

POSITIVE ENERGY



**YES, NUCLEAR IS AN
ENERGY OF THE FUTURE**



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CLAUDE IMAUVEN

Chairman of the Board of Directors

**YES,
NUCLEAR IS
AN ENERGY
OF THE FUTURE**

The Covid-19 health and economic crisis has shown us this. By questioning our development model, it has called for a fairer, more sustainable and safer society. A society in which Orano has a role to play. A key player in a nuclear sector that provides abundant, reliable and low-carbon electricity, the group actively contributes, through its technologies, industrial know-how, skills and commitment, to the society of tomorrow.

A group at the forefront of the fight against global warming and the preservation of the planet's resources, committed to the development of regions, employment and medical research, ready to respond to the challenges of our time, whether they concern energy, the environment or health.

By adopting a Purpose and a new commitment policy, the group has chosen to set itself ambitious objectives. The Board of Directors approved this approach, which strengthens Orano's positioning as a committed player providing solutions for the world of tomorrow.

**So yes, nuclear energy is essential
for present and future generations.**



PHILIPPE KNOCHE
Chief Executive Officer

THE BIG INTERVIEW

In a world where climate change and access to energy represent significant challenges, in 2021 Orano is rolling out a new corporate project based on commitment, with strong ambitions. Philippe Knoche presents the five strategic axes that will project Orano into the future.

Community

“What makes our activities special is their timescale. It takes several decades, from the project phase to redevelopment, including the operational phase, and requires us to forge long-term relationships with the regions that host our industrial or mining sites. We commit very early on to close relationships with our local stakeholders in order to share our vision:

contributing to economic development while protecting the environment.

According to a survey we have conducted, 60% of people living near our sites in France believe that nuclear energy is an asset for the region. We hope that these local roots will continue to grow even stronger in the coming years, relying on the ongoing pursuit of economic development, proactive initiatives for the environment, such as eco-design, and a frank and constructive dialog.”

Climate

“Since its creation, Orano has been committed to the fight against global warming. Firstly, because nuclear energy is low-carbon, and promotes the decarbonization of electricity generation, which has become an essential component of the energy transition and effective scenarios to mitigate greenhouse gas emissions (GHG). But we go further.

Since 2004, we have already reduced emissions from our industrial sites. We will continue with a target of reducing our direct and indirect emissions by 40% by 2025 compared to 2015, the benchmark year for France's national low carbon strategy (*Stratégie nationale bas carbone* – SNBC). More than 10 decarbonization projects are currently being studied in order to achieve this goal. It is a priority environmental objective for our group.”

Skills

“A company that puts skills at the center of its priorities is an attractive company. When we foster talent development through our training policy, when we create working conditions that contribute to well-being, when we promote high-quality social dialog, we create pride in belonging and commitment. Today, this is the purpose of our ambition and our actions: developing the talents already present and attracting those of tomorrow.

Joining Orano is the possibility of entering a multitude of professions at the crossroads of climate and energy, a group recognized for its culture of innovation, industrial expertise, cutting-

edge technologies and its ability to rise to the challenges of tomorrow. Strengthening our attractiveness also means being able to instill greater diversity and inclusion in our organization, combating all forms of discrimination. With an ambitious target for 2025: that 75% of employees recommend Orano to outside parties and, in particular, to those who wish to join our group.”

Customers growth

“There can be no development of a company without the trust and satisfaction of its customers. Orano has a large customer portfolio, based on strong, long-term customer relationships. Our group must continue

to meet the needs of its customers, present and future, creating value for them and for us.

This value creation means firstly through innovation. Innovation that meets customer expectations. Innovation that serves society, the energy transition and the preservation of resources. And innovation which allows the development of new growth opportunities, in new business sectors. This is the pioneering spirit of Orano, so precious in building the next world.

The group's Innovation Business strategy explores models for future value creation. We therefore plan to continue expanding our recycling offer. In the medical field, we are proud of the promising projects pursued by Orano Med, our subsidiary dedicated to nuclear medicine, to develop new therapeutic solutions for the treatment of cancers.”

“We want to build a group connected to its environment, which acts for the climate, the preservation of resources and health. A group capable of being profitable while contributing to carbon neutrality, developing the skills of its employees, attracting the best talent and innovating to position Orano in the world of tomorrow.”





Cash

"In 2020, Orano confirmed its level of profitability with a positive net cash flow, allowing further debt reduction, but also with a gross operating margin that rose by more than 25%. As in previous years, order intake also reached a very high level of 1.9 billion euros, despite the health crisis. This is testament to the confidence of our customers, whether in the supply and transformation of uranium, the manufacturing of recycled MOX fuel, or short-cycle services (transportation, manufacturing of packages, engineering, dismantling), enabling Orano to prepare for the future.

Our group has two very compatible objectives for the coming years: continue to reduce its environmental footprint, particularly in the use of raw materials, water and waste reduction; operate efficiently and be profitable."

Meeting the challenges of today and tomorrow

"On the strength of these solid results, and the commitment at all levels of the company to safety and security, Orano wishes to continue its development by promoting nuclear materials for the climate, healthcare and a resource-efficient world.

Our new Purpose defines who we are, and is consistent with society's current concerns. It commits us to being proactive and providing solutions for current challenges concerning the climate, energy or societal issues and projects the group into the future with ambitious targets."

OUR PURPOSE

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



PURPOSE AND COMMITMENTS

Through its Purpose, Orano is fully committed to climate protection, the preservation of natural resources and the search for innovative healthcare solutions. This Purpose is not an empty claim. It drives our dynamism and deeply commits us. It is now part of our corporate project and informs the roadmap which will guide our actions to the year 2030.

ACTIONS VISIBLE AS OF 2021

Integration of CSR criteria into the compensation of managers

In 2021, the implementation of certain actions and the achievement of the roadmap objectives will count for 10% in the variable compensation criteria for some 2,500 eligible managers worldwide. The objectives cover topics as diverse as the carbon footprint, eco-design, waste reduction, skills development, youth employment and inclusion, and impactful innovation.

Investments assessed according to their consistency with the corporate project

In 2021, all investment projects will be presented to the Executive Committee and the Board of Directors according to an analytical grid assessing their consistency with the group's five commitments. A grid structured around the six Sustainable Development Goals (SDGs) that Orano has placed at the heart of its commitment policy. This principle will be extended to other group processes in the area of acquisitions, offers, purchasing, etc.

A third electric boiler for Orano la Hague

Orano la Hague has decided to reduce its carbon footprint by replacing a heavy fuel oil boiler with a third electric boiler. In October 2020, the heavy fuel oil supply was ended and the boiler is currently being supplied with domestic fuel oil pending the order for the electric boiler in 2021. The installation and commissioning of the new boiler by 2023 will ultimately result in savings of more than 40,000 metric tons of CO₂e.



2030 OBJECTIVES

COMMUNITY

Strengthen **local roots**, particularly in the area of skills development and employment

Create a **second life** for the sites

Eco-design all our major projects

CLIMATE

Reduce the “equivalent” carbon footprint of our activity in line with the Paris Agreement

Innovate to reduce the footprint of our customers and **increase the acceptability of nuclear energy** and materials

SKILLS

Offer **professional and personal development** in an attractive working environment

Be a benchmark, inclusive employer that promotes diversity

Develop our **innovation ecosystem**

CUSTOMER GROWTH

Expand our **recycling offer**

Develop **anti-cancer treatments**

Become a player in **the medical, industrial and research isotopes** market

CASH

Improve the efficiency of the extended enterprise by 25%

Reduce our production of **non-recycled waste** by 25%

COLLECTIVE WORKING RICH IN EXCHANGES AND COMMITMENTS



LAURENCE GAZAGNES
HSE⁽¹⁾ Director

A CO-CONSTRUCTION APPROACH

Because Orano's future is being constructed together, the commitment-based approach had to be established collectively. Since the last quarter of 2019, the teams have worked with the Executive Committee, 1,300 managers and employees. At the end of 2019, a first phase enabled the group to select the six priority Sustainable Development Goals (SDGs) from among the 17 challenges for society set out by the UN. This co-construction approach continued during the first half of 2020, in the middle of the lockdown, through a series of workshops involving managers and employees working on Orano's contributions to these six themes:

- climate and carbon neutrality;
- preservation of natural resources and reduction of waste;
- reliable energy at an affordable cost;
- environmentally friendly industrialization and innovation;
- skills development in the regions;
- safety, security, health and the contribution to medical research.

“This motivating project was co-constructed throughout 2020 with more than 1,300 group employees and 130 stakeholders. This collective work led to the formalization of our Purpose, our commitments and our roadmap to 2030.”

CHALLENGING OUR PERCEPTION OF ORANO

Who is Orano today? What is our added value? How are we perceived by our main stakeholders, whether customers, suppliers or local residents, elected officials, journalists, etc.? To respond to these issues, 55 Orano employees interviewed 130 stakeholders to better understand their expectations vis-à-vis Orano in social and environmental matters. Their feedback is the subject of a summary report called a “materiality analysis”, a first for Orano.

WHAT IS A MATERIALITY ANALYSIS USED FOR?

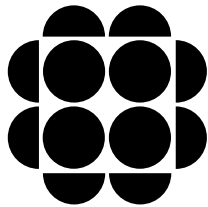
It identifies the significant and relevant issues that have an impact on the group's performance, prioritizes them and compares and contrasts impressions within Orano with those of external stakeholders. These open and constructive discussions provided a wealth of useful feedback. The process and the collective approach helped us to define our Purpose, commitments and roadmap to 2030.

HOW IS THIS ROADMAP GOING TO BE ROLLED OUT?

Starting this year, it will inform Orano's processes and policies, as well as our strategic priorities up to 2030. In order to give a strong momentum to this approach, quantified objectives and markers have been defined by the teams as of 2025. They will be rolled out within all group entities so that everyone contributes.

(1) Health, safety, environment.

SNAPSHOTS



APRIL 2020

PROJECTS

SIGNATURE OF A CONTRACT WITH THE FRENCH ATOMIC ENERGY COMMISSION AND MILITARY APPLICATIONS DEPARTMENT (CEA-DAM) FOR A NEW RECYCLING WORKSHOP

The contract covers the detailed preliminary design for a new nuclear waste recycling workshop at the Valduc site, in France. It marks a significant step in the growth of Orano's external activities. The workshop was named "R2D2" and represents 18 million euros in engineering services. An agreement that resulted in the mobilization of the first Orano employees at the Valduc site in the last quarter of 2020.



JULY 2020

RECYCLING

CONVERGENCE PROJECT: TRANSFORMATION OF THE LA HAGUE SITE TO CREATE THE PLANT OF TOMORROW

Convergence revisits the industrial model with a view to a single treatment plant on the Orano la Hague site. This project is based on two key areas: modernization of the control rooms and systems and bringing together support functions in one place, the latter currently being spread over nearly 30 different locations on the site.

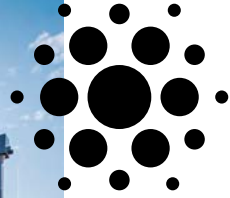


AUGUST 2020

CHEMISTRY & ENRICHMENT

THE PHILIPPE COSTE PLANT: COMMISSIONING OF THE SECOND BUILDING FOR FLUORINE PRODUCTION

Philippe Coste, on the Tricastin site, houses the new additional fleet of 34 electrolyzers, equipment designed to produce the fluorine needed to convert UF₄ into UF₆. These new units will make it possible to double the fluorine production capacity to 15,000 t U/year. On August 20, 2020, the first kilos of UF₆ were produced.



