## 2019 - 2020 edition

## Our social and environmental commitments



Employees of McClean Lake at the adjacent Pat Lake after completing their shift at the site, Orano Canada

Alban a Street and



In 2020, Orano is a group now transformed and with the solidity it needs as a key contributor to the production of lowcarbon electricity. In 2019, the commitment of each and every one of our 16,000 employees worldwide enabled us to maintain a high level of safety at our nuclear facilities while delivering expected economic results. In the context of a major health crisis due to Covid-19, this commitment shown by our teams has also enabled us, whilst continuing to make the health and safety of our employees our absolute priority, to maintain business continuity in our activities contributing to the production of electricity: conversion and enrichment of uranium, fabrication of fuel from recycled uranium, shipments of nuclear materials and support services for the nuclear fleet and fuel cycle facilities.

The group has demonstrated the resilience of its industrial model, it is now committed to being even more proactive in looking for solutions to protect the climate and the environment and to foster economic development. Indeed, with the growing number of crises now being faced, I am convinced that companies have a central role to play. They must make fundamental social, societal and environmental commitments, and they must contribute to the protection of natural and human resources which are increasingly under threat. Orano is ready to do this. Orano is committed to doing this.

It is in this spirit that we have been working together for the past 18 months with the Executive Committee, the Board of Directors and all the managers of the

## Editorial by **Philippe Knoche CEO of Orano**

group. We have redefined our corporate mission and updated our priorities. We have broken down the main challenges into strategic goals which contribute to meeting the UN's Sustainable **Development Goals.** 

The fight against climate change is of course one of our leading priorities. Starting from this year, we are going to work at an increasingly fast rate to optimize the contribution we can make in this area: ranging from our own carbon neutrality and the reduction of our emissions to those of our customers. We will also continue to operate safely and competitively with a reduced environmental footprint while contributing to development in the territories where we operate. Last but least, our business plan puts innovation at the heart of our strategic choices to preserve natural resources and to develop solutions in the area of healthcare.

The success of this policy of commitment within the Company will be measured in terms of impact. It will rely on the mobilization and the competence of Orano's people. Every day, they continue to operate cutting-edge industrial facilities and invent the nuclear technologies of tomorrow. Every day, they work alongside our stakeholders to identify and implement internationally recognized solutions. I am particularly proud to work alongside them and am confident in the future of our group, which is now entering a new chapter in the industrial history of Orano.

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86

**OUR RESULTS** 

Indicators **GRI content Reporting parameters** 











PROFILE

## **Orano** in **brief**



Orano transforms nuclear materials so that they can be used to support the development of society not only in the field of energy but also in research into nuclear medicine.

The group offers products and services with high added value throughout the entire nuclear fuel cycle, from raw materials to waste treatment.

Its activities, from mining to dismantling, as well as in conversion, enrichment, recycling, logistics and engineering, contribute to the production of low-carbon electricity. Orano is also developing activities in the medical field to help in the development of cancer treatments.

### Our **ambition**

Make nuclear an ever more reliable and competitive source of energy.

Transform nuclear materials so that they can be used to support the development of society, particularly by way of recycling.

Remain the world's leading player for the production and recycling of nuclear materials, waste management and dismantling.

Continue to reduce our carbon footprint and pursue a policy of being a responsible industrial player.

### Our values





tÔ.



responsibility



**Cohesion and team spirit** 

Leading by example, integrity,

**Continuous improvement** 

**Customer satisfaction** 



**Respect and people development** 

## Key figures for **2019**



33% Mining	48% France
24% Front End	<b>10%</b> Europe excl. France
42% Back End	26% Asia-Pacific
1% Other	15% North & South Ameri
	1% Africa and Middle East

16,000 employees active worldwide



1,264 Recruitments on permanent contracts including **1,082** in France



22% of women among staff (compared to 19% for the industry)



**Frequency rate** for occupational accidents 2019



**450 kt**co<sub>2</sub>e **Direct and indirect Greenhouse Gas** (GHG) emissions (Scope 1 and 2)









Average dose over 12-month period for employees of Orano (**0.5 mSv** for sub-contractors)





**reduction** in direct and indirect (Scope 1 and 2) Greenhouse Gas emissions since 2004

## Our **activities** and **locations**

Orano and its 16,000 employees bring to bear their expertise and their mastery of cutting-edge technology, as well as their permanent search for innovation and unwavering dedication to safety, to serve their customers in France and abroad.

#### Countries in which Orano is present

France (Headquarters) Germany United Kingdom USA Canada Niger Gabon Namibia Kazakhstan Mongolia Uzbekistan Japan China South Korea



ORANO MED

Orano Med, a subsidiary of Orano, is a company that combines biotechnologies and nuclear technology to develop new therapies in the fight against cancer.

Bessines-sur-Gartempe (France), Plano (Texas – USA),

Orano TN, Orano LMC (France), TN Americas & TNF (USA)



### CONVERSION AND ENRICHMENT OF URANIUM

On the strength of its unique integrated industrial platform and some of the most modern facilities in the world, with the Philippe Coste conversion plant and the Georges Besse II enrichment plant, Orano is recognized across its entire market for its technical skills and its processes at the cutting edge of innovation.

Orano Tricastin (France), Lea (France), Orano Malvési (France)

••••



MINING

Our mining activities cover the

exploration, production and

commercialization of uranium

worldwide, as well as the remediation

of former mining sites. Orano is one of

the world's leading producers of

uranium.

Katco (Kazakhstan), Orano Canada (Canada),

Somaïr (Niger), Cominak (Niger), Badrakh

Energy (Mongolia), Comuf (Gabon), Bessines

(France), Orano Namibia (Namibia), Nurlikum

Mining (Uzbekistan)



Right across the nuclear fuel cycle, Orano provides its unique expertise in the design, approval and manufacturing of casks, as well as the conducting of transport operations, whether over land, by sea or by rail, coupled with the very highest level of risk management.



With 50 years of experience, Orano is a leading supplier of operations support services for nuclear sites (on-site logistics, specialized maintenance, radiological safety), radioactive waste management, and the dismantling of nuclear equipment and facilities at the end of their lifetime.

Triade (France), Trihom (France), Marcoule (France)

<mark>)8</mark>



### RECYCLING OF USED NUCLEAR FUEL

Thanks to the performance of its La Hague and Melox plants, the only ones of their kind to operate on an industrial scale, Orano is able to position itself as key international player in the processing and recycling of used nuclear fuels.

Orano La Hague (France), Temis (France) Orano Melox (France)



### ENGINEERING

Engineering activities are focused on markets in engineering consulting, project owner or prime contractor assistance, design and execution engineering, startup and operations support for plants. They serve both the group's own activities, as well as external customers, in France and abroad.

> Saint-Quentin (France), Equeurdreville (France), Bagnols-sur-Cèze (France), Orano Projects (UK)

PROFILE

## **Our value creation** model

Orano transforms nuclear materials so that they can be used to support the development of society not only in the field of energy but also in research into nuclear medicine.



Orano has genuine assets to meet all these challenges:

- an uncompromising safety culture,

#### ASSETS AND RESOURCES



**HUMAN** CAPITAL

of whom are women

College and Trihom

at the end 2019

CAPITAL

time

their area

Tricastin, Melox)

a customer portfolio that is unique in the nuclear sector,

recognized industrial expertise and modernized facilities,

leading technologies and expertise that is unique in the world,

people who are recognized for their skills and their commitment,

and their ability to overcome challenges.

#### ACHIEVEMENTS AND RESULTS

#### **HUMAN** CAPITAL

• 1,264 permanent appointments in 2019

733 work/study trainees in 2019

37 hrs training per employee per year in France Workplace equality index of 84/100 in 2019

#### **INTELLECTUAL** CAPITAL

 More than 20 innovative technological solutions deployed on sites

• More than 30 POCs (Proofs of Concept) underway • 20 business innovation explorations in progress

• More than 170 collaborations with start-ups to meet the energy challenges of tomorrow

## **INDUSTRIAL & ENVIRONMENTAL**

 10 % of French nuclear-generated electricity comes from the recycling of used fuel A major player in the low-carbon transition making it possible to offer, thanks to its contribution, one of the technologies with the lowest carbon emissions (12 g CO<sub>2</sub>/KWh)

#### **SOCIETAL** CAPITAL

€ 4.5 M of investment in communities by the Mining activity in 2019 in the areas of health, access to water, training and economic development

 1,122 jobs created as the community revitalization plan in France between 2017 and 2019

#### **ECONOMIC & SHAREHOLDER CAPITAL**

8 years worth of revenue as order backlog Responsible management of activities: € 8 Bn of assets dedicated to covering the entirety of our obligations relating to the future dismantling of our

#### PROFILE

## For our **stakeholders**

Discussing our goals with our stakeholders is one of commitments as part of being a responsible industrial player. Orano takes advantage of various opportunities created to listen to and learn from the dialogue.

#### **SHARED VALUE**



#### Employees & Representatives

- Government & Authorities
- Shareholders & Investors
  - Sub-contractors & Suppliers

Elected & State Representatives

#### Public & Communities

Local residents & communities

Those playing a role in creating jobs and local development

Relations with schools & young people

Relations with the media & associations

### A group **committed** to contributing to **its ecosystem**

Orano is committed in its governance to respecting the principles of bodies of which it is not necessarily a member or to which it is not a direct signatory.

#### Orano is a member of:

- The World Nuclear Association (WNA),
- The French Nuclear Industry Association (GIFEN),
- FORATOM,

- The French Nuclear Energy Society (SFEN),
- The World Association Of Nuclear Operators (WANO),
- France Chimie,
- France Industrie,
- The International Council on Mining and Metals (ICMM) via its subsidiary Orano Mining.



#### **Orano supports:**

WE SUPPORT

- the principles of the UN Global Compact,
- the OECD Guidelines for Multinational Enterprises,
- the fundamental conventions of the International Labor Organization (ILO),
- the Extractive Industries Transparency Initiative (EITI),
- the principles of the Global Reporting Initiative (GRI).



## **Listen** to expectations, risks and opportunities

At the start of 2020, the group decided to do its first materiality analysis. Nearly 160 managers and 130 external stakeholders were interviewed to identify expectations, risks and opportunities. The lessons learned from this exercise have been taken into account in thinking about the group's future commitments, and are anchored in its strategy.

#### OUR APPROACH TO MATERIALITY ANALYSIS

Materiality (a specialist term which can also be understood as "relevance") defines what can have a significant impact on a company, its activities and its capacity to create financial and non-financial value for itself and its stakeholders.

The Orano materiality analysis was conducted in several phases between January and September 2020:

- Consolidation of issues,
- Identification of stakeholders,
- Internal consultation,
- Consultation with our stakeholders,
- Analysis and sharing of results.

This is a first for Orano, the results of which are shown in detail on the next page. Above all, it provided an opportunity, which was much appreciated both internally and externally, for constructive and caring dialogue with our ecosystem.



FIND OUT MORE Find the complete analysis on our website

<mark>12</mark>

"A big **thank you** to our stakeholders for their **confidence**."

**130** 

stakeholders interviewed



Internal interviewers

#### **ININ TESTIMONIALS**

#### **Maryline BRETON**

Officer for CSR and Local Economic Development Orano La Hague

"CSR means thinking outside the usual boundaries as an "extended enterprise". It is then essential to listen to your stakeholders to understand their expectations and the associated issues. In practice, between May and July 2020 for the La Hague site, we interviewed 24 of our stakeholders including representatives of the State, local authorities, associations and suppliers, as well as elected representatives: an approach demonstrating greater openness which was very much appreciated and which was extremely valuable not only in terms of the information it provided on areas for improvement but also in terms of sharing information that was useful to both parties.

#### **Gilles RECOCHE**

VP, Responsibility, Engagement & Communication Orano Mining

"Having a dialogue with stakeholders means knowing who they are, recognizing them, and building and maintaining a relationship of trust between us."

## Our **materiality** matrix



#### Importance for Orano





The safety and security of operations and transportation is a priority that the organization and external stakeholders have in common and this is something over which it is perceived to have good control.

**Transparency, information and ethics** are also shared priorities. There is deemed to be room for improvement on transparency, particularly concerning the ease with which information can be found in reports published by the group.

#### **STRONG EXTERNAL EXPECTATIONS**

In the environmental domain, even though our stakeholders recognize the contribution that nuclear makes to the fight against climate change, they place the emphasis on **"the reduction and recovery of waste", "the endof-life management of sites"** and **"the environmental performance and eco-design of projects",** thus expressing a desire to see the question of processed final waste, responsible behavior in the closure of sites, as well as an overall concern to save resources and limit the impact of operations and of new projects. There is thus deemed to be room for improvement in the way these topics are taken into account by Orano.

#### **INTERNAL** SENSITIVE ISSUES

The "contribution to the fight against climate change" and the "well-being of employees and quality of life at work" are ranked as more important internally than externally.

This is also the case for all of the **economic and governance issues** (except for Transparency).

#### A STARTING POINT

The results of the materiality analysis have been shared with the Executive Committee and managers of the group in order to be fully taken into account in the new roadmap for societal and environmental commitment. The proper management of **"Health, safety and radiation protection"** is also a priority shared by external stakeholders and by the organization. This is understood to apply not only to our employees, but also to our sub-contractors and suppliers, and to local residents,

In the societal domain, the **"economic** development of the territories in which we operate", the "support for local training and employment" and "dialogue and consensusbuilding" are deemed to be important issues for our stakeholders and ones on which there is room for improvement, in this way expressing a desire for Orano to have more of a role in communities in terms of development of skills and employment,

**"Technological and managerial innovations"** are the issue which is most frequently cited externally, in particular as an element contributing to sustainability of activity.



#### PROFILE

## A step further towards a stronger **commitment**

### An approach supported by the **Executive Committee** and **co-constructed** with teams

The CSR Engagement Department, reporting to the Senior Executive Vice President, Health, Safety and the Environment (HSE), a member of the Executive Committee, is piloting a year of coconstruction with managers of the group to define the group's future societal and environmental commitments anchored in its strategy.

## 1,300

Managers given awareness training and mobilized in less than 6 months

#### MOBILIZING TO DEFINE OUR FUTURE COMMITMENTS

At the end of 2019, the Executive Committee and 200 managers from all entities of the group took part in a process to raise their awareness of the new strategic, societal and environmental goals for Orano between now and 2025.

The process of co-construction continued into 2020 with 1,300 managers taking part in digital workshops, held in parallel to the materiality analysis and despite the exceptional situation in order to gain an understanding of external trends, the group's societal and environmental goals and the state of progress to date, and to think about the group's corporate mission and actions to be taken for the years to come.





![](_page_8_Picture_11.jpeg)

These sessions in particular were an opportunity to assert the group's desire to contribute to the UN's 2030 agenda for sustainable development.

They also mobilized the internal community of "Change Masters".

#### FOCUS ON CHANGE MAKERS AND CHANGE MASTERS

In order to assist with its transformation, Orano has trained 300 managers in the best change management techniques. These agents of change, referred to as "Change Makers" and "Change Masters" are mobilized on crosscompany projects, the purpose of which is to write a new page in the group's societal and environmental commitments.

#### **IDENTIFICATION TESTIMONIALS**

#### **Carine PIQUET** Vice President, China Business Operations

Orano Projets

"Within Orano Projects, we organized coconstruction workshops to put our roadmap together with our managers. These workshops were held during the lockdown period, with good mobilization among managers under the leadership of the Management Committee. We saw strong commitment to the approach which made it possible to look to the future and involve everyone's in the business plan. In the specific context of lockdown, this approach also enabled us to take a very major step forward in our digital transformation." Work commenced on the assessment of Scope 3 Greenhouse Gas emissions at the end of 2019 and is continuing into 2020 in order to identify areas for reduction. This exercise provides the opportunity to gain an understanding of the mechanisms of climate change and the levers that we can work on through our actions and our decisions.

![](_page_8_Picture_22.jpeg)

Co-construction workshop, Orano Projets (France) and Katco (Kazakhstan)

![](_page_8_Picture_24.jpeg)

The criteria for assessment of projects and investments have also been reworked to take societal and environmental impacts into account in line with our strategic goals. These are gradually going to come into more widespread use.

All of these projects will make it possible to formulate a corporate mission and updated societal and environmental commitments at the start of 2021.

#### **David OHAYON**

Senior Vice President, Fuel Cycle Business Line Orano Nuclear Packages and Services

"Taking part in this project as a Change Master from the very outset through to the group's corporate mission and ambition being made clear was an enthralling adventure. My involvement in the application workshops within my Business Unit allowed me to emphasize an in-the-field aspect of the approach by bringing each and every one's efforts and initiatives into line to form a collective project."

## **Our vision** for 2025

## Our significant contribution to key global challenges ...

#### Develop

competitive and low-carbon access to electricity for all in a world fighting against climate change

increase in temperatures on average (Source: IPCC)

Protect resources via recycling

The IPCC scenarios confirm that in order to limit global warming to 1.5°C and continue to live in a viable world, without being the only solution, nuclear power is a vital component. The Paris agreement on climate change envisages a sharp reduction in the CO<sub>2</sub> emissions and the European Union has set itself a target of achieving carbon neutrality by 2050 and Orano intends to play a part in this collective mobilization.

Electricity is an essential commodity, the cost of which has to remain affordable, and this is something of that is of major societal importance for all countries and to assist with electrification of the economy. Orano is convinced that nuclear energy is a competitive form of energy which has its place in the ecological transition.

Natural resources are not available in infinite supply. Orano is convinced that the recycling of nuclear materials is a responsible and sustainable approach as part of the circular economy. The French nuclear industry was one of the first to recycle using spent fuel reprocessing, which reduces the volume of waste and saves materials. This know-how could be extended to the recycling of other strategic resources.

#### **Contribute to the fight against** cancer thanks to nuclear medicine

- Materials are a source of energy that has the capacity to save lives. Orano is contributing to the development of alpha therapy treatments for use in the fight against cancer.

Through its strategic goals, the group intends to structure its contribution and its actions, with a societal and environmental ambition that is commensurate with the challenges and expectations to be met, without forgetting about the fundamentals of performance and development.

## ... Taken into account in our 5 **strategic** goals

![](_page_9_Figure_15.jpeg)

### Our contribution to the 6 **Sustainable Development Goals**

The Sustainable Development Goals (SDGs) are goals defined by the United Nations to create a better future and express a collective awareness of the need for a sustainable society.

At the end of 2019, Orano's managers made the group's contribution to the 6 goals a matter of priority and over the years to come this will be translated into concrete actions to be taken as part of our new roadmap.

![](_page_9_Picture_19.jpeg)

By innovating to preserve resources and protect health

## OUR COMMITMENTS

![](_page_10_Picture_2.jpeg)

## A governance leveraging the best standards

## **Claude Imauven's** vision

Chairman of the Board of Directors

"The Board of Directors works closely with Orano's Management to build the energy of the future: low carbon, competitive, and respecting people and the environment. This entails a commitment to leverage the best standards on what we could call our fundamental values behind our daily actions : operating nuclear facilities with the highest safety standards while monitoring impacts on the environment and health, making sure Orano manages its risks and acts ethically and transparently."

![](_page_11_Picture_4.jpeg)

## Our 2019 results

Governance

![](_page_11_Picture_7.jpeg)

Administrators including 4 independent administrators and 2 employee representatives

#### Nuclear and industrial safety

## 139

Nuclear safety and radiation protection events on the INES scale **INES 2:0 INES 1:7 INES 0: 132** 

#### Health, radiation protection, & occupational safety

1.8

Frequency of occupational accidents in 2019

#### Ethics and compliance

1,116

Employees trained in compliance in 2018 and 2019, including 843 in 2019

#### **Transparency & information**

27

**3** GOOD HEALTH AND WELL-BEIN

-/v/

Public meetings in which Orano participated regarding the French plan for the management of radioactive materials and waste (PNGMDR)

![](_page_11_Picture_22.jpeg)

Women in Orano ExCo on January 1, 2020

![](_page_11_Picture_24.jpeg)

taken every year

## 0.84 mSv

Average dose over 12 months for Orano employees (0.5 mSv for subcontractors)

## 107

**Incidents** escalated by the ethical reporting process

![](_page_11_Picture_31.jpeg)

#### **Visitors** at our main French sites

## Governance

![](_page_12_Picture_2.jpeg)

#### Board of Directors As of November 1st, 2020

#### MEMBERS OF THE BOARD OF DIRECTORS

The Board of Directors guides and controls the company's actions and results and deliberates on strategic and financial decisions

Claude Imauven Chairman and independent administrator

Philippe Knoche Chief Executive Officer, administrator

French government represented by Bruno Vincent Administrator

**François Delattre** Administrator named at the proposal of the French government

**François Jacq** Administrator named at the proposal of the French government

13

Administrators include 4 independent administrators and 2 employee representatives

#### Cécile Sellier

Administrator named at the proposal of the French government

**Marie-Solange Tissier** Administrator named at the proposal of the French government

**Philippe Braidy** Administrator named at the proposal of the French government

Anne-Sophie Le Lay Independent administrator

Patrick Pelata Independent administrator

Marie-Hélène Sartorius Independent administrator

**Bernard Bastide** Administrator representing employees

**Alexia Dravet** Administrator representing employees

![](_page_12_Picture_22.jpeg)

**Specialized committees** dealing with each of the non-financial subjects within their field of **responsibility** 

#### **ADVISORY COMMITTEES**

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

**Strategic and Investment Committee** 

**Audit and Ethics Committee** 

Nominating and Compensation Committee

Committee for Monitoring End-of-Cycle Obligations

FOR MORE INFORMATION Orano's governance

## **Executive** Committee

The objective of Orano's ExCo is to chart the company's course and ensure consistency in implementing decisions under the authority of the Chief Executive Officer. The ExCo provides the CEO with support for managing the company and implementing the strategy and general policy defined by the Board of Directors.

