

September 2022

Orano's mining activities



THE ORANO GROUP



“ Orano develops know-how in the transformation and control of nuclear materials, for the climate, for a healthy and resource-efficient world, now and tomorrow



In 2021

€4.7 Bn in revenue

€25.8 Bn order backlog

TOP 3 worldwide in our key activities

17,000 employees

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

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

Every day, the Orano group's 17,000 employees draw on their skills, unwavering dedication to safety and constant quest for innovation, with the commitment to develop know-how in the transformation and control of nuclear materials, for the climate and for a healthy and resource-efficient world, now and tomorrow.

MINING ACTIVITIES

NATURAL URANIUM

Natural uranium is a metal found all over the Earth, in rocks as well as in seawater.

Its low level of radioactivity generates the main source of heat that keeps the Earth's mantle at a high temperature, thereby limiting its cooling.

Thanks to this property, uranium has become the raw material used by the nuclear industry to produce electricity.

A leading producer of uranium

“ Reliably supply natural uranium to our customers, who produce carbon free electricity and contribute to the effort against global warming.

Orano's teams prospect, discover, develop and operate a geographically diverse and profitable set of uranium deposits in order to guarantee security of supply for customers.

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

Committed to efforts to continuously improve safety and operational performance, its teams carry out their mining activities in a manner that fully respects people and the environment, and contribute to the economic development of local regions and their populations.

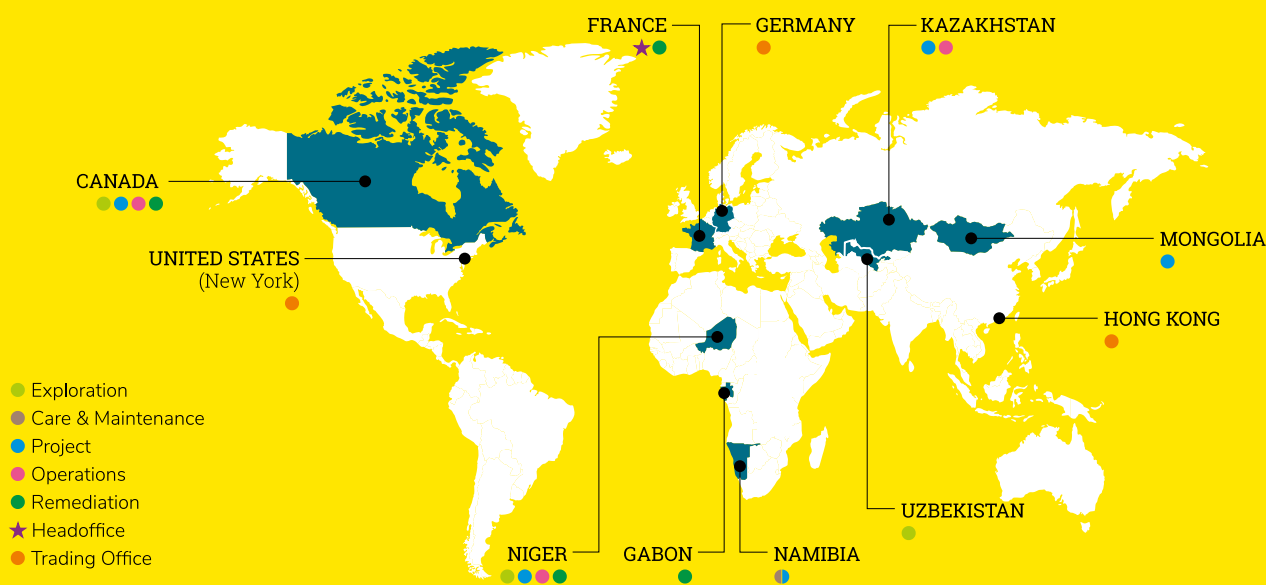
In 2021

1,065 M€
contributing revenue

23.5%
of Orano's revenue

3,022
employees (all type of contracts combined)