MANAGING THE COVID-19 SITUATION

Since the epidemic's first wave, Orano put in place a system to adapt its industrial activity to the development of the health crisis, with three priorities:

- preserve the health of its employees;
- ensure the nuclear safety of its facilities;
- maintain the energy supply contributing to the generation of electricity.

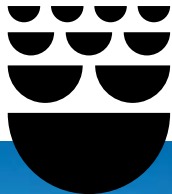
Thanks to **the commitment and mobilization of its teams**, Orano was able to continue to respond to strategic needs of EDF and its European and international customers.

Throughout the crisis, the group also supported **front-line caregivers** in the fight against the epidemic. Orano distributed more than **80,000 masks** and **30,000 sets of protective equipment** to hospitals located near its facilities and to healthcare professionals, as well as various laboratories. Protective visors manufactured using its 3D printers and hydroalcoholic solution produced in its Beaumont Research Hall (Normandy) are all initiatives taken by the group's women and men.

Watch the video



SNAPSHOTS



OCTOBER 2020

MINING

LAUNCH OF THE DRILLING CAMPAIGN IN THE KYZYLKUM DESERT, UZBEKISTAN

The diversification of operating methods and geographical locations is one of the strengths of Orano's mining business. In 2019, Orano strengthened its presence in Central Asia and signed a partnership agreement with the Uzbek Government to develop exploration activities and mining operations in the country. The Kyzylkum Desert drilling campaign began on October 22, 2020.



NOVEMBER 2020

DISMANTLING & SERVICES

ADP OBTAINS THE OPERATING LICENSE FOR THE CRYSTAL RIVER NUCLEAR POWER PLANT

The North American electricity generator Duke Energy entrusted Accelerated Decommissioning Partners (ADP), a joint venture between NorthStar and Orano, with a contract for more than 500 million dollars for the complete dismantling and management of used fuel from the pressurized water reactor of the Crystal River 3 nuclear power plant (CR-3), in Florida. Orano's teams will carry out the cutting and packaging of the reactor vessel and primary cooling system components.



ORANO SOLIDAIRES

In the context of a global health crisis, the group launched the operation "Orano Solidaires" based on three essential areas to combat the pandemic: medical research, support for caregivers and for the most disadvantaged population groups.

One year after its creation, more than **40,000 euros** have been collected from Orano employees according to the principle "**1 euro given = 1 euro matched by Orano**".

This collection has made it possible to donate to local care center charities, or others that work to combat the pandemic, such as AVI Drôme, Coup de Pouce and Narbonne Solidaire.

Orano Solidaires aims to continue to carry out actions which embody the group's social and human commitment.

NUCLEAR MEDICINE

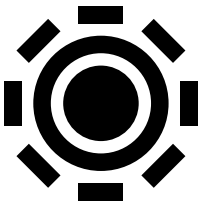
INCREASE IN LEAD-212 PRODUCTION CAPACITY FOR THE DEVELOPMENT OF CANCER TREATMENTS

On October 29, 2020, the Orano Med teams successfully conducted the first operation for the production of lead-212 by dissolving thorium nitrate on the new production lines at the Laboratoire Maurice Tubiana (LMT) located in Bessines-sur-Gartempe (France). This milestone is the realization of Orano Med's commitment to produce the necessary isotopes in sufficient quantities and at a level of purity in accordance with pharmaceutical standards, to enable the development and marketing of cancer treatments.

OCTOBER 2020



MARCH 2021



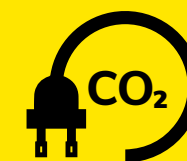
NUCLEAR PACKAGES & SERVICES

SIGNATURE OF AN AGREEMENT WITH DAHER TO ACQUIRE ITS NUCLEAR ACTIVITIES IN GERMANY AND NORTH AMERICA

Daher is not only an aircraft and equipment manufacturer. The group is also a designer and operator of logistics services for aeronautics and high-tech industries. The logistics business was of particular interest to Orano, particularly for its locations in Germany and North America. Daher Nuclear Technologies' know-how in upstream transportation thus helps the group to reinforce its position in the nuclear transportation business, and provides new sites.



NUCLEAR POWER IS AT THE FOREFRONT OF THE FIGHT AGAINST GLOBAL WARMING



Electricity generation is the main source of CO₂ emissions worldwide due to the predominant share of fossil fuels (mainly gas and coal).

Over
90%

Thanks mostly to nuclear power, but also to renewables including hydropower, **France has over 90% low-carbon electricity.**



According to experts at the IPCC⁽¹⁾, **to limit global warming to +1.5°C, the use of nuclear energy is essential.**



Climate experts recommend **increasing the proportion of low-carbon energy used to generate electricity from 30% today to more than 80% by 2050.**

(1) Intergovernmental Panel on Climate Change.

#1 reasons to rely on nuclear power to combat global warming

The capacity of nuclear to guarantee low-carbon electricity generation is invaluable in addressing the climate emergency.

#2

Constant and controllable energy

Thanks to its robust production system, nuclear power supplies electricity on a continuous basis that can be adapted to demand. Thus, nuclear power contributes significantly to securing electricity transmission to hospitals, companies, housing and transport worldwide.

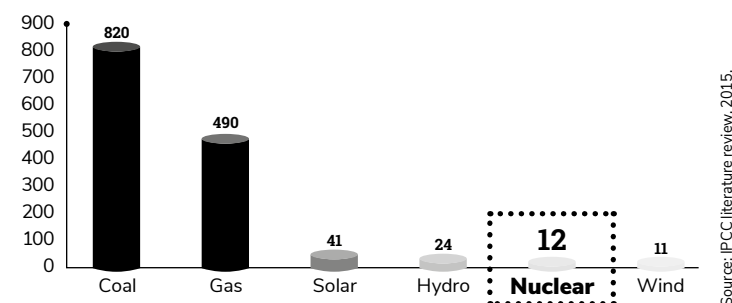
Another major benefit of nuclear power is that France is 56% energy independent.

#1

Low-carbon energy

Nuclear energy is one of the least greenhouse gas (GHG) emitting energies in the world with emissions comparable to wind power, 4 times lower than that of solar and 40 times less than gas. Its very low level of CO₂ emissions makes it an indispensable energy for the low-carbon transition.

Greenhouse gas emissions (gCO₂eq/kWh)



Source: IPCC literature review, 2015.

DID YOU KNOW?

The significant share of nuclear power enables France to have one of the most low-carbon electricity mixes in Europe.

#3

Essential energy for the electricity mix

In all scenarios studied by the IPCC and the IEA⁽¹⁾ to generate low-carbon electricity, a significant development of renewable energies can only be considered alongside nuclear energy in order to avoid the use of fossil fuels. Renewable energies (solar, wind) are by nature intermittent and cannot on their own meet the current and future energy needs of 8 billion people on the planet.

As a result, nuclear and renewables must be considered together to sustain the low-carbon energy transition and meet France's commitments to fight global warming.

(1) International Energy Agency.

#4

Competitive energy

Nuclear energy is actually one of the least expensive sources of electricity, allowing France to have an electricity price which is among the lowest in Europe.

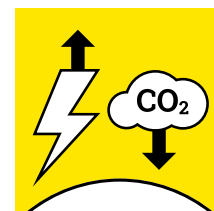
+60%

This is how much more a German household pays on its electricity bill compared to a French household.

#5

A vital energy for the world of tomorrow

The equation to be resolved is well known: in 2050, due to the growth in global demographics, the use of electric mobility and economic development in emerging countries, we will need twice as much electricity. At the same time, we need to achieve carbon neutrality.



As electricity generation is currently the primary source of CO₂ emissions worldwide due to the use of fossil fuels (coal and gas), climate experts recommend increasing the share of low-carbon energy used to generate it from 30% to more than 80% by 2050.

#6

Energy with low raw material consumption

Orano recycles used nuclear fuel to produce new fuel, thereby helping to preserve natural resources. In France, one in ten light bulbs works thanks to recycled nuclear fuel.

96%

of used fuel is recyclable, helping to preserve natural resources.

100 g

of uranium produce as much energy as one metric ton of oil.

#7

Health-friendly energy

Unlike fossil fuel power plants (coal, gas, oil), nuclear power plants do not emit fine particles, nitrogen dioxide, or sulfur dioxide into the atmosphere. Atmospheric pollution, in addition to the climate emergency, is also a major public health issue.

DID YOU KNOW?

Power plants are often pictured with gigantic plumes of smoke coming out of the reactors. These are not CO₂ emissions but only water vapor from cooling towers. It is completely harmless to humans and the climate.



REDUCE OUR CARBON FOOTPRINT

While Orano is already committed to the climate, by reducing greenhouse gas (GHG) emissions through the generation of low-carbon nuclear electricity, the group has decided to go further by implementing a program in 2004 to reduce its environmental footprint in order to contribute to the Paris Agreement and the collective effort to achieve carbon neutrality in 2050.

–60% REDUCTION IN GHG EMISSIONS SINCE 2004

Orano had made a commitment to reduce its greenhouse gas emissions by 50% between 2004 and 2020. This target was exceeded with a reduction of 60% thanks to the efforts of all its business lines. This performance is the result of the implementation of new industrial processes and the renewal of the industrial facilities with some of the most modern plants in the world, resulting in a reduced environmental footprint. It is also the result of technological choices, as in the case of the used fuel recycling plant in la Hague, with a choice made to use electricity rather than fuel oil to produce steam for the site.

–60%
REDUCTION in direct and indirect GHG emissions (scopes 1 and 2) since 2004

–91%
REDUCTION IN ENERGY CONSUMPTION since 2004



CONTRIBUTE TO CARBON NEUTRALITY IN 2050

Based on these results, Orano wants to contribute to carbon neutrality with a new target to reduce its GHG emissions by 2030. The group is studying more than 10 internal decarbonization projects for a total of 140 ktCO₂e. Through its objectives to reduce its own footprint, Orano will contribute to further reducing that of nuclear energy. The group is convinced that nuclear materials and the production of low-carbon, safe and competitive nuclear electricity can play an essential role in serving the climate and carbon neutrality. Orano works alongside its customers to ensure that this goal is achieved.

TARGET –40%
on Orano scopes 1 and 2 by 2025 compared to 2015, benchmark year of the National Low Carbon Strategy (Stratégie Nationale Bas Carbone - SNBC), in order to comply with the Paris Agreement

IMPROVE OUR ENERGY EFFICIENCY

The challenges of energy efficiency are an essential driver of Orano's decarbonization goals. Based on energy audits and the measurement of the direct and indirect carbon footprint started in 2004, an action plan has been established to reduce the group's energy and carbon bill. These actions concern the replacement of fuel-powered equipment with electrical equipment, the introduction of LED lighting, optimization of fluid production tools and the possible use of renewable energy production resources in countries where electricity is highly carbon-intensive.

ASSESS THE FOOTPRINT OF OUR VALUE CHAIN

Orano consolidates knowledge of its scope 3 emissions, meaning emissions from its Upstream and Downstream activities in the nuclear fuel cycle, with a view to identifying reduction drivers. This scope, by nature very diverse, concerns the purchase of raw materials, equipment, etc. Its assessment shows 1.3 MtCO₂e, i.e. three times the direct and indirect emissions (scopes 1 and 2), of which 70% from the item "Purchases of goods and services". The identification of drivers to lower consumption, consume locally and increase low-carbon consumption will also have the objective of generating positive effects on the group's efficiency.