25%

**Women** in Orano ExCo on January 1, 2020

![](_page_12_Picture_35.jpeg)

#### Left to right:

David Claverie Finance

Laurence Gazagnes Health, Safety, & Environment

Jacques Peythieu Chemistry-Enrichment BU

Alain Vandercruyssen Decommissioning & Services BU

Patrick Champalaune Commercial & Marketing

Corinne Spilios Performance Philippe Knoche Chief Executive Officer

Guillaume Dureau Projects BU

Frédéric de Agostini Nuclear Packages & Services BU

**Hélène Derrien** People & Communications

Nicolas Maes Mining BU

Pascal Aubret Recycling BU

#### **FUNDAMENTALS**

## Making **nuclear and industrial safety a priority**

![](_page_13_Picture_2.jpeg)

Orano has made the nuclear and conventional safety of its operations and transportation a priority. Safety is specifically based on the defense in depth principle which results in a succession of measures ("lines of defense") aimed at mitigating technical or human failures.

#### WHAT IS NUCLEAR SAFETY?

Nuclear safety refers to all the technical and organizational measures concerning design, construction, or operation, decommissioning and dismantling of basic nuclear facilities, and transportation of radioactive substances. These measures are undertaken to prevent accidents and mitigate their effects.

The measures involve 3 levels:

- prevention by a high level of design, construction, and operational quality,
- permanent monitoring to detect operating deviations and correct them by automatic systems or operator action,
- mitigating consequences to prevent the worsening of any incidents or accidents.

#### **DID YOU KNOW?** (?)

Orano joined the World Association of Nuclear Operators (WANO) in 2012. WANO's mission is to give the highest priority to nuclear safety and reliability in nuclear facilities throughout the world.

#### **2019 TAKE-AWAYS**

139

Nuclear safety and radiation protection events on the INES scale **INES 2: 0** INES 1:7 **INES 0: 132** 

59

Internal inspections with **86** recommendations

In addition to these three levels of defense, taken into account from the facility design phase, we have undertaken the following:

- organizational measures and allocation of resources for controlling emergency situations and protecting the public,
- improvement actions following the operating feedback from the Fukushima accident.

#### FOCUS ON TRANSPORTATION SAFETY

Transportation safety also rests on 4 lines of defense:

- the package containing radioactive materials and its cask, which must protect operators, the public, and the environment,
- transportation modes (rail, road, sea, or air) and the reliability of associated operations,

• response measures implemented in case of incident or accident to mitigate consequences,

• protection of transported material and packages.

Test conditions for accident situations are extremely stringent with regard to cask design. To receive the approval necessary for their use, the casks transporting radioactive materials, for example, must undergo a series of tests:

• free fall from a height of 9 meters (30 feet) on an undeformable surface,

• drop from a height of 1 meter (3 feet) on a steel punch,

• direct exposure to a fully engulfing fire generating a minimum average ambient temperature of 800°C for 30 minutes,

• immersion in water for 8 hours.

#### INTERVIEW 11111

WITH PASCAL WILZ. INSPECTOR-GENERAL

"Examining the main lessons learned from inspections and various findings shows that nuclear safety is satisfactory."

#### What are the key actions of the General Inspectorate?

**P.W.:** An inspection program is drawn up annually by Executive Management on the proposal of the Inspector-General. The program enables correct application of nuclear safety principles, early detection of a potential deterioration in nuclear safety and radiation protection performance, and identification of improvements needed to ensure complete control of safety and radiation protection. Management can also decide to perform situationspecific inspections.

#### **NUCLEAR SAFETY/ENVIRONMENT CHARTER AND POLICY**

The Nuclear Safety Charter states the Executive Management's priority commitment to risk management and establishes the appropriate principles of organization and action. It calls for implementing a continuous improvement approach based on operating feedback.

The 2017–2020 Nuclear Safety/Environment Policy, validated by the ExCo, which monitors progress on the policy, formally identifies nuclear safety, industrial safety, and environmental protection priorities.

## ~130

Inspections of the French Nuclear Safety Authority on Orano's nuclear facilities

![](_page_13_Picture_41.jpeg)

![](_page_13_Picture_44.jpeg)

#### You publish an opinion on the nuclear safety of the facilities every year. What are the results for 2019?

**P.W.:** The results are satisfactory. Action plans are underway to address points requiring vigilance and attention, identified in the 2017 and 2018 reports. A dynamic must be maintained for implementing the independent safety field and subcontractor management and for upholding high levels of safety culture. Operational documentation remains an important issue.

For 2019, we also need to pay attention to certain points: controlling the chemical risk in non-process facilities, controlling the fire risk, and mastering safety pillars.

Within the framework of Orano's transformation, based on operational excellence, the objectives of this policy are:

- that a high level of nuclear safety is sustainably ensured for our facilities, our products, and our services,
- that strengthened operational discipline is a daily concern for operational management and all those involved in conducting operations and maintenance.
- that the priority given to risk prevention and environmental protection is taken into account by each of the processes that make up our activities.

This policy is applied by all the entities in the form of action plans that are monitored at the corporate level. It is also applicable to external contractors and is appended to the corresponding contracts.

Its application is internally controlled by the General Inspectorate which reports to the Executive Management on the compliance of operations.

27

FOR MORE INFORMATION Available documents

2019 General Inspectorate Annual Report 2017–2020 Nuclear Safety/Environment Policy 2018 Nuclear Safety Charter Informational reports on nuclear facilities

The following themes are monitored:

- compliance with the requirements of the safety authorities and internal requirements,
- periodic review of the main nuclear safety issues,
- changes to organization and specific situations,
- consideration of nuclear and conventional safety in ongoing activities,
- nuclear safety management.

Furthermore, specific themes can be monitored, such as incorporating human and organizational factors (HOFs) and performing periodic inspections and tests.

#### OID YOU KNOW?

All the opinions of the French Nuclear Safety Authority concerning Orano are publicly available on its Internet site. http://www.french-nuclear-safety.fr/

#### EVENTS CONCERNING NUCLEAR SAFETY AND OPERATING FEEDBACK

The nuclear industry is one of the most closely monitored industries in the world. Anomalies and incidents lead to notification of administrative authorities and reports made available to the public. As part of continuously improving nuclear and industrial risk control, Orano systematically analyzes the technical, human, and organizational causes of all these events and takes action to avoid recurrence.

The 7 events classified as INES level 1 in 2019 concern:

- four deviations in waste management at Marcoule and Tricastin,
- a delay in performing periodic inspections on several facilities at the La Hague site,
- a small robot that fell into the vessel of a shutdown reactor while the pool was being cleaned,
- and failure of automatic power interruption equipment to start in a facility at Tricastin.

To promote "weak signal" escalation and experience sharing, at the end of 2011 Orano set up an indicator calculated from a ratio between the number of level 0 events and the total number of significant events. Detecting weak signals and reporting and handling significant events is one of Orano's major objectives.

In 2019, Orano's event prevention rate (EPR) met the objective, reaching its lowest level at 0.05.

## FOCUS ON THE EARTHQUAKE ON NOVEMBER 11, 2019

On November 11, 2019, an earthquake occurred near the city of Teil (southeastern France). The shaking was slightly felt at the Orano Tricastin site, 23 km (14 miles) from the epicenter. This earthquake had no impact on the nuclear safety of the site's industrial facilities, which are compliant with the latest safety standards and the requirements of the post-Fukushima supplementary safety assessments. The observed intensity of the shaking was far below the trip values of the site's safety systems.

#### MANAGEMENT OF DEGRADED SITUATIONS

Orano also has a robust emergency management system to handle emergency situations that could impact nuclear safety in its facilities, employee and public health, and the environment. Nearly 100 exercises are organized each year, including some with government and public authorities. Our nuclear sites have dedicated H24 response teams.

![](_page_14_Picture_22.jpeg)

## Spotlight on...

#### ... SUPPLEMENTARY SAFETY ASSESSMENTS

The French Nuclear Safety Authority, in charge o monitoring French nuclear facilities, asked operators on May 5, 2011, to start supplementary safety assessments (SSA) of their facilities following the accident in Japan on March 11, 2011 As part of this effort, Orano conducted in-depth examinations of its facilities and organizations and made investments totaling 300 million euros.

#### ... SAFETY REVIEWS

They regularly re-evaluate the level of nuclear safety in a facility by considering the latest regulatory changes and using the best available techniques. The purpose of this exercise is also to obtain the necessary validations from the competent authority to continue operating a facility for the next 10 years. These reviews are a regulatory obligation for Basic Nuclear Facilities Subject to the approval of the French Nuclear Safety Authority, each review file contains 12 documents and a summary report, also submitted to the French Minister of Ecological and Inclusive Transition.

#### ... HUMAN AND ORGANIZATIONAL FACTORS

Human and organizational factors (HOFs) are an important component of nuclear safety because they influence human responses (actions, inspections, monitoring). They can lead to deviations compared to expected behavior (operating procedures, instructions, etc.), but also serve as factors for correcting deviations affecting nuclear safety. These factors are based on people interacting with their environment, systems, processes, and organizations.

	OUR ACTIONS:
ە	300M invested in:
•	Supplementary equipment that resists the mo extreme hazards or enables taking action afte the fact
•	New emergency centers at our Basic Nuclear Facilities
A รเ	response force for providing addition upport to a site
	OUR ACTIONS:
	Setting up a dedicated organization for safety reviews
*	OUR ACTIONS:
	Internal requirements on incorporating HOFs in projects (design, facility changes, or

Systematizing the use of reliability enhancement practices (REP)

HOF inspection at La Hague in 2019

## Measure and reduce impacts

![](_page_15_Picture_2.jpeg)

#### ENVIRONMENTAL MONITORING PRINCIPLES

Orano devotes significant resources to reducing and controlling chemical and radioactive releases. In parallel, it ensures permanent environmental monitoring.

Liquid and gaseous releases are monitored continuously, to enable rapid corrective actions if needed. And to check there is no real impact on the environment, deferred monitoring (based on sampling) is performed in the various ecosystems all along the radionuclide transfer chains leading to people.

#### FOCUS ON MONITORING RADIOACTIVITY IN THE ENVIRONMENT

Terrestrial environmental monitoring focuses on the possible routes by which radioactivity is transferred to people:

- atmospheric route (air),
- deposits (plants, soil),
- **water** (rain, drinking water, streams, groundwater),
- food (milk, vegetables, meat, etc.).

Periodic measurements are taken in the environment. The type, location, and frequency of the samples are chosen to make them representative of the monitored environment. A specific investigation is used for radionuclides.

## ~100,000

Samples taken each year for environmental monitoring

In France, the measurement results are regularly submitted to the competent authorities (Nuclear Safety Authority, regional departments for the environment, planning, and housing, etc.).

At old mining sites, in addition to rigorous water quality monitoring, regular studies prove that the quantity and quality of aquatic ecosystems are not affected by Orano's activities.

#### (?) DID YOU KNOW?

To monitor the flow rate and level parameters of the waterway that crosses the Tricastin site, called La Gaffière, an IIOT (industrial internet of things) solution was adopted. The monitoring sensors are connected to a computerized and digitized monitoring application. This wireless, low-consumption system directly sends the information collected to teams in charge of environmental monitoring. This saves times for the operators and secures the data. Deployment of this IIOT solution started at the end of 2019 throughout the Orano Tricastin site for other uses (piezometric height, water and electricity meters, etc.).

#### LIMIT IMPACTS ON THE ENVIRONMENT AND THE POPULATION

Radioactivity in the environment (sea water, fauna, flora, air, soil, etc.) is assessed based on the activity released in liquid and gaseous effluents and their dispersion. Then the dosimetric impact is calculated by considering all routes by which radioactivity can affect people. This assessment involves population groups identified as being the most exposed locally to the impact of releases.

#### FOCUS ON **KEY ANNUAL** RADIOLOGICAL IMPACT RESULTS AT OUR MAIN SITES

![](_page_15_Picture_22.jpeg)

**10 mSv** 

![](_page_15_Picture_24.jpeg)

Natural radioactivity (annual average dose in France) **2.9 mSv** 

![](_page_15_Picture_26.jpeg)

![](_page_15_Picture_27.jpeg)

Orano Malvési (facility classified for environmental protection)

![](_page_15_Picture_29.jpeg)

Orano La Hague **0.0142 mSv** 

Orano Tricastin

## 0.00076 mSv

Orano Melox

### < 0.000001 mSv

The annual impact of our nuclear sites in France is nearly 100 times less than natural radioactivity.

<mark>30</mark>

![](_page_15_Picture_37.jpeg)

( Sampling in the environment. Orano La Hague, France.

#### HANDLING IMPACTS GLOBALLY AND OVER TIME

Limiting impacts also encompasses the following areas:

- Bacteriological impact,
- Visual impact,
- Impact on biodiversity,
- Noise pollution,
- Disturbance of road and rail traffic,
- Olfactive impacts, vibration, dust, etc.
- Impact from light emissions, electromagnetic fields, etc.

Orano's nuclear safety/environment policy also aims to reduce and control all of our environmental liabilities with an approach in proportion to the issues. This strategy is motivated by the desire to give the lands where sites are located a second life.

In compliance with its commitment to the French government, Orano manages nearly all old uranium mining sites in France (236 of 247 in total), in addition to the sites Orano and its subsidiaries have operated for almost 60 years. In 2009, the French government entrusted Orano with the public service mission of a survey followed by a treatment plan for the waste rock from mining in France in the public domain, whether or not the former mining sites were operated by Orano. Currently, 95% of these liabilities have been handled, with work to be finished by the end of 2020.

#### FOR MORE INFORMATION Available documents

2019 General Inspectorate Annual Report 2017–2020 Nuclear Safety/Environment Policy 2018 Nuclear Safety Charter Informational reports on nuclear facilities Orano Mining CSR report Post-Mining Report for France (in French)

#### **FUNDAMENTALS**

## Health, radiation protection, and occupational safety

![](_page_16_Picture_2.jpeg)

Protecting the physical and mental health of our employees is a daily concern.

The 2017–2020 health, safety, and radiation protection policy applies to all Orano entities and targets 3 priorities:

- develop primary prevention in health, safety, and radiation protection,
- manage our operations with commitment and responsibility,
- strengthen feedback and sharing of experience.

## A ROBUST OCCUPATIONAL HEALTH ORGANIZATION

For French entities, occupational health is coordinated in a corporate health service with national reach to make it more effective. The corporate occupational health department is mature, and the operating feedback makes it possible to adjust the monitoring conditions for employees.

Any changes are officially made by the governing bodies for occupational health in France (standing national committee on occupational health and the national commission of monitoring and control). These bodies include and have ties to labor and management representatives.

![](_page_16_Picture_11.jpeg)

of Orano employees are monitored by an internal occupational health department. Inter-company departments offer medical monitoring to other employees. 2019 TAKE-AWAYS

1.8

Frequency rate for occupational accidents in 2019

## 0.84 mSv

Average dose over 12 months for Orano employees (0.5 mSv for subcontractors)

FOCUS ON

Santé Attitude Plan Prévention 2019-2021

In 2019, Orano initiated a multi-year prevention plan called "Santé Attitude" (Health Focus). At most of Orano's sites, dynamic, hands-on events have been held alongside stands featuring prevention specialists and healthcare professionals. Vision was the first theme. These actions will continue into 2020, with a focus on the skin, our protective envelope.

#### (?) DID YOU KNOW?

With the support of its insurance partners, Orano offers all its employees and their families a system of remote medical consultation available 24/7, including during work travel or vacations.

![](_page_16_Picture_23.jpeg)

#### PREVENTION BASED ON RISK ASSESSMENT

Prevention entails identifying hazards and assessing risks according to occupational situations. This analysis leads to a risk map for the site per work unit (included in the risk assessment file known as the "document unique" in France). Action plans for the personnel are developed and monitored based on this mapping and address training, career paths, protection, awarenessbuilding, monitoring, ergonomics, etc.

Based on the "document unique," an individual occupational risk sheet (ORS) is prepared and used to determine appropriate medical monitoring for the employee.

Any person working in the facilities, whether they are an employee or a subcontractor, is informed of the inherent risks of their activity and the measures taken to prevent them.

#### FOCUS ON HSE NETWORKS

The activities of the safety networks and radiation protection networks lead to sharing and exchange on methods for applying regulations, best practices, and research into the causes of safety and radiation protection events. They also provide crossfunctional responses, in view of improving prevention.

#### **MEDICAL MONITORING**

A monitoring program has been developed by healthcare professionals in the department using scientific and regulatory principles. This program includes screening for occupational illnesses and preventing them. Prevention information is provided to employees on an individualized basis. Medical monitoring tracks occupational exposure throughout employees' careers. It relies on an expanded technical platform offering supplemental biological and radiotoxicological examinations.

## 13

Santé Attitude sessions in 2019 over a total of 18 days

#### (?) DID YOU KNOW?

As part of preventing psychosocial risks (PSR), Orano has set up a counseling and support structure open to all employees in France. A specific structure was set up for expatriated personnel and their families, in coordination with the Insurance Department.

Organizational changes are preceded by a preliminary assessment of the psychosocial risks, which is shared with employee representatives.

#### OPERATIONS IN RADIOLOGICAL ENVIRONMENTS

Radiation protection is defined as the set of rules, procedures, and means of prevention and monitoring to avoid or mitigate the potentially harmful effects of ionizing radiation, its direct impact on people or its indirect impact, including damage done to the environment.

Radiation protection corresponds to 3 principles of prevention: justification, optimization, and limitation.

The operations in radiological environments involve dosimetric evaluations, for which the preparation is indispensable for reducing worker exposure to ionizing radiation to levels that are "as low as reasonably possible" (ALARA principle).

Employees exposed to ionizing radiation benefit from monitoring suitable for the level of exposure.

![](_page_16_Picture_43.jpeg)

#### **FUNDAMENTALS**

## Health, radiation protection, and occupational safety

![](_page_17_Picture_2.jpeg)

The actions to maximally reduce the dose received by workers in controlled areas are as follows:

- Occupational ergonomics and collective protections are considered from the facility design phase
- Work conditions are studied in depth and provisional dose is assessed before operation
- Exposure duration is limited
- The principle of dosimetric equity is applied
- Protective screens are used
- The work environment and the physiological constraint of PPE usage are incorporated
- Medical monitoring is adapted according to the risks (external exposure or contamination risk)
- Individual dose histories are kept.

#### INTERVIEW

WITH PIERRE LAROCHE, DIRECTOR OF HEALTH, SAFETY, AND RADIATION PROTECTION

> "Orano employee and subcontractor teams show total commitment."

### SAFETY, ECTION

## In 2019, what were the initiatives deployed in your department to improve the health and safety of employees?

**P.L.:** Concerning health, we have set up telemedicine, which facilitates employee access to the occupational health physician when they are on a different site.

In terms of safety, we have created GATOME, the toxicology and metrology support group. In 2019,

#### FOCUS ON **DOSIMETRY**

The amount of ionizing radiation absorbed by a worker is expressed in dose or dose equivalent. For exposed workers, this entails:

- dosimetry obtained by reading the operational dosimeter that informs the exposed worker in a controlled area in real time and enables managing and monitoring doses by the radiation protection entity,
- **passive dosimetry** obtained by laboratory measurement of delayed dosimetry, which takes account of the doses received by the personnel during regulatory periods (month or quarter). The results are sent by the measurement laboratory to a national central file (SISERI), archived, and provided to the occupational health physician. Passive dosimetry is the standard dosimetry to demonstrate regulatory compliance as defined in the French Labor Code (worker exposure limit value for the whole body of 20 mSv per year).

The individual doses of each Orano employee contribute to the results presented in this report (average dose of 0.84 mSv over 12 months for Orano employees).

## A CORPORATE POLICY OF ACCIDENT PREVENTION

As part of its occupational accident prevention policy, Orano has used accidentology to define required pillars and safety standards applicable on its platforms and by all its personnel and subcontractors.

