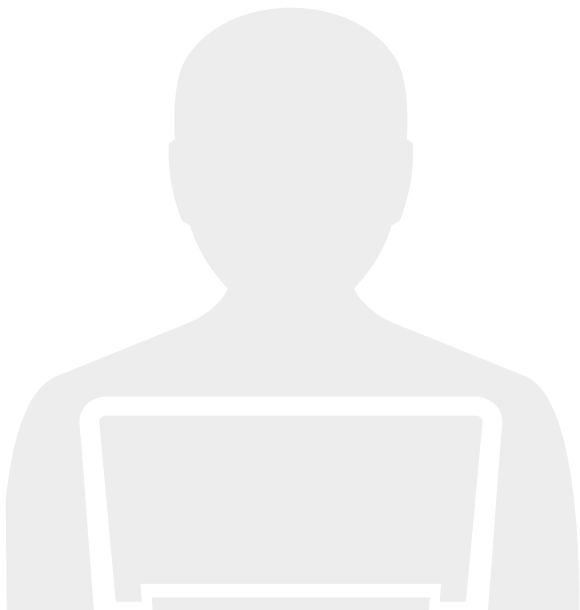
PART-TIME WORK

Among the staff engaged on permanent contracts in all the countries where we operate, 57 are part-time: 23 men, 34 women.

In France, in 2019, the percentage of part-time employees reached 1.6%, a 0.7% increase compared to 2017.

PREVENTION OF PSYCHOLOGICAL RISKS DURING ORGANIZATIONAL CHANGES

The “Quality of life at work” agreement also launched the draft of common guidelines for all Orano Group entities to evaluate the human impact of organizational changes, as well as the creation, in France, of a joint national observatory for quality of life at work.



In France, any organizational changes are made with the participation of staff representative bodies (within varying notice periods enshrined in a collective bargaining agreement). The working of labor relations within Orano Mining France was such that management practiced a one-month notification period between the presentation of documents

and the consultation, this period has been extended to three months in the event of an expert assessment, in accordance with the internal texts, the law and the collective bargaining agreement for the metal industry.

For individual and significant changes of position, a contract amendment is always offered by Orano Mining to the employee.

Any project that requires a significant and major development in working conditions must be given special attention and examined in terms of its psycho-social impact, using an analysis table comprising around 20 elements (e.g. clarity of roles, change management, skills development, etc.);

In Canada and France, there is a program offering assistance to employees in difficulty, whether due to personal or professional problems, with a counseling and support service available for employees.

EMPLOYEE BENEFITS

The Orano Mining collective agreement signed in 2012 governs the relationship between the company and its



Minimum notice periods regarding operational changes

	Canada	France	Kazakhstan	Mongolia	Namibia	Niger
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	No time limit	Time limit fixed between 1 and 3 months; usually 4 months if a major reorganization ensues (predetermined deadline that allows OS to use expertise) - e.g. Chatillon transfer	period of notification 1 month (30 calendar days or 4 weeks)	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 notice in accordance with Namibian Labour law	No time limit
For organizations with collective bargaining agreements, report whether the notice period and provisions for consultation and negotiation are specified in collective agreements	No	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.)	As above + consultations before the notice period	No

employees and demonstrates the joint willingness of the company and union organizations to maintain a good level of employee benefits at its French sites. The agreement deals with all provisions related to union law and management-labor dialogue, careers and professional development, working hours (including leave and absences), health and contingency costs, retirement management, etc.

All subsidiaries can take advantage of benefits such as medical care, disability/ death coverage and a pension scheme.



Benefits provided to full-time employees that are not provided to temporary or part-time employees

Categories	Canada	France	Kazakhstan	Mongolia	Namibia	Niger
Life insurance	●	●	●	●	●	●
Health care	●	●	●	●	●	●
Disability and invalidity coverage	●	●	●	●	●	●
Parental leave	●	●	●	●	-	-
Retirement provision	●	●	●	●	●	●
Stock ownership	N/A	N/A	N/A	N/A	N/A	N/A

PARENTAL LEAVE

Where there is such provision at national level, the Orano Group pays particular attention to the situation of the employee on parental leave.