PRESENT ON 4 CONTINENTS



3
mining sites

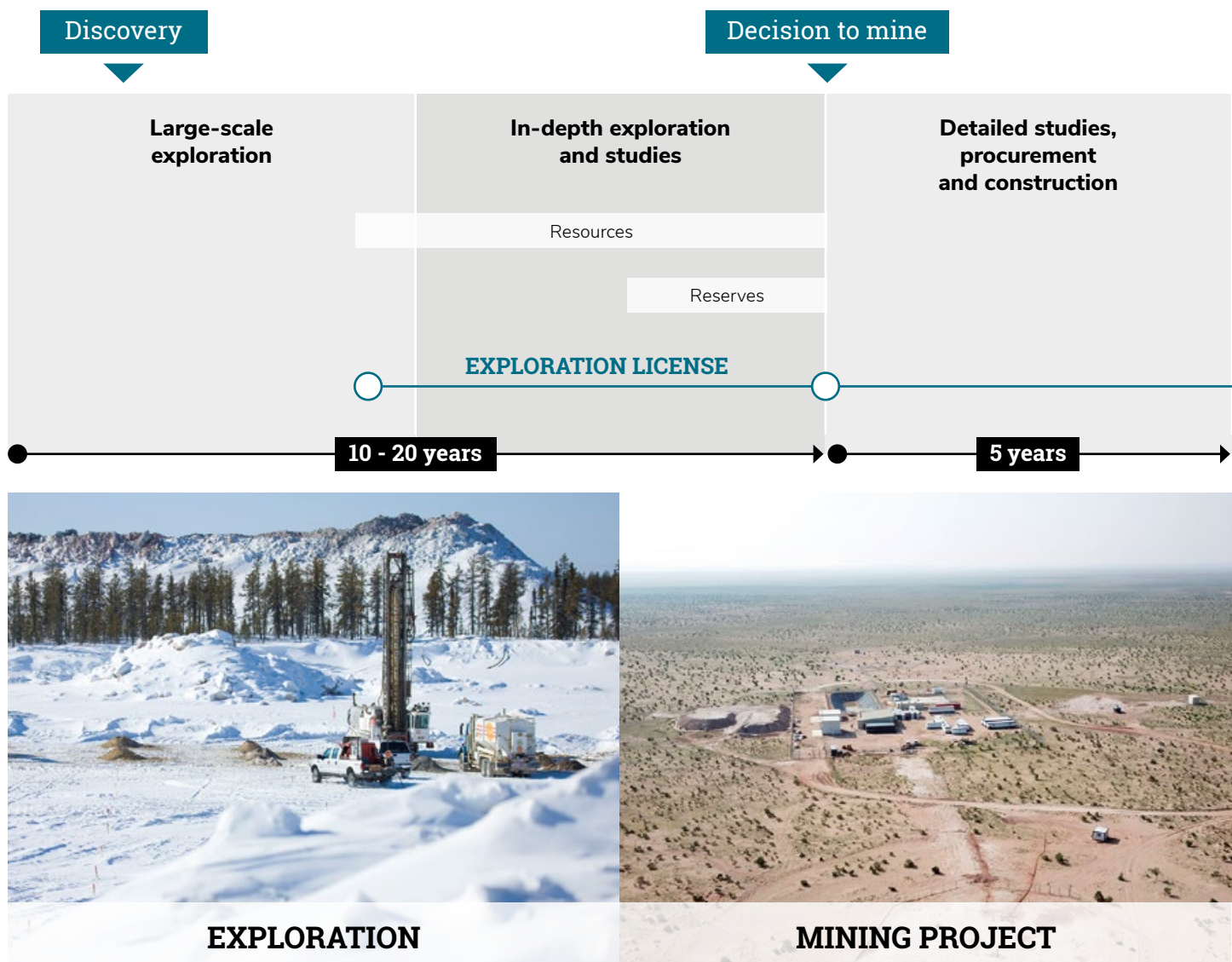
6,814 tU*
produced in 2021

TOP 3
on the global market

* Consolidation share after equity method (exc. Cigar Lake) + production of COMINAK non-consolidated financially till February 2021. COMINAK is consolidated since February 2021.

Present at every stage of the mining process

Orano's mining activities cover the exploration, development of mining projects, production, mine remediation and commercialization of uranium from different types of deposit across the world.

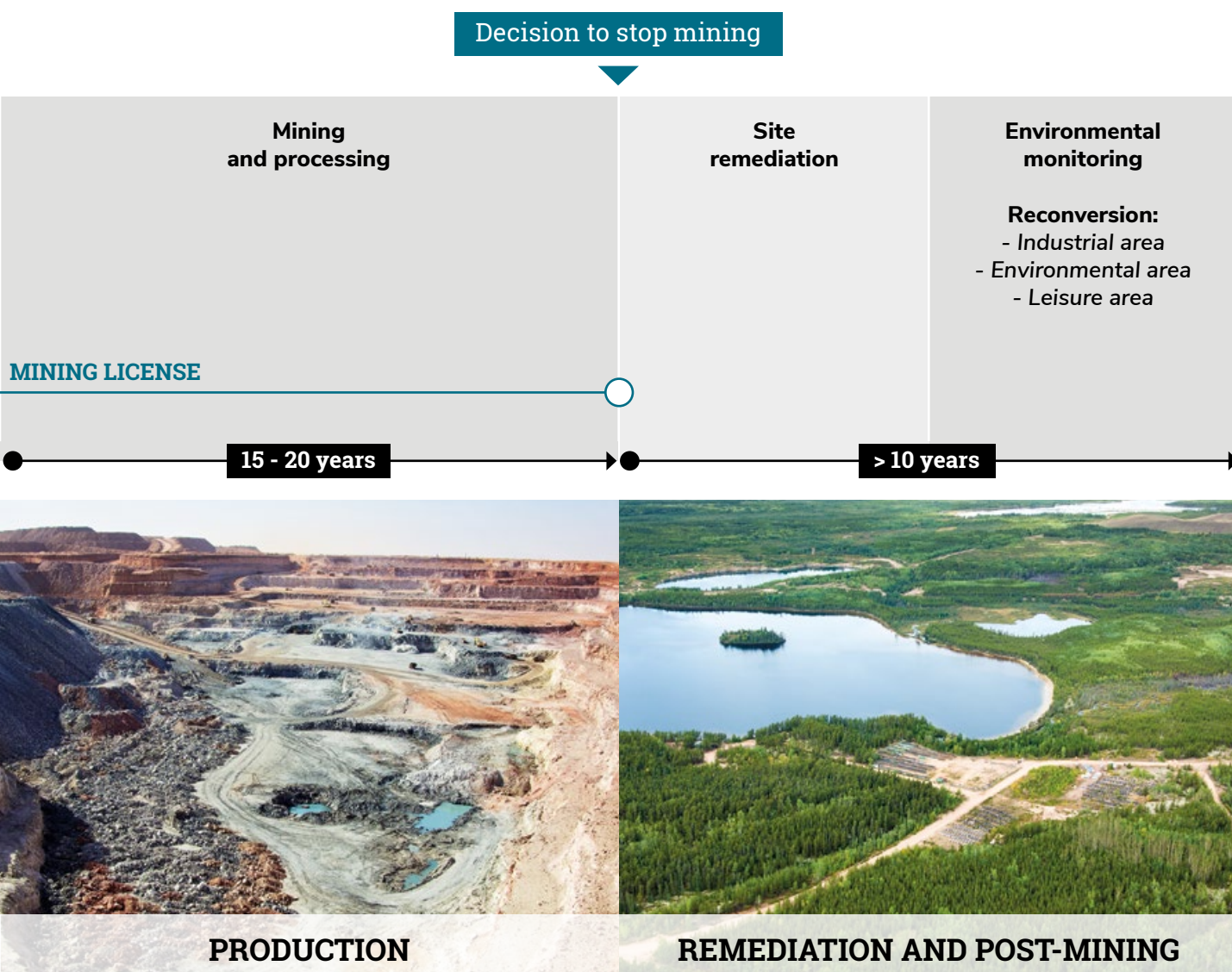




URANIUM TRADING

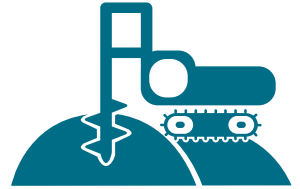
Fully owned by Orano, Urangesellschaft mbH (UG) manages the trading – purchasing and sale – of uranium on the various international markets.