## GATOME carried out toxin measurements in the workplace to determine the respiratory exposure of employees.

#### And for radiation protection?

**P.L.:** In partnership with IRSN, we have developed software, MIODOSE, that can estimate doses caused by internal contamination of employees exposed to ionizing radiation. This entails whole-body or radiotoxicological measurements.

Strict compliance with the pillars will prevent employees from being exposed to severe or fatal hazards.

The standards are simple, common-sense rules that must become reflexes for everyone, at all levels. They call for individuals to take care of their own safety as well as that of others.

Pillars and 7 standards make up the Orano occupational safety policy

## Working together for safety!

![](_page_17_Picture_34.jpeg)

#### FOCUS ON THE PPE WORKGROUP

For operations with radiological risks, the number and type of work clothes are adapted according to the risk and level of exposure, in view of avoiding internal and external contamination of the worker. A multidisciplinary effort was led by prevention specialists and healthcare professionals, with guidance from the corporate health, safety, and work conditions committee, to prepare a guide defining the most effective clothing associations, actual wear times, and maximum daily wear times, based on the physical workload and ambient temperature.

The progressive deployment of this guide in 2019 is an example of safety and health prevention applied to all Orano employees.

![](_page_17_Picture_38.jpeg)

A proactive approach to developing Orano's occupational safety culture, in place since 2019, consists in assessing the potential seriousness of safety events (including near-misses and weak signals) that, depending on context, could have become fatal accidents or caused irreversible and lasting damage. Orano then takes action to prevent these events from recurring.

Orano takes care to provide continuing education of employees and subcontractors on health and safety.

#### (?) DID YOU KNOW?

"SAFETY DAY" is a yearly event. Organized in June in each entity and focused on issues related to occupational safety, this event is an opportunity for all employees of a site to share best practices and participate in demonstrations and activities around the theme of safety, such as:

- 3D virtual reality in workshops on movements and risk hunting,
- Santé Attitude (Health Focus) with themes such as screening for eye disease, workstation posture, and eye yoga,
- French Highway Code, including regulations, penalties, and prevention of traffic risks and driver distractions,
- lock-out, illustrated by reliability enhancement practices,
- protective equipment (radiological risk, chemical risk, etc.),
- first aid, with an emphasis on recovery position, hemorrhage, and burns,
- work at heights,
- same-level falls,
- and a focus on Orano's guiding principles of safety pillars and standards in all its professional activities.

Available documents

2017–2020 Health, Safety, & Radiological Protection Policy

## Manage **risks**

![](_page_18_Picture_2.jpeg)

Orano has set up a risk management system in keeping with the recommendations of the French financial markets authority (AMF), professional standards, and regulatory changes regarding due diligence and reporting non-financial performance.

#### RISK MANAGEMENT POLICY AND INTERNAL CONTROL

A risk assessment campaign is carried out annually to weigh the effect of potential events on Orano reaching its strategic and operational objectives. Its main goals are to:

- identify formally risks of all types,
- characterize these risks to classify them,
- define and implement action plans aimed at controlling these risks.

#### DID YOU KNOW?

The risks and litigation Orano is involved in are published in the annual report.

Orano also has an internal control system organized according to 3 areas:

- Control by the entities themselves,
- Control by the Financial Department in collaboration with the Risk and Internal Audit Department,
- Control by the Risk and Internal Audit Department.

#### 

WITH OLIVIER THOUMYRE, DIRECTOR OF RISKS AND INTERNAL AUDITS

"It is essential for us to be a reliable partner for our customers."

![](_page_18_Picture_18.jpeg)

## How does the internal audit contribute to Orano's committed approach?

**O.T.:** The internal audit serves specifically to assess risk control, including the risk of not complying with our social commitments. So the internal audit process is aimed at providing reasonable assurance of compliance with our commitments. In this way, it participates in Orano attaining its objectives.

### So you see the social and environmental commitment as a risk?

**O.T.:** It is neither a risk nor a supplemental obligation, but rather the natural extension of the company's reason for being in all aspects of its business. This new dimension proceeds from awareness that the positive results of a company are not limited to its financial earnings, but also include its impact on society and the environment. I would even say that in the long term, social impact gives a company sustainability and resilience, themselves a source of lasting financial results. So the two are not opposed, they must support each other. In this way, Orano's committed approach is a real opportunity. The role of the internal audit is to ensure this opportunity.

Orano is committed to becoming a preferred partner for its customers. To build its resilience, it took concrete steps in 2019 on a process to create formal business continuity plans for its entities.

These plans were used to manage the COVID-19 situation in early 2020. In-depth operating experience will be gathered to learn all relevant lessons and continue making progress.

## and ensure the continuity and **resilience** of our **operations**

#### OUR MAIN RISKS IN A CHANGING WORLD

peddling

![](_page_18_Picture_27.jpeg)

Adhering to an uncompromising and ambitious <mark>compliance</mark> policy, along with <mark>sharing a set of values</mark> with local authorities

#### FOCUS ON THE MANAGEMENT OF THE COVID-19 SITUATION

Guaranteeing everyone's safety in the workplace and the continuity of energy supply has been a guiding principle for Orano's emergency management. In response to the global COVID-19 pandemic, Orano very early on understood the gravity of this health crisis. Its first response was to protect the health of its

In response to the global COVID-19 pandemic, Orano very early on understood the gravity of this health crisis. Its first response was to protect the health of its employees. By the end of January 2020, Orano had informed them of the precautions to be taken in Finally, during these difficult times, Orano maintained relation to the epidemic in China. As it developed, its committed approach and remotely conducted Orano focused on a doctrine of public health and various projects, while remaining in close contact with business continuity to manage all dimensions of this its employees. exceptional situation, drawing on its experience with, and training for emergency situations. Orano raised awareness of barrier behaviors among its personnel very regularly, but also among its service providers, and put a set of necessary measures in place, collaborating with personnel representatives every step of the way.

#### STRENGTHS WE BRING TO OPPORTUNITIES

- A diversified portfolio to support the conservation of resources and the <mark>fight</mark> against global warming
- A level of <mark>excellence</mark> in nuclear safety, environment, health, conventional safety, and <mark>skill development</mark> recognized outside Orano

A long-term partner, long industrial cycles, and economic <mark>resilience</mark>

## **Ethics** and compliance

![](_page_19_Picture_2.jpeg)

Orano strives to be exemplary in terms of ethics and compliance. As a responsible company, Orano acts in accordance with two priority principles:

- complying with the most stringent requirements suitable for nuclear and conventional safety issues in order to conduct our business and protect health and the environment,
- complying with the strictest integrity standards and unswerving commitment in the fight against bribery, fraud, and anticompetitive practices.

#### OUR COMPASS: COMPLIANCE CHARTER AND CODE OF ETHICS

Compliance is the measure for ensuring that the company controls the following risks:

- violation of laws and regulations,
- non-compliance with industry standards,
- non-compliance with the Orano Code of Ethics and compliance policies and procedures.

Orano's Code of Ethics sets forth these principles and the associated rules of conduct, demonstrating our awareness of our priorities, our values, and our reputation on a daily basis. It applies to our subcontractors and suppliers who must sign a specific sustainable development commitment.

#### (?) DID YOU KNOW?

The Orano Code of Ethics is available in 8 languages on our Internet site. Each employee is asked to confirm their commitment to comply with this Code of Ethics every year during their annual assessment.

#### GUIDING PRINCIPLES AND HUMAN RIGHTS

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

- The Universal Declaration of Human Rights adopted by the UN in 1948,
- The fundamental conventions of the International Labour Organization (ILO), and
- OECD Guidelines for Multinational Companies.

Orano's application of these reference texts reflects its commitment to eliminating all forms of forced, imposed, or child labor and protecting free association, privacy, and the right to collective bargaining.

Beyond these fundamental texts, Orano supports concrete initiatives to promote socially responsible attitudes and environmental protection and to measure its actions in compliance with:

- The principles of the UN Global Compact,
- The Extractive Industries Transparency Initiative (EITI), and
- The principles of the Global Reporting Initiative (GRI).

![](_page_19_Picture_24.jpeg)

![](_page_19_Picture_25.jpeg)

![](_page_19_Picture_26.jpeg)

Miners. Cominak, Niger.

#### **DUE DILIGENCE**

From its inception, Orano has made it a core priority to ensure on a daily basis the prevention, identification, and management of risks related to the fuel cycle and the use of nuclear energy.

In keeping with this approach, Orano undertook to establish a vigilance plan, in compliance with the French law of March 27, 2017, in view of identifying risks, preventing serious violations of human rights and fundamental liberties, ensuring the health and safety of people, and protecting the environment.

All of these risks and measures are compiled and incorporated in a dedicated part of Orano's annual activity report.

Orano is also actively committed to making its value chain accountable and is particularly involved in the assessment of its subcontractors and suppliers.

They must agree to comply with Orano's Ethics Code and its General Purchasing Conditions, which impose strict compliance with human rights, under penalty of termination of the contractual relationship.

DID YOU KNOW? In 2019, Orano included its consolidated vigilance plan in a dedicated chapter in its annual activity report.

#### **EMPLOYEE TRAINING**

To ensure employees understand Orano's ethical rules, an e-learning program is required in all entities. All executives and nearly half of the other employees have completed the module. Furthermore, concerning bribery prevention, an elearning program and a virtual or in-person class are also offered to those concerned. If needed, "focus" sessions are also organized.

## + 5,000

Employees trained in ethics and compliance at the end of 2019 via the e-learning module

#### FOCUS ON THE **OBLIGATORY ETHICS E-LEARNING MODULE**

The themes covered in this module are:

- Protection of people and property:
  - Harassment, discrimination, and sexist behavior,
  - o Human rights,
  - Data protection and confidentiality,
  - Protection of image and reputation,
  - Health, quality, safety, and
  - environmental protection policies,
- Competition,
- Export control and non-proliferation,
- Conflicts of interest,
- Gifts and invitations,
- Payments and intermediaries,
- Lobbying,
- Sponsoring, donations, and humanitarian work.

![](_page_19_Picture_56.jpeg)

## Ethics and **compliance**

![](_page_20_Picture_2.jpeg)

#### A PROGRAM TO PREVENT BRIBERY AND INFLUENCE PEDDLING

Orano's directors, specifically the CEO and all members of the Executive Committee, propel and guarantee the application of Orano's Compliance Charter and the program to prevent bribery and influence peddling.

This program is organized around 8 pillars:

- Anti-bribery code of conduct, and the documentation for the associated policies and procedures,
- **Risk mapping** for bribery and influence peddling, updated yearly,
- General awareness-building among the personnel and targeted training for those most concerned,
- **Compliance assessment of third parties** in direct relation with Orano,
- Accounting controls and an environment of internal control,
- Whistle-blower system, making it possible to report alleged bribery, for example, or influence peddling,
- **Disciplinary regime**, with a principle of zero tolerance in case of proven bribery by Orano employees,
- Assessment and control plan for the entire program, aimed at identifying deviations and taking corrective actions.

#### (?) DID YOU KNOW?

Orano performs compliance reviews of the third-parties it deals with to establish sustainable and upstanding partnerships

#### <mark>2019 TAKE-AWAYS</mark>

1,116

Employees trained in **compliance** in 2018 and 2019, including 843 in 2019

107

**Incidents** escalated by the ethical reporting process

This program is part of a continuous improvement approach regarding assessment of identified risks, changes in indicators, and the results of controls. It is supported by a network of some 30 compliance representatives covering all Orano's activities and by regular communication with operating personnel.

32

maps of bribery risks created by Orano entities

## AN OPERATIONAL AND ETHICAL WHISTLEBLOWER SYSTEM

As part of its ethical commitment, Orano has deployed an internal system for receiving and handling whistleblower complaints. This system is intended for all its employees. The confidentiality of complaints is a fundamental legal requirement Orano pays close attention to, together with the protection of whistleblowers acting in good faith.

In case of a characterized problem, failure to fulfill a legal or regulatory obligation, or violation of the Ethics Code or compliance policies, an employee may choose to either alert their managers, use other internal channels, or use the secure whistleblower platform. It is planned to open this platform to commercial partners in 2021. They already have a contact person to whom they can address complaints. The whistleblower platform has automatic translation capabilities and can receive messages in most languages.

#### FOCUS ON THE WHISTLEBLOWER SYSTEM

This system is supervised by the Compliance Committee, itself led by the Compliance Director, who is the whistleblower coordinator. Intermediary coordinators for each complaint category also contribute to ensuring correct handling of complaints reported on the platform, in compliance with Orano's procedure.

This system covers the following 10 complaint categories:

- 1. Human rights, discrimination, bullying, sexual harassment, sexist behaviors or actions, and verbal or physical aggression,
- 2. Serious failure to protect people and property,
- 3. Serious breach of conventional and nuclear safety and environment rules,
- 4. Serious breach of rules concerning intellectual property, personal data, or confidential information,
- 5. Violation of export control rules or noncompliance with international sanctions,
- 6. Irregularities, quality fraud, falsification of documents, or serious breach of quality rules,
- 7. Financial fraud, misrepresentation, theft, misappropriation of corporate assets, or insider trading,
- 8. Bribery, influence peddling, conflicts of interest, special privileges, money laundering, and the funding of terrorism,
- 9. Anticompetitive practices,
- 10. Other serious breaches of the Orano Ethics Code

#### MONITORING ETHICAL INCIDENTS

Every year, the Executive Management asks the managers of its units and subsidiaries in France and abroad to prepare an ethics report documenting after the fact the unethical events and vigilance points they are aware of that occurred over the past year. For 2019, 107 unethical incidents were reported through this process (versus 114 in 2018). They are being handled appropriately. There were 8 events in category 8: bribery, influence peddling, conflicts of interest, etc. The themes with the most incidents were: 1-Discrimination and Harassment," "3-Safety," "2-Protection," and "Quality Fraud." A summary is presented every year to the bodies of governance.

#### "FOLLOWING COMPETITION LAW

Orano undertakes to conduct its business in the market in compliance with the rules of fair competition. It pays particular attention to adhering to rules on arrangements and the exchange of sensitive information. Regular training sessions are organized to remind everyone—purchasers as well as sales and strategy teams—of the guiding principles of competition law and its daily application, notably for invitations to tender and partnerships with competitors.

To date, Orano is not aware of any injunctions or financial penalties for anticompetitive practices being pursued against it.

![](_page_20_Picture_46.jpeg)

Interest representation actions reported to the French High Authority for Transparency in Public Life in 2019

#### LEGAL FRAMEWORK FOR INTEREST REPRESENTATION

Interest representation activities are now covered under the French law Sapin 2 (relating to transparency, the fight against bribery, and modernization of economic life), which requires perfect transparency for actions conducted under certain conditions. Orano thus documents actions involving the concerned public authorities and reports them to the French High Authority for Transparency in Public Life. A specific training course was provided to Orano representatives who are within the scope of the regulations. Political contributions are prohibited by principle, except in OCED countries where they are legal.

![](_page_20_Picture_50.jpeg)

## **Transparency** and information

![](_page_21_Picture_2.jpeg)

Transparency, i.e. public access to reliable information, is inherent in our nuclear, industrial, and mining activities. Orano is strongly committed to transparency.

#### RELIABLE AND REGULAR REPORTING ON OUR ACTIVITIES

Orano publishes all information on its activities on its Internet site. For example:

- Each Basic Nuclear Facility publishes an informational annual report as required by Article L 125-15 of the French Environment Code. This report presents any events that occurred along with details on environmental management, waste management, and transparency and public information actions,
- Orano's General Inspectorate also publishes a report on the safety status of its facilities,
- Orano Mining and its production subsidiaries publish a social responsibility report.

#### (?) DID YOU KNOW?

Since 2010, under the auspices of the French Nuclear Safety Authority and the French Institute for Radiological Protection and Nuclear Safety, the national network for measuring radioactivity in the (https://www.mesureenvironment radioactivite.fr/en#/expert) has been centralizing all environmental radioactivity monitoring data in France. One of its strengths is its varied sources (French government and its public institutions, nuclear operators, and other public or private entities or associations). All of Orano's Basic Nuclear Facilities contribute to this network. For more information: https://www.mesure-radioactivite.fr/en#/expert/

https://www.mesure-radioactivite.tr/en#/expert / https://www.irsn.fr/EN/Pages/home.aspx

#### 2019 TAKE-AWAYS

4,000

visitors at our main French sites

27

**Public meetings** in which Orano participated (PNGMDR)

Every year, the French Nuclear Safety Authority also publishes an opinion on the state of nuclear safety in Orano facilities.

Since 2017, these publications have included a report on payments to foreign governments and, more recently, the list of retention structures in storage facilities for tailings left over from uranium ore processing (Orano Mining).

#### FOCUS ON TAILINGS RETENTION STRUCTURES

In August 2019, following exceptional rains, an accumulation of water in the SOMAÏR mine tailings pile led to the rupture of a small section (10 linear meters) of its dike. This resulted in spillage of a mixture of rainwater, rocky materials, and production liquor into the plant area. The emergency response from the start of the incident made it possible to limit the impacted surface area, to deal with the dike rupture very rapidly, and to recover the spilled substances. This incident did not lead to any injuries or contamination for the site personnel, or any water infiltration in the soil, or any pollution outside the site.

Following the Brumadinho disaster, the mining industry worked with ICMM, of which Orano is a member, to publish the list and characteristics of all its tailings retention and storage structures.

List of retention structures in storage facilities for tailings left over from uranium ore processing (Orano Mining).

#### FOCUS ON GLOBAL CONFERENCE ON THE EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE (EITI)

On June 19, 2019, in Paris, Nicolas Maes, CEO of Orano Mining, confirmed his support for making the payment disclosure standard defined by the EITI the worldwide voluntary and regulatory standard to avoid the publication of different numbers on the same subject, depending on variable baselines or regulatory frameworks. Orano publishes a summary of Orano Mining's disclosures according to the various reporting modes: French law, EITI, or ESTMA (Extractive Sector Transparency Measures Act).

#### (?) DID YOU KNOW?

- Orano Mining teams have developed a new application for accessing complete data on old uranium mines in France, their environmental monitoring, and their redevelopment: CartOmines. The site is currently organized around
- two informational tools:
- a general map of old mine sites with a series of indicators such as production, volume of stored tailings, and redevelopment data,
- a map tool indicating all the regulatory sampling points (air, water, bioindicators) located near the sites.

Link to CartOmines

#### INFORMING AUTHORITIES, THE PUBLIC, AND STAKEHOLDERS IN CASE OF AN EVENT

All anomalies and incidents on a nuclear site must be reported to the authorities using the International Nuclear Event Scale (INES) which goes from 1 to 7. Once a simple anomaly is reported (INES scale level 1), Orano releases a press release, also available on its website. This information is also widely shared with the external stakeholders for the concerned site.

<mark>42</mark>

#### SHARING AND PROVIDING LEARNING OPPORTUNITIES TO THE PUBLIC

Throughout its sites and for many years, Orano has been committed to open and transparent dialogue. The goal is to give the public opportunities to learn about our activities and challenges and to answer their questions as well as those of our stakeholders. This approach is illustrated through site visits for our customers and for industrial partners, local and national elected officials, journalists, etc.

![](_page_21_Picture_36.jpeg)

In 2019, partnering with the institute BVA, Orano conducted a study on French public perceptions of nuclear energy. This study shows that nuclear energy is still perceived as positive by most French citizens and as part of the electricity mix of the future, despite the persistence of numerous misconceptions. This study led to a brand campaign in the last quarter of 2019.

#### DIALOGUE AND LEARNING OPPORTUNITIES

Orano developed two themes as part of an approach targeting young people on one of their preferred media outlets, YouTube. To this end, in February 2019 the Communications Department set up a partnership with the "Trash" group, which produced 2 videos on nuclear activities: "5 secrets sur la radioactivité" (5 secrets about radioactivity) (1.4M views, 50,000 likes, 600 comments) and "Comment faire de l'uranium radioactif" (How to make radioactive uranium) (163,000 views, 7800 likes, 400 comments).

#### FOR MORE INFORMATION

For Orano's latest news: https://www.orano.group/en or our Twitter accounts: @Oranogroup, @Oranomalvesi, @OranoTricastin, @OranolaHague, @oranocanada

![](_page_21_Picture_43.jpeg)

## Tend towards carbon neutrality

### Laurence Gazagnes's vision **HSE** Director

"Orano intrinsically contributes to low-carbon electricity production and is proud to be part of the effort to reach the goal of carbon neutrality by 2050. As early as 2004, Orano set up a program to reduce its environmental footprint on all Orano industrial sites. The results speak for themselves in terms of reduced greenhouse gases and the fight against climate change. All our activities contribute to this goal, from mining to recycling to chemistry-environment. Because it is urgent to take action, Orano employees are committed more than ever and motivated to go even further and faster."

