



RÉPUBLIQUE
FRANÇAISE

*Liberté
Égalité
Fraternité*



Geosciences pour une Terre durable

brgm

Geosciences
for a
sustainable
Earth

BRGM
FRENCH GEOLOGICAL SURVEY
At a glance

BRGM

THE FRENCH GEOLOGICAL SURVEY

The BRGM is France's public reference institution for Earth Science applications for the management of surface and subsurface resources and risks. Its activities are geared to scientific research, support to public policy development and international cooperation.

Understanding

geological phenomena and associated risks.

Developing

new methodologies and techniques.

Producing and distributing

and disseminating data to support the management of soils, subsoils and their resources.

Delivering

the necessary tools for managing soils, subsoils and their resources, preventing risks and pollution and developing climate change policies.

**Over
1000 staff**

including more
than 700
engineers and
researchers

The BRGM is

A PUBLIC INDUSTRIAL AND COMMERCIAL

institution created in 1959
and working under the Ministry
for Higher Education, Research
and Innovation, the Ministry for the
Ecological Transition and the Ministry for
the Economy and Finance.

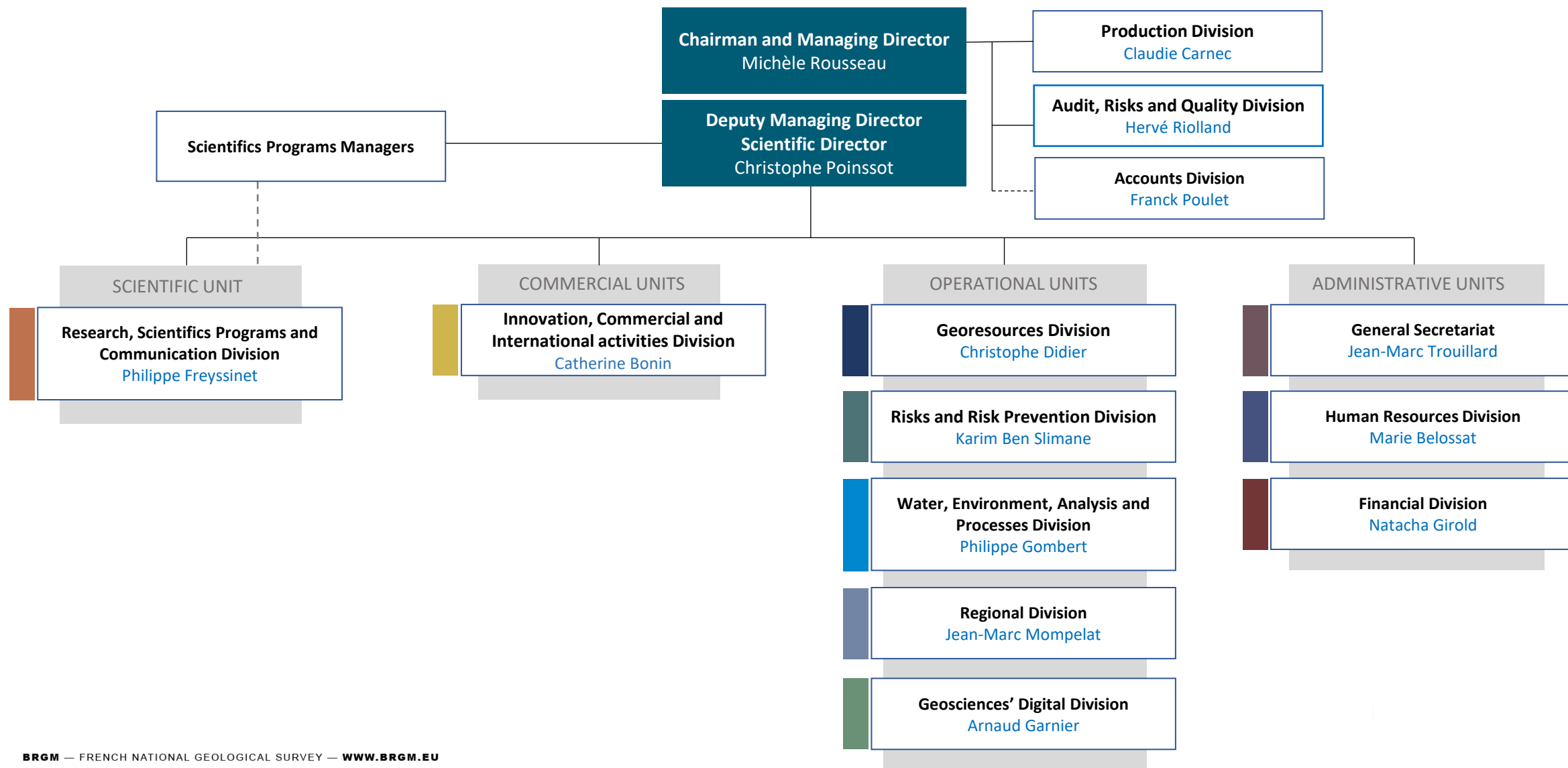


Certification and accreditation

The BRGM has held ISO 9001
certification (for Quality) since 2004,
and ISO 14001 (Environment)
since 2012.