UG is one of the biggest uranium traders in the world and counts the main players in the uranium sector among its customers, including nuclear power utilities, uranium producers, converters and enrichers, and other traders.



Exploration

Its portfolio of reserves and resources allows the group to guarantee security of supply for its customers over the long term, with 20-year production visibility.



Orano allocates significant resources to the search for new deposits. For several years, its exploration budget has been among the largest in the uranium industry.

EXPLORATION PROGRAMS

- **CANADA:** Athabasca Basin
- **UZBEKISTAN:** Djengeldi region

EVALUATION PROGRAMS

- **KAZAKHSTAN:** Southern Kazakhstan (South Tortkuduk Project)
- **NIGER:** around the mining sites in northern Niger

In 2021

207,782 tU

mineral reserves held by Orano

164,649 tU

best identified resources held by Orano
(measured and reported)

THE EXPLORATION PROCESS

The exploration process to confirm a new deposit takes place over several years, from the discovery of the very first indicators during **prospecting**, to exploration by **drilling**, up to the confirmation of a **resource** with the potential for mining.

This exploration process continues throughout the mining cycle to try to identify additional resources near the initial deposit.



Nurlikum Mining geologists, Djengeldi site, Uzbekistan



Thin section (litholamellage) workshop, Bessines-sur-Gartempe, France

FOCUS

Athabasca Basin, Canada

The highest known uranium concentrations – with the uranium content of the ore exceeding 20% – are located in the Athabasca Basin in the north of Saskatchewan province, where most of Orano's exploration activities take place. Although the historical deposits are found close to the surface, our current targets are buried several hundreds of meters underground.

16 active projects
9 operated by Orano

DID YOU KNOW?

Prospecting is carried out in successive steps:

- Geological survey of the region
- Interpretation of remote sensing images
- Underground survey using geophysical methods
- Radioactivity measurements on the ground
- Soil and water studies
- The conducting of surveys to acquire geophysical data in situ
- Analysis of samples taken during the survey

The mining project



The project phase determines technical, economic and environmental viability.

It involves increasing the knowledge of the deposit and characterizing the ore. It is during this phase that an **industrial pilot** may be set up to establish the most suitable extraction and ore processing methods.

In parallel, studies are performed **to assess the societal and environmental impact of the project, and prepare the remediation plan.**

Orano works according to the characteristics of each deposit to develop mines with optimum profitability, while minimizing their impact on the environment.



Midwest, Canada

Looking ten years ahead, the market is expected to grow. The 2021 edition of the World Nuclear Association's Nuclear Fuel Report shows a 27% increase in uranium demand over 2021-2030 (for a 16% increase in reactor capacity) and 38% increase for the decade 2031-2040 depending on new plants being built and the rate at which older plants are retiring.

ORANO PROJECTS

- **IMOURAREN*** in Niger
- **ZUUVCH OVOO** in Mongolia
- **MIDWEST** and **McCLEAN** in Canada
- **TREKKOPJE MINE**** in Namibia

* Optimization studies for the Imouraren project are underway with the aim of assessing the feasibility of operating the deposit with other extraction methods.

** Project in care & maintenance



ZUUVCH OVOO PILOT IN MONGOLIA

Badrakh Energy, the Orano subsidiary in Mongolia, is currently testing the ISR mining method selected for the recovery of uranium at the Zuuvch Ovoo deposit in the Gobi Desert.

At the end of 2020, the pilot processing plant started its operations with elution of the uranium loaded resins from the 2010-2011 Umnut pilot. On July 11, 2021, the operations began on the 1st ISR cell of the Zuuvch Ovoo pilot.

Over a two-year period, the pilot will cover all uranium production stages, from extraction to the processing of the recovered ore, and the drumming of the concentrate produced.

Approximately 20 metric tons of uranium are expected to be produced during this test period.

DID YOU KNOW?

Uranium content can vary from 220 g per metric ton of ore for deposits in Mongolia, to 200 kg per metric ton for deposits in Canada. The operating methods are adapted accordingly.



FOCUS

Badrakh Energy in figures

- **2 shareholders:** Orano Group, MonAtom
- **3 mining licenses** for the Dulaan Uul/Umnut and Zuuvch Ovoo deposits
- **23,167 tU** (measured & indicated resources, part Orano equity) for Zuuvch Ovoo/Dulaan Uul deposits
- **Number 1 uranium mining development project** in Mongolia
- **2 years** of operating tests performed at the Zuuvch Ovoo mining site
- **86 employees, 96% originate** from Mongolia



Production



The technical and economic feasibility of a project determines the method of extraction to be employed.

EXTRACTION

There are three types of mine:

- **Open-pit mines**, for shallow deposits
- **Underground mines**, for deeper deposits
- **In-situ recovery (ISR)** for low-grade deposits where the ore is recovered without extracting the host rock

4 MINING SITES

- **SOMAÏR mine** in Niger
- **KATCO** in Kazakhstan, the operator of one of the largest ISR mines in the world
- **CIGAR LAKE mine** (operated by Cameco)/**McClean Lake mill** (operated by Orano) in Canada
- **McARTHUR RIVER mine***/**Key Lake mill*** (operated by Cameco) in Canada

* Restart planned in 2022 after care and maintenance since July 2018.