## Our 2019 results

Contributing to the fight against global warming

## 450 ktCO<sub>2</sub>e

of direct and indirect emissions (Scopes 1 and 2) of greenhouse gases (GHG)

## -61%

for direct and indirect emissions (Scopes 1 and 2) of greenhouse gases since 2004

Scope 3 Assessment initiated end 2019

Improving our energy performance

1.905 TWh of energy consumption

Adapting our operations to global warming

![](_page_22_Picture_13.jpeg)

### 119 tCO<sub>2</sub>e/€M GHG intensity (Scopes 1 and 2)

-33%

for direct and indirect emissions (Scopes 1 and 2) of greenhouse gases since 2015

![](_page_22_Picture_20.jpeg)

for energy consumption since 2004

45

## **Reduce** our **carbon** footprint

![](_page_23_Picture_2.jpeg)

In addition to being convinced of the role nuclear energy can play in the energy transition to lowcarbon electricity, Orano has been implementing a program since 2004 to reduce its own emissions in view of contributing to the collective effort.

#### **61% DECREASE IN GHG EMISSIONS SINCE 2004**

Orano made the commitment to reduce its greenhouse gas (GHG) emissions by 50% between 2004 and 2020. This goal was surpassed with a 61% reduction thanks to the efforts made in all business areas:

- In mining: a reduction of 26% of GHG emissions per metric ton of uranium produced with the use of new industrial processes,
- At the Malvési uranium conversion site: an 80% reduction in GHG emissions linked to the commissioning of its new Comurhex II facility, the most modern conversion plant in the world, equipped with new production workshops with a reduced environmental footprint.

#### **DID YOU KNOW?** (?)

Orano is a signatory to the French Business Climate Pledge, launched by the MEDEF employers' union and signed in 2019 by 99 French companies wishing to align themselves with the Paris Agreement.

### 2019 TAKE-AWAYS

450 ktCO<sub>2</sub>e

of direct and indirect (Scopes 1 and 2) greenhouse gas emissions 268 ktCO2e, direct (Scope 1) 183 ktCO2e, indirect (Scope 2)

## 119 tCO<sub>2</sub>e/€M

GHG intensity (Scopes  $\overline{1}$  and 2)

#### FOCUS ON PUBLIC **MISPERCEPTIONS OF LOW-**CARBON

In 2019, Orano carried out a study in partnership with BVA on public perceptions in France, "French people and nuclear energy."

The fact that nuclear energy emits little  $CO_2$  is not widely known by French people, a large majority of which (69%) believe that the nuclear industry contributes to climate change.

54% of the French public think the energy mix of the future will include nuclear and renewable sources.

• In the Tricastin uranium conversion and enrichment plants: beyond the 98% reduction in electricity consumption thanks to new enrichment technology, an 85% reduction in GHG emissions has been achieved, notably through changes to the fluorine production facilities and the commissioning of the new Philippe Coste conversion plant. In total, between 2004 and 2018, energy consumption was reduced by 96%.

In the La Hague spent fuel recycling plant: a 42% reduction in CO2 emissions has been achieved, thanks notably to preferred use of electricity over heavy fuel oil in the production of steam for the needs of the site.

#### Changes in Orano Scope 1 and 2 greenhouse gas emissions

![](_page_23_Figure_22.jpeg)

#### Greenhouse gas emission scopes (GHG protocol definition)

Scope 1: direct emissions resulting from the combustion of fossil fuels (gas, oil, coal), direct emissions of refrigerant gases, and direct CO<sub>2</sub> emissions not involving combustion

**Scope 2: indirect emissions related to consumption** of electricity, heat, or steam necessary for industrial activities

Scope 3: emissions other than those described above

The industry regularly performs lifecycle analyses. Emissions associated with the fuel cycle have the biggest carbon impact. Decarbonization of cycle activities is thus a major challenge, and an opportunity for Orano to set an example. At the end of 2019. Orano launched an assessment of its Scope 3 footprint.

#### **COMMITTING TO CARBON NEUTRALITY BY 2050**

To build on these results, Orano plans to commit to carbon neutrality with a new objective of reducing its GHG emissions by 2025 and 2030. It is currently studying 14 internal decarbonization projects for a total of 150 ktCO<sub>2</sub>e.

## **Objective: -30%**

on Orano Scopes 1 and 2 by 2025 to comply with the Paris Agreement and the National Low-Carbon Strategy

46

![](_page_23_Picture_34.jpeg)

![](_page_23_Picture_36.jpeg)

### (?) DID YOU KNOW?

The IPCC used 12 q  $CO_2e$  / kWh in its study for the nuclear industry, which is 68 times lower than for carbon and 40 times lower than for gas.

![](_page_23_Figure_39.jpeg)

Greenhouse gas emissions (gCO,eq/kWh)

Source: IPCC literature review, 2015.

![](_page_23_Picture_42.jpeg)

## Improve our **energy** performance

![](_page_24_Picture_2.jpeg)

2019 TAKE-AWAYS

**1.905 TWh** 

of energy consumption

The challenges around energy performance are an inevitable driver for Orano's performance plan and decarbonization ambitions. In 2019, Orano launched a systemic cross-functional action in the area of energy, notably by reactivating the energy coordinator network.

#### **DRIVING ENERGY PERFORMANCE**

Energy consumption is a significant item in Orano's expenses and is also one of the vectors of greenhouse gas emissions. Since 2019, an "Energy Performance" workgroup has brought together all Orano entities around this theme. On the basis of energy audits and the direct and indirect carbon footprint measurements in place since 2004, an action plan was defined to reduce energy expenditure and carbon emissions in the years to come. -91% Reduction in the consumption of energy since 2004

These actions include replacing equipment that uses combustible energies with electric equipment, deploying LED lighting, optimizing fluid production machinery, and possibly deploying renewable means of production.

DID YOU KNOW? The share of electricity consumed from renewable sources is negligible in Orano's overall energy balance.

#### ✓ Meeting of energy coordinators

![](_page_24_Picture_13.jpeg)

## And adapt our operations to **global warming**

![](_page_24_Picture_15.jpeg)

Regarding facility vulnerability, climate events and other hazards such as earthquake are integrated into the design of facilities, in addition to measures taken to manage severe accidents. However, climate change does not simply mean the occurrence of extreme events that might jeopardize the nuclear safety of our facilities. Such change is in fact associated with disturbances of various kinds, more or less gradual, which may impair our ability to operate our sites in compliance with the current operating standards.

#### ASSESSING THE IMPACT OF CLIMATE CHANGE ON OUR FACILITIES

In order to assess regional trends for the forthcoming decades, Orano has carried out an internal study of expected future rainfall and temperatures, based on the available climate models. Meteorological data from our sites has also been analyzed, in order to assess the observed trend over the last 20 years.

Orano has begun to weigh incorporating these changes in future periodic safety reviews of its facilities and including them in the design of future facilities. Orano will need to sharpen its analyses in coming years to incorporate all physical and transitional risks as recommended by international standards.

#### FOCUS ON ENERGY COORDINATORS

The energy coordinators of each entity meet every 3 months on an Orano site to share best energy performance practices and to review cross-functional projects: eliminating wastage, load management, funding, etc. +**1.5**°

Possible temperature increase around our operations by 2050

#### FOCUS ON **CLIMATE FORECASTS AROUND OUR OPERATIONS**

The study of rainfall around our sites showed no clear trend for the coming decades, but already shows greater variability, with some particularly wet years potentially following much drier years. Episodes of drought may become increasingly long, causing reduced flow rate and slower recharge of bodies of both surface and groundwater.

A more detailed analysis of the average and maximum temperatures near our sites shows a slight overall increase (between + 0.2°C and + 1.3°C) over the last 20 years compared with the standard reference temperature (excluding 2019). This increase is more significant for sites in the south of France.

An analysis of the regional climate forecasts for the next few decades shows that irrespective of the scenarios chosen, the trend will continue. The temperature rise may reach between  $+ 0.9^{\circ}$ C and  $+ 1.5^{\circ}$ C by 2050 (compared with the reference standard). The main risk is an increase in the number and intensity of heat waves. Cold spells, on the other hand, will become milder and less and less frequent.

FOR MORE INFORMATION Available documents 2019 General Inspectorate Annual Report Informational reports on nuclear facilities

## **Operate** efficiently while reducing our footprint

**Corinne Spillios's** vision **Performance** Director

"Orano performance is measured according to 3 areas: our economic performance which enables us to be competitive over the long term and thus sustainable, our social performance which promotes our values while enhancing the motivation and skills of our employees, our collective intelligence which always keeps us agile, and our social and environmental performance by which we reduce our footprint and improve our local involvement.

To achieve these performance levels, Orano relies daily on operational excellence in all its activities, projects, and services, in order to improve customer satisfaction, "do it right the first time," and improve quality in the extended plant, including its suppliers. It also uses industrial master plans to have a clear medium-term trajectory, notably for our carbon footprint and our performance plan, supported by the company's digital transformation."

![](_page_25_Picture_4.jpeg)

![](_page_25_Picture_5.jpeg)

## Our 2019 results

Modernized facilities that are effective and competitive

€250M

of savings during the last competitiveness plan (2018 - 2019)

Quality and operational excellence every day

100% ISO 140001 certified operations

#### Our footprint reduced from the design phase

**10.3M m3** 

consumption of water

since 2004

21,704 metric tons of conventional waste

Reduced and recycled waste

![](_page_25_Picture_22.jpeg)

for water consumption

#### FOOTPRINT

## Modernized, effective, and competitive facilities

![](_page_26_Picture_2.jpeg)

Affordable electricity is a social issue. Orano is committed to creating value for its customers by offering them competitive products, technologies, and services that meet their current and future needs.

#### **COMPETITIVENESS AND MODERNIZATION**

Orano presents its performance culture as a core value. This culture is based on a global, structured approach with several pillars: ambitious long-term industrial and supply chain policies, and a program of operational excellence deployed directly in the field and supported by coherent digital transformation and innovation plans.

20% of the fuel cycle in the kWh cost (LCOE)

![](_page_26_Picture_7.jpeg)

#### **DID YOU KNOW?** (?)

Beyond investing in its conversion and enrichment plants, Orano's Tricastin platform spent more than 500 million euros in 2012–2018 to modernize certain older workshops of the Tricastin-Malvési industrial platform.

In recent years, Orano modernized part of its production capacities and now operates the world's most modern plants in their category. This modernization also enabled spectacular nuclear safety and environmental improvements through the best technology available.

Control room of the Georges Besse II (GB II) enrichment plant. Orano Tricastin, France

![](_page_26_Picture_12.jpeg)

Philippe Coste plant (Comurhex II). **Orano Tricastin, France.** 

E250M

of savings during the last competitiveness plan (2018 - 2020)

FOR MORE INFORMATION Available documents

Informational reports on nuclear facilities Orano Mining CSR report

## Spotlight on...

#### ... GEORGES BESSE II

Orano has invested massively these past 15 years in the Tricastin industrial platform to modernize its production machinery, starting with the George Besse II enrichment plant, replacing the old Georges Besse (EURODIF) plant whose commercial production ended in June 2012, with decommissioning of its equipment in 2016. The Georges Besse II plant, commissioned in 2010, uses centrifugation technology to enrich uranium, a proven, effective technology meeting stricter safety and environmental protection requirements.

#### ... PHILIPPE COSTE

Orano chose to modernize its industrial conversion facilities: with the new Philippe Coste plant, whose equipment was commissioned in 2018. The highest level of nuclear safety and a reduced environmental footprint were the major priorities in the design of this facility, classified for environmental protection in the Seveso upper tier. It began its production ramp-up in 2019 and is targeting an installed capacity of 15,000 metric tons by the end of 2020, with the commissioning of the 2nd fluorine production building. In this way, the 2019–2021 period has been dedicated to pursuing the program for commissioning equipment and enhancing its reliability.

#### ... REVAMPING MALVESI

At the Malvési site, 500 million euros were invested in 10 years to modernize the industrial equipment and reduce the site's environmental footprint. The new facilities, part of the Comurhex II project and commissioned on the industrial scale during summer 2016, offer a major innovation: Isoflash, or thermal denitration, which reduces consumption of chemical reagents.

These commitments are ongoing, with investments and facility modernization continuing until 2025. They are worth an additional 300 million euros, one of the beneficiaries of which is the local economy. Several major projects are also being conducted in parallel: the nitrate processing project (TDN), projects to improve solid residue management (ECRIN), the PERLE and CERS projects, the project to reduce nitrogen oxide emissions and uranium oxide production, modernization of current facilities, and so forth.

![](_page_26_Picture_27.jpeg)

#### **MEASURABLE IMPACTS:**

-98% for electrical consumption

-100% for water consumption through technological breakthroughs

![](_page_26_Picture_31.jpeg)

emissions since 2004

-80% for its greenhouse gas

**MEASURABLE IMPACTS:** 

A targeted reduction of 60% in the consumption of potash and process residues (fluorine)

Reduced water consumption by using a closed loop

![](_page_26_Picture_36.jpeg)

#### **MEASURABLE IMPACTS:**

-80% for greenhouse gases since 2004

Between 2007 and 2015: -63% for nitrates.

- -70% for fluorides.
- -98% for uranium,
- -78% for ammoniums,
- -42% of nitrogen oxide emissions
- -30% for volatile organic
- compounds (VOCs)

#### **FOOTPRINT**

## Quality and operational excellence every day

![](_page_27_Picture_2.jpeg)

#### () DID YOU KNOW?

The quality management system controls Orano's certifications. In 2019, 100% of its industrial operations were certified ISO 14001 and OHSAS 18001. Of its nuclear facilities, 100% are certified ISO 9001.

### One of Orano's priorities is to make operational excellence a core part of everyday management.

This priority is managed by the Performance Department whose objectives are to define and implement frameworks and standards for continuous improvement of performance in existing and future activities. This entails:

- Improving the quality of products and services to improve the perception of customers and regulatory bodies,
- Making progress on supplier quality,
- Anchoring the fundamentals of operational excellence in the field and eliminating wastage and "irritants",
- Identifying strategic areas of operational excellence to work toward an ever more global system.

#### **DRIVING INDUSTRIAL QUALITY**

The quality of products and services constitutes a key factor in nuclear safety and success. Striving to remain a major player in the nuclear industry, Orano tolerates no compromises with the expected quality. In its quality policy, Orano is committed to:

- developing a strong quality culture for the long term,
- improving the satisfaction of customers and other interested parties and inspiring their trust,
- driving continuous improvement on a daily basis.

The Quality Department promotes a quality culture, uses the quality management system, and coordinates certification procedures. Quality improvement also entails setting up indicators for measuring non-quality costs and analyzing major and/or recurrent elements of these costs, with an objective of reducing the backlog of events and their processing time.

![](_page_27_Picture_17.jpeg)

### 10

Industrial and specialty networks coordinated for internal exchange

#### A STRUCTURED SYSTEM AND A NETWORK SUPPORTING OPERATIONAL EXCELLECE

For several years, Orano has deployed a structured system of operational excellence in charge of coordinating projects to transform the company and increase skills in its teams. This system is supported by a network of operational excellence coordinators in all entities.

![](_page_27_Figure_22.jpeg)

Internal and external sharing is one of the drivers used to accelerate the transformation. To this end, Orano organizes two "Plant Managers Networking" sessions per year, bringing together the top operational managers from around the world (60 people) at one of its sites to share best practices and find synergies. Orano also supports 10 industrial and specialty networks for crosspollination of knowledge and peer exchange (energy, maintenance, operation, operational excellence, laboratories, etc.)

Orano is involved in various business associations (RNC, ESSEC, etc.) to actively monitor new tools and effective methods used in other industries. Several "Learning Expedition" immersions are planned with the target manager populations at external sites to create enthusiasm and to think outside the box.

#### DRIVING THE DIGITAL TRANSFORMATION

Orano has launched SHIFT, a digital transformation plan whose objective is to support nuclear safety in facilities. Performance and development of activities are enhanced through the design and deployment of secure digital solutions (cybersecurity) adapted to specialty fields (user experience or UX), developed according to agile methodology, and based on data with fluid access and management. As part of SHIFT, digital standards (infrastructures, machinery, methods, applications) will be implemented to maximize the operational synergies between Orano's entities. The digital transformation in the work culture will be guided by an active Orano digital community and by sharing best practices related to digital applications and data manipulation.

![](_page_27_Picture_29.jpeg)

![](_page_27_Picture_30.jpeg)

(^) Orano Projets, France.

55

For 2020–2023, SHIFT programs will concretely tackle modernizing infrastructures (network, datacenter), deploying Microsoft 365, and developing a digital twin program for fuel cycle plants, industrial performance projects based on data use, and digitization of machinery for our operators on site.

FOR MORE INFORMATION Available documents ISO 9001 – 14001 – 18001 – 45001 certificates

## **Reducing our footprint**, from the design phase

![](_page_28_Picture_2.jpeg)

Orano has set the following objectives for itself: monitor and assess quality of air, water, soils and the food chain, and optimize consumption of resources (water, energy, etc.) and raw materials (reagents, etc.) while reducing waste.

#### A GLOBAL ENVIRONMENTAL APPROACH

With monitoring at our industrial platforms, the objective to minimize our environmental footprint is based on a structure and on organizations at all levels, which work together in the following areas:

- Respecting regulatory provisions while preparing to incorporate new requirements,
- Preventing and controlling risks,
- Continuously reducing impact factors (consumption of natural resources, releases, etc.),
- Identifying and measuring the impacts of our activities on the environment,
- Seeking out and developing new solutions to limit impacts.

This approach applies to operations in use, but also to new projects.

#### FOCUS ON IMPACT STUDIES

Environmental Impact Studies (EISs) are performed for each new project or when a major change to our facilities is under consideration. **They include an avoid – reduce – compensate (ARC) analysis of biodiversity**.

#### <mark>2019 TAKE-AWAYS</mark>

10.3M m3

of water consumption, including **74%** for our mining activities and **19%** for our chemistry-enrichment activities

21.7 kt

The environmental approach takes concrete form in targeted actions to reduce sampling in the natural environment and consumption of materials and energy. It also involves a constant search for new ways of recycling waste.

#### WATER AND BIODIVERSITY, KEY ISSUES

Water is a rare natural resource, and management of water is one of Orano's core environmental and social concerns. Its main consumers are mining activities (74%) and chemistry-enrichment activities (19%). Production plants for the latter were modernized, allowing a 93% reduction of Orano's water footprint since 2004.

-93% Reduction in the consumption of water since 2004

In 2019, Orano Mining assessed the level of water stress on all of its ten sites worldwide using the "Aqueduct Water Risk Atlas" tool from the World Resources Institute (WRI). Orano Mining also assessed the overall water risk for each site. This risk has 3 components:

- Physical quantity risk,
- Physical quality risk,
- Regulatory risk.

This level of overall risk per country, as well as all water sources and consumption for its activities, are detailed in the Orano Mining CSR report.

#### FOCUS ON THE **OVERALL WATER RISK**

The overall water risk combines 3 risks:

- The physical quantity risk, which is evaluated using these eight indicators: water stress, water depletion, inter-annual variability, seasonal variability, groundwater table decline, riverine flood risk, coastal flood risk, and drought risk,
- The physical quality risk, which assesses the risk of using water not fit for use, combining 2 indicators: existence (or absence) of wastewater management and the potential eutrophication of coastal waters.
- The **regulatory and reputational risk**, which includes the risk related to water management by local organizations (drinking water, sanitation), but also potential conflicts with the public concerning access to water.

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

#### DID YOU KNOW?

The report on the aquatic environment of Tricastin waterways was updated in May 2019.

The following was sampled on ten points:

- sediment,
- fish,
- macroinvertebrate organisms,
- phytoplankton,
- diatoms,
- aquatic and riverside plants.

The results of this study confirmed that the activities of Orano Tricastin have no impact on the aquatic ecosystem in the surrounding waterways.

#### FOR MORE INFORMATION

Available documents Informational reports on nuclear facilities Orano Mining CSR report Concerning biodiversity, Orano is attentive to conservation, and considers it indispensable for keeping its activities compatible with the environment. Overall, aspects related to the flora and fauna are taken into account from the design phases of new projects, then throughout the facility operating phases, and finally during site rehabilitation.

Due to the location of mine sites and their footprint on the ground, conserving and protecting biodiversity is a more significant issue for them, whether during exploration, operation, or in a "post-mine" context. That is why Orano is committed to carrying out prevention and compensation actions. For example, in 2019, a compensation project specific to saxauls (endemic tree species in the region) was launched in Mongolia with the assistance of specialists and local herders. In France, all redeveloped sites are monitored by an ecologist.

![](_page_28_Picture_48.jpeg)

(^) Katco, Kazakhstan.

#### OPTIMIZATION OF MANAGEMENT SOLUTIONS FOR HAZARDOUS WASTE

Conventional waste is classified into two categories: non-hazardous waste (NHW) and hazardous waste (HW).

Orano has undertaken actions to optimize waste solutions for hazardous waste, a large part of which was stored on the sites until now, or directed toward nuclear waste disposal facilities. These various actions aim notably to limit the waste quantities directed toward nuclear waste solutions to what is strictly necessary, and thus to optimize the capacity of Andra's disposal centers.