GREENHOUSE GAS EMISSION SCOPE

(GHG protocol definition)

scope 1

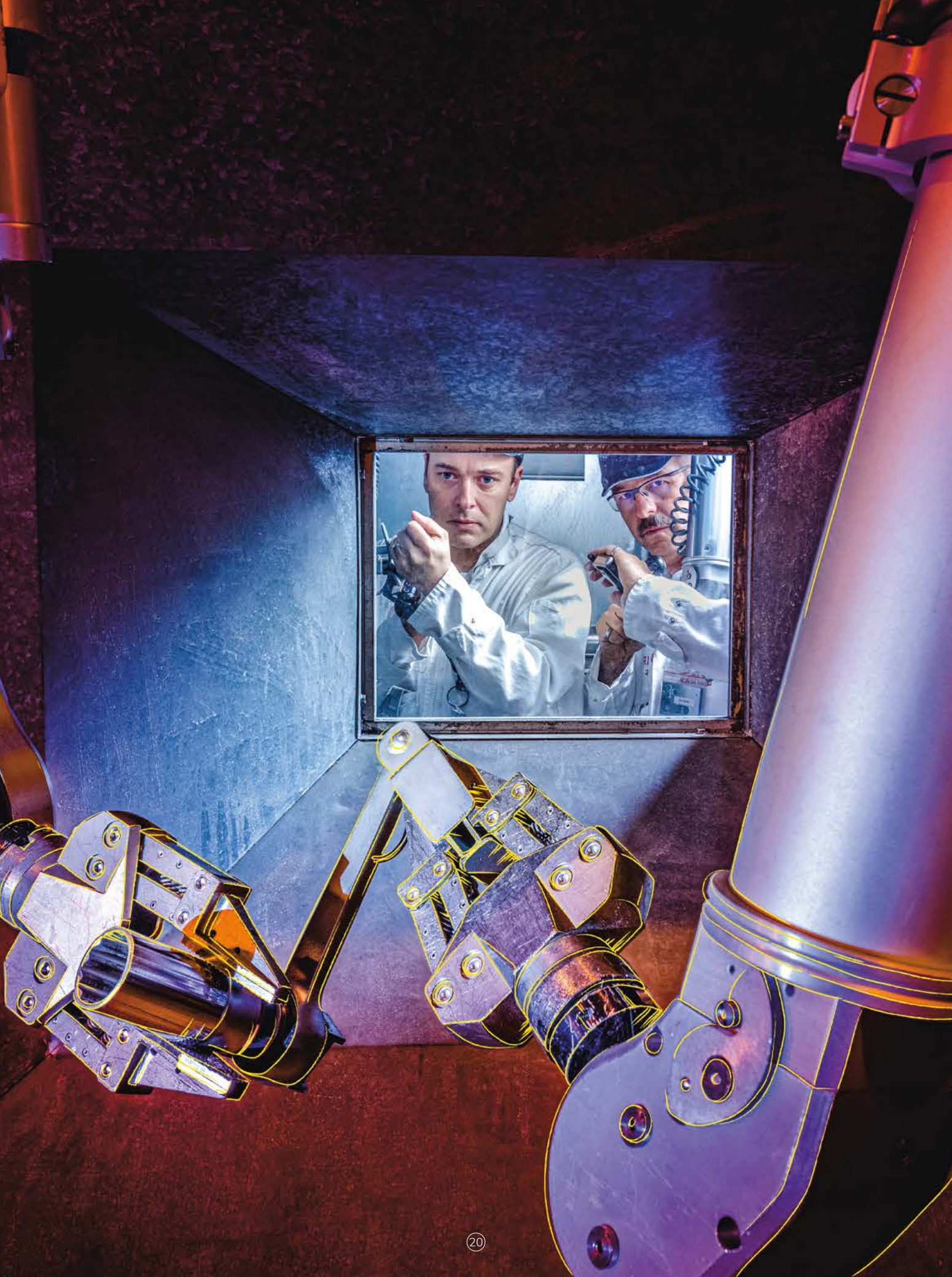
Direct emissions from fossil fuel combustion (gas, oil, coal), direct emissions from refrigerant gases, direct emissions from CO₂ not resulting from combustion.

scope 2

Indirect emissions related to consumption of electricity, heat or steam required for the activity.

scope 3

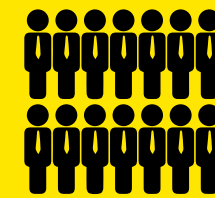
Other emissions not arising from the items described above.



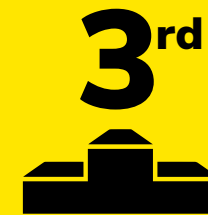
MADE IN FRANCE



NUCLEAR POWER IS A SHOWCASE FOR FRENCH EXPERTISE



220,000
jobs



largest French industry
after aeronautics and automotive



An industry that contributes
**6 billion euros per year to
the French balance of trade**



3,600 companies
in the regions of which 85%
are VSEs and SMEs



TN® Eagle completes the new generation of Orano nuclear packages

Intended for transportation and dry storage, TN® Eagle completes the latest generation of Orano packages. Its modular design provides a decisive competitive advantage. It targets a global market.

THE ADVANTAGES OF REVOLUTIONARY PACKAGING

TN® Eagle is a new generation of packaging for the transportation and storage of used fuel. With a modular structure, it is built from standard technological bricks and meets the various needs of electricity customers around the world by combining better features in terms of safety, productivity and high performance. A particular feature of TN® Eagle: it will be manufactured using an innovative, seamless process, which makes it possible to optimize manufacturing with greater robustness. In less than a year, it obtained approval from the French nuclear safety authority: a fundamental step in its future international development.

A VERSION ADAPTED FOR THE AMERICAN MARKET

To meet the specific needs of the American market (storage of used fuel in canisters), Orano's teams will slightly adapt the TN® Eagle design and have already submitted an application for approval to the NRC, the US Nuclear Regulatory Commission. The first production run for the American market began in

October 2020. Assembly operations in the new production workshop are planned for the end of 2021 for the commissioning of the TN® Eagle at the end of 2023, with the first transportation of used fuel in the United States.

A 4.0 PRODUCTION WORKSHOP

Orano is investing in a manufacturing workshop dedicated to TN® Eagle in Cherbourg, France, to ensure deliveries of packaging to customers worldwide by sea and facilitate deliveries of packaging components by suppliers. The workshop's capacity will initially be 10 packages per year. This next-generation manufacturing workshop will deliver packaging to customers in less than 15 months from the launch of the forged metal containment chamber and the final acceptance of the packaging.

A RANGE OF CUSTOMIZED NUCLEAR PACKAGING

- **TN® 17 MAX:** transportation of used fuel to the Orano la Hague recycling plant
- **TN® G3:** commissioning in 2023 in two versions, long and short
- **NUHOMS®:** half of dry storage packaging in the United States
- **NUHOMS® MATRIX:** a revolutionary storage system
- **TN® EAGLE:** the latest, commissioning in 2023



An inflatable, controlled environment room to protect patients and caregivers

The Orano group, the start-up Aircaptif (design office) and Cir Médical (equipment supplier for emergency physicians) pooled their skills to design, in record time, an inflatable, controlled environment room to remedy the congestion in hospitals in the context of the health emergency due to the Covid-19 pandemic.

Deployed in 40 minutes, this device takes the form of an inflatable structure housing an airtight room. The room has an extraction-based ventilation system developed by Orano, which guarantees static and dynamic confinement and protects not only the patient but also caregivers from the risk of contamination.

EASY TO INSTALL, LIGHT AND MODULAR

The concept can be easily installed by two operators. It is modular, reusable and can be deployed in multiple forms ranging from 2 m² to more than 30 m². Depending on requirements, the inflatable room can be mounted in a building, a hangar, a laboratory, an aircraft, or even a helicopter to isolate contaminated patients.

AN INNOVATION FROM ORANO PROJECTS

As part of the development of the concept, Orano used the expertise of Orano Projects teams, specialized in the engineering of complex ventilation systems that block 99% of particles the size of a virus.

ADVANTAGES OF THE CONCEPT

- Reusable, rigid inflatable structure
- Single-use vinyl frame if desired
- Operational within 40 minutes
- Static confinement in accordance with the ISO 10648-2 standard
- Dynamic confinement in accordance with the ISO 17873 standard
- Custom confined rooms from 2 m² to more than 30 m².
- Applicable to all business sectors



Medical sector



Pharmaceutical industry



Electronics



Aerospace



Fine chemicals



Biotechnology

ORANO, INDUSTRIAL AND TECHNOLOGICAL KNOW-HOW

Orano has unique expertise in the nuclear fuel cycle. A photo report on this industrial know-how, made possible by some of the most modern facilities in the world, recognized by the entire market for its technological expertise and cutting-edge processes.

→

URANIUM EXPLORATION, EXTRACTION AND PROCESSING, PROJECT DEVELOPMENT AND REMODELING

ORANO MINING

- Among the top 3 uranium producers worldwide
- 4 operating sites in 3 countries
- 3,445 employees

With mines in operation in Canada, Kazakhstan and Niger, Orano is one of the world's leading uranium producers thanks to competitive production costs and cutting-edge extraction techniques. The diversity of its resources and reserves over 20 years guarantees its customers sustainable access to uranium. In Kazakhstan, the KATCO joint venture, which operates the largest "in situ recovery" (ISR) uranium mine in the world, supplies approximately 7% of the annual world production, with more than 40,000 metric tons of uranium produced since 2006. The ISR technique, suitable for low uranium content deposits, is a competitive exploration technology that is respectful of the environment.



←

URANIUM CONVERSION

ORANO MALVÉSI & PHILIPPE COSTE

- World leader in uranium conversion
- An entirely renovated state-of-the-art production facility
- 15,000 t U/year: annual UF₆ production capacity to 2023

First stage of the conversion, the Orano Malvési plant, in Narbonne, purifies and transforms the natural uranium ore (from the mines) into uranium tetrafluoride (UF₄). The annual installed capacity is 15,000 metric tons/year. The second conversion phase continues at the Philippe Coste plant (in Tricastin), where UF₄ is transformed into uranium hexafluoride (UF₆). Orano is the only Western converter to have invested heavily in the renewal of its conversion capacities, to the latest safety, technology and environmental standards, thus ensuring long-term supply for its customers.



←

URANIUM ENRICHMENT

ORANO TRICASTIN

- Number 3 in the world for enrichment
- Georges Besse II: the largest enrichment complex in Europe
- Production capacity: 7.5 million SWU/year

Located in Tricastin, the Georges Besse II plant is one of the largest industrial platforms for the enrichment of uranium by centrifugation, offering the best guarantees in terms of technical reliability, energy savings and environmental impact. Enrichment activities precede the final stage of manufacturing fuel assemblies for nuclear power plant reactors around the world. In 2021, the Orano Tricastin site is developing new activities, based on its experience in uranium chemistry, conversion and enrichment, with the construction of the stable isotopes laboratory, which opens up opportunities for the healthcare market in particular.

↓

TREATMENT AND RECYCLING OF USED FUEL

ORANO LA HAGUE

- Number 1 industrial platform for recycling nuclear materials in the world
- 2 production lines: UP2-800 and UP3
- more than 1,000 metric tons of used fuel processed each year

The Orano la Hague plant is in charge of the first stage of radioactive material recycling operations for future use in new fuels, followed by the packaging of these recyclable materials and final waste in a safe and stable form. The site is recognized for the performance of its state-of-the-art facilities. Each year, more than 300 million euros are invested in the site's long-term performance, with dismantling projects for the site's first plant (UP2-400), now shut down, and the safety of the facilities.