SOMAÏR open-pit mine, Niger



McClellan Lake mill, Canada



PROCESSING

When the ore is removed from the mine, it is crushed and ground. The uranium is then leached (dissolved using chemical reagents).

- **Heap leaching** is used for low-grade ores. Once the ore is prepared, it is stacked on an impermeable pad and sprayed with a suitable chemical solution (e.g. SOMAIR, in Niger).
- **Dynamic leaching** is used for high-grade ores. It takes place in a liquid medium in tanks at the facility (e.g. McClellan Lake, in Canada).

The uranium is then extracted from the solutions using a precipitation process. It is purified, dried and calcined to obtain the final product, natural uranium concentrate: **yellow cake (800 kgU per metric ton)**.

Uranium can be produced in different forms. However, the standard form on the stock market is U_3O_8 . Uranium prices are quoted in dollars per pound of U_3O_8 .



DID YOU KNOW?

Physical, radiological and chemical properties of U_3O_8

Uranium oxide (U_3O_8) is a stable, non-combustible, water-insoluble and non-corrosive powder. Radiologically, it is a material with a low level of radioactivity.

In the form of U_3O_8 , uranium can be stored in optimum safety conditions, in an environmentally friendly way.



FOCUS

Non-conventional mining techniques

JET BORING

Located 450 meters below the surface in unstable, waterlogged rocks, the Cigar Lake deposit (Canada) required the development of new technology that involves freezing the ground and extracting the ore with high-pressure jets of water.

This method, developed by Orano engineers, is called jet boring.

It is suitable for deposits with a very high uranium content as miners handle the ore remotely.

13.5%

Average ore content at the Cigar Lake mine, the second highest-grade ore deposit in the world



Cigar Lake mine, Canada

IN-SITU RECOVERY (ISR)

The principle of in-situ recovery consists in injecting a leaching solution into the deposit via wells. The solution (diluted acid and water) dissolves the uranium as it passes through the deposit and is then pumped to the surface. The solution, loaded with uranium, is then transported by pipeline to the plant, where the uranium is extracted and fixed on ion-exchange resins.

The solutions are enriched with acid and reinjected into the wells in a closed circuit. This technique is only used when the mineralized zone is located in a permeable formation, such as sand. This formation should be naturally isolated by non-permeable rock, such as clay, located above and below the ore zone, as in Kazakhstan, in Mongolia and in Uzbekistan.

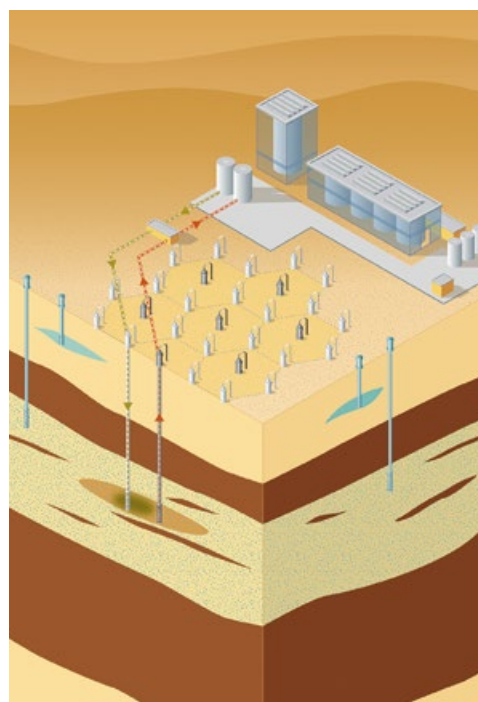


ISR wellfield field, Kazakhstan

57%*

of the world's uranium is produced using ISR

* Source: World Nuclear Association, 2020



FOCUS
At a glance: Orano's main mining assets

Mine	Status	Ownership	Mine type	Processing type	Average grade	Production, tU, 2021*
SOMAÏR, deposits near Arlit, Niger	In operation since 1971	<ul style="list-style-type: none"> • Orano, operator: 63.4% • SOPAMIN, Niger: 36.6% 	Open-pit mine	Dynamic leaching and Acid heap leaching	1.81‰	1,996 tU
COMINAK, deposits near Akouta, Niger	Shutdown of production - March 2021 Start of remediation - April 1st, 2021 12 years of remediation work	<ul style="list-style-type: none"> • Orano, operator: 59% • SOPAMIN (Niger): 31% • ENUSA (Spain): 10% 	Underground mine	Dynamic leaching	2.47‰	190 tU
McArthur River mine/ Key Lake mill, Canada	In operation since 1999* Restart planned in 2022 of the McArthur River mine and Key Lake mill as the mine and mill has been in care and maintenance since July 2018	Mine: <ul style="list-style-type: none"> • Cameco Corporation, operator: 69.8% • Orano: 30.2% <hr/> Mill: <ul style="list-style-type: none"> • Cameco, operator: 83.3% • Orano: 16.7% 	Underground mine	Dynamic leaching	5.86% (2019)	0 tU
Cigar Lake mine/ McClean Lake mill, Canada	Start of mill operation in 1999 Restarted in 2014 to process Cigar Lake ore Suspension of activity for 4 months in 2021 following the COVID-19 context	Mine: <ul style="list-style-type: none"> • Cameco, operator: 54.547% • Orano: 40.453% • Tepco: 5% <hr/> Mill: <ul style="list-style-type: none"> • Orano, operator: 77.5% • Denison Mines: 22.5% 	Underground mine	Dynamic leaching	13.5%	1,788 tU (Part Equity Orano) Total production: 4,747 tU
KATCO, Tortkuduk and Muyunkum deposits, Kazakhstan	In operation since 2006	<ul style="list-style-type: none"> • Orano: 51% • Kazatomprom: 49% 	In-Situ Recovery (ISR)	In-Situ Recovery (ISR)	42.6 mg/L	2,840 tU
TOTAL						6,814 tU

* Consolidation share after equity method (exc. Cigar Lake) + production of COMINAK non-consolidated financially till February 2021. COMINAK is consolidated since February 2021.