## Reduce and **recycle waste**

![](_page_29_Picture_2.jpeg)

Orano chooses radioactive waste management methods in compliance with fundamental principles:

- protect human health, safety, and the environment.
- prevent and limit the burden left to future generations,
- reduce the quantity and harmfulness of radioactive waste, notably by appropriate processing and conditioning methods,
- organize waste transportation and limit the distance and volume,
- ensure that the public is informed of how waste production and management operations affect the environment and public health, and which measures are planned to prevent or compensate for adverse effects, provided that the legal guarantees of confidentiality are respected.

#### **UNDERSTANDING RADIOACTIVE** WASTE

There are 2 categories of waste: conventional waste and radioactive waste. Radioactive waste is defined as "radioactive substances for which no further use is planned or considered, or which have been qualified as such by the administrative authority" (Article L. 542-1-1, French Environment Code).

Radioactive waste is managed based on 2 parameters: activity and half-life. This gives the following classification:

- VLLW (very low-level waste),
- LILW-SL (low- and intermediate-level shortlived waste),
- LLW-LL (low-level long-lived waste),
- ILW-LL (intermediate-level long-lived waste),
- HLW (high-level waste).

The guiding principles for implementing management solutions at the various Orano sites, which comply with its objectives and commitments in terms of nuclear safety, cost, timeframe, and quality, are as follows:

- waste reduction at the source by aiming for "zero waste," during design as well as operation, waste likely to be radioactive is separated from conventional waste, notably using a facility "zoning" policy. This policy is permanently optimized to minimize the quantity of radioactive waste.
- the radiological characterization and the radioactivity assessment needed for optimal conditioning,
- volume reduction through cutting, assembly, and compacting processes,
- conditioning that immobilizes waste in a container suitable for its radioactivity and halflife, after processing or using a matrix material (e.g. cement).

## 2 kg/yr/inhabitant

of radioactive waste in France, of which 5g is highly radioactive

#### FOCUS ON RECYCLING VLLW

Most European countries, such as Germany and Sweden, recycle their very low-level waste (VLLW). French regulations, based on the principle of zoning, do not at this time authorize this kind of recycling. This leads to sending significant quantities of inactive waste to Andra disposal facilities, which has resulted in premature saturation of the Andra VLLW disposal site (CIRES). Orano's dismantling operations have produced significant quantities of VLLW, particularly the Georges Besse plant which has alone generated 136,000 metric tons of recyclable metals. Following the PNGMDR public debate in 2019, the French government committed to changing the regulatory framework for managing very low-level waste, with the possibility of recycling VLLW on a case-by-case basis.

#### **2019: A KEY YEAR FOR THE NATIONAL PLAN FOR** MANAGEMENT OF RADIOACTIVE **MATERIALS AND WASTE** (PNGMDR)

The French policy concerning radioactive materials and waste aims to ensure their sustainable management, in compliance with protecting health, safety, and the environment. This policy is notably based on establishing a national plan for the management of radioactive materials and waste (PNGMDR), transparency measures, keeping the public informed, democracy, and securing funding for dismantling nuclear facilities and managing radioactive waste.

The PNGMDR is a document that assesses existing methods of managing radioactive waste and materials, identifies foreseeable storage and disposal facility requirements, and indicates the capacities needed for those facilities and the duration of storage.

The frequency with which the PNGMDR is updated will decrease from three to five years starting with the 5th plan (2019-2023). A public debate was held between April and September 2019 regarding the 5th edition of the national plan for the management of radioactive materials and waste.

#### INTERVIEW hihi

WITH JEAN-MICHEL ROMARY, DIRECTOR OF DISMANTLING AND NUCLEAR WASTE MANAGEMENT

"Waste management is a key challenge for Orano, as a structural part of managing our fuel cycle activities on our behalf and on behalf of our customers."

#### What are the main conclusions of the **PNGMDR public debate in 2019?**

J-M.R.: The conclusions of the public debate involve various subjects. Concerning organization and governance, it was shown there is a need to strengthen the governance of radioactive materials and waste management and to better coordinate waste management policy with energy policy.

Several areas of action were set: strengthening the control of the recyclability of radioactive materials, responding to the need for new spent fuel storage capacities, recycling VLL metallic waste, and defining the conditions for implementing the CIGEO project.

Finally, more consideration should be given to the impact of management choices on localities and on economic, health, and environmental issues.

This debate resulted in more information provided to the public, through 22 public meetings that brought together a total of 3400 participants throughout France, and through the publication of 68,250 informational documents.

Following the publication on September 25, 2019, of the assessment and report for this debate, the French Ministry for an Ecological and Inclusive Transition and the French Nuclear Safety Authority made public their decision concerning the next PNGMDR.

![](_page_29_Picture_40.jpeg)

#### **DID YOU KNOW?**

Information on waste flows and volumes stored at Orano nuclear facilities is submitted to the competent authorities as annual reports and published yearly by Andra in the National Inventory. https://inventaire.andra.fr/inventaire.

![](_page_29_Picture_43.jpeg)

![](_page_29_Picture_45.jpeg)

#### What are the main challenges facing Orano in terms of waste management?

J-M.R.: Managing waste is a key challenge for Orano, as a structural part of managing our fuel cycle activities on our behalf and on behalf of our customers. The conclusions of the public debate can guide the future waste management plan, indispensable for the sustainability of our activities. In particular, examples include implementing the metal recycling solution and eventually the solutions for other low-level waste, as well as studies on setting up waste disposal facilities on site.

## Proud and committed employees

## The vision of **Hélène** Derrien Director for People &

Communication

"Employees' pride in belonging and commitment to the company are built on strong foundations. One of them is the implementation of human-resources polices that high-flyers, develop promote diversity, establish working conditions that improve wellbeing, and promote productive and mutually-respectful social dialogue. All these strengths enable us to contribute to the business's performance."

8 DECENT WORK AND ECONOMIC GROWTH

![](_page_30_Picture_5.jpeg)

## Our results for 2019

Our working conditions and the pay policy

#### **Dialogue and labor relations**

49

agreements and addenda completed in 2019

Making the most of talents and skills

## 16,000

active employees across the world

85% of staff took a training course (France)

5.8%

of working employees were work/study trainees

All together: diversity and inclusivity

84/100 Professional equality index

**Diversity Label** renewed

![](_page_30_Picture_22.jpeg)

## 100%

of employees covered by collective agreements

## 1,264

permanent appointments, including 1,082 in France

### 66%

of courses were nonmandatory (France)

## 22%

of staff are women (as opposed to 19% in the industry)

![](_page_30_Picture_34.jpeg)

Percentage of employed people with a disability

**SKILLS** 

## Our working conditions and the pay policy

![](_page_31_Picture_2.jpeg)

Our salary policy is based on three pillars: Orano's attractiveness, rewarding performance, and internal equity. The business's economic situation is also considered.

#### **WORKING CONDITIONS**

The year 2019 was marked by three key achievements:

- The agreement on the quality of working life (Qualité de Vie au Travail - QVT) signed by all the union organizations on 1 April 2019 (France),
- An average increase of 5 points in overall staff satisfaction (OranoVox opinion survey),
- A reduction of 20% (from 3.6% to 2.9%) in the resignation rate of engineers and managerial staff (France).

The QVT agreement in 2019 also:

- Affirms the right to disconnect
- Requires the implementation of a counseling and support service

#### **SALARY POLICY**

Our salary policy is based on three pillars: Orano's attractiveness, reward for performance, and strict insistence on internal equity. The business's economic situation is also considered.

#### FIXED REMUNERATION

This includes the basic salary, spread over 12 or 13 months, and various other items such as seniority allowance.

In France, the budgets for salary progression are negotiated each year with the social partners. In 2019, we allocated an additional 2.2% of the gross payroll.

### HARDSHIP AT WORK AND OTHER CONSTRAINTS

Staff who are required to work shifts or wear specific clothing to carry out their work are systematically paid hardship allowances depending on their post.

#### FOCUS ON THE THREE PILLARS FOR WORK / LIFE BALANCE

#### **REMOTE WORKING**

The QVT agreement "pushes the boundaries" by introducing remote-working options for everyone (as far as the job allows).

By the end of 2019, these options had been taken up by 670 people, not counting occasional remote workers

Our "latest generation" Head-Office facilities at Châtillon allow staff to work remotely up to two days a week. 60% of Head-Office staff work remotely at least one day a week.

#### **PART-TIME WORKING**

The QVT and Professional-Equality agreements also make it easier to work part time.

By the end of 2019, over 17% (women) and almost 3% (men) of permanent working employees were part time (worldwide, 15% and 2%).

#### PARENTHOOD

In France, Orano extended its arrangements to support parenthood in 2019. They included:

- Adapting the job where necessary during pregnancy,
- Extending paternity leave from 11 to 15 days,
- Making it easier to take either full or part time parental leave.

During leave, there are arrangements to maintain social-security retirement and insurance contributions. In other countries, Orano is working with the arrangements for parental leave provided at national level. In all cases, the Group ensures that parental leave does not lead to discrimination on return to work, and has systems to avoid staff falling behind professionally or in terms of salary.

#### **RECOGNITION OF PERFORMANCE**

A variable portion of an individual's pay rewards personal and collective performance, based on the job and the level of responsibility.

The rules are gradually being harmonized between our different entities across the world, in compliance with local regulation and practice. The amounts are apportioned using an HR computer system common to all Orano establishments worldwide, thus ensuring a transparent and equitable process.

![](_page_31_Picture_36.jpeg)

( ) Orano Mongolia.

#### COLLECTIVE ADVANTAGES

In France, optional and mandatory profit-sharing agreements are negotiated with the social partners. In addition, between 2017 and 2019, there was an additional profit-sharing scheme known as the "better fortunes clause" that redistributed to employees a portion of any positive net cash flow that was above the budgeted amount.

In 2019, the following amounts were redistributed in respect of 2018:

- Over 14 million euros under the optional profitsharing scheme,
- Almost 40 million euros under the mandatory profit-sharing scheme and the "better fortunes clause".

![](_page_31_Picture_43.jpeg)

At the start of 2019, and as authorized under the French Social-Emergency Law of December 2018, Orano paid exceptional allowances to 9,156 eligible employees (earning up to three times the annual minimum wage (SMIC)), totaling  $\notin$ 4,765,300, or 0.40% of personnel costs. In the United States, the "All Employee Incentive Plan" collectively remunerates employees not individually eligible for the variable portion.

#### SAVINGS AND RETIREMENT PLANS

In France, the Orano Group Savings Plan (Plan d'Épargne Groupe - PEG) replaced the Areva 2005 PEG in 2019. It comprises seven mutual investment funds with different investment horizons.

Group employees also have access to a Group retirement savings plan (Plan d'Épargne pour la Retraite Collectif - PERCO). The money is invested in the seven PEG mutual investment funds (with independent management), and in three investment schemes (with discretionary management). The funds in the PERCO are available on retirement as an annuity or as a lump sum. At the end of December 2019, the balance of funds in the Orano PEG/PERCO was over 423 million euros.

In the United States, under the "401(K)" retirement savings plan, Orano contributes 3% of each person's salary. It also pays in an additional amount equal to the first 5% of an employee's contribution.

#### FOCUS ON ORANO VOX

This is a survey carried out each year since 2017 by a reputable external service provider who ensures that the responses are confidential.

The 2019 version approached almost all the Group's working employees, or 15,000 staff in 13 countries.

The 2019 survey showed in particular:

- overall satisfaction up by 5 percentage points from 2018,
- significant progress in loyalty and commitment to supporting the Group's objectives (up 16% and 11% compared with 2017), and similarly
- a larger proportion of staff each year (up 19% in two years) prepared to recommend Orano to their family or friends, and greater recognition of the ability of management to support staff development (up 14% in two years).

TO FIND OUT MORE Documents available Recruitment at Orano

## SKILLS Dialogue and **labor relations**

![](_page_32_Picture_1.jpeg)

Orano favors social dialogue and conducts it sincerely and in good faith. The Group considers that to be productive, social dialogue must take place in a climate of mutual trust and respect.

#### LABOR RELATIONS

The year 2019 was marked by four key achievements (France):

- We entered into a binding agreement on professional equality between women and men,
- We defined our long-term commitment to the quality of working life for all Group employees,
- We defined an agreement on managing skills and career paths. One key aim was to ensure that employees are fully engaged in their approach to personal development and career path, and that the approach is based on how they wish to progress,
- We finished setting up Social and Economic Committees (Conseil Social et Economique -CSE) within the different Group entities.

trade-union organizations represented at Group level have Group union coordinators

**25** CSEs in the Orano group (including central CSEs)

#### **KEY FIGURES FROM 2019**

49

agreements and addenda concluded in 2019

## 100%

of union representatives have signed the professional-equality agreement

The Orano Group believes that a business should reflect the diversity both of its workforce and of the society in which it is evolving. Orano is a committed and socially-responsible Group, and the parties' aim is to establish a long-term policy of inclusion, gender equality and professional diversity in all jobs and at all levels of responsibility. The agreements were negotiated at Group level in order to drive through a comprehensive policy common to the entire Group.

#### (?) DID YOU KNOW?

In 2019, Orano did not suffer any significant break in production related to an industrial dispute

#### FOCUS ON PREVENTING PSYCHOSOCIAL RISKS DURING REORGANIZATIONS

If an organization changes significantly, a table analyzing the human impact of the change is drawn up for the psychosocial risk factors, together with the associated action plans. The plans include collecting feedback 6 - 18 months after the reorganization actually takes place.

TO FIND OUT MORE About what Orano Mining has done Orano Mining CSR report

## Spotlight on...

## ... THE PROFESSIONAL EQUALITY AGREEMENT

Orano's aim is to provide the long-term conditions for true professional equality in all jobs and at all levels of responsibility.

The agreement, for a four-year period from 2019 to 2022, aims to strengthen the policies for gender balance and professional equity by means of practical measures.

Action plans are based on the objectives for action defined in the agreement. So that local conditions were properly considered, they were defined at establishment level, in liaison with staff representatives.

The practical implementation of the agreement will be monitored annually, both at national and establishment level.

#### ... THE AGREEMENT ON DEVELOPING THE QUALITY OF WORKING LIFE

The quality of working life is an on-going concern and a priority for action in the Group's social policy. The Group has had an agreement in place since 2012 on developing the quality of working life, and in 2019, the parties undertook to re-open negotiations in 2020.

#### ... THE AGREEMENT ON DISABILITY

The Group first made a commitment to employ disabled people in 2007. In 2018 it signed its fifth disability agreement, proof of its continuing firm commitment. During that period, its efforts doubled the percentage of disabled people employed, from 2.7% to 5.41%.

#### **OUR ACTIONS:**

Develop professional equality,

- Guarantee equal salaries for men and women,
- Promote the access of women to posts of responsibility,
- Include the needs of day-to-day parenting in professional life,
- Improve working conditions and look for a better balance between professional activity and personal life,
- Take steps to prevent and counter sexual harassment and sexist attitudes and behavior.

#### **OUR ACTIONS:**

The main topics covered relate to:

- The content and significance of the work with a good match between tasks and resources, autonomy, and participation in decisionmaking,
- Working together, listening and the right to speak,
- Preventing harassment and a whistle-blowing system,
- The working environment,
- Retirement arrangements and the recognition of employees' difficult working conditions,
- The recognition and management of organizational change,
- The balance between personal and professional life, and in particular remote working and the right to disconnect.

#### **OUR ACTIONS:**

The main actions in the agreement are:

- Improve colleagues' awareness of disability at work,
- Support line managers,
- Inform those employees affected by the Group's disability policy, particularly of the measures available to them under the agreement,
- Support professional transitions and maintain people in jobs, making the best use we can of digital tools,
- Strengthen the role of the Disability Leader and improve local relationships.

**SKILLS** 

## Making the most of **talent** and **skills**

![](_page_33_Picture_2.jpeg)

The Group is entering a new phase in the transformation, with the aim of improving Orano's attractiveness. It is working on developing skills and career paths, on individual commitment and on new ways of working.

The years 2018 and 2019 were marked by three key achievements:

- Over 1000 permanent recruitments each year,
- Training offer for France rationalized and put on line,
- Roll-out of the first stages of the French "Avenir" (Future) Law of September 5, 2018 for the freedom to choose a future career.

#### **RIGOROUS MANAGEMENT OF SKILLS**

We now have an action plan to monitor current and future skills more closely. It is being tracked by the ExCo, and includes, for instance:

- Organizing and managing a network of transdiscipline leaders,
- An annual skills review (Revue Annuelle de Compétences - RAC) included in the annual managerial cycle,
- Within France, an analysis and cross-cutting action plans for each family of disciplines, in order to:
  - Reduce staff stress
  - Manage the match of experience and skills to the business needs,
  - Anticipate demographic risks and the age pyramid,
  - Make jobs more attractive,
  - Incorporate technological advances,
  - Set up a biennial review of high-flyers and identify possible ways they can develop within the organization.

#### **KEY FIGURES FROM 2019**

1,264

**permanent** appointments, including 1,082 in France

85%

of staff took a training course (France)

#### FOCUS ON **COOPERATION** WITHIN THE NUCLEAR INDUSTRY IN FRANCE

Orano works with the French Atomic Energy Commission (Commissariat à l'Énergie Atomique -CEA), EDF, Framatome and many businesses in the sector as a member of the French Nuclear Industry Association (Groupement des Industriels Français de l'Energie Nucléaire – GIFEN) (formerly PFN) in mapping skills in the industry, carrying out assessments and defining action plans with the professions concerned.

#### ATTRACTIVENESS AND WORKING ENVIRONMENT

Orano is a young business, recognized for its highly-technical nature, its innovation culture, its international base and the diversity of its jobs. To join the Group is to enter an organization recognized worldwide for its excellence, one that, by contributing to the production of safe, lowcarbon, future-proofed energy, is involved in the energy transition and climate change.

The use of new ways of working has been strengthened by the facilities at the Group's new head office, the Prisme building at Châtillon. The site favors open spaces, digitized systems, and flexible working to encourage more crossover, interaction and responsiveness. Every aspect of the design is intended to foster friendly and fluent exchange. Orano also promotes remote working, in response to the wishes of many of its staff.

#### A PROACTIVE TRAINING POLICY

Orano runs four training schools:

- The Ecole des Métiers (for technical training),
- The Management School
- The Mining College, and
- Trihom, an external leader in nuclear training.

The training catalog lists 3,300 courses, constantly enhanced to reflect current needs, and almost 85% of staff took a training course in 2019. Each employee in France received on average 37 hours of training, a total of more than 480,000 hours. Of those hours, 66% were spent on non-mandatory training.

Orano takes a proactive approach to improving its employees' skills and employability, guided by the Annual Skills Review. The topic is, in particular, discussed formally during the annual appraisal interviews.

## 3,300

training courses in the Orano catalog

#### (?) DID YOU KNOW?

Orano produces its own e-learning modules, written with experts in the different jobs in the sector.

The MOOC\* "The nuclear fuel cycle" will ultimately have around forty modules, half of which are already in use.

\* Massive Open Online Course: on-line training open to all

#### FOCUS ON THE MANAGEMENT SCHOOL

The Management School has for the last three years created and offered strategic training programs to develop and support managers in the Group's transformation. It aims to direct management towards the managerial values and behaviors that the Group expects, in line with the business project.

<mark>66</mark>

![](_page_33_Picture_46.jpeg)

training hours on average for each employee in France, 66% for nonmandatory training

#### THE PACE OF RECRUITMENT

In 2019, Orano recruited 1,264 new permanent staff throughout the world, including 1,082 in France, to meet its needs across all Business Units. The overall number of staff in the Group increased as a result.

Almost one third were engineers and managerial staff, 40% of whom were starting their careers or had had just one previous job. Orano also took on 733 work/study trainees, 450 of whom joined the Group in 2019. We achieved this by working closely with 26 target schools and universities, with whom we run a joint network of almost 80 ambassadors, and participate in around fifty forums

![](_page_33_Picture_51.jpeg)

DID YOU KNOW? Orano's recruitment process is available on the internet site https://orano.group/fr/carrieres/le-recrutement-chezorano

![](_page_33_Picture_53.jpeg)

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!

![](_page_33_Picture_55.jpeg)

## Standing together for **diversity** and **inclusion**

![](_page_34_Picture_2.jpeg)

Orano aims to be an inclusive employer that encourages diverse profiles, by including disabled people within our disciplines.

#### AN ACTIVE PRO-DIVERSITY POLICY

At top level, the Board of Directors and the Nominations and Remuneration Committee are promoting a growth scheme to promote diversity. An initial Group agreement (covering Areva) was concluded with the union organizations in 2012.

Orano has certification! The French State created the Diversity Label in 2008, to recognize commitment to diversity and action to counter discrimination.