↑

RECYCLING AND MANUFACTURING OF MOX FUEL

ORANO MELOX

- Global benchmark plant for manufacturing MOX fuels
- A planned workload of 150 metric tons/year
- 44 nuclear reactors have produced electricity using MOX since 1972

Located in Marcoule, in the Gard department, the Orano Melox recycling plant manufactures recycled MOX nuclear fuel assemblies, intended to supply light water reactors. Manufactured from a mixture of uranium and plutonium oxides from used fuel, MOX is the second most widely used nuclear fuel in the world. In France, 10% of nuclear electricity is generated using MOX. Orano Melox's expertise is recognized by many countries to which Orano supplies MOX fuels, in particular Japan, where Orano teams share their experience with the J-MOX plant.



↓

PACKAGING AND SERVICES

ORANO NPS

- 400 packaging patents granted internationally
- More than 1,500 dry storage systems used worldwide
- More than 5,000 transportation activities per year

Orano is the only industrial player to manage international logistics operations at all levels of the nuclear fuel cycle: design, approval and manufacture of packaging, transportation with the highest level of safety and security, dry storage of used fuel, nuclear waste logistics. The latest new generation packaging, TN® G3, is entering the test phase. It will be used to transport used fuel from EDF nuclear power plants in France.



↓

DISMANTLING AND SERVICES TO NUCLEAR FACILITIES

ORANO DS

- French leader in nuclear dismantling and operational support services
- 5,000 employees
- Present at all French nuclear sites and internationally

Orano has unique expertise in dismantling operations and in supporting nuclear operators in the conduct of their operations. In 2020, the group expanded its international presence, notably with a major contract in the United States to deconstruct the Crystal River 3 reactor core in Florida. Its service offer was also strengthened with the acquisition, in France, of three companies specializing in nuclear maintenance. This development complements the construction site assistance and training offer for the nuclear industry, for which Orano is the main service provider to the French nuclear installed base.



A WORD FROM

JEAN-PIERRE PÉLICIER

Chief Digital Officer

Since 2020, the Orano group has been committed to a vast plan to accelerate the digital transformation around the SHIFT plan and its eight programs.

“Digital is a tremendous performance driver for Orano.”

SHIFT PLAN

“The digital transformation aims to optimize the safety of facilities, and the performance and development of the group's activities by designing and deploying secure digital solutions (cybersecurity), adapted to the jobs (User eXperience), which are developed according to Agile methodology and are data-driven for fluid access and management. Our SHIFT plan translates these priorities into eight programs structured as roadmaps to ensure the deployment of solutions between 2020 and 2025.”

PERFORMANCE

“Digital technology must become a key factor in industrial performance. Current computing, data storage, communication and interface

technologies enable us to advance our operations through the digitization of operating methods and supply channels, predictive maintenance or the digital management of the lifecycle of our plants. It is worth mentioning some recent achievements like the Melox Interactive app, which makes it possible to monitor production progress in real time, the interactive mapping application CartOmines for monitoring the environmental impact of former mining sites undergoing redevelopment or the use of collaborative tools included in the Microsoft 365 suite.”

PEOPLE AT THE HEART OF DIGITAL TECHNOLOGY

“At Orano, digitization is designed to assist people. Above all, it must optimize processes and services to make everyday life easier for our employees, providing them with a fluid and augmented experience, and improving the working conditions and safety of our operators. We train our employees so that everyone buys in to the new digital and connected uses. With everyone's support, digital is a great driver of performance to continue to develop nuclear energy and make it even safer, cleaner and more competitive.”



NUCLEAR ENERGY HAS HAD ITS ROOTS IN THE REGIONS FOR 50 YEARS



60% of local residents
of Orano sites in France believe
that nuclear power is an asset
for their region (BVA study 2019)

98%

of Orano employees
abroad are
recruited locally



€4.3M invested in 2020
in the areas of healthcare,
access to water, education
and economic development
in the countries where
Orano Mining operates



Plants in France that create
long-term jobs and economic activity:

- Northwest (la Hague):
5,000 direct jobs
- Southeast (Tricastin + Melox + Malvési):
3,500 direct jobs

WITH PLAYERS
IN THE LOCAL
ECONOMY

Rooted for 50 years in the local economic fabric, the industrial sites of Orano fully support their regions through their involvement in local bodies, support for employment and training, and the social and solidarity-based economy.



Involvement
in local bodies

Orano Melox is a founding member of **CleanTech Vallée**, which supports innovative start-ups and SMEs involved in the ecological transition. Objective: to make the French department of Gard a reference in the field of cleantechs.

Orano la Hague has been a member of the **Alizé Manche** committee since its inception: it provides skills support to developing companies. It is also a member of the selection committee of **Normandie Incubation**, the Normandy incubator.

Orano Tricastin is involved in **regional economic or administrative bodies** such as the Chamber of Commerce and Industry for the Drôme and Vaucluse, business clubs and business creation support structures that boost the local entrepreneurial fabric.

Taking action during
the Covid-19 crisis

60,000 pieces of protective equipment were distributed to caregivers by the Orano la Hague and Melox establishments. In the Gard department, CleanTech Vallée start-ups have created a disinfection robot with the support of Orano Melox.

The group's Fablabs have been heavily involved in **3D printing of protective visors** intended for healthcare professionals in the regions (hospitals, medical practices, retirement homes, private nurses, etc.), based on plans and data shared by all the additive manufacturing communities in France. The Fablab at the Tricastin site produced more than **1,000 face shields in this way**.

In the countries hosting Orano's mining activities, support operations for medical personnel and charitable activities were undertaken with local communities in Niger, northern Canada, Mongolia and Kazakhstan.

Commit to
the development
of the local
industrial fabric

Orano pays close attention to the sustainability of the network of suppliers to the nuclear sector in France, as well as skills development. In line with its commitment policy, the group thus carries out the majority of its purchasing at national or even local level.

90% of purchases by entities located in France are thus carried out in France, with a very high proportion of local purchases in regions close to its major industrial sites. At the la Hague site, for example, **70% of purchases** are carried out in the Nord Cotentin area.



Acting to develop
skills and employment

Orano relies on its knowledge of the regions and local economic development players to carry out actions tailored to the specific employment priorities and needs in each area. The group supports jobs in short supply and projects led by SMEs/SMIs in the industrial sector and services to industry, particularly in the nuclear sector, and attaches particular importance to the sustainability

of the activities generated by these projects. The Orano la Hague site took part in the inauguration of **the Valognes machining school**, the leading production school in the Manche department, which implements new learning methods for young people having difficulty with school.

3 QUESTIONS FOR

JEAN-MICHEL
CATELINOIS

Mayor of Saint-Paul-Trois-Châteaux,
President of the Drôme Sud Provence
community of communes



What does Orano
represent for your
region?

Established at the Tricastin site for 60 years, Orano is one of the two main employers, alongside EDF, with more than 4,000 jobs involved. It constitutes an economic and social powerhouse for our region. The history of our region has been built around energy and we want to continue the nuclear adventure by mobilizing to accommodate two EPR projects in Tricastin.

What is the perception
of the Tricastin site
by the local population?

77% of local residents are in favor of the nuclear

industry and that just goes to show how acceptable it is to the population. There is total cooperation between Orano Tricastin and local elected officials. We work closely together and in complete transparency.

Does the integration
of Orano go beyond
economics?

Orano participates actively and financially in the main cultural events in the region, like the Film Festival, the Book Festival, and the upcoming start of the Tour de France. The group also supports work-study schemes and the Careers Forum to support young people in their careers. It is a reliable partner.

“More than an economic player, Orano’s roots are historical, cultural and social. It is part of the DNA of our regions.”

Supporting
solidarity initiatives

The different entities of Orano Mining invested **4.3 million euros** in community investment projects in 2020. Among these actions, the group has supported **the NGO FXB International** since 2016 to help vulnerable families lift themselves out of poverty.

In the Drôme department, Orano Tricastin made a donation of 20,000 euros to **AVI**, an association that provides support to enable the elderly or disabled to remain in their homes.

Orano la Hague has been committed for many years to the **inclusion of people excluded from employment**

including sponsoring jobseekers with the *Maison de l'Emploi et de la Formation*, support for parenting workshops run by *Maisons Familiales Rurales* throughout the Manche department, and support for entrepreneurship through micro-credit with ADIE.

Trihom, the leader in training in the nuclear industry and a subsidiary of Orano, supports **disabled sport** in the region around its registered office in Beaumont-en-Véron, in the Indre department. A subsidy is paid to athletes with a severe motor or mental disability who are involved in competitions at national level.

REDEVELOPMENT OF THE COMINAK SITE

After starting operations in 1978, the COMINAK underground uranium mine in the northwest of Niger ceased production in March 2021. In consultation with the Nigerien authorities and its shareholders, COMINAK is undertaking responsible redevelopment of the industrial site. This large-scale project draws on Orano’s more than 40 years of expertise in post-mining management.



COMINAK (Compagnie minière d’Akouta), created on June 12, 1974, produced around 75,000 metric tons of uranium between 1978 and the end of 2020. It has been operating the Akouta, Akola and Ebba deposits in Arlit in Niger since 1978, but the depletion of its reserves no longer allows it to continue its operational activities. Its Board of Directors, which met on October 23, 2019, set the end of production at the Akouta site for March 31, 2021.

Orano, majority shareholder of COMINAK, has committed to providing technical support for the project, alongside the State of Niger and other shareholders.



“Redevelopment and post-mining are an integral part of the life of a mining project.”



ORANO COMMITMENTS

As part of the redevelopment of the COMINAK site, Orano undertakes to engage in ongoing and transparent dialog and communication with stakeholders. The group is undertaking redevelopment work that will make the site healthy, safe and non-polluting, in compliance with national standards and international recommendations. Orano is supporting employees and subcontractors with a retraining plan and support for eligible and viable entrepreneurship projects, and is acting to ensure a sustainable, long-term societal transition for the population. Orano is working with the State of Niger on a business continuity plan in the north of the country, notably with the continued operation of the SOMAÏR mining site and development studies for the Imouraren project.



TECHNICAL COMPONENT

The technical component includes the redevelopment and dismantling of all the listed structures on the site. The main ones are: underground mining work, the surface plant and facilities, the tailings site* and the effluent ponds. The redevelopment activities will be subject to rigorous environmental monitoring and ongoing inspections by the authorities, which will continue for several years after closure.

SOCIAL COMPONENT

COMINAK has set itself the objective of guaranteeing fair and equitable treatment for all employees within a defined and formalized framework. As a result of ongoing social dialog, a social agreement was signed with employee representatives and the Labor Administration of Niger on November 20, 2020. At the same time, a reclassification unit – a unique structure in the country – was set up with different types of possible solutions: retirement and early retirement, vocational retraining, entrepreneurship and mobility inside and outside Niger, transfers to other local companies and, finally, the retention of part of the workforce to carry out the redevelopment work on the site.

SOCIETAL COMPONENT

Today, COMINAK is a major player in the economic life of the town of Akokan. In order to limit the impact of the closure of the site on the population, COMINAK has developed an adapted societal transition plan relating to the conditions for access to healthcare, water, the management of urban infrastructure and support for entrepreneurship and local economic activity, in consultation with the relevant ministries, administrative authorities, elected officials and civil society.