Remediation and Post-Mining

Taken into account from the exploration phase, site remediation responds to economic, societal and environmental challenges.

REMEDIATION

Mines remediated by Orano and its subsidiaries:

- **SHIRLEY BASIN** (1953-1988) and **LUCKY MC** (1959-1993) **mining sites**, Wyoming, USA
- **CLUFF LAKE mine** in Canada (in operation from 1980 to 2002)
- **MOUNANA mining site** in Gabon (in operation from 1961 to 1999)
- **235 mining sites in France** (in operation from 1948 to 2001)
- **COMINAK mining site** in Niger (remediation in progress)



Remediated Cluff Lake site, Canada



REMEDIATION

Undertaken on a sound scientific and technical basis, remediation must:

- Ensure lasting stability in terms of public health and safety
- Minimize the residual impact of previous activities
- Limit the area of land subject to restrictions on use
- Ensure landscape integration and preserve biodiversity
- Allow good social and societal management and encourage reconversion

All post-mining work is carried out in strict compliance with the environmental standards in force and in consultation with local populations. The majority of remediation activity takes place when mining operations cease due to depletion of resources or for economic reasons.

100%

of French mining sites remediated

26

administrative areas in France

25

dedicated remediation specialists



Processing plant at the Mounana mining site, Gabon



Aerial view of the remediated mining site, Gabon

orano.group/cartomines

The interactive mapping application that gives public access to data on the old uranium mines in France, their environmental monitoring and conversion.

POST-MINING: FRENCH EXPERTISE

In accordance with commitments made to the French government, Orano manages almost all the former uranium mining sites in France (235 out of 247 in total), which includes sites in addition to those operated by the group and its subsidiaries for nearly 60 years.

The team in charge of mining site remediation, based in Bessines-sur-Gartempe (Limousin), manages the redevelopment projects, performs environmental monitoring, ensures that there are no impacts on health or the environment, monitors the operation of water treatment plants, manages the historical databases, enhances the value of Orano's land assets and invests in research and development projects. All this work is done while maintaining a constant dialog with the general public and the authorities.

FOCUS

COMINAK

REMEDIATION PROJECT FOR THE COMINAK MINE

The COMINAK* uranium mine located in the north of Niger has produced 75,000 metric tons of uranium during its 40 years in operation. Subsequent to the depletion of its resources, the COMINAK Board of Directors voted in October 2019 to stop the production. This decision became effective as planned on March 31, 2021.

In consultation with the Niger authorities and its shareholders, COMINAK is conducting a project to remediate its industrial site in a responsible manner and in continuous and transparent dialogue with stakeholders.

Within the framework of its remediation, COMINAK undertakes to make the site safe and non-polluting, in accordance with national standards and international recommendations, as well as to minimize the social and societal impact of the closure of the mine which previously represented livelihoods for over 1,400 employees and subcontractors, their families, as well as associated trade in the region.

COMINAK has undertaken to support its employees and subcontractors through the reconversion plan and the development of eligible and viable entrepreneurial projects. The company has set itself the objective of achieving a long-term and sustainable social transition in the interests of the local community.

With over 40 years of know-how and expertise in post-mining management, Orano, which has a 59% stake in COMINAK, undertakes to provide technical support for the project, working alongside the State of Niger and other shareholders.

* Shareholding 2021: SOPAMIN (Niger, 31%), Orano (France, 59%), ENUSA (Spain, 10%)



www.orano.group/reamenagement-cominak



The development of projects that will give a new lease of life to former mining sites is integral to Orano's goals of making the most of its land assets in France, promoting local socio-economic activity and helping maintain a healthy environment.

The reconversion plan is drawn up after consultation with the different local stakeholders concerned. It is based on the sustainable development principles of economic, environmental and societal balance. It guarantees a future for former mining sites and their integration into the region through the development of economic or leisure activities, or the conservation of areas of special environmental interest.

In France:

- More than **63%** of former mining sites now accommodate an **industrial facility, agricultural activities or photovoltaic power stations**
- **4 photovoltaic power plants** installed, supplying the needs of **10,000 households**, and **11 projects** in planning
- More than **35%** of former sites are **ecological and/or forest areas**
- More than **20%** are used for **leisure activities** (fishing, hunting, etc.)

ZOOM

Bessines-sur-Gartempe site (Haute-Vienne, France)

- In operation from 1955 to 1993
- Remediated between 1993 and 2000
- Site area: 159 hectares



A LEADING INDUSTRIAL PLATFORM

The former mining site at Bessines-sur-Gartempe has become a standard-setting industrial platform, making Orano the ninth largest metallurgy company in the Haute-Vienne department.

6 areas of expertise:

- Geosciences: studies on thousands of ore samples from all around the world
- Center for Innovation in Extractive Metallurgy (CIME): produces bespoke industrial-scale pilots and develops analytical processes for nuclear and conventional industries
- Maurice Tubiana Laboratory: production of lead-212, needed to develop innovative treatments for cancer
- Post-Mining: oversight of remediation work and environmental monitoring
- Interim storage of depleted uranium: this uranium, a by-product of the enrichment of natural uranium, represents a valuable source of energy

+€40 million invested
in **4 major projects**
between 2019 and 2021

Innovation

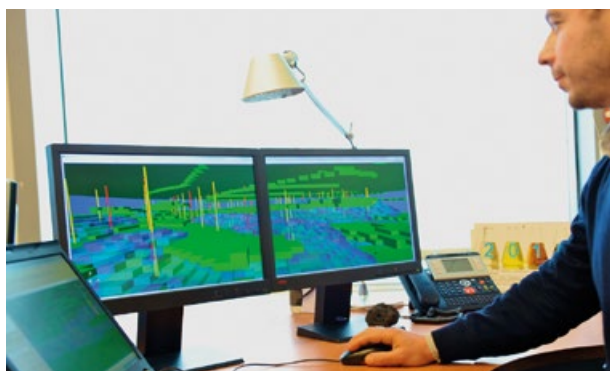
Innovation and digital transformation are at the heart of Orano's mining business, to create value, maintain the profitability of operations, better control environmental impact and develop new extraction methods.