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

Number of employees on parental leave in 2019 (Niger and Namibia are not concerned)

Total number of employees (by gender)	Women	Men	Total
Total number of employees that were entitled to parental leave	161	342	503
Total number of employees that took parental leave	46	17	63
Total number of employees that returned to work in the reporting period after parental leave ended	21	9	30
Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work	17	7	24
Return to work rate of employees that took parental leave	45%	100%	48%
Retention rate of employees that took parental leave	100%	100%	100%

EQUAL OPPORTUNITIES



Gender equality in the workplace

The indicators in our mining activities are encouraging: women make up 40% of the teams in France, and 50% of the Orano Mining Board of Directors. However, we still need to improve the overall numbers of women abroad which reached 15% (+5% in 2019 compared to 2018), and make sure they are promoted at all levels of the organization, particularly in Management Committees, to reach Orano's target of 25%.

In 2019, 23% of new hires were women within Orano Mining.

In France, with the objective of promoting gender equality in the workplace, Orano Mining has taken the necessary measures to redress pay gaps between genders. A budget has been negotiated and put in place with the aim of closing these unjustified gaps. In accordance with the 2018 agreement on gender equality in the workplace, a budget equal to 0.05% of the payroll was allocated in 2019 to exceptional and corrective measures within the framework of gender equality within the company.

In 2019, the percentage of women benefiting from a pay rise is equivalent to that for men. No differences were observed in variable pay components.

Lastly, Orano Mining sets itself the goal of a promotion rate for women at parity with that observed for men over the calendar year. 50% of promotions in 2019 were for women, with 2 out of 3 promotions to managerial status being women.



The pay equality index for Orano Mining as defined by French law is 87/100.

Gender equality also extends to internships, apprenticeships and professionalization contracts. In 2019, within this population, women hired accounted for 52% of the count (13 female interns out of 26 and 13 female work-study contracts out of 24), a balance that we maintain in 2020.

In France, the 2019 ratio of women's base salary to that of men by occupational category is 1.11 for Technicians and Administrative Employees, and 0.85 for Engineers & Managerial staff.

Percentage of employees per category in each of the diversity categories

	Under 30 years old	30-50 years old	Over 50 years old
	254	2,468	730
	7.4%	71.5%	21.1%

Categories	Women	Men
Executive	11.1%	88.9%
Non-executive	26.9%	73.1%

For more information



LOCAL RECRUITMENT

Orano Mining's social policy expresses a commitment to promoting the local recruitment of our employees. Over 98% of our employees on our sites are from the host country.

We also pay particular attention to indigenous communities, to facilitate their access to our employment opportunities.

This situation exists in Canada, for example, in North Saskatchewan, a region that has seen numerous initiatives to promote access to employment and select local entrepreneurs as a preference. This is also true for all countries where we operate.

Currently, across all the countries in which we work, the majority of employees (at all levels of the organization) are of local nationality.

For more information, refer to our chapter *Commitments - Community involvement* p.49



PROVISIONS FOR PEOPLE WITH DISABILITIES



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

In 2019, the employment rate of people with disabilities in Orano Mining was 4.65% in France.

GRI standards



The Orano Mining’s CSR Report 2019 has been prepared in accordance with the GRI Standards guidelines. The Mining and Metals Sector Supplement (MMSS) has also been used.

We report primarily on the General Standard disclosures called “Core”. Then the table sets out in details the topic-specific Standard disclosures called “essentials” and the indicator linked to each identified material aspect. A correspondence with the 10 ICMM Mining Principles was added.