The tailings site* alone is

5 MILLION M³
OF EARTHWORKS

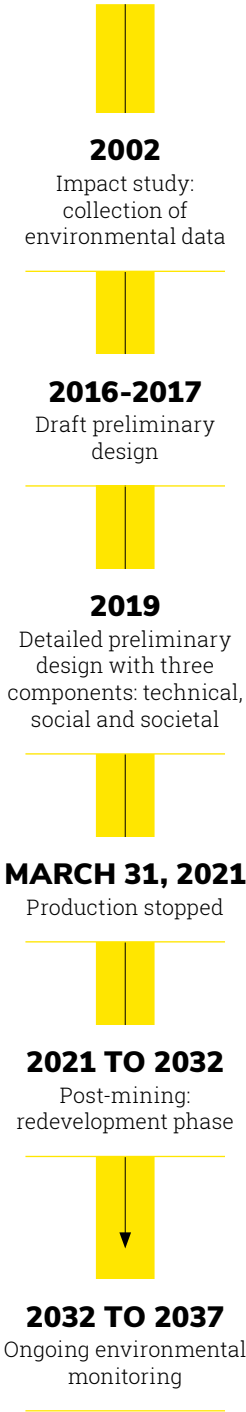
12 YEARS
OF REDEVELOPMENT

90%
OF HOURS WORKED
BY LOCAL STAFF

1/3 OF THE
REDEVELOPMENT BUDGET
DEVOTED TO SOCIAL
AND SOCIETAL COMPONENTS

* Mound of tailings covered by a layer of argillite and sandstone.

KEY
PROJECT DATES



FOR MORE INFORMATION:
<https://www.orano.group/reamenagement-cominak/en/home>



A WORD FROM
BRICE
LEBRASSEUR
Project Manager

NEXT STEPS

"The first redevelopment works to be launched are those that began on April 1, 2021 and will end during the year. After the plant shutdown, dismantling of surface industrial facilities was launched in May and will be completed in mid-2022. The redevelopment of the effluent basins, the longest operation (10 to 12 years), will also begin this year, following on from the tests launched a year ago. The redevelopment of the tailings site, which is the most important project, both from a technical and financial point of view, will begin in the second half of 2022 and will be spread over 4 years. In parallel with these major operations, other redevelopment works such as the demolition of buildings and workshops in the industrial zone will be organized throughout the life of the project."

CHALLENGES

"This project involves many challenges: technical, societal, social and environmental. On a technical level, the one that seems most important is the quality of the redevelopment works to ensure that environmental protection and population health objectives are met over the long term. To carry out the work, we set ourselves a target that it should be carried out with 90% of hours worked by local people. This objective is a challenge that we will achieve with local partners."

The success of the social plan also remains essential, both from the point of view of the respect we owe COMINAK employees and the stable conditions needed for the project to be completed. The other more traditional challenges are cost control and schedule compliance, which are essential insofar as they contribute to the speed of making the site secure. Our close collaboration with the government of Niger and local authorities is a key factor in meeting these challenges and we are working together hand in hand to ensure the success of the project."

THE CHALLENGES FOR ORANO

"The main challenge for the group is to fulfill its commitments and thus reaffirm its ability to be a responsible mining operator, capable of maintaining the trust of its partners, both in a country where Orano, a long-standing player, wishes to remain in the long-term, but also internationally. It should be noted that the redevelopment of the COMINAK site is the first project of its kind to be carried out in Niger under controlled conditions, based on solid studies and a long-term vision. To conduct it, we are using Orano's recognized expertise in its core business and in post-mining management, as well as external expertise because we are working on very delicate problems, such as resistance to erosion over a long period of time."

**ORANO, 40 YEARS
OF EXPERIENCE IN MINING SITE
REDEVELOPMENT**

Post-mining activities refer to all the activities carried out by Orano to monitor redeveloped mining sites, from an environmental, health and safety point of view, as well as to prepare their second life after operations cease. It is an expertise that draws on many disciplines, from geology to water treatment, including radiation protection, ecology and the management of documentary databases.

**MINES REDEVELOPED BY
ORANO AND ITS SUBSIDIARIES**

- The Cluff Lake mine in Canada (operated from 1980 to 2002)
- The Mounana mining site in Gabon (operated from 1961 to 1999)
- 235 mining sites in France (operated from 1948 to 2001)



Aerial view of the redeveloped
Cluff Lake mine site,
Canada



Mounana mining site,
Gabon



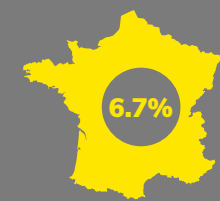
Open-cast mine redevelopment of
Puy de l'Âge,
Limousin, France



THE NUCLEAR SECTOR IS AN ATTRACTIVE SECTOR OF THE FUTURE



800,000 jobs
in the nuclear
sector in Europe⁽¹⁾



The nuclear sector
represents **6.7%** of industrial
jobs in France⁽²⁾



Orano employs
more than 16,500 people
around the world



1,211 hires on permanent
contracts with Orano in 2020,
of which nearly 1,000 in France

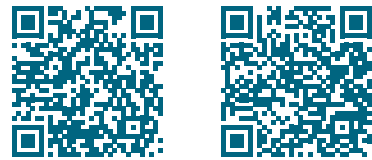
(1) Source SFEN: Société Française d'Énergie Nucléaire (the French nuclear energy society).

(2) Source GIFEN: Groupement des Industriels Français de l'Énergie (French nuclear industry association).

ITSMYJOB

Orano is an international group with many areas of activity. Its expertise comes from its 16,500 employees who work in some 250 different professions. “#ItsMyJob” is a video format that pays homage to each of them by showing their daily lives, their rigor, their good humor... and their desire to transmit their skills. We have transformed this format into a cartoon, to promote two professions, two employees, among all those who help raise Orano to the highest level of excellence.

FIND THEIR FULL TESTIMONY
on the Orano Youtube channel



**PRÉCILIA
LE ROUX**

Nuclear Maintenance
Technician Dismantling
& Services



My job is to maintain the equipment in the various buildings at the Orano la Hague site. We work as controllers, electricians, mechanics. It's very varied!



We are always given the support we need. The procedures are very strict. Safety is everywhere, it is the top priority.



We might also work on pneumatic and electronic equipment. We do diagnostics on the machines.



There is a great atmosphere in the team! We complement each other well, in terms of skills and character.



I love my job because it drives me to always strive for excellence. In a way, we are working to help others and it's rewarding.



**ÉTIENNE
PELLETRAU**

Safety Design Engineer
with Orano Projects
at the Orano la Hague site



My job is to check that the buildings we build on the site meet all the safety standards.



In practical terms, throughout the project, from design to construction, I analyze the risks to ensure that the buildings remain compliant with standards.



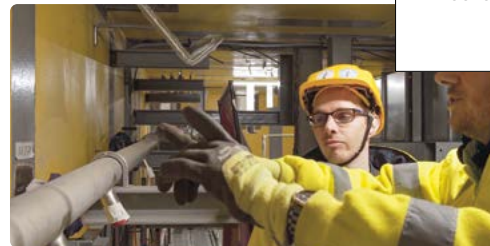
This concerns, for example, checking the thickness of the concrete on the walls, to make sure that the personnel are protected from radiation...



... Or that the pipes are placed on earthquake-resistant supports.



On a daily basis, I use a lot of digital tools, whether they are 3D models or virtual reality.



Our priority: protecting people and the environment. Nothing is left to chance at a nuclear site.



What is interesting is that we work for an internal customer (Orano la Hague) but also for external customers such as ANDRA (Agence Nationale des Déchets Radioactifs - French national agency for radioactive waste management) or the CEA. It is a profession with variety, and plenty of interaction.



MOBILIZED FOR DIVERSITY AND INCLUSION

Orano wants to be an inclusive employer and encourages diversity of profiles. It is at the highest level and through an international commitment that our group demonstrates its concrete investment in favor of professional equality and the inclusion of all, regardless of their differences.

While promoting diversity is first and foremost a matter of conviction, this must be translated into concrete actions. This is the case for Orano, which once again obtained the "Diversity" label awarded by AFNOR in September 2020. A particularly demanding label, which symbolizes the respectful and considerate working atmosphere of all, regardless of their differences, where the only discriminating criterion is competence. All this, while contributing to the company's performance.

What does promoting diversity mean on a daily basis? First, respect for three fundamentals: combating discrimination, ensuring equal opportunities, integrating and including all differences.



PHILIPPE THURAT

Head of Social Strategy,
School Relations & Diversity

FIGHTING DISCRIMINATION

"The fight against discrimination has led us to carry out a risk mapping exercise. We cross-referenced the 25 factors of discrimination established by French law with the 4 main HR processes of hiring/integration, career development, training and compensation, to which is added the social climate of the company.

Then, time for action. In line with the Code of Ethics, in addition to the usual remedies (HR manager, occupational medicine), Orano has implemented a whistleblowing and complaints system in France for several years, open to all employees. This mechanism enables alerts to be reported confidentially. Since April 2019, it has been included in the ethics alert system."

ENSURING EQUAL OPPORTUNITIES

"Equal opportunity is a subject on which we can act at all stages: upstream of hiring, but also once the employee has been brought on board.

Orano is involved, for example, in the promotion of technical courses for female students, through a network of 80 engineering ambassadors composed of 40% female ambassadors.

The percentage of women on work-study programs is 36.5% and the objective is to increase this proportion by one point per year, particularly in the technical areas.

Lastly, Orano gives everyone the equal right to prove themselves, exploit their talents and achieve their objectives."

INTEGRATE AND INCLUDE ALL DIFFERENCES

"Orano is convinced that a company must reflect the diversity of its employees and that of the society in which it operates. Acting for inclusion means going even further: inclusion means interaction between all profiles, with all their differences. Because pluralities of gender, geographical and socio-cultural origins, as well as cognitive and physical differences are assets recognized by the group. Sources of performance, they bring new creativity by multiplying points of view."

**89/
100**
professional
EQUALITY
index

22%
WOMEN
in the workforce
compared to 19%
in the industry
as a whole

18
PEOPLE
with disabilities
recruited
in 2020

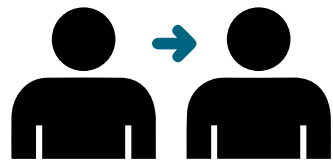
WOMEN & MENTORING

To support the development of its female talents, Orano set up a mentoring program in 2020. The principle: to share, transfer experience and confidence of female mentors to new talents.

THE CHALLENGES OF MENTORING

Being a mentor means participating in a practical and active way in the development of the company and in the success of its high-potential managers by sharing your experience. It also means giving meaning to one's experience.

For those who are mentored, the program creates opportunities. Opportunities to develop through contact with more experienced people, to benefit from their vision, experience, strategic analysis and network. And to be challenged and receive regular non-operational feedback.