![](_page_34_Picture_7.jpeg)

#### Orano has held the title since 2010!

In the United States, Orano is registered as an Equal Opportunity Employer (EOE) with the US Equal Employment Opportunity Commission, a federal agency. Orano is also a member of Direct Employer (a recruitment body specifically for minorities, women, exservice personnel and the disabled).

#### **KEY FIGURES FROM 2019**

The renewal of the **Diversity Label** 

### 22%

of staff **are women** (as opposed to 19% in the industry)

### 5.41%

percentage of employed people with a disability

#### **ACTION FOR GENDER EQUALITY**

At the end of 2019, 22% of Orano's workforce were women, as were 28% of its managerial staff. The aim is to increase the proportion of women recruited in France by 1 percent per year. Already at the end of 2019, 24% of all new staff and 35% of new managers were women. Women also account for 31% of the high-flyers and 18% of the experts.

#### FOCUS ON THE PROFESSIONAL EQUALITY INDEX (French Law of September 5, 2018)

The eight French companies in the Group have scores ranging between 75 and 94 points out of 100. If Orano were a single company, its index would be 84. (It "loses" 10 points because there are still not enough women (25%) sitting on senior management committees).

In 2019, the company spent 260,000 euros to compensate for 177 unjustified differences in pay, of which 85% benefitted women.

In its publicity, the Group systematically promotes female profiles in technical jobs.

Orano is keen to promote technical trades with women students, and uses a network of 80 engineer ambassadors, 40% of whom are women. 38% of work-study students are women, and the objective is to increase the proportion by one percent each year, in particular in the technical trades.

## ACT TO INTEGRATE PEOPLE WITH DISABILITIES

Orano's disability policy goes back to 2006. It is implemented by a network of Diversity/Disability Leaders in each establishment. At the end of 2019 in France, the teams included 625 disabled employees, 5.4% of all those employed.

#### ?) DID YOU KNOW?

On September 17, 2019, the cyclist pack for the parasport "Tour de l'Aude" made a stop at the site. The 60 para-athletes in the pack paused for supplies at the Orano Malvési site: an opportunity to talk to staff there. The cyclists covered 250 km in 4 days to raise awareness of disability.

#### **COUNTERING DISCRIMINATION**

As a committed and socially-responsible business, Orano attaches particular importance to countering any form of discrimination and to developing an inclusive policy.

Orano has therefore mapped the risks by looking at the 24 discrimination factors defined in French law as regards the four main areas of HR: recruitment/integration, career development, training and remuneration, and also the social climate within the business.

In France, Orano has for several years had a whistleblowing and complaints system open to all staff, with special measures to ensure confidentiality. It is linked to the Ethical Code, and extends beyond the usual means of redress (manager, RH manager, occupational health service, etc.). In 2019, the whistleblowing and complaints system was incorporated into the more general Orano internal ethics alert procedure.

These mechanisms were used to report 6 alerts in 2019 (compared with 10 in 2018), two of which proved well founded.

<mark>68</mark>

#### **RECRUITING LOCALLY**

In all "significant" countries (those in which Orano and its subsidiaries employ at least 100 people), the great majority (approximately 98%) of those employed are recruited locally.

Orano also pays particular attention to local communities and indigenous peoples, making it easier for them to access its job offers.

In Canada, for instance, the collaboration agreements signed between 2012 and 2016 with the indigenous peoples in northern Saskatchewan develop human resources based on a long-term partnership. They are structured round five pillars: the development of a workforce and of businesses, community involvement, the management of the environment, and investment in the community.

#### FOCUS ON ORANO MINING

Over 98% of Orano Mining employees are from the same country as their site. The breakdown by country is published in the Orano Mining CSR report.

![](_page_34_Figure_39.jpeg)

![](_page_34_Picture_40.jpeg)

#### TO FIND OUT MORE Documents available

Brochure on the Disability Agreement (in French) Brochure on the Professional Equality Agreement (in French) Orano Mining CSR report

![](_page_34_Picture_43.jpeg)

## Innovate to preserve resources and protect health

## The vision of **Guillaume Dureau**

**Director of Orano Projects** Director of R&D, Innovation & Orano Med

"At Orano, we believe in the power of innovation. Innovation to improve how the Group performs its activities, of course, and to develop new growth opportunities in our traditional industry sectors: but also to develop in other sectors, mindful of sustainable-development issues, and always in the service of society. These new activities support the energy and industrial transition with services that are innovative, circular and sustainable, and with products that respond to urgent societal challenges (in medicine and space, recycling of strategic materials, and tomorrow's nuclear industry). Innovation is one of the Group's growth accelerators: it is a new way of creating, delivering and adding value, aligned with the Group's CSR commitments"

## Our results for 2019

Technological innovation as a performance lever

14 patents lodged in 2019

€103 M invested in R&D in 2019

Business innovation to accelerate the Group's growth

1,500 start-ups in the Orano

**3** GOOD HEALTH AND WELL-BEING

-/\/`•

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

ecosystem

Recycle nuclear materials

70

![](_page_35_Picture_17.jpeg)

![](_page_35_Picture_19.jpeg)

18% of whom are women

![](_page_35_Picture_21.jpeg)

![](_page_35_Picture_23.jpeg)

million euros invested by Orano Med in 2019 and 2020 in France and in the United States to increase the lead-212 production capacity

![](_page_35_Picture_25.jpeg)

#### **INNOVATION**

## Technological **innovation** as a performance lever

![](_page_36_Picture_2.jpeg)

Orano uses an innovation approach to enhance the Group's performance, but also to re-design its activities and to explore new growth opportunities. It can thus provide its customers with new services and innovative solutions, while serving society and preserving resources and health.

#### **INNOVATION, ORANO'S PRIORITY**

Orano has made innovation one of its three priorities, together with operational excellence and value creation for its customers. The innovation approach has three facets:

- industrial innovation,
- business innovation, and
- innovative thinking from the women and men at Orano, which makes this transformation possible.

## FOCUS ON ORANO INNOVATION SME

Orano encourages collaborative innovation with start-ups by launching open-innovation challenges relating to the needs in the field, and inviting start-ups to present their innovative solutions. Since 2019, a total of 49 challenges have been issued and 28 implementations are in progress.

Link to the Orano Innovation SME

**KEY FIGURES FROM 2019** 

**14** patents lodged in 2019

**€103 M** invested in **R&D** in 2019 (**2.7%** of turnover)

#### ADOPT THE NEW TECHNOLOGIES FOR PERFORMANCE AND SAFETY

Innovation at Orano is firstly a matter of adopting the new Industry 4.0 technologies to improve productivity at our plants, the competitiveness of our services and the safety of our operators. The Group is basing its industrial innovation program on ten key technologies for the future:

- 01 Smart sensors
- 02 The IoT and secure communication networks03 Instrumentation, characterization and nuclear measurement
- 04 3D Modeling & simulation
- 05 Additive manufacture
- 06 Data analysis and artificial intelligence
- 07 Immersive technologies including virtual reality 08 Autonomous and remotely-operated robots & drones, cobotics
- **09** Mobile & collaborative systems including augmented reality
- **10** New materials and advanced coatings

## A FLEXIBLE AND RECEPTIVE INNOVATION STRATEGY

1,500

start-ups in the Orano ecosystem, including **300** qualified

## Spotlight on...

#### ... NANOPIX, THE SMALLEST GAMMA CAMERA IN THE WORLD,

Nanopix, developed by Orano in partnership with the CEA and prize winner at the WNE 2018, is the world's smallest gamma camera. It was invented for mounting on different carriers (pole, robot, robot arm or drone etc.) in order to overcome the access constraints at work sites when locating radioactive hot spots. It is used in areas that are difficult to access, where the gamma imagers on the market are unsuitable because of their size and mass.

## ... ORANEF, A FOLDING INSPECTION DRONE

Oranef is a folding mini-drone with a wireless communication system, a control station and a camera. It was developed to carry out inspections in all types of cubicles that conventional inspection tools cannot access (including zone 4) and is part of the move to maintain the plant in operational condition over the long term. The folding zone can be inserted via borescope holes 80mm in diameter.

#### ... A CONNECTED ROD TO HELP GEOLOGISTS

Exploration geologists can use a newly developed connected device now under test to measure the exact grade of ore and compare it in real time with the digital model. The enhancement means that the ore loaded into trucks will be more homogeneous. It will also help improve working conditions, as the operator's posture is less awkward and the distance between the operator and the ore is greater, reducing exposure to gamma radiation.

#### THE VALUE IT CREATES:

**Operator dose reduced** 

Costs of job reduced

Time saved during investigations

Work scenarios optimized

#### THE VALUE IT CREATES:

**Operator dose reduced** 

Time saved

**Costs reduced** 

Investigations more exhaustive

#### THE VALUE IT CREATES:

Reduces awkward positions and doses

Reduces quality defects and mining costs

Optimizes the load in the trucks

More about innovation at Orano 14.0

## **Business innovation to** accelerate the Group's growth

#### PUSHING BACK THE FRONTIERS

Our skills in radiation protection, nuclear-powered travel and long-term energy systems such as the RTG (Radioisotope Thermoelectric Generator) will be vital for the space industry.

#### **INVENTING THE MODELS TO CREATE FUTURE VALUE**

Orano's Innovation Business strategy explores models that will create value in the future, by enhancing the use of its skills, expertise, assets, leadingedge technologies and nuclear materials. A portfolio of new potential activities is being developed, focusing on:

- Services, rather than product sales,
- The circular economy, as an extension to its strategy for recycling, ecodesign and the rehabilitation of mining ecosystems,
- DeepTech, with projects addressing key societal issues.

We are thinking of the Group's future today, so that it will be built tomorrow following a strategy of sustainable economic development.

INTERVIEW WITH NATHALIE COLLIGNON

INNOVATION DIRECTOR

"The nuclear industry is a sector for the future, serving society bv promoting sustainable development."

![](_page_37_Picture_13.jpeg)

![](_page_37_Picture_14.jpeg)

#### What practical steps were taken to instill an innovation culture?

**NC:** Practical steps have been taken to develop an innovation culture within the Group:

- Orano managers are now trained in innovation and there are effective and dynamic communities that meet regularly to share good practices and construct together road maps for the Group,
- An interactive and recreational module capitalizes on and highlights the Group's achievements linked to the Industry 4.0 technologies
- FabLabs accessible to staff at sites offer tools and support to leaders of innovative projects,
- An "Exploration Factory" provides resources to speed up research into opportunities to grow the portfolio,

• And every two years, the Orano Awards honor the most innovative projects carried out within the Group, irrespective of their transformative nature. The idea of "learning through mistakes" has been introduced with the "Best Failed Idea" category.

#### Do you act alone or is there a network?

**NC:** One of the Group's main challenges is to speed up its innovation cycles. Orano has implemented a flexible and open strategy by bringing in new skills (such as design) from leading partners in ultra-innovative and dynamic ecosystems such as that for the I4.0 start-ups, and services from recognized Innovation Business partners. It is doing so in conjunction with the Circular Economy (BMI Lab, Univ St Gallen, AKTAN and Strategyzer).

#### **ORANO MED, A NEW** PLAYER IN NUCLEAR MEDICINE

Orano Med. Orano's medical subsidiary, has developed a new and very promising process to extract and purify lead-212 for targeted alpha therapy, a new form of cancer radiotherapy that reduces the impact on healthy cells.

Link to the Orano Med site

invested in extending production capacity in France and in the United States

## UPS

#### **COMPETITION FOR DEEP-TECH START-**

As part of the competition to develop new growth opportunities organized in collaboration with Hello Tomorrow for deep-tech start-ups, we proposed five challenges: Enhancing remote expertise, Using any isotope, Using uranium properties, Environmental monitoring and industrial site upcycling, and Using nuclear expertise and technology.

The competition attracted 57 international entries, 14 of which drew Orano's interest.

#### **OXILIO**

Orano has just launched a new service, Oxilio, for use by those not involved in nuclear power generation to manage nuclear materials (for instance, by hospitals to manage spent radioactive sources). Rolling out this new service will help us to identify others that we might develop in the health sector.

![](_page_37_Picture_39.jpeg)

The Orano Med laboratory (Maurice Tubiana laboratory) specifically for producing lead-212. Bessines sur Gartempe, France.

![](_page_37_Picture_41.jpeg)

Orano innovation Orano Innovation SME Orano Med site

## **Recycle** nuclear materials

![](_page_38_Picture_2.jpeg)

Orano is a world leader in reprocessing and recycling, and relies on its recognized expertise to provide its customers with efficient, safe and responsible management of spent nuclear fuel. It does so by recovering usable material (uranium and plutonium) from spent fuel and re-cycling it to manufacture new fuels, such as MOX, for nuclear reactors.

#### PRESERVE RESOURCES BY RECYCLING SPENT FUEL

Recycling can recover and re-use up to 96% of the material in spent fuel (1% from plutonium, and 95% from uranium). The remaining 4% (comprising fission products) is final waste that cannot be reused. The first recovery stage is carried out at Orano's La Hague plant.

In the second stage, Orano produces MOX, a recycled fuel. MOX fuel is used to supply nuclear power plants in France, Japan and Germany. Depending on customer requirements, a fuel assembly containing a mix of plutonium and depleted uranium contains between 3 and 12% plutonium. In France, 10% of nuclear electricity is now produced using MOX fuel, representing almost 8% of electricity from all sources.

?) DID YOU KNOW?

1 gram of plutonium can produce the same amount of energy as 1 tonne of oil.

#### **KEY FIGURES FROM 2019**

1,213

tonnes of spent fuel processed at La Hague in 2019

## 10%

of French electricity production comes from recycled materials

2%

cost of recycling in the electricity bill

#### FOCUS ON THE PROCESSING OF SPENT FUEL

The processing takes place at the Orano La Hague plant, in 4 stages and remotely:

- The fuel is received and stored safely before processing: the fuel is taken from its packaging and remains in a pool under 9m of water, for an average of five years. During this time, the temperature of the fuel reduces and its radioactivity decays naturally,
- The components are separated and re-usable materials recovered: a chemical workshop separates the recyclable material (plutonium and uranium) from the final, non-usable waste (fission products),
- The final waste (4%) is encapsulated safely and securely: This comprises fission products and the remains of metallic structures (hulls and end pieces),
- The waste is stored safely for an indefinite period awaiting final storage: French waste is stored at the La Hague site in dedicated halls, until it is transferred to the deep geological storage facility (the deliverable from the CIGEO project). Waste from foreign customers is sent back to its country of origin, as required under French law.

The proportion of nuclear electricity generated using recycled materials could increase to up to 25% with the recycling of the uranium in spent fuel (MOX). The figure could, in theory, reach 30% with MOX 2, a new type of fuel that allows nuclear fuel to be recycled several times.

#### **EXPORT EXPERTISE**

Orano is internationally recognized for its expertise in the safe recycling of spent fuel. By the end of 2019, 44 commercial reactors across the world had been loaded with MOX fuel since the start of the seventies: 38 in Europe (22 in France, 10 in Germany, 3 in Switzerland, 2 in Belgium 1 in the Netherlands), 5 in Japan and 1 in the United States.

![](_page_38_Picture_25.jpeg)

#### THE 3 VIRTUES OF RECYCLING

Natural

resources

are saved

![](_page_38_Picture_27.jpeg)

 $\square$ 

96% of spent nuclear fuel can be recycled, leaving 4% of final waste The volume of the most radioactive waste is reduced by a factor of five

![](_page_38_Picture_31.jpeg)

![](_page_38_Picture_33.jpeg)

( MOX fuel assembly. Orano Melox, France.

#### FOCUS ON MOX, THE RECYCLED FUEL

MOX fuel is manufactured in five stages in Orano's Melox plant:

- A powder is produced from plutonium and depleted uranium mixed in the proportions required by customers,
- The powder is compressed into pellets,
- The pellets are **sintered** in high-temperature ovens,
- The pellets are ground to the required diameter (to the nearest micron),
- The pellets are inserted into **sheaths**, or metal tubes. The "rods" are 4 meters long and contain approximately 320 pellets, depending on customer requirements,
- The rods are inserted into a fuel **assembly**. This is the end product from Melox for delivery to the customer.

85

 $\langle \cdot \rangle$  Training in remote operation. Orano La Hague, France.

TO FIND OUT MORE Documents available Link to our popular-beliefs site (in French)

## Engaged and responsible locally in our environment

### The vision of **Nicolas Maes Director**, Mining BU

"The business is an economic player, but it is also a player in the regions where it operates. This applies particularly to our mining and nuclear activities. We need to commit ourselves early on to manage the challenges throughout our operational cycle. This means setting up programs to identify and then to control and reduce potentially negative impacts, committing to plans with the local and national stakeholders, and carrying out development work in the regions so that our activity affects them in a positive way.

Our approach to communities is therefore very proactive. It is integral to our activities, and relies on constant, constructive and on-going dialogue with our stakeholders."

![](_page_39_Picture_4.jpeg)

![](_page_39_Picture_5.jpeg)

## Our results for 2019

Communicate and participate

Local Commission (CLI or CSS) for each industrial site

#### Buy and subcontract in a responsible way

## 100%

of contracts include sustainable-development undertakings

## 90%

of purchases by French entities are from suppliers established in France

Help to develop the regions around our operations

#### Redevelop old sites for new uses

![](_page_39_Picture_16.jpeg)

end-of-cycle provisions to finance the end of life of nuclear installations, covered by dedicated assets

![](_page_39_Picture_20.jpeg)

![](_page_39_Picture_22.jpeg)

meetings organized with the stakeholders near our mining sites in France and abroad

73%

of purchases by foreign entities are made in the local country

![](_page_39_Picture_28.jpeg)

rehabilitated former French mining sites housing an industrial establishment, agricultural activities or photovoltaic plants

![](_page_39_Picture_30.jpeg)

## **Communicate** and participate

![](_page_40_Picture_2.jpeg)

Discussing the issues with our stakeholders is part of our undertaking as a responsible manufacturer.

#### TRANSPARENCY AND DIALOGUE WITH OUR STAKEHOLDERS IN FRANCE

Orano participates in discussion groups and committees with its stakeholders. In France for example, the Group is a member of the French High Committee for Transparency and Information on Nuclear Security (Haut Comité pour la Transparence et l'Information sur la Sûreté Nucléaire - HCTISN) and contributes actively to its work. Via its sites, the Group is also a stakeholder in the Local Information Commissions (Commissions Locales d'Information - CLIs). The task of these commissions is to ensure information is conveyed to people living near nuclear sites.

The CLIs meet several times a year and are important bodies providing information about the site's activities. A number of presentations are made during the meetings, which are attended by the media (press, radio etc.). The CLIs also meet during public inquiries to give an opinion on the projects presented.

Every industrial chemical facility classified as "Seveso upper tier" has an equivalent body, a Site Monitoring Commission (Commission de Suivi de Site - CSS) which replaces the Local Information and Consultation Committee (Comité Local d'Information et de Concertation - CLIC), and has the role of informing the public about the facility's activities.

## KEY FIGURES FROM 2019

**Local Commission (CLI - site information, or CSS - site monitoring)** for each industrial site

## +100

meetings organized with the stakeholders near **our mining sites** in France and abroad

#### AN EQUIVALENT SYSTEM FOR OUR MINING FACILITIES

In each country where Orano Mining is present, organizations are systematically established and managed to provide information, dialogue and consultation about the sites. They may be Local Information Commissions (Commission Locale d'Informations - CLI), Site Monitoring Commissions (Commission de Suivi des Sites -CSS), visits or web applications providing the public with information on the monitoring of remediated former sites (CartOmines).

#### FOCUS ON THE BILATERAL STEERING COMMITTEE (CBO) IN NIGER

The Committee was created in May 2006 to help strengthen local governance of community projects for local people. Together with Orano Mining, the CBO brings together local representatives, the authorities involved and civil society. It defines the local development policy, identifies priority areas for action, gives an opinion on each project, and ensures its financing.

#### (?) DID YOU KNOW?

All the undertakings agreed with the French Nuclear Safety Authority are presented regularly at CLI meetings.

#### **WHAT THEY SAY**

#### Jean-Christophe VARIN

Deputy Site Director Orano La Hague

"The Local Information Commission for Orano La Hague and the site have been in continuous dialogue for almost forty years, since the La Hague CLI was the first created in France, in 1981. Although the three general meetings each year are the key ones, discussion also continues within specialist working parties. Members of the CLI or its Chairman are also informed regularly, in line with the Orano Group's commitment to transparency."

#### **Nathalie BONNEFOY**

Communication Director Orano CE

"The Local Information Commissions play an essential role in the process of dialog and consultation with local inhabitants. They are independently financed and report to the French Nuclear Safety Authority (Autorité de Sûreté Nucléaire - ASN). They have a variety of members, including institutional players, environmental associations, State-funded chambers of commerce, union organizations and government authorities. Operators are also members, and report periodically on their work in nuclear safety, radiation protection and the environment. They provide an opportunity for completely transparent and unrestricted open discussion and debate on current topics relating to our activities. They play a key role in informing local residents. They challenge us and force us to reconsider our way of thinking, so that the general public is better informed and has better access to information.