More information on the ICMM Mining Principles



GRI Standards	Description	Chapter of the CSR report	ICMM (10 Mining Principles)
GRI 102: General disclosures			
Organizational profile			
GRI 102-1	Name of the organization	Profile	
GRI 102-2	Activities, brands, products, and services	Uranium market	
GRI 102-3	Location of headquarters	Profile	
GRI 102-4	Location of operations	Profile	
GRI 102-5	Ownership and legal form	Profile	
GRI 102-6	Markets served	Profile	
GRI 102-7	Scale of the organization	Profile	
GRI 102-8	Information on employees and other workers	Profile Our employees	
GRI 102-9	Supply chain	Profile Community involvement	
GRI 102-10	Significant changes to the organization and its supply chain	Profile	
GRI 102-11	Precautionary Principle or approach	Risk Management Health, Safety and radiation protection	2, 4 5
GRI 102-12	External initiatives	CSR approach	1, 2, 3, 10
GRI 102-13	Membership of associations	CSR approach	1
Strategy			
GRI 102-14	Statement from senior decision-maker	Statement from the top management	2
GRI 102-15	Key impacts, risks, and opportunities	Risk Management	2, 3, 4
Ethics and integrity			
GRI 102-16	Values, principles, standards, and norms of behavior	Ethics Transparency and consultation	1, 3, 10

GRI Standards	Description	Chapter of the CSR report	ICMM (10 Mining Principles)
Governance			
GRI 102-18	Governance structure	Profile	1
GRI 102-30	Effectiveness of risk management processes	Risk Management	
Stakeholder engagement			
GRI 102-40	List of stakeholder groups	CSR approach	10
GRI 102-41	Collective bargaining agreements	Profile	3
GRI 102-42	Identifying and selecting stakeholders	CSR approach	10
GRI 102-43	Approach to stakeholder engagement	Transparency and consultation	10
GRI 102-44	Key topics and concerns raised	CSR approach Transparency and consultation	10
Reporting practice			
GRI 102-45	Entities included in the consolidated financial statements	Orano Annual Activity Report 2019	
GRI 102-46	Defining report content and topic Boundaries	CSR approach	10
GRI 102-47	List of material topics	CSR approach	2, 10
GRI 102-48	Restatements of information	Reporting parameters	
GRI 102-49	Changes in reporting	Reporting parameters	10
GRI 102-50	Reporting period	Reporting parameters	10
GRI 102-51	Date of most recent report	Reporting parameters	10
GRI 102-52	Reporting cycle	Reporting parameters	10
GRI 102-53	Contact point for questions regarding the report	Reporting parameters	10
GRI 102-54	Claims of reporting in accordance with the GRI Standards	Reporting parameters	10
GRI 102-55	GRI content index	Reporting parameters	10
GRI 102-56	External assurance	Reporting parameters	10
Topic-specific Standards			
ECONOMIC			
GRI 103-1	Explanation of the material topic and its Boundary	Profile	2, 10
GRI 103-2	The management approach and its components	Profile	2, 10
GRI 103-3	Evaluation of the management approach	Profile	2, 10
GRI 201: Economic Performance			
GRI 201-4	Financial assistance received from government	Transparency and consultation	1, 10

GRI Standards	Description	Chapter of the CSR report	ICMM (10 Mining Principles)
GRI 203: Indirect Economic Impacts			
GRI 203-1	Infrastructure investments and services supported	Community involvement Our employees	9
GRI 204: Procurement Practices			
GRI 204-1	Proportion of spending on local suppliers	Community involvement Our employees	2, 9
GRI 205: Anti-corruption			
GRI 103-1	Explanation of the material topic and its Boundary	Ethics	3
GRI 103-2	The management approach and its components	Ethics	3
GRI 103-3	Evaluation of the management approach	Ethics	3
GRI 205-1	Operations assessed for risks related to corruption	Ethics	1
GRI 205-2	Communication and training about anti-corruption policies and procedures	Ethics	1
GRI 205-3	Confirmed incidents of corruption and actions taken	Ethics	1
ENVIRONMENT			
GRI 103-1	Explanation of the material topic and its Boundary	Environment	6, 7
GRI 103-2	The management approach and its components	Environment	6, 7
GRI 103-3	Evaluation of the management approach	Environment	6, 7
GRI 302: Energy			
GRI 302-1	Energy consumption within the organization	Environment	6
GRI 302-3	Energy intensity	Environment	6
GRI 304: Biodiversity			
GRI 304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Environment	7
GRI 305: Emissions			
GRI 305-1	Direct (Scope 1) GHG emissions	Environment	6
GRI 305-2	Energy indirect (Scope 2) GHG emissions	Environment	6
GRI 306: Effluents and Waste			
GRI 306-1	Water discharge by quality and destination (version 2016)	Environment	6
SOCIAL			
GRI 401: Employment			
GRI 103-1	Explanation of the material topic and its Boundary	Our employees	3