A Mentor

is a person with experience who has the self-assurance and wisdom to appreciate the importance of transferring their knowledge to other, less experienced individuals

A Mentee

is a person seeking personal and professional fulfillment

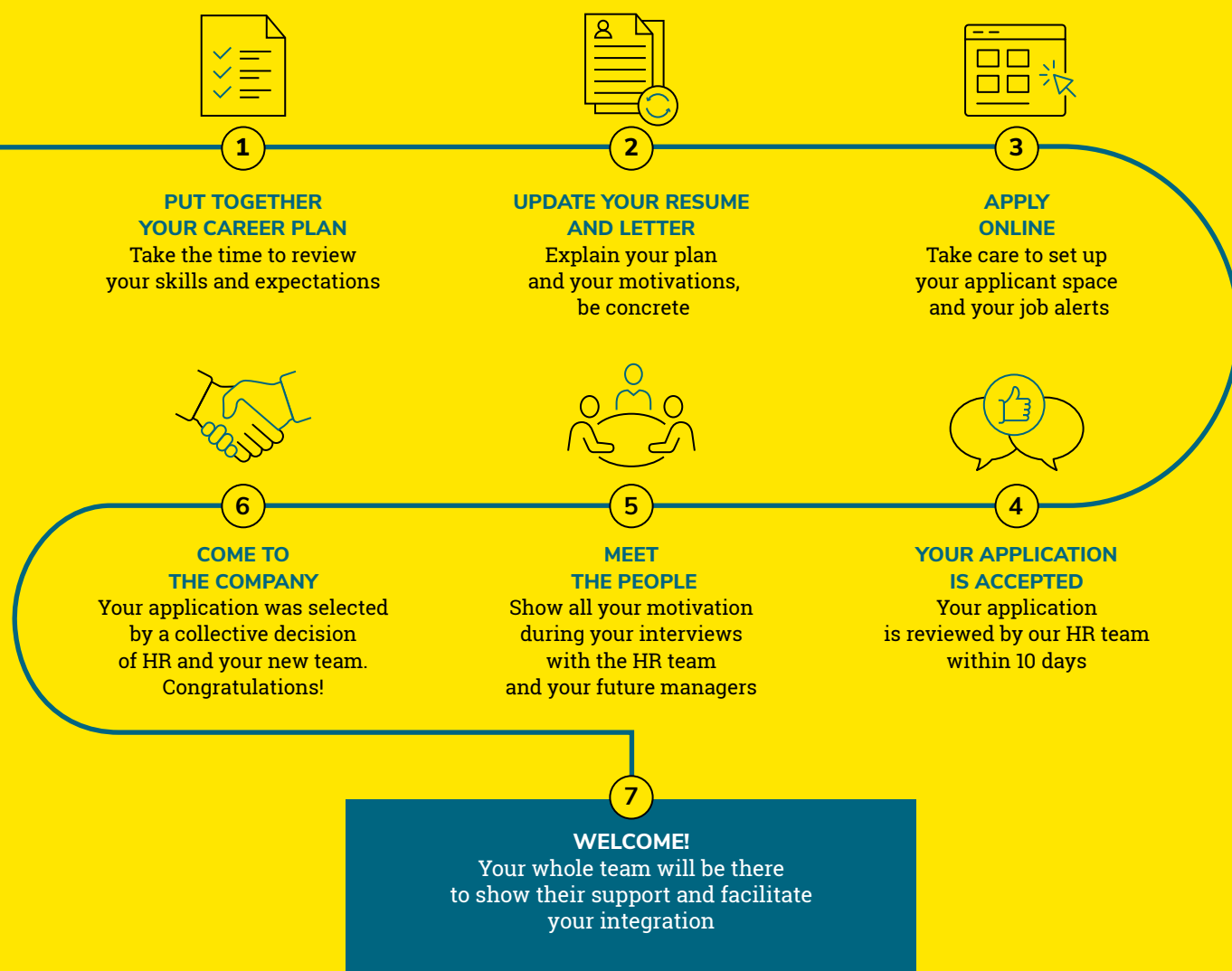
MENTORING: AN INTERPERSONAL RELATIONSHIP OF SUPPORT, EXCHANGE AND LEARNING

The relationship between mentor and the person being mentored is more complex than a teacher-learner relationship. Mentors continue to learn alongside other generations, they open their minds to those being mentored, who find help, and professional and personal support.

How to join Orano group?

Are you convinced that nuclear energy is a resource for the future? Do you dream of a new adventure where expertise, creativity and collective intelligence give you the chance to reinvent yourself? Welcome aboard!

Find out about the recruitment process step by step:



Interested in being part of the adventure?
[Come right this way](#)

DATA SCIENTIST, THE CONTOURS OF A KEY FUNCTION

The job of Data Scientist is at the heart of the challenges of the digital and industry 4.0 transformation.
 Update on a highly sought-after profile.

15
 DATA SCIENTISTS
 AT ORANO
 x2
 planned hires

ZOOM ON A PROJECT

At la Hague, analyses of historical production data made it possible to identify levers for industrial optimization without major operational changes.

Result: an increase in production capacity and recurring savings of around 1 million euros in annual production costs.



A profession born from mathematics

The term "Data Scientist" is often associated with digital technology, but in reality statisticians have been around for a very long time in all fields. They have always been able to make the figures talk to help decision-making.



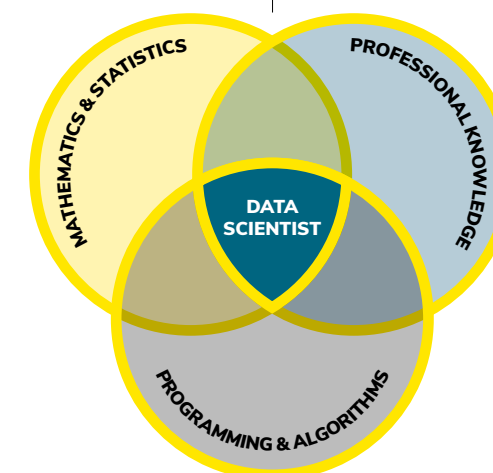
At the heart of industry 4.0

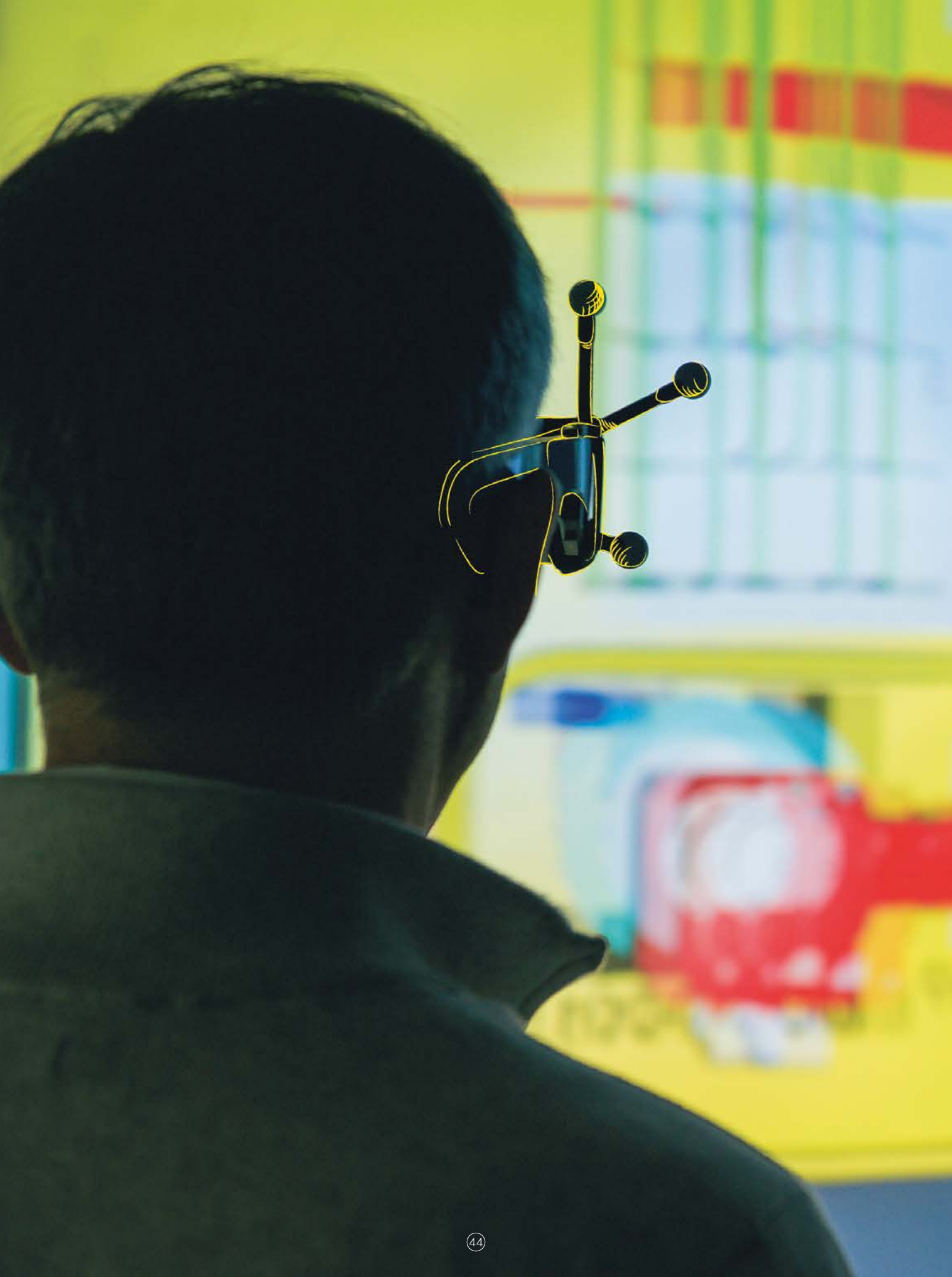
Orano has a large volume of data of all kinds, a source that just needs to be exploited to create value. Data analysis is a lever with very high added value to support the digital transformation and optimize industrial processes.



Always carried out as a team

In order to make sense of the data and ensure buy-in to the solutions proposed by the various professions, Orano Data Scientists always work closely and transparently with the teams in the field.





ORANO PREPARES THE WORLD OF TOMORROW

More than
1,500

start-ups and innovative French SMEs
in the Orano ecosystem through
the "Orano SME Innovation" initiative



**40 Innovation Business
explorations** ongoing, to conceive
new growth opportunities



More than **100 million euros**
invested in R&D
every year



8 operational Fablabs
with several hundred ideas
already tested

THE DEBATE

“INNOVATE TO REINVENT OURSELVES”

Firmly rooted in Orano’s DNA, innovation is designed to imagine the future of the group today, for execution tomorrow. Opening up the possibilities to explore new growth opportunities.



NATHALIE COLLIGNON

Chief Innovation Officer
at Orano



THOMAS LE DIOURON

CEO
Impulse Partners

REINVENTING OURSELVES

N C Innovation is one of the group’s three priorities, along with operational excellence and value creation for our customers. Until 2018, more than 70% of our R&D and innovation efforts were in support of our existing value creation models, essentially looking for better performance. Now, not only are our innovation cycles accelerating to anchor our company in industry 4.0, but they are increasingly oriented towards the diversification of our activities and the exploration

of new growth opportunities to serve society, in a sustainable development approach.

To do this, it is up to us to further enhance our unique skills and expertise, our cutting-edge technologies and fuel cycle materials, some of which are of a strategic nature. Orano is already able to reinvent its business models in sectors of the future such as medical, space, the energy transition and the circular economy.

“Our unique skills and expertise, our cutting-edge technologies, and some of our strategic nuclear materials are key resources to be exploited in sectors of the future, such as healthcare, space, the circular economy, and the energy transition.”

N. COLLIGNON

T L D Major industrial groups are at the crossroads of several fundamental transitions: environmental, digital (technological), generational (age pyramid, employer attractiveness), changes in uses, etc. These transitions threaten historical balances and, in order to survive or remain leaders, companies must reinvent themselves. The Covid-19 crisis has been a catalyst for the acceleration of these transitions. However, reinventing ourselves cannot simply be decreed. We help large manufacturers to evolve in line with this new need, firstly by facilitating the identification of the issues of the future and secondly by putting in place the most appropriate systems to launch explorations, test and allow risk-taking in cultures that are risk-averse.

N C Reinventing our business models necessarily transforms the way we work and manage. Orano encourages open-mindedness to innovative ecosystems, to partners of a new kind, such as those from the world of design, and encourages freedom of action, collective intelligence, and trust, by developing a state of mind which always puts the customer or the user and value creation at the heart of our thinking.