Innovation covers all stages of mining, from exploration to remediation, including the modernization of workstations, measures to improve the reliability of processes, the optimization of resources and industrial processes, predictive maintenance and site remediation.

TOWARDS THE DIGITAL MINE

3D MODELING

Used in the context of ISR extraction, HYTEC is a simulator that helps model the mining of a deposit all the way up to environmental remediation. It can be used to simulate the acidification of the deposit and the way in which uranium is dissolved and transported, and thereby to better evaluate uranium recovery over time.



CONNECTED MINING EQUIPMENT

Data from sensors positioned on trucks is used to increase the productivity of the mining cycle, as well as to enable predictive maintenance to be carried out on the equipment.

DRONES

Drones can be used in a range of applications, such as photogrammetry, for obtaining a topographical survey in order to estimate ore volumes.



Drones can also carry radiometric waves for geophysical exploration work, improving precision and saving time.



SABRE

SABRE: A NEW METHOD OF EXTRACTION SEES THE LIGHT OF DAY

Orano Mining together with its partner Denison Mines are developing a new method of extraction, known as Surface Access Borehole Resource Extraction (SABRE), which would make it economically viable to mine small high-grade deposits in Canada's Athabasca basin. This method of drilling directly from the surface offers several economic, environmental and safety benefits. Following promising results of a mining test in 2021, Orano is evaluating the potential use of the technology for future mining operations at its McClean Lake and Midwest properties in Canada.



CIME building, Orano's industrial platform at Bessines-sur-Gartempe

CENTER FOR INNOVATION IN EXTRACTIVE METALLURGY (CIME)

The Center for Innovation in Extractive Metallurgy develops industrial and customized solutions for the recovery of radioactive and non-radioactive materials. It assists companies and public authorities in the conduct of studies and analyses right through to the design and implementation of bespoke industrial-scale pilots.

Founded in 1981, CIME has developed a wide range of skills based on its expertise in mineral processing and hydrometallurgical techniques for the extraction, separation and purification of materials. The center has been the source of many innovations that have been successfully introduced at Orano's mining sites.

With its new facilities inaugurated in 2021, the CIME research and development platform diversifies its activities with innovative projects in the fields of energy transition and circular economy.

www.orano.group/cime/en



Mongolia pilot designed by CIME



Batteries pilot

Battery Recycling Project

CIME is a host to two industrial pilots to test the recycling process for materials (lithium, cobalt, nickel, etc.) contained in electric vehicle batteries. This process, developed by Orano and its partners*, is consistent with a circular economy approach.

Orano Mining is leading this project within Orano, mobilizing skills from R&D, public affairs and strategy teams.

* The RECYVABAT consortium: Orano, Paprec, MTB Manufacturing, Saft, CEA

A RESPONSIBLE MINING COMPANY



OUR PRINCIPLES OF ACTION

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

Our principles



Our mining activities fully support the group's threefold ambition of achieving profitable, socially responsible and environmentally friendly growth.

Driven by the belief that the ongoing success of mining activities depends on responsible, transparent management that respects people and the environment, **Orano joined the International Council on Mining and Metals (ICMM) in May 2011.**

Alongside the other ICMM members, Orano contributes to discussions and the implementation of the sector's top priorities in terms of sustainable development.

The 10 principles of sustainable development drawn up by ICMM are based on best practices in the sector. They form the foundation of Orano Mining's responsible approach.

Orano Mining actions in the area of corporate social responsibility are structured and formally defined through commitments and governing bodies.

- Orano Mining adopted a **CSR policy** in 2016.
- The **CSR Committee**, which sits at the same level as the Management Committee of Orano Mining, has the task of approving CSR goals and progress once a year.
- The **Mining Social Committees (CSMs)** are tasked, at the local level in each country, with putting social actions into practice in terms of partnerships and economic development aid.



RESPONSIBLE COMMITMENTS ROADMAP 2025-2030

In compliance with Orano's group responsible commitments roadmap, Orano Mining established in 2021 clear and measurable commitments in terms of corporate social responsibility aimed at a time frame stretching to 2030, with progress points in 2025. The commitments and the action plan now revolve around the five pillars of the group's strategy:



COMMUNITIES



CLIMATE



COMPETENCIES



CUSTOMER GROWTH



CASH



Health and safety

Orano maintains a health and safety management system and is strengthening its safety culture at all levels of the organization.

Orano is committed to ensuring the prevention and control of all risks inherent in its activities for its employees and external stakeholders by:

- Involving managers in strengthening the safety culture of teams on a daily basis
- Deploying applicable safety standards throughout the group
- Systematically evaluating the risks linked to all our activities using a shared methodology
- Involving all employees in the detection, elimination and control of dangerous and risky situations
- Collecting and exchanging best safety practices
- Sharing the lessons learned from accidents with group entities and our industrial partners

ATTENTION: HIPOS

Identifying, analyzing and acting on the causes of accidents and events with a high potential for severity (HIPOs) is one of our priorities.

SAFETY MONTH

For several years now, June has been an opportunity for Orano and its mining business to raise awareness about safety among employees and subcontractors. Each mining site organizes a Safety Day to share best practices and lessons learned. These Safety Days are also a chance for everyone to reconfirm their commitment to safety.