GRI Standards	Description	Chapter of the CSR report	ICMM (10 Mining Principles)
GRI 103-2	The management approach and its components	Our employees	3
GRI 103-3	Evaluation of the management approach	Our employees	3
GRI 401-1	New employee hires and employee turnover	Our employees	3
GRI 401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Our employees	3
GRI 401-3	Parental leave	Our employees	3
GRI 402: Labor/Management Relations			
GRI 402-1	Minimum notice periods regarding operational changes	Our employees	3
GRI 403: Occupational Health and Safety			
GRI 403-1	Occupational health and safety management system	Health, Safety and radiation protection	5, 4
GRI 403-3	Occupational health services	Health, Safety and radiation protection	5, 4
GRI 404: Training and Education			
GRI 404-1	Average hours of training per year per employee	Our employees	
GRI 404-3	Percentage of employees receiving regular performance and career development reviews	Our employees	3
GRI 405: Diversity and Equal Opportunity			
GRI 405-1	Diversity of governance bodies and employees	Our employees	3
GRI 406: Non-discrimination			
GRI 406-1	Incidents of discrimination and corrective actions taken	Ethics	3
Mining and Metals Sector Supplement			
MM3	Total amount of overburden, rock, tailings and sludges, and their associated risks	Environment	6
MM4	Number of strikes and lock-outs exceeding one week's duration, by country	Our employees	3
MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	Not applicable	3
MM10	Number and percentage of operations with closure plans	Site remediation and mine closure	8, 2, 6



ORANO MINING 2019 KEY FIGURES




REPORTING PARAMETERS

"PAPERLESS"

This annual report, the Corporate Social Responsibility Report prepared by the Corporate Social Responsibility Department of Orano Mining, is the result of the mobilization of all our teams at our headquarters and our sites.

We have created an **interactive report completely downloadable** and have discontinued the production of an entire hardcopy version.

REPORTING PERIOD

The **2019 CSR Report** is the tenth edition of this annual exercise. The previous reports are available for download in the box **"Annual report archive"**. 

2019 CSR Report is a report with the following characteristics:

- it covers our responsible commitments performance for the year 2019, which means the reporting ran up to December 31, 2019;
- it has been prepared in accordance with the orientations of the materiality exercise realized at the end of 2018;
- it is based on the essentials or core criteria of the Standards version of the GRI.

SCOPE OF INFORMATION

In application of Orano's strategy and policies and the orientations provided by our 2019 materiality matrix, this report aims to **present**

the performance linked to the main CSR challenges of the mining activities under eight broad families of commitments: Ethics, Transparency and Consultation, Community Involvement, Risk Management, Health, Safety and Radiation protection, Environment, Ours employees, Mining Closure.

The CSR Policy section sets out our underpinning commitments.

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 and Namibia**. When the scope only covers one given country, this is mentioned (in particular in the commitment "Our employees").

There are no issues identified outside the organization as relevant.

GRI AND THIRD PARTY


VERIFICATION

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.

This year, once again, we have conducted an **independent verification of the content of this report** in compliance with the ICMM Audit procedure and the AA1000 ethical auditing principles (available only in French).

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. SOMAIR, a subsidiary of Orano Mining in Niger, was audited in 2019.

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.

Find out more: Orano Mining
CSR 2018 Report 

For further information,
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Orano Mining, RSE Direction

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Conception & Realisation: BLEU CERISE - July 2020

Orano transforms nuclear materials so that they can be used to support the development of society, first and foremost in the field of energy.

The group offers products and services with high added value throughout the entire nuclear fuel cycle, from raw materials to waste treatment. Its activities, from mining to dismantling, as well as in conversion, enrichment, recycling, logistics and engineering, contribute to the production of low-carbon electricity.

Orano and its 16,000 employees bring to bear their expertise and their mastery of cutting-edge technology, as well as their permanent search for innovation and unwavering dedication to safety, to serve their customers in France and abroad.

Orano, giving nuclear energy its full value.

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Energy is our future, don't waste it!