COLLECTIVE INTELLIGENCE

T L D For the past 10 years, we have been supporting major industrial accounts in accelerating their innovation process. To do this, we create bridges between groups and start-ups to meet the challenges of transformation of the former and the development of the latter. There is a form of beneficial co-dependency between these two worlds, where each has its own role. Start-ups need large groups to exist and continue to develop, because manufacturers are a major source of innovation. Large groups need to confront start-ups in order to be constantly informed, challenged and shaken up in their habits.

N C At Orano, we have set up “Orano SME Innovation”, an initiative that promotes collaborative innovation with industry 4.0 start-ups. We are already working effectively with nearly 100 of them in a win-win approach. These start-ups develop certain technological bricks that the group may need, and in return, we contribute to their development and growth by offering them direct and effective access to industrial-scale “test sandboxes”, unique skills and new markets. Working in the nuclear field, with its high standards, is a very good reference that opens the doors to many other sectors of activity.

Watch the full debate
on the podcast
“Expert voices”



“Reinventing oneself cannot simply be decreed. We help large manufacturers to accelerate their innovation process by creating bridges with start-ups to meet the challenges of transformation of some and the development of others.”

T. LE DIOURON

STATE OF MIND

TLD It is above all the state of mind conveyed by start-ups that is sought by large groups: agility, short decision-making processes, a collaborative approach that crosses hierarchical or pyramid structures. For start-ups, collaboration with large groups is a great showcase. It also helps them to develop and adopt a more “industry compatible” attitude.

HC I strongly believe that to reveal a capacity for innovation, we must manage to free up space for our employees, take time to observe the world, be inspired by it and take a step back. The spirit of innovation at Orano is spreading on solid foundations and initiatives on the ground anchored in the group’s Business Units. This is evidenced by the involvement of all Orano entities throughout the world in the Awards #2020, with more than 140 innovative projects presented in 6 categories, or the in-house Innovation Business program with around 40 explorations under way to invent the growth opportunities of tomorrow.

ATTRACTIVENESS OF THE SECTOR

TLD Nuclear is a sector whose very complexity and high standards offer a wealth of opportunities for deeptech start-ups (disruptive innovation): optimization of processes and logistics, robotics, smart sensors, IIoT, AI, augmented reality, simulators, etc. It constitutes a significant source of innovations, even if it is aimed more at a population of “start-uppers” already involved in cutting-edge technologies. With the crisis in the aerospace and automotive markets, more and more start-ups are undeniably turning to nuclear.

NC To accelerate this momentum, we organized a competition for deeptech start-ups to explore and co-develop new activities around healthcare, space, the energy transition, the circular economy and with a positive impact on the environment. More than 60 international start-ups responded and we are holding discussions with a dozen of them to inform the co-development of innovative solutions for tomorrow.

We note that more and more start-ups are being created to develop new concepts, products or services, convinced that nuclear is a great field for innovation and a sector of the future. To make this work, we have adapted our contractual processes, our purchasing and our business reflexes towards greater flexibility and agility. On a daily basis, we ask ourselves how we can help these start-ups to accompany us in the exploration of new growth opportunities or to improve our performance, in a win-win approach.

TLD Prioritizing innovation, as Orano is doing, reflects a profound cultural transformation in several areas: openness to external expertise, approaches to exploring new models, entrepreneurial spirit, etc. The company is changing its processes to be more agile and better able to meet the challenges of tomorrow. From a human point of view, it also enables employees to confront other models, to reconnect with the essential and to rediscover the meaning of their individual actions.



INDUSTRY 4.0

Making the most of the new digital technologies of industry 4.0 to improve the productivity of factories and mines, the competitiveness of services and operator safety, such is **Orano I4.0** ambition through the group’s capacity for industrial innovation and the ecosystem of partner start-ups and SMEs. <https://i4.0.orano.group/en/>



RECYCLING OF STRATEGIC MATERIALS

We are already devising ways to recover certain materials from the nuclear fuel cycle, including **depleted uranium** and several **strategic metals**, essential raw materials for the company’s development. These strategic materials available in the nuclear fuel cycle can be used, for example, to support the energy transition: energy storage, catalysts for the production of hydrogen or processes for converting carbonaceous materials into synthetic fuels.



MEDICAL

Controlled nuclear materials can help save lives, through their use in cancer treatments or in medical research in the form of isotopes. This is the case of **lead-212**, which makes it possible to develop new therapies against cancer, as pursued by **Orano Med**. Other isotopes are being studied to continue this dynamic in the medical sector.



CIRCULAR ECONOMY

As a key player in the circular economy **throughout the fuel cycle**, Orano designs its facilities to limit waste and pollution and optimize the use of its products and their recycling in order to reduce the use of raw materials and preserve the energy used to produce them. Orano also rehabilitates its mining sites and improves the environmental footprint of its industrial sites. It is the breadth of this expertise that Orano wants to bring to its customers and to the many players in this booming sector.



SPACE

Among Orano’s unique skills, **radiation protection** is obviously crucial for space flights and can be promoted to the space sector. If we think of travel to distant planets, then **nuclear propulsion** will be vital. Certain radioactive isotopes are also being considered to supply energy systems such as radioisotope thermoelectric generators.



ENERGY TRANSITION

Nuclear power is an essential part of the ecological and energy transition by contributing, along with hydraulic power, to the generation of **controllable and low-carbon electricity**, in particular for the development of **electric mobility**.

NUCLEAR HAS A FUTURE

Orano is exploring new fields of activity for the benefit of society.

OXILIO: A NEW NUCLEAR MATERIALS MANAGEMENT SERVICE

On the strength of its expertise in dismantling, remediation, radiation protection, maintenance and radioactive waste management, Orano is launching “Oxilio”: a new service for all users of radioactivity in non-nuclear power sectors such as hospitals, radiotherapy centers, research institutes, etc. Know-how mastered by Orano that will enable more than 2,000 professionals or manufacturers to focus on their core business.

THE HOPES FOR NUCLEAR MEDICINE IN THE TREATMENT OF CANCER

Orano Med, the medical subsidiary of Orano, combines biotechnology and nuclear power to develop a new generation of targeted therapies against cancer thanks to the unique properties of lead-212.

3 RESEARCH CENTERS

- **The Laboratoire Maurice Tubiana**, in Bessines-sur-Gartempe, in the Haute-Vienne department, dedicated to the production of lead-212
- **A dedicated R&D center** in Bessines-sur-Gartempe
- **DPPU laboratory**, in Plano, Texas, dedicated to the development of new lead-212 therapeutics

Lead-212 is a very rare radioactive alpha-isotope that comes from thorium. Orano's expertise in cutting-edge nuclear technologies has made it possible to develop a unique process for the extraction and purification of lead-212. This rare metal is the subject of much research and appears in promising new treatments against cancer called "targeted alpha-particle therapy".

THE HOPES FOR TARGETED ALPHA-PARTICLE THERAPY

Targeted alpha-particle therapy is an innovative technology that selectively recognizes and destroys cancer cells, limiting the impact on surrounding healthy cells. This therapeutic approach fuels the hope of the international medical community to move towards less toxic and more effective treatments for patients with limited therapeutic solutions.

INCREASED LEAD-212 SUPPLY CAPACITY

Orano Med has increased fivefold its production capacity for lead-212 using thorium nitrate from Orano's mining activities at its Bessines site and doubled the surface area of the laboratory. This milestone is the realization of Orano Med's commitment to produce

radioisotopes in sufficient quantities and at a level of purity in accordance with pharmaceutical standards, to enable the development and marketing of cancer treatments.

THE NEXT ADVANCES FOR ORANO MED

Orano Med's ambition is to develop a solid portfolio of therapeutics combining the properties of lead-212 with targeting molecules. To this end, a dozen developments are underway, either directly or in partnership with other biotechnology or pharmaceutical companies, notably with Roche, the world leader in oncology.

INTERNATIONAL RECOGNITION

Orano Med's work has already received several awards in the United States, such as the Clinton Foundation Prize and, more recently, the Annual Prize awarded by SNNMI, the American benchmark in nuclear medicine, for ongoing clinical trials in the development of a treatment for neuroendocrine tumors with its partner RadioMedix.

Find our podcast
"Expert voices"



www.oranomed.com

ORANO AWARDS #2020: INTERNAL INNOVATION REWARDED

For the second edition of the Orano Awards, Orano encouraged all its employees to enter an internal competition that rewards innovative projects carried out for the group. An opportunity to promote the spirit of innovation and initiatives on the ground.

BOOSTING THE SPIRIT OF INNOVATION

Through their talents, skills and ideas, each Orano employee contributes to the group's transformation. The Orano Awards showcase innovative projects led by the teams, their initiatives, their successes and their failures, and those from which we can continue to learn and progress. A very rich sharing of experiences and a state of mind that corresponds to the group's Test & Learn innovation approach.



NEW! AN AWARDS CEREMONY WITH A DIFFERENCE

Orano launched a series of 10 videos for the Orano Awards #2020. Better than a conventional ceremony, this series of videos was broadcast on the group's intranet. Step by step, the candidates could follow the deliberations of the juries, the announcement of the nominees, and the presentation of the projects by category right up to the award ceremony.

PLANNING FOR THE FUTURE

The 2020 edition of the Orano Awards was organized around six categories, each with innovative projects: "commercial growth", "operational performance", "managerial and organizational transformation", "digital transformation", "best failed idea" and "2020 initiatives". This last category, launched in connection with the health crisis, illustrates the group's ability to work together as a whole for a common cause, in a tremendous outpouring of solidarity.

9 PROJECTS REWARDED

MORE ALGORITHMS = LESS ACID!

Use of an algorithm to calculate the quantity of reagent to be added, according to the quality of the ore, in the SOMAIR dynamic leaching plant.

MANAGEMENT CONVENTION 4.0

This 100% digital convention brought together 300 Orano Projects managers around innovative and interactive modes of managing.

COVID-19: MAINTAINING THE LINK

A 360° system for the group's employees to inform, and create links and unity.

TOMORROW LA HAGUE

A unifying transformation project for the la Hague site, carried out internally by local teams to develop a real dynamic for the site.

VANADIUM AT COMINAK?!

Innovative in its process, this project consists of producing vanadium from the concentration sludge of uranium treatment effluents.

PACKAGING 2ND AND 3RD LIVES

The challenge: to provide a customer with a robust and economical packaging, in a short time frame, thanks to the reuse of the TN12 packaging. An innovative and competitive approach to 2nd life packaging.

INTERACTIVE MELOX

Used by production management, Melox Interactive is the 4.0 tool accessible to all for finding reliable and consolidated information on the plant, machines and production.

TREEP

A tailor-made and original commercial approach that enabled a customer to make significant savings, and meet deadlines while ensuring the safe transportation of enriched uranium.

A BACTERIA SUPPORTS LIXI

IRONBIOX is an innovative bioprocess, based on bacterial activity, developed and industrialized to improve the uranium recovery rate in low-grade ores.

More than 140 INNOVATIVE PROJECTS presented	6 CATEGORIES
Teams of 2 6 PEOPLE	18 NOMINEES

ORANO

in brief

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

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

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

Orano, giving nuclear energy its full value.

OUR VALUES



Safety and security



Continuous improvement



Customer satisfaction



Ethics, transparency and dialog



Respect and development of people



Cohesion and team spirit

OUR AMBITION

→ Making nuclear energy increasingly reliable and competitive.

→ Getting the most out of nuclear materials, in particular through recycling, so that they contribute to the development of society.

→ Remaining the world's leading player in the production and recycling of nuclear materials, waste management and dismantling.