There are plenary sessions, but the most important thing is the on-going relationship between the members to whom we talk and report as events require."

#### INVOLVEMENT IN COMMUNITY PROJECTS

Orano is involved in various aspects of the life of the communities near its operations in France and abroad.

#### In France

One example is the framework agreement for collaboration between Orano Melox and the University of Nîmes. This has strengthened the existing cooperation between the two establishments over the last few years, particularly during the Festival of Science. The collaboration allows us to develop methods of education, visits, courses, work/study placements, and research & development work. It brings research and industry together as they confront the major energy challenges such as countering global warming, nuclear safety, the energy transition, and public acceptance.

### ~60%

of those living near our French sites think that the nuclear industry is good for the region (BVA study, 2019)

#### At mining sites

Badrakh Energy, the Orano Mining subsidiary in Mongolia, created a scholarship program in 2010 to train the workforce, support education and give young people in the region access to university studies. It covers the entire three years required to complete a bachelor degree. In 2019, 39 students from Ulaanbadrakh and Sainshand in Dornogobi province received scholarships, bringing the total number of beneficiaries to 81 since it started.

## €4.5 M

invested in health, access to water, education and economic development to meet the expectations of our stakeholders in countries where Orano Mining has a site.

## **Buy** and subcontract in a **responsible** way

![](_page_41_Picture_2.jpeg)

The Group's procurement is governed by its Procurement and Supply Chain process. Suppliers are assessed and monitored based on the criteria of nuclear safety, quality, conformance, finance, competitiveness, health, industrial safety and the environment, and on their ability to supply products and services that meet the needs and specified requirements.

#### INTEGRATING SOCIAL AND ENVIRONMENTAL CRITERIA INTO THE PROCUREMENT POLICY

The Group has a formal Procurement Policy, which was revised in 2018. Orano's reference documentation on the use of subcontracting and on procurement includes the following documents:

- an Industrial Policy,
- a Procurement Policy and an Intra-Group Procurement Policy,
- a Supply Chain manual covering all procurement processes and procedures,
- Group procedures that define how HSE is incorporated into the procurement process,
- General Terms & Conditions of Purchase (Conditions Générales d'Achats - CGA).

Orano's contracts are divided into 3 classes depending on the level of risk. Class 1 includes those with a high HSE risk, Class 2, those with a significant HSE risk, and Class 3, those with a low risk or with no particular HSE requirement.

(?) DID YOU KNOW? Orano applies the principles in the Social Specifications. **KEY FIGURES FROM 2019** 

## 100%

of contracts include **sustainable**development undertakings

## 90%

of purchases by **French entities** are from suppliers **established in France** 

Classification is based on a risk analysis carried out before the requirements specification. It takes the form of a risk table covering around twenty key points (e.g. nuclear safety and the environment).

#### FOCUS ON **REPORT ON** SUBCONTRACTING IN FRANCE

The legal and regulatory framework for subcontracting nuclear activities and for activities within nuclear facilities in France has been extended since 2012. Orano is scrupulous in respecting the rules and in its reporting.

Every two years, the Group publishes a report of its practices as regards the use of subcontractors for all Orano roles in France, including nuclear operator, industrial operator and supplier of services and works.

#### INVOLVE THE VALUE CHAIN

Orano wants its suppliers to commit to sustainable development. For several years, all Orano contracts and General Terms & Conditions of Purchase have included provisions on compliance by suppliers with such a commitment.

The procurement manager and the requisitioner must take into account economic and ethical aspects and fair competitive practices, and look more favorably on the suppliers and tenders that best fit with the organization. When determining the needs, they must consider the local context, the impact on employment and the local economy.

## And help to develop the regions near our operations

Orano is fulfilling its commitment to community involvement by work to improve the attractiveness and aid the economic development of the regions in which it has sites.

#### DEVELOPMENT, SKILLS AND LOCAL EMPLOYMENT

In line with the values of the business, Orano relies on its knowledge of regions and of those with a role in local economic development to run projects that address the priorities and the specific needs of each employment pool. The Group supports trades under stress and projects led by SME/SMIs in the industrial sector and in services to industry, particularly in the nuclear industry, it sees the longterm future of the activity generated by such projects as particularly important. Action to develop the local economy also covers finance for projects in the social economy, and support for jobs and training.

#### (?) DID YOU KNOW?

Orano is involved in local initiatives to develop skills and jobs. Examples in France are CCI, UIMM, NuclearValley, Nucleopolis, Alize, and CleanTech Valley etc.

#### **1,122 JOBS CREATED IN FRANCE BY REVITALIZATION INITIATIVES**

Between 2016 and 2019, as part of the transformation plan and the regeneration commitment in its plan for voluntary departures in France, the Orano Group undertook to support the regions via an economic revitalization plan and initiatives designed to promote the emergence of new activities and the creation of new jobs.

By the end of 2019, Orano had met its commitments under the revitalization agreements, and had supported the creation of 1,122 jobs (23% higher than the initial target).

<mark>80</mark>

#### FOCUS ON CIME, THE NEW INNOVATION CENTER FOR EXTRACTIVE METALLURGY

On September 10, 2019 we laid the foundation stone for the new innovation center for extractive metallurgy (Centre d'Innovation en Métallurgie Extractive - CIME) at the French site of Bessinessur-Gartempe. The CIME develops scientific and technical solutions to meet the needs of its customers in the areas of energy, the environment, industrial recycling, health, ore treatment and engineering. The investment of over 30 million euro underlines the Group's desire to innovate and modernize, and to remain in the Limousin over the long term.

73%

of purchases by foreign entities are made in the local country

#### **PARTICIPATE IN LOCAL BODIES**

Orano's principal industrial sites work proactively for their region and its industrial fabric. Their senior management are active members of the region's economic and administrative bodies (they hold office or have representatives in their offices).

Such bodies allow fruitful discussion with the region's economic players, and enable issues and news to be shared throughout the year.

![](_page_41_Picture_42.jpeg)

Sustainable Development Obligations applicable to Suppliers Report on subcontracting 2018 (in French)

## Redevelop old sites for new uses

![](_page_42_Picture_2.jpeg)

The Group's experience means it takes its responsibilities seriously, including the proportionate remediation of liabilities. This equitable societal transition can, when the site is suitable, give its assets a second life.

#### THINK AHEAD FOR A NEW LIFE FOR **OUR SITES AND OUR CUSTOMER** SITES

As activities develop, so do facilities: and some close down. Orano prefers to dismantle facilities at the time activities cease. This means the management of liabilities is not deferred and the areas can be converted to another use.

#### **DID YOU KNOW?** (?)

The cost incurred at the end of a nuclear facility's life is provided for following a process defined in French law. At the end of 2019, the end-of-cycle provision for financing these operations amounted to €7,688 M. The provisions are matched by earmarked assets.

Orano also carries out remediation and dismantling for other operators. Its expertise in all areas allows it to offer its customers either a complete package or a bespoke service, from the initial studies up to completion.

**TO FIND OUT MORE Documents available** Dossier for post-mining management, France (in French)

#### FOCUS ON DISASSEMBLY OF THE **OLD FACILITIES AT MALVÉSI**

The industrial plant at the Malvési site has been undergoing renovation and modernization since 2016, at the same time, a major program is being rolled out at the site to dismantle and remediate facilities that are now closed. On average, over 70 Group employees, specialists in dismantling and remediation, are currently working on site to dismantle the old, now unused, workshops in a responsible way so that new industrial activities can start. A total of around ten facilities will be dismantled by 2025. The program started in 2018 and represents a total investment of €70 M. It has allowed a new workshop (the UO2 workshop) to be built so that an intermediate product from the site's main process can be re-used and marketed.

#### **OLD MINING SITES CONVERTED**

Orano has developed expertise in remediating and managing former mining sites. Their re-use forms an integral part of the mining cycle. The main objectives of a remediation plan are to:

- Ensure stability for public health and safety over the long term, and reduce the residual impact of the previous activities.
- Limit the area of the site subject to restrictions of use and ensure the landscaping aims to preserve the local biodiversity and allows possible reuse of the site, depending on the easement restrictions,
- Enable good social and community management after use, and encourage site conversion.

Over 63% of remediated former French mining sites today house industrial premises, agricultural activities or solar power plants. Four solar power plants have been installed, enough to supply 12,000 homes. Eleven projects are under study.

![](_page_42_Picture_18.jpeg)

NUT STUDY

#### ... SICN VEUREY VOROIZE

The two BNIs 65 and 90 have been decommissioned and public-utility easements created, allowing the site's reindustrialization to be finalized. This will be done in partnership with the industries already present on over half the area. Under the decommissioning procedure, the dossier was validated by the ASN and examined by the local authorities, via a Prefectorial Order defining the boundary and the public-utility easements (Servitudes d'Utilité Publique - SUP) on the plots making up the site of the two BNIs. The Order was published on October 1, 2019, and following its publication, the College of the French Nuclear Safety Authority (ASN) published the decommissioning decisions for BNIs 65 and 90 on October 29, 2019 (Decisions DC 0680 and DC 0681).

#### ... THE DISMANTLING OF EURODIF

The Georges Besse II enrichment plants have replaced the Eurodif manufacturing plant, which until June 2012 produced uranium enriched by gaseous diffusion. The plant was finally shut down in 2016. The Decree authorizing it to be dismantled was obtained at the start of 2020 and defines the necessary stages in its disassembly. The work must be completed at the latest by December 31, 2051. Dismantling Eurodif involves over 130.000 tonnes of metal. or the weight of nineteen Eiffel Towers.

#### ... PRODUCTION CLOSE-DOWN AND **REMEDIATION OF THE COMINAK** MINE

In 2019. Cominak's Board of Directors decided to stop production at the Akouta site on March 31, 2021. This was a difficult decision that will have significant consequences, but was prompted by the mine's diminishing reserves. Orano, with its wide experience in post-mining management, undertook with the Nigerian authorities and Cominak's shareholders to remediate the industrial site in a responsible way, in compliance with the Nigerian regulation and with international recommendations, and to define the social transition plan for the Arlit - Akokan community as regards access to healthcare and water, maintenance of the urban infrastructures, and support for entrepreneurship and local economic activity.

#### **OUR ACTIONS:**

**Buildings demolished** 

Soil remediated

**BNIs decommissioned** 

Land currently being sold

#### **OUR ACTIONS:**

**Facilities flushed out** 

**Decree authorizing** disassembly obtained on February 7, 2020

#### **OUR ACTIONS:**

A three-pronged remediation plan (technical, social, and societal):

- Remediation and environmental monitoring work
- Support for employees
- Societal transition

Work on a continuity plan for activities in North Niger

# OUR RESULTS

![](_page_43_Picture_1.jpeg)

## Performance **indicators**

![](_page_44_Picture_2.jpeg)

	2017	2018	2019	Target for 2020
Reference revenue (in €M)	3 848	3 623	3 787 🧷	

#### Governance **mobilized** to achieve the **highest standards**

Governance	2017	2018	2019	Target for 2020
Governance				
Number of directors	-	13	13	
Independent directors		4	4	
Directors representing employees		2	2	
Women on governance bodies			46%	> 40%
Women among directors representing employees			41%	
Proportion of women on the Executive Committee			9%	25%
Ethics, compliance, risk				
Employees trained in compliance		273	843	
Incidents escalated by the Ethical Reporting process			107	
Interest representation actions reported to the French High Authority for Transparency in Public Life	5	1	6	

Number of events classified on the INES scale in nuclear entities	2017	2018	2019	Target for 2020
INES Level 2	0	0	0 =	0
INES Level 1	12	8	7	
INES Level 0	105	121	132	
Incident Prevention Rate (IPR: INES 1 / (INES 0 + INES 1))	0.11	0.07	0.05 🛛	< 0.1
Internal inspections carried out by the General Inspectorate	39	44	59	

#### Tending towards **carbon neutrality**

		2017	2018	2019	Target for 2020
GreenHouse Gas Emissions					
Direct GHG emissions scope 1 (tCO2e)	√ ( <b>1</b> )	294 832	260 687	267 872 7	
Indirect GHG emissions scope 2 (tCO2e)	√ ( <b>1</b> )	157 424	163 893	<b>182 921</b> 7	
GHG emissions scope 1+2 (tCO2e)		453 729	425 580	<b>450 792</b> 7	
Variation compared with previous year			-6%	+6%	
GHG reduction (Scope 1 and 2) since 2004			-63%	-61%	
GHG reduction (Scope 1 and 2) since 2015			-37%	-33%	
Detail of GHG emissions scope 1+2 (tCO2e)					
Mining				293 896	
Front-End				50 345	
Back-End				105 367	
Corporate				1 185	
GHG emissions (Scope 1+2) per unit revenue (tCO2e / €M)		118	117	119 =	
Energy					
Quantity of energy consumed (MWh)		2 080 917	1 869 557	<b>1 905 131</b> 🛛	
Variation compared with previous year			-10%	+2%	
Reduction in the consumption of energy since 2004				-91%	
Detail of quantities of energy consumed (MWh)					
Mining				652 768	
Front-End				517 405	
Back-End				729 895	
Corporate				5 063	
Energy consumption per unit revenue (MWh / €M)		541	516	503 🛛	

#### Operating efficiently and **reduce our footprint**

	2017	2018	2019		Target for 2020
Number of ISO 14 0001 certified sites			100%		100%
Water					
Quantity of water consumed (m3)	12 026 198	10 856 726	10 294 639	И	
Variation compared with previous year		-10%	-5%		
Reduction in the consumption of water since 2004			-93%		
Detail of quantities of water consumed (m3)					
Mining			7 669 436		
Front-End			2 006 084		
Back-End			614 558		
Corporate			4 561		
Water consumption per unit revenue (m3 / €M)	3 125	2 997	2 718	Ы	
Conventional waste					
Global tonnage of conventional waste (normal and exceptional activity)	26 686	19 909	21 704	7	
Quantity of hazardous waste (t) linked to a normal activity	9 490	6 690	5 267	Ы	
Quantity of non-hazardous waste (t) linked to a normal activity	6 796	6 760	6 786	=	
Radioactive waste	htt	ps://inventaire	e.andra.fr/inve	entai	re

#### Proud and committed employees

Health, safety, radiation protection	2017	2018	2019	Target for 2020
Occupational safety				
Frequency rate for lost-time occupational accidents (excl. commuting accidents)	2.4	1.5	<b>1.8</b> 7	1.4
Severity rate for occupational accidents (accidents declared in the year excl. commuting accidents)	0.07	0.03	0.08 7	
Number of fatal accidents	1	0	0 =	0
Health				
Occupational illnesses	10	16	23 🧷	
Radiation protection				
Average exposure dose of employees to ionizing radiation over 12 consecutive months (mSv)	0.8	0.86	<b>0.84</b> 🖌	
Total individual external doses over 12 consecutive months for Orano employees (H.mSv)	8 016	8 360	8 300 =	
Total individual internal doses over 12 consecutive months for Orano employees (H.mSv)	3 259	3 374	<b>2 934</b> 🛛	
Average exposure dose over 12 consecutive months of subcontractors to ionizing radiation (mSv)	0.5	0.47	0.50 7	
Orano employees above 14 mSv (internal Orano threshold)	18	46	<b>40</b> <sup>\</sup>	
Subcontractors above 14 mSv (internal Orano threshold)	1	3	3 =	
Maximum dose (mSv)	16.1	16.6	<b>15.9</b> 🖌	

Breakdown of registered staff corresponding to scope of consolidation of the Group	2017	2018	2019	Target for 2020
Breakdown of workforce by type of contract*				
Active permanent contracts	15 846	15 921	15 913	
Fixed-term contracts	367	404	389	
Work-study	643	694	733	
Non-active permanent contracts (early retirees, employees on parental leave, incapacitated employees)	2 133	1 802	1 595	
Total	18 989	18 821	18 630	

\* Scope: workforce managed excluding Cominak, Sovagic and Macrocyclics, mining JVs counted at 100% if majority stake and 0% otherwise

Employee engagement	2017	2018	2019		Target for 2020
Employee engagement rate	36%	45%	55%	7	
Trend in employee engagement rate measured by OranoVox		+9%	+10%		
Recruitment and turnover World					
Employment rotation rate:	mployment rotation rate:		0 204	7	
Average entries / initial headcount		7.5%	0.3%	~	
Attrition rate (turnover):	C 40/		7 204	P	
departures incl. retirements / initial headcount		0.470	7.3%	~	
of which individual redundancies		64	72	7	
Permanent contract hires		1174	1 264	7	
of which Engineer and Manager categories		41%	34%	Z	

Employee engagement **Recruitment and Turnover France** Attrition rate (turnover)\* of which individual redundancies Permanent contract hires of which Engineer and Manager categories **Breakdown of employees** Personnel breakdown by activity\* Mining Front-End (Chemistry-Enrichment) Back-End (Recycling, Decommissioning & Services, Logistics, Projects) Corporate and other (incl. Medical) Total Breakdown of workforce by region\* France Asia-Pacific Americas Africa and Middle East Europe (outside France) Breakdown of the workforce by socio-professional category Engineer and manager categories Technical and administrative staff Workers Breakdown of employees by gender\* Women (worldwide) Men (worldwide) Women in manager categories Women in non-manager categories Breakdown of employees by age bracket\* Under 21 yrs 21 to 30 yrs 31 to 40 yrs

 $^{\ast}$  % calculated on the basis of active employees on permanent contracts

41 to 50 yrs 51 to 60 yrs Over 60 yrs

\* Resignations, dismissals, deaths, retirements

2017	2018	2019		Target for 2020
	5.0%	<b>6.0%</b>	7	
	37	<b>46</b> 🗇	7	
	951	<b>1 082</b>	7	
	41%	<b>32%</b>	7	

2017	2018	2019	Target for 2020
3 179	2 819	2 754	
2 693	2 550	2 371	
12 212	12 388	12 490	
1 061	1 036	989	
19 145	18 793	18 604 🗅	J
78.4 %	79.8 %	81.4 %	
8.0 %	7.9 %	7.6 %	
6.7 %	6.5 %	5.2 %	
6.0 %	4.9 %	4.9 %	
0.9 %	0.9 %	0.9 %	
29.2 %	30.0 %	30.1 %	
52.1 %	51.9 %	52.0 %	
18.6 %	18.2 %	17.9 %	
20.9 %	21.5 %	21.7 %	
79.1 %	78.5 %	78.3 %	
27.2 %	27.7 %	28.3 %	
18.2 %	18.9 %	18.9 %	
0.04 %	0.1 %	0.1 %	
12.0 %	13.6 %	13.6 %	
29.8 %	29.6 %	30.2 %	
26.3 %	26.1 %	25.4 %	
29.8 %	28.8 %	28.7 %	
2.0 %	1.9 %	2.0 %	

Collective bargaining agreements and notice periods for organizational change	France	Kazakhstan	Niger	USA	Canada
Collective agreements	Yes	Yes	Yes	No	Yes
Including notice periods for consultation and negotiation	Yes	Yes	No	N/A	No
	1-3 months				

Effective notice period in the event of a significant change in the organization	4 months if exercise of right to an expert opinion by trade unions	1 month	No	60 days (WARN act)	No limit	

Summary of employee benefits reserved for permanent contract employees *	France	Kazakhstan	Niger	USA	Canada
Providence	x	x	x	x	x
Medical insurance	x	x	x	х	x
Disability pension	x	x	x	х	x
Parental leave	x	x	-	-	x
Retirement savings plan	x	x	x	x	x
Employee shareholder scheme	na	na	na	na	na

\* Significant countries: in which Orano and subsidiaries employ at least 100 staff

France indicators	2017	2018	2019	Target for 2020
Compensation				
Salary review envelopes (incl. gen. raise for non-managerial staff categories, seniority, promotions/mobility, etc.)	1.6%	2%	2.2%	
Industrial relations				
Percentage of employees covered by a collective agreement	-	-	100%	
Number of agreements signed in the year	-	-	49	
Number of agreements signed unanimously	-	-	4	
Competency development				
Level of access to training in France	-	84%	<b>85%</b> 7	
Estimation of training volume (h)	-	482 000	482 727 =	
Proportion of compulsory courses (%)	-	42%	<b>34%</b> 🛛	
Proportion of non-compulsory courses (%)	-	58%	<b>66%</b> 7	
Estimation of mean training hours per employee (h/employee)	-	35.4	<b>37</b> 7	
Work-study trainees in the personnel (as % of active permanent contracts)	-	5.6%	<b>5.8%</b> ↗	
Quality of life at work				
Number of employees benefiting from the implementation of telework	385	671	<b>931</b> 7	
Percentage of employees benefiting from the implementation of telework vs eligible population	8%	12%	-	
Employment rate of persons with disabilities	5.12%	5.58%	<b>5.41%</b> 🛛	
Number of employees with disabilities in France	599	625	<b>645</b> 7	
Number of ethical alerts linked to non-discrimination reported	10	4	6 7	1
Instances of implementation of counseling and support service	-	35	35 =	