FOCUS

Health observatories

The creation of health observatories is an independent, multi-party initiative that aims to monitor former workers to detect potential cases of disease linked to exposure to ionizing radiation.

Since these health observatories were launched in Gabon in October 2010 and Niger in 2012, they have provided a total of 5,657 post-professional consultations.

The medical check-ups performed to date have not detected any symptoms of occupational diseases related to exposure to ionizing radiation.

The natural radioactivity of uranium ore means that measures must be taken to protect workers from ionizing radiation and monitor their working environment by measuring ambient conditions.

Radiological protection refers to:

All activities that aim to prevent and control any risk of exposure of these workers to ionizing radiation by guaranteeing appropriate and relevant dose rate monitoring in all circumstances at our exploration and production sites.

Radiological protection requires:

- The evaluation of the radiological occupational risks for each work station
- The continuous improvement of working conditions, with a view to minimizing exposure
- The promotion of a radiological protection culture by providing training and expertise



Radioactivity and the general public

- **1 mSv/year:** the annual exposure limit from industrial activities for the general public, set by French and European regulations
- **2.9 mSv/year:** the exposure (average French value) of the general public to natural radioactivity: radon, cosmic rays, ground radiation
- **4.6 mSv/year:** the overall exposure (average French value) of a member of public: natural radioactivity + added radioactivity, e.g. medical exposure, air travel



20 mSv Dose limit under French regulations applied at all sites

19.9
mSv

Maximum dose** recorded for Mining BU employees (COMINAK mine in Niger)

2.8
mSv

Average dose** for Mining BU employees

3.0
mSv

Average dose** for Mining BU subcontractors

* Actual additional annual dose: the sieverts (Sv) to which a person is exposed in addition to natural background radiation.

** Average dose July 2020-June 2021.

EMPLOYEE EXPOSURE IN 2021

The additional dose* limit applied for our employees and subcontractors cannot exceed 20 mSv over a rolling 12-month period, in accordance with French regulations.

0 workers exposed to more than 20 mSv in 2021

Environment

Environmental responsibility is an ongoing commitment firmly rooted in our values. As such, our actions seek to strengthen risk prevention and our control of the environmental footprint of our activities.

THE ENVIRONMENT IS TAKEN INTO ACCOUNT THROUGHOUT THE MINING CYCLE

Environmental impacts and risks are constantly assessed, all the way from exploration to site redevelopment, as well as during the project and mining phases.

Environmental monitoring (monitoring of the atmosphere, aquatic and terrestrial environment, and groundwater), as well as associated preventive measures, is also carried out at each stage of the cycle.

Environmental impact studies are performed for each new mining project and whenever a major modification of our industrial facilities is anticipated. They meet the regulatory requirements in force, and must be submitted for public consultation and be approved by the local authorities.

In addition to strict compliance with the regulations in force in each country, Orano has set out a common approach to all sites to better anticipate the risks and limit the ecological footprint of its activities.

All of Orano's operating mining sites, as well as the Bessines-sur-Gartempe industrial platform, have gained

- **OHSAS 18001** and/or **ISO 45001**
- **ISO 14001** certification

R&D SERVING THE ENVIRONMENT

Orano invests in research and development to improve its knowledge of the potential impacts of its activities and find innovative solutions to reduce their consequences.

Orano Mining is studying the use of bacteria to accelerate the natural remediation mechanisms, as well as to reduce the consumption of chemicals in the uranium recovery process.

Our experts are conducting a program to study the behavior of tailings to better control their impact on the environment. To study the materials, we are able to call upon fundamental research tools such as particle accelerators.

FOCUS

Best practice: participatory monitoring

In Mongolia, since 2013, representatives of the authorities and local communities, independent experts and schoolchildren have been regularly invited to accompany the teams taking samples for environmental monitoring.

More than 20 participatory monitoring campaigns organized since 2013.



CLIMATE:

- ▶ Reduce the emissions of CO₂ equivalent from activities as operator in scope 1 and 2 (-40% compared to 2015).
- ▶ Work to decarbonate our electricity supply where relevant in order to increase the share of low carbon energy at our operating sites.

The objective of “net zero emissions,” scopes 1+2, by 2050 was reaffirmed in October 2021 by the collective commitment of the members of ICMM, including Orano Mining.

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

Decarbonisation at the SOMAÏR open pit mine

Innovative studies are being carried out by Orano Mining to limit GHG emissions associated with the ore treatment process. In 2021, the SOMAÏR site changed its process to partially replace carbonates with sodium hydroxide in ore processing, which will make it possible to minimize the release of CO₂.

In 2022, the SOMAÏR site plans to start the construction of a photovoltaic plant to decarbonize its electricity supply. The project consists of installing a 5 MWp solar power plant which will supply 10% of the site's electricity needs in 2023 and 25 - 30% in 2025.

**BIODIVERSITY:**

- ▶ In order to minimize the impact of mining activities on biodiversity, the “mitigation hierarchy” is implemented from the very first phases of the project. Our aim is to work towards - as a minimum - zero net loss of biodiversity.

Compensation project in Mongolia

As part of the preparation of the Zuuvch Ovoo ISR pilot site, the detailed environmental impact assessment determined that the destruction of a certain number of saxauls, an iconic shrub of the steppe, would be unavoidable. Orano's subsidiary in Mongolia, Badrakh Energy, has opted for a unique compensation scheme.

Upstream of the project, the majority of the facilities will be built outside areas with a high density of saxauls, and Badrakh Energy will ensure that roads are strictly managed.