→ Continuing to reduce our carbon footprint and remaining on course as a responsible player.

ETHICS & COMPLIANCE

As a responsible company, Orano acts according to two priority principles: compliance with the highest standards in terms of safety and security, the protection of health and the environment; as well as compliance with the highest standards of integrity and an unwavering commitment to combating corruption, fraud and anti-competitive practices.

The group strives to maintain and develop a culture of ethics and compliance by implementing policies,

programs and tools adapted to each area, in line with its Code of Ethics and Business Conduct. Communication, awareness-raising and training activities are accordingly carried out throughout the year, drawing on expert networks; the documentation is kept up to date and improved on a regular basis, and controls are carried out according to the risks identified. Finally, the ethics whistleblowing system implemented within the group makes it possible to report any situation or event contrary to the rules in force.

KEY FIGURES

2020

WORK SAFETY

Workplace accident frequency rate with lost time in 2020:

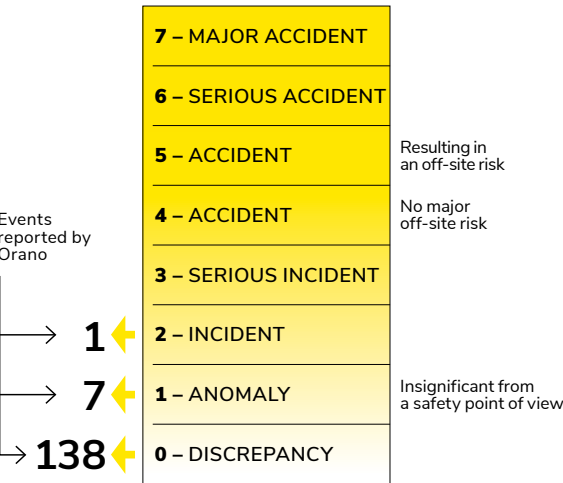
1.3 (vs. 1.8 in 2019)

Occupational injury severity rate in 2020:

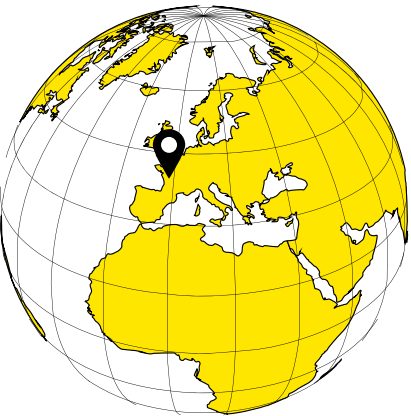
0.05 (vs. 0.08 in 2019)

SECURITY

Number of events reported ranked on the INES scale in 2020



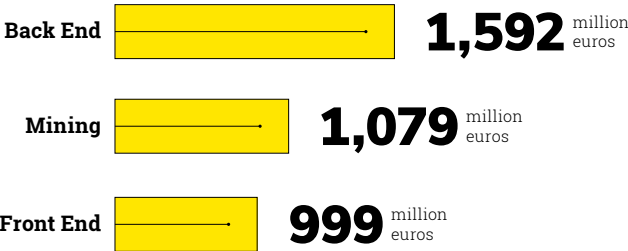
3.7 BILLION EUROS in revenue



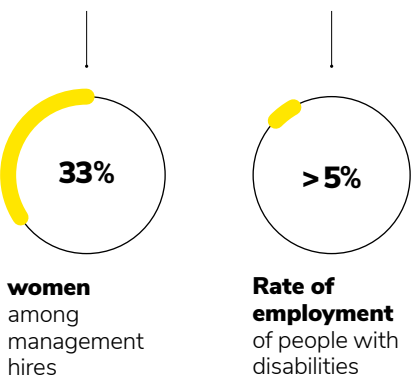
17 industrial sites in France

Top 3 worldwide in our key activities

REVENUE FROM MAIN ACTIVITIES IN 2020



27 BILLION EUROS backlog



550 MILLION EUROS in investments

ENVIRONMENT

463 ktCO₂e direct and indirect greenhouse gas emissions (scopes 1 and 2)

–60% ↓ reduction in emissions since 2004

OUR ACTIVITIES

A key player in the nuclear fuel cycle, Orano recovers nuclear materials so that they contribute to the company's development in the field of energy as well as in medical research.



MINING

Our mining operations cover uranium exploration, production and marketing worldwide, as well as the remediation of former mining sites. Orano ranks among the world's leading uranium producers.



URANIUM CONVERSION AND ENRICHMENT

With a unique integrated industrial platform, and the world's most modern facilities – the Philippe Coste conversion plant and the Georges Besse II enrichment plant –, Orano is recognized throughout the industry for its technical skills and cutting-edge processes.



USED-FUEL RECYCLING

Thanks to the performance of its la Hague and Melox plants – which are the only ones to operate on an industrial scale –, Orano is the recognized international leader in the reprocessing and recycling of used fuel.



NUCLEAR PACKAGES & SERVICES

Throughout the fuel cycle, Orano provides its unique expertise in the design, certification and production of casks, as well as the associated transport, whether overland, sea or rail, with the highest level of risk control.



DISMANTLING & SERVICES

With 50 years' experience, Orano is a benchmark supplier in the field of operations support for nuclear sites (work-site logistics, specialized maintenance and radiological security), as well as the management of radioactive waste and the dismantling of end-of-life equipment and facilities.



ENGINEERING

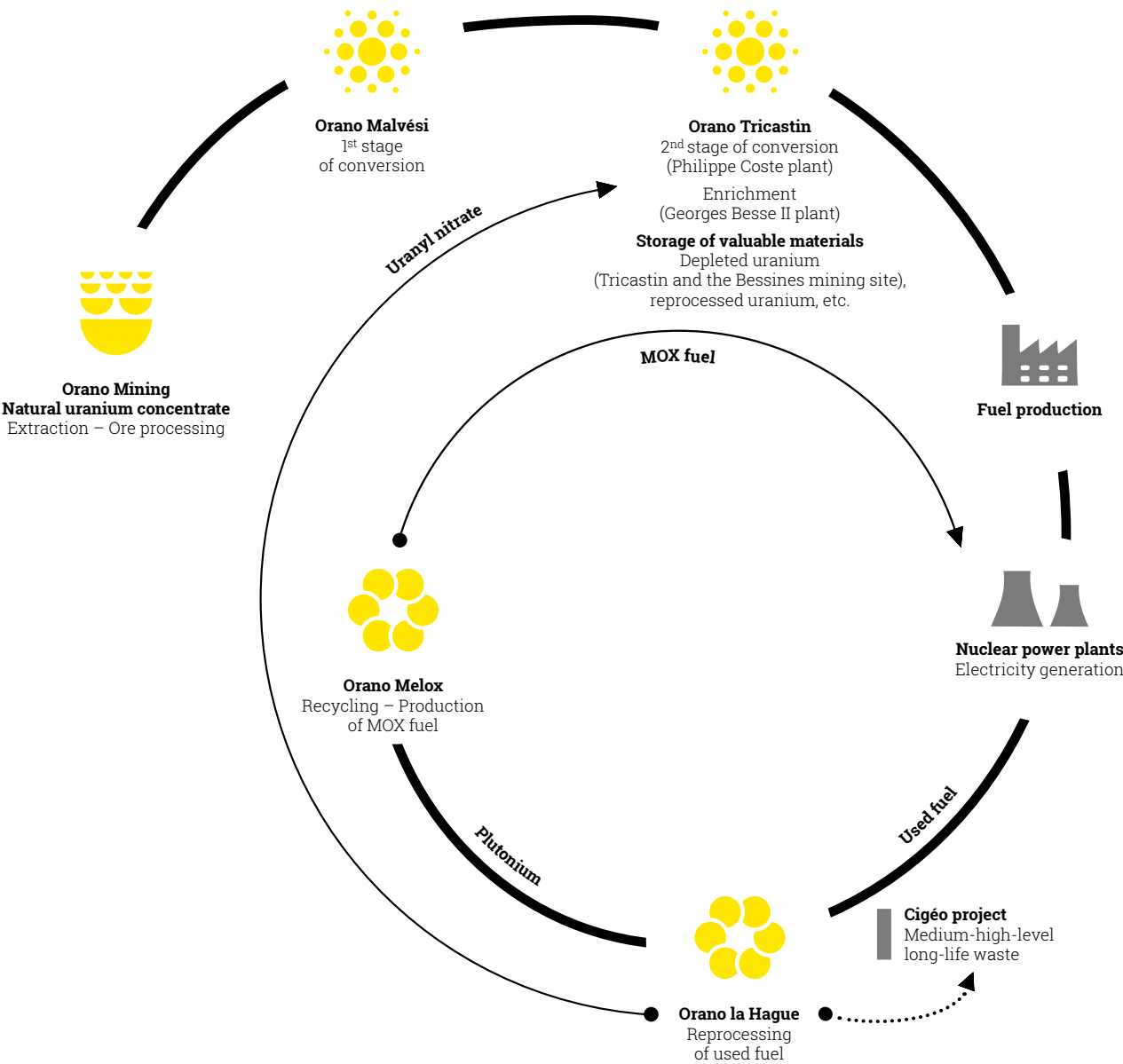
Engineering operations involve engineering consulting services, contracting and project management assistance, design and construction engineering, plant commissioning and operational support. The teams operate in the group's own facilities as well as for external customers, in France and worldwide.



ORANO MED

Orano Med – a subsidiary of Orano – is a company that brings together biotechnologies and nuclear technology to develop new therapies to fight cancer.

THE NUCLEAR FUEL CYCLE



EXECUTIVE
COMMITTEE

April 2021



FROM TOP TO BOTTOM

Jacques Peythieu
Chemistry-
Enrichment BU

Patrick Champalaune
Commercial & Marketing

Corinne Spilios
Performance

Guillaume Dureau
Projects BU

David Claverie
Finance

Frédéric de Agostini
Nuclear Packages
& Services BU

Hélène Derrien
People & Communications

Laurence Gazagnes
Security, Health, Safety
& Environment

Nicolas Maes
Mining BU

Philippe Knoche
Chief Executive Officer

Alain Vandercruyssen
Dismantling
& Services BU

Pascal Aubret
Recycling BU

Board of Directors

The Board of Directors steers and oversees the company's activities and results, and deliberates on strategic and financial decisions.

COMPOSITION OF THE BOARD OF DIRECTORS⁽¹⁾

Claude Imauven Chairman and Independent Director	Directors appointed on the proposal of the French State Philippe Braidy François Delattre François Jacq Cécile Sellier Marie-Solange Tissier
Philippe Knoche Chief Executive Officer, Director	
French State represented by Bruno Vincent Director	Independent Directors Anne-Sophie Le Lay Patrick Pelata Marie-Hélène Sartorius
	Directors representing employees Bernard Bastide Luc Gervaud

(1) At April 1, 2021.

Board committees

To perform its duties, the Board of Directors is supported by four specialized committees which issue opinions and recommendations to the Board.

Strategy and Investment Committee Chaired by Claude Imauven	Compensation and Nominating Committee Chaired by Marie-Solange Tissier
Audit and Ethics Committee Chaired by Marie-Hélène Sartorius	End-of-Lifecycle Obligations Monitoring Committee Chaired by Marie-Solange Tissier

(1) At April 1, 2021.

www.orano.group

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or take part in the dialog,
follow us on:



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orano

Giving nuclear energy its full value

Business corporation (*société anonyme*) with a Board of Directors
with share capital of 132,076,389 euros.

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www.orano.group

Energy is our future. Don't waste it!