France indicators	2017	2018	2019		Target for 2020
Gender equality					
% of women in permanent contract hires	29 %	27 %	<b>24 %</b>	И	29%
of which Engineer & Manager categories	39 %	35 %	<b>35 %</b> =	=	37%
Proportion of women on Executive Committees	25 %	25 %	<b>25 %</b> =	=	25%
Proportion of women among work-study hires		36%	<b>38%</b> 2	7	40%
Proportion of women among experts	16%	-	<b>18%</b> 🤇	7	-
Score on the gender equality in the workplace index (Group estimate*)	-	89/100	84/100	Ы	> 75/100
Number of pay gaps addressed	209	141	177 🔅	7	
* Estimate taking Group companies as a single entity					

Parenting	w	м	Overall
Employees eligible to apply for parental leave (under local laws and agreements) in 2019	318	691	1009
Employees who actually began parental leave in 2019	73	26	99
Employees on PL who returned to work in 2019	54	15	69
Employees on PL having returned to work in 2018, and still present 12 months after their return to work	21	9	30
Rate of return (those who returned vs. those who should have returned)	96%	100%	97%
Retention rate (above vs. all those who returned to work in 2018)	81%	100%	86%

#### Innovating to preserve resources and protect health

	2017		2018	2019		Target for 2020
Number of patents filed in the year		-	18	14	К	
R&D budget (€M)		-	101	103	7	
R&D budget as % of revenue (%)		-	2.79%	2.72%	=	
Experts within the Group		-	-	470		

#### Being engaged and responsible locally

	2017		2018		2019	Target for 2020
Contracts including sustainable-development undertakings		-		-	100%	100%
Purchases by French entities made from suppliers established in France		-		-	90%	> 80%
Purchases by foreign entities made in the local country		-		-	73%	

![](_page_47_Picture_0.jpeg)

## **GRI** Index

	Description	Description	Source	Omission
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GRI 102 - 2016	General disclosures	Eléments généraux d'information		
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GRI 102-2	Activities, brands, products, and services	Activités, marques, produits et services	Pages 8 - 9	
GRI 102-3	Location of headquarters	Lieu géographique du siège	Page 8	
GRI 102-4	Location of operations	Lieu géographique des sites d'activité	Pages 8 - 9	
GRI 102-5	Ownership and legal form	Capital et forme juridique	Dernière page	
GRI 102-6	Markets served	Marchés desservis	Page 7	
GRI 102-7	Scale of the organization	Taille de l'organisation	Page 7	
GRI 102-8	Information on employees and other workers	Informations concernant les employés et les autres travailleurs	Pag 91	
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GRI 102-25	Conflicts of interest	Conflits d'intérêts		Annual report 2019 page 108
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GRI 102-27	Collective knowledge of highest governance body	Connaissance partagée de l'organe de gouvernance le plus élevé	Page 24	
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GRI 201 - 2016 Economic performance Performance économique	GRI 201 - 2016	Economic performance	Performance économique		
GRI 201-1 Direct economic value generated and distributed Valeur économique directe générée et distribuée Page 10 - 11	GRI 201-1	Direct economic value generated and distributed	Valeur économique directe générée et distribuée	Page 10 - 11	

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GRI 201-2	Financial implications and other risks and opportunities due to climate change	Implications financières et autres risques et opportunités dus au changement climatique		Annual report 2019 page 53
GRI 201-3	Defined benefit plan obligations and other retirement plans	Obligations liées au régime à prestations déterminées et autres régimes de retraite		Annual report 2019 page 69, page 145
GRI 201-4	Financial assistance received from government	Aides publiques reçues		х
GRI 202 - 2016	Market presence	Présence sur le marché		
GRI 202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Ratios entre le salaire au premier échelon standard par genre comparé au salaire minimum local		x
GRI 202-2	Proportion of senior management hired from the local community	Part de cadres supérieurs recrutés dans la communauté locale	Page 69	
GRI 203 - 2016	Indirect economic impacts	Impacts économiques indirects		
GRI 203-1	Infrastructure investments and services supported	Investissements dans les infrastructures et mécénat	Page 81	
GRI 203-2	Significant indirect economic impacts	Impacts économiques indirects significatifs	Page 10 - 11	
GRI 204 - 2016	Procurement practices	Pratiques d'achats		
GRI 204-1	Proportion of spending on local suppliers	Part de dépenses auprès de fournisseurs locaux	Page 82 - 83	
GRI 205 - 2016	Anti corruption	Lutte contre la corruption		
GRI 205-1	Operations assessed for risks related to corruption	Activités évaluées en termes de risque lié à la corruption	Page 40 - 41	
GRI 205-2	Communication and training about anti-corruption policies and procedures	Communication et formation relatives aux politiques et procédures de lutte contre la corruption	Page 40 - 41	
GRI 205-3	Confirmed incidents of corruption and actions taken	Cas avérés de corruption et mesures prises		х
GRI 206 - 2016	Anti-competitive behavior	Comportement anticoncurrentiel		
GRI 206-1	Legal actions for anti-competitive behavior,	Actions en justice contre le comportement anticoncurrentiel et les pratiques antitrust	Page 41	
	and dust, and monopoly practices	praciques undra use		
GRI 207 - 2019	Tax	Politique fiscale		
<mark>GRI 207 - 2019</mark> GRI 207 - 1	Tax Approach to tax	Politique fiscale   Approche de la politique fiscale		Annual report 2019 page 58 et 204
GRI 207 - 2019 GRI 207 - 1 GRI 207 - 2	Tax   Approach to tax   Tax governance, control, and risk   management	Politique fiscale     Approche de la politique fiscale     Gouvernance fiscale, contrôle et     gestion des risques		Annual report 2019 page 58 et 204 Annual report 2019 page 58 et 204
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GRI 207 - 2019 GRI 207 - 1 GRI 207 - 2 GRI 207 - 3 GRI 207 - 4	Tax     Approach to tax     Tax governance, control, and risk management     Stakeholder engagement and management of concerns related to tax     Country-by-country reporting	Politique fiscale     Approche de la politique fiscale     Gouvernance fiscale, contrôle et     gestion des risques     Implication des parties prenantes et     gestion des questions liées à la     politique fiscale     Reporting pays par pays		Annual report 2019 page 58 et 204 Annual report 2019 page 58 et 204 X <u>Lien</u>
GRI 207 - 2019 GRI 207 - 1 GRI 207 - 2 GRI 207 - 3 GRI 207 - 4	Tax     Approach to tax     Tax governance, control, and risk management     Stakeholder engagement and management of concerns related to tax     Country-by-country reporting     Environment	Politique fiscale     Approche de la politique fiscale     Gouvernance fiscale, contrôle et     gestion des risques     Implication des parties prenantes et     gestion des questions liées à la     politique fiscale     Reporting pays par pays     Environnement		Annual report 2019 page 58 et 204 Annual report 2019 page 58 et 204 X <u>Lien</u>
GRI 207 - 2019 GRI 207 - 1 GRI 207 - 2 GRI 207 - 3 GRI 207 - 4 GRI 301 - 2016	Tax     Approach to tax     Tax governance, control, and risk management     Stakeholder engagement and management of concerns related to tax     Country-by-country reporting     Environment     Materials	Politique fiscale     Approche de la politique fiscale     Gouvernance fiscale, contrôle et     gestion des risques     Implication des parties prenantes et     gestion des questions liées à la     politique fiscale     Reporting pays par pays     Environnement     Matières		Annual report 2019 page 58 et 204 Annual report 2019 page 58 et 204 X <u>Lien</u>
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GRI 207 - 2019 GRI 207 - 1 GRI 207 - 2 GRI 207 - 3 GRI 207 - 4 GRI 301 - 2016 GRI 301-1 GRI 301-2 GRI 301-3 GRI 302 - 2016 GRI 302-1	Tax     Approach to tax     Tax governance, control, and risk management     Stakeholder engagement and management of concerns related to tax     Country-by-country reporting     Environment     Materials     Materials used by weight or volume     Recycled input materials used     Reclaimed products and their packaging materials     Energy     Energy consumption within the organization	Politique fiscale     Approche de la politique fiscale     Gouvernance fiscale, contrôle et     gestion des risques     Implication des parties prenantes et     gestion des questions liées à la     politique fiscale     Reporting pays par pays     Environnement     Matières     Matières recyclées utilisées     Produits et matériaux d'emballage     valorisés     Energie     Consommation énergétique au sein de     l'organisation	Page 48	Annual report 2019 page 58 et 204 Annual report 2019 page 58 et 204 X <u>Lien</u> X X X X
GRI 207 - 2019 GRI 207 - 1 GRI 207 - 2 GRI 207 - 3 GRI 207 - 4 GRI 301 - 2016 GRI 301-1 GRI 301-2 GRI 301-3 GRI 302 - 2016 GRI 302 - 2016 GRI 302 - 2	Tax     Approach to tax     Tax governance, control, and risk management     Stakeholder engagement and management of concerns related to tax     Country-by-country reporting     Environment     Materials     Materials used by weight or volume     Recycled input materials used     Reclaimed products and their packaging materials     Energy     Energy consumption within the organization     Energy consumption outside of the organization	Politique fiscale     Approche de la politique fiscale     Gouvernance fiscale, contrôle et     gestion des risques     Implication des parties prenantes et     gestion des questions liées à la     politique fiscale     Reporting pays par pays     Environnement     Matières     Matières recyclées utilisées     Produits et matériaux d'emballage     valorisés     Energie     Consommation énergétique au sein de     l'organisation     Consommation énergétique en dehors     de l'organisation	Page 48	Annual report 2019 page 58 et 204 Annual report 2019 page 58 et 204 X Lien X X X X X
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	Description	Description	Source	Omission
<mark>GRI 303 - 2018</mark>	Water and effluents	Effluents et déchets		
GRI 303-1	Interactions with water as a shared resource	Interactions avec l'eau en tant que ressource partagée	Page 52 - 53	
GRI 303-2	Management of water discharge- related impacts	Gestion des impacts liés au rejet d'eau	Page 52 - 53	
GRI 303-3	Water withdrawal	Prélèvement d'eau		See specific reports from entities
GRI 303-4	Water discharge	Rejet d'eau		See specific reports from entities
GRI 303-5	Water consumption	Consommation d'eau	Page 52 - 53	
<mark>GRI 304 - 2016</mark>	Biodiversity	Biodiversité		
GRI 304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Sites d'activité détenus, loués ou gérés, situés dans ou bordant des aires protégées et des zones riches en biodiversité à l'extérieur des aires protégées		See specific reports from entities
GRI 304-2	Significant impacts of activities, products, and services on biodiversity	Impacts significatifs des activités, produits et services sur la biodiversité	Page 52 - 53	
GRI 304-3	Habitats protected or restored	Habitats protégés ou restaurés		See specific reports from entities
GRI 304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Espèces sur la liste rouge de l'UICN et sur la liste de conservation nationale dont les habitats sont situés dans des zones affectées par les opérations		See specific reports from entities
<mark>GRI 305 - 2016</mark>	Emissions	Emissions		
GRI 305-1	Direct (Scope 1) GHG emissions	Émissions directes de GES (champ d'application 1)	Page 44 - 45	
GRI 305-2	Energy indirect (Scope 2) GHG emissions	Émissions indirectes de GES (champ d'application 2)	Page 44 - 45	
GRI 305-3	Other indirect (Scope 3) GHG emissions	Autres émissions indirectes de GES (champ d'application 3)	Page 44 - 45	
GRI 305-4	GHG emissions intensity	Intensité des émissions de GES	Page 44 - 45	
GRI 305-5	Reduction of GHG emissions	Réduction des émissions de GES	Page 89	
GRI 305-6	Emissions of ozone-depleting substances (ODS)	Émissions de substances appauvrissant la couche d'ozone		See specific reports from entities
GRI 305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Émissions d'oxydes d'azote (NOX), d'oxydes de souffre (SOX) et autres émissions atmosphériques significatives		See specific reports from entities
GRI 306 - 2016	Effluents and waste	Effluents et déchets		
GRI 306 - 2	Waste by type and disposal method	Déchets par type et filière		See specific reports from entities
GRI 306 - 3	Significant spills	Pollutions significatives	Page 40 - 41	
GRI 306 - 4	Transport of hazardous waste	Transport de déchets dangereux		See specific reports from entities
GRI 307 - 2016	Environmental compliance	Conformité environnementale		
GRI 307 - 1	Non-compliance with environmental laws and regulations	Non-conformité à la législation et à la réglementation environnementales		Rapport Annuel d'Activité 2019 page 192
GRI 308 - 2016	Supplier environmental assessment	Evaluation environnementale des fournisseurs		
GRI 308 - 1	New suppliers that were screened using environmental criteria	Nouveaux fournisseurs analysés à l'aide de critères environnementaux	Page 38	
GRI 308 - 2	Negative environmental impacts in the supply chain and actions taken	Impacts environnementaux négatifs sur la chaîne d'approvisionnement et mesures prises		х

	Description	Description	Source	Omission
	Social	Social		
GRI 401 - 2016	Employment	Emploi		
 GRI 401-1	New employee hires and employee	Recrutement de nouveaux employés et	Page 90 - 91	
GRI 401-2	Benefits provided to full-time employees that are not provided to	rotation du personnel Avantages accordés aux salariés à temps plein et non aux employés	Page 92	
 GRI 401-3	Parental leave	Congé parental	Page 93	
GRI 402 - 2016	Labor management relations	Relations employés/direction		
GRI 402-1	Minimum notice periods regarding	Périodes minimales de préavis pour les modifications opérationnelles	Page 92	
GRI 403 - 2018	Occupational heath and safety	Santé et sécurité au travail		
GRI 403-1	Occupational health and safety management system	Système de management de la santé et de la sécurité au travail	Page 32 - 35	
GRI 403-2	Hazard identification, risk assessment, and incident investigation	Identification des dangers, évaluation des risques et investigation des événements indésirables	Page 32 - 35	
GRI 403-3	Occupational health services	Services de santé au travail	Page 32 - 35	
GRI 403-4	Worker participation, consultation, and communication on occupational health and safety	Participation et consultation des travailleurs et communication relative à la santé et à la sécurité au travail	Page 32 - 35	
GRI 403-5	Worker training on occupational health and safety	Formation des travailleurs à la santé et à la sécurité au travail	Page 32 - 35	
GRI 403-6	Promotion of worker health	Promotion de la santé des travailleurs	Page 30 - 31	
GRI 403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Prévention et réduction des impacts sur la santé et la sécurité au travail directement liés aux relations d'affaires	Page 32 - 35	
GRI 403-8	Workers covered by an occupational health and safety management system	Travailleurs couverts par un système de management de la santé et de la sécurité au travail	Page 32 - 35	
GRI 403-9	Work-related injuries	Accidents du travail	Page 32 - 35	
GRI 403-10	Work-related ill health	Maladies professionnelles	Page 90	
GRI 404 - 2016	Training and education	Formation et éducation		
 GRI 404-1	Average hours of training per year	Nombre moyen d'heures de formation	Page 66 - 67	
GRI 404-2	per employee Programs for upgrading employee skills and transition assistance programs	par an par employe Programmes de mise à niveau des compétences des employés et programmes d'aide à la transition	Page 66 - 67	
GRI 404-3	Percentage of employees receiving regular performance and career development reviews	Pourcentage d'employés bénéficiant de revues de performance et d'évolution de carrière		x
GRI 405 - 2016	Diversity and equal opportunity	Diversité et égalité des chances		
GRI 405-1	Diversity of governance bodies and employees	Diversité des organes de gouvernance et des employés	Page 93	
GRI 405-2	Ratio of basic salary and remuneration of women to men	Ratio du salaire de base et de la rémunération des femmes et des hommes		×
GRI 406 - 2016	Non discrimination	Lutte contre la discrimination		
GRI 406-1	Incidents of discrimination and corrective actions taken	Cas de discrimination et mesures correctives prises	Page 68 - 69	
GRI 413 - 2016	Local communities	Communautés locales		
GRI 413-1	Operations with local community engagement, impact assessments, and development programs	Activités impliquant la communauté locale, évaluation des impacts et programmes de développement	Page 30 - 31 Page 81	
GRI 413-2	Operations with significant actual and potential negative impacts on local communities	Activites generant des impacts négatifs substantiels, réels ou potentiels sur les communautés locales		Refer to specific reports of the entities

GRI 414 - 2016	Supplier social assessment	Évaluation sociale des fournisseurs		
GRI 414-1	New suppliers that were screened using social criteria	Nouveaux fournisseurs analysés à l'aide de critères sociaux	Page 82 - 83	
GRI 414-2	Negative social impacts in the supply chain and actions taken	Impacts sociaux négatifs sur la chaîne d'approvisionnement et mesures prises		Х
GRI 415 - 2016	Public policy	Politiques publiques		
GRI 415-1	Political contributions	Contributions politiques	Page 41	
GRI 416 - 2016	Customer health and safety	Santé et sécurité des consommateurs		
GRI 416-1	Assessment of the health and safety impacts of product and service categories	Évaluation des impacts des catégories de produits et de services sur la santé et la sécurité	Page 26 - 31	

The 2019 "Our societal and environmental commitments" Report has been drafted in accordance with the GRI Standards guidelines. Certain non-core categories have not been addressed. Certain information contained in the 2019 Annual Activity Report has not been included in this document.

#### **FIND OUT MORE**

#### **Available documents**

2019 Annual Activity Report

### **Report** Parameters

#### **REPORTING SCOPE**

In application of Orano's strategy and policies and the orientations provided by our 2020 materiality matrix, this report aims to present the performance linked to the main CSR challenges of Orano's activities.

The 2019 Report "Our Social and Environmental Commitments" presents the following specificities: It covers the performance of our responsible commitments over the year 2019, the reporting period for the information included in this report is the period ending December 31, 2019,

- This is the first edition of the report,
- It is based on the guidelines of the materiality exercise carried out in 2020,
- It covers the so-called "core" criteria as defined in the GRI Standards version,
- The data given covers the assets for which Orano acts as operator,
- When the scope only covers one given country, this is indicated.

#### **REPORTING PROTOCOL, GRI AND THIRD PARTY VERIFICATION**

For environmental, social, economic and ethical topics, internal technical protocols have been developed over several years. They enable us to answer to several indicators proposed in the GRI guidelines.

This process is being carried out in accordance with the non-financial performance statement (DPEF - Déclaration de Performance Extra-financière), which provides statutory guidelines with regard to the topics to be covered by companies in non-financial reporting. French regulatory constraints do not allow us to report on categories of indicators relating to diversity which are covered by other national regulations.

Each year the Orano group conducts an audit on a sample of extra-financial indicators as part of the independent verification of the Annual Activity Report. The audit report is available in the latter report.

The results are also signed off by Senior Management.

#### CONTACT

Corporate Engagement Department: engagement@orano.group

## Find all our publications

#### www.orano.group

2019 edition

Status of safety

in nuclear facilities

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Annual Activity Report

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#### **2019 Annual Activity Report**

Situation and activities Risks and safequards Social, environmental and societal commitments Report on corporate governance Information on share capital Financial statements

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#### **Orano 2019 - 2020 Brochure**

In-depth look at used fuel recycling Guided tour of TRIHOM Focus on OranoMED

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#### **2019 Orano Mining CSR report**

CSR approach Orano Mining commitments and KPIs

![](_page_50_Picture_13.jpeg)

### **Information reports** on French nuclear facilities

Orano La Hague 2019 Orano Melox 2019 Orano Tricastin 2019 Orano Malvési 2019

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#### **Policies**

2018 Nuclear Safety Charter 2017 - 2020 Nuclear Safety - Environment Policy 2017 - 2020 Health - Safety - Radiation Protection Policy 2018 - 2020 Disability Agreement Professional gender equality agreement Report on Payments to Foreign Governments Code of ethics Certifications ISO 9001 - ISO 14001 - OHSAS 18001

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#### **2019 General Inspectorate Annual Report**

Status of safety in nuclear facilities

Orano transforms nuclear materials so that they can be used to support the development of society, first and foremost in the field of energy..

The group offers products and services with high added value throughout the entire nuclear fuel cycle, from raw materials to waste treatment. Its activities, from mining to dismantling, as well as in conversion, enrichment, recycling, logistics and engineering, contribute to the production of low-carbon electricity.

Orano and its 16,000 employees use their expertise, ongoing innovative research, unwavering dedication to safety and mastery of cutting-edge technologies to serve their customers in France and abroad.

Orano, giving nuclear energy its full value.

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#### 

Energy is our future, don't waste it!

![](_page_51_Picture_8.jpeg)

Orano thanks all those who have contributed to this document. Published by the Corporate Engagement Department. October 2020

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#### Orano

Business corporation with a Board of Directors - Capital of 132,076,389 euros RCS Nanterre 330 956 871 Headquarters PRISME - 125 avenue de Paris, 92320 Châtillon - France