The company has offered to replant saxauls over a surface area equivalent to that affected by the pilot. The compensation measures is carried out in an area close to the pilot and compatible with the sustainable regrowth of the trees, in a location chosen in agreement with stakeholders and in accordance with local traditions. In this way, in order to create a positive societal and environmental dynamic, the stakeholders are encouraged to take part in the compensation process, as the work is carried out by local companies and professionals specializing in biodiversity compensation schemes and in the replanting of trees in arid regions.

Economic and social development

Mining activities are drivers of sustainable economic development in the regions in which they are based.

LOCAL PURCHASING

The group contributes to the economies of the countries where it operates mining sites, notably by making significant purchases from local suppliers.

The fact that preference is given to local suppliers during the bidding process allows the creation of a network of companies and numerous jobs in the region. Orano works with 2,500 suppliers in countries where it runs mining activities.

75%

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



LOCAL JOBS

Orano Mining social policy expresses a commitment to the local recruitment of our employees.

- 98% of employees come from the host country
- 93% of employees have permanent contracts

Orano pays particular attention to indigenous people and communities to help them access our job offers.



FOCUS

In Canada: partnership strategy with northern communities

Orano Canada maintains lasting relationships with contractors and service providers in the local area of its activities by identifying northern companies for the purchase of goods and services.

The company helps contractors develop qualified employees from communities in northern Saskatchewan for meaningful long-term employment and career advancement.

The company spent :

- Almost \$58 million* on purchasing goods and services from Saskatchewan-based businesses (62% of total spending);
- Over \$28 million* on purchasing from northern-based and/or Indigenous owned businesses in the province.

* Canadian dollars

Community investments

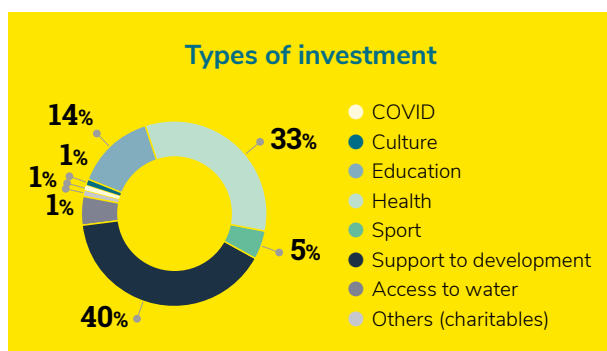
Community investments are projects and actions that aim to meet both the expectations of stakeholders and the operational goals of our mining activities.



Orano's mining subsidiaries make community investments targeting the following priority areas:

- **Education** (building classrooms and kindergartens, providing scholarships, etc.)
- **Health** (construction of health infrastructure, provision of training and medical equipment, etc.)
- **Access to water** (drinking water wells, wells for horticulture, livestock wells, etc.)
- **Infrastructure** (for municipalities and cooperatives, agriculture or sanitation facilities, etc.)
- **Access to energy** (e.g. installation of solar panels)

€5.1 million
community investments in 2021



FOCUS

Niger: Irhazer, a major hydro-agricultural project

Irhazer is a hydro-agricultural and pastoral development project in northern Niger. It aims to contribute to sustainable food security through the development of irrigated agriculture by improving 700 hectares of farmland.

Ultimately, it aims to ensure that sites can operate independently in a profitable and sustainable way.

Orano is financing feasibility studies, the pilot phase and the development phase through investments totaling **11.4 billion CFA francs (about €17 million)** under an agreement signed with the government of Niger on December 1, 2006.

This represents:

- 180.5 hectares converted into community irrigation for 220 households covering 1,540 people;
- 35 water points created with 3 solar-powered pumping stations created, benefiting 740 nomadic camps accommodating 1,139 households with 6,338 people and 73,000 head of livestock being watered there each day;
- 200 hectares in small private family irrigation;
- 5 counters set up and a fund of 20 million CFA francs for the marketing of alfalfa for the benefit of 4 cooperatives;
- 46,510 animals have been vaccinated and treated per year in the department of Ingal and Arlit during the salt cure.



Reporting and dialog

Transparency and dialogue are basic principles of corporate social responsibility. Orano runs its business in consultation with all the stakeholders, in accordance with national public policies.



LOCAL COOPERATION COUNCILS IN MONGOLIA

Four times a year, Orano's subsidiary in Mongolia holds Cooperation Council Meetings with representatives from local communities in Ulaanbadrakh sum and Zuunbayan bag, Dornogobi province. More than 20 meetings have taken place since 2013.

ORANO CANADA: A DIRECT LINK TO LOCAL PEOPLE

In Canada, particular emphasis is given to dialog with northern indigenous communities, through meetings with local leaders, special public meetings and frequent participation in community events.

Thanks to the Northern Affairs Office at La Ronge, Saskatchewan, and its additional liaison officers based in three other communities, the inhabitants benefit from a direct link to Orano Canada.

BILATERAL STEERING COMMITTEE IN NIGER (CBO)

The Bilateral Steering Committee (Conseil Bilatéral d'Orientation - CBO) meets once a year, bringing together the administrative authorities, local authorities, technical services, the general public and representatives of the mining companies to examine development projects for villages in the departments of Arlit and Iférouane, financed by SOMAÏR, COMINAK, Imouraren SA and Orano Mines Niger.

DID YOU KNOW?

Orano has been supporting the Extractive Industries Transparency Initiative (EITI) since 2003. This means that the group informs the EITI about the revenue payments it makes to governments in the countries where it operates mines and has also committed to the publication of mining contracts and agreements.

Since 2010, Orano has published a Corporate Social Responsibility report to give details about the performance of the group's mining activities in terms of sustainable development.

The CSR report is prepared in accordance with the internationally recognized non-financial reporting guidelines of the Global Reporting Initiative (GRI). The 2021 edition of the report was drafted in line with the GRI standards.

The report is also audited by an independent third party to check that Orano's mining activities comply with the guiding principles of International Council of Mining and Metals (ICMM), including its 10 sustainable development principles.

www.csr-mines.orano.group



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