Our laboratories
are accredited by COFRAC.

GOVERNANCE





KEY ROLES

Scientific research

Scientific research at the BRGM is focused on furthering geological knowledge and understanding surface and subsurface phenomena. Key objective: to meet the challenges of global change.

The BRGM's scientific research is conducted through:

- **projects funded by government grants** for public service activities,
- **projects with multiple co-funding** (regional and European),
- **partnerships with targeted agencies** (ANR, ADEME, etc.),
- **responses to calls for proposals** from the ministries,
- **fast-track research development under contracts with industries.**

257 international
reference publications (ISI)



Research for business innovation

Research under contract are undertaken with industrial sectors and businesses of every size.

A broad spectrum of applications for soil and subsoil resources and uses is covered:

- **Addressing challenges to supplies of subsurface resources:** minerals, water, geothermal energy.
- **Developing new (eco)technologies and tools for subsurface uses and their management:** materials and energy storage, development and security of utility and communication networks.
- **Proposing efficient tools for operational assessments and monitoring of the environment:** risk prevention and environmental precaution, integrated data products.

Three market sectors:

- Energy and mineral resources
- Water and environment
- Infrastructure and planning



KEY ROLES

Support to public policy development

Support to public policy development includes expert assessments, monitoring and studies for the State, local authorities, agencies and public institutions.

- **Surface and subsurface observation** to build and disseminate knowledge.
- **Methodological studies and synopses** to transfer research results to “civil society”.
- **Independent public expert studies.**
- **Training** and knowledge transfer.

A **national committee** representing the BRGM’s supervisory ministries sets out overall guidelines for our activities to support public policy development. A **national programming body addresses the needs expressed** by national and regional partners.

108 agreements
signed with local government
bodies



KEY ROLES

International cooperation

The BRGM runs projects internationally to protect populations and promote sustainable resource management.

Two key lines of action:

- **protecting people and their environment** against natural risks,
- **ensuring the permanence and quality of natural resources:** water, minerals and (geothermal) energy.

Internationally as in France, the BRGM supplies its know-how and expertise, particularly in areas relating to "**geological infrastructure**", **mineral resources**, **access to water**, **natural risks** and **geothermal energy**.

Projects in 30 countries

KEY ROLES

International cooperation





KEY ROLES

Mine safety

In 2006, the French State handed responsibility to the BRGM for the management of surveillance, risk prevention and safety work in former mining sites.

Main objectives:

- **ensuring the safety of people and property** in former mining areas,
- **maintaining technical mining competences** for this purpose.

The BRGM is responsible in particular for:

- **mine safety engineering work**, as delegate project manager.
- **surveillance of mining site facilities**, for compliance with the Mining Code or the Environment Code,
- **management of the post-mine information system**, particularly intermediate technical mining archives, and contributions to mining intelligence.



KEY ROLES

Training

The BRGM disseminates its scientific competences and techniques through training activities and continuing professional training.

- **BRGM Campus**

Higher education diploma courses in the geosciences, through training support and partnerships with higher education establishments.

- **BRGM Formation**

Continuing professional training, through some sixty introductory and advanced courses in all geoscience fields.

20 years
of experience
in continuing
professional training

The BRGM aims to meet key challenges for society, particularly those related to climate change, energy transition and the development of the circular economy.

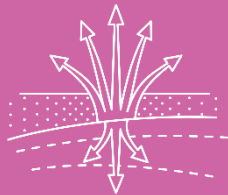
Building on geoscience as its core competence, the BRGM develops expert knowledge to contribute to a harmonised management and controlled use of the soil and subsurface of cities and territories.



Geology and knowledge of the subsurface



Risks and spatial planning



Subsurface potential for the energy transition



Groundwater management



Mineral resources and the circular economy



Data, digital services and infrastructure

Geology and knowledge of the subsurface



Furthering knowledge of the subsurface and developing a geological infrastructure are key roles for the BRGM as the French geological survey organisation. The aim is to produce fundamental and applied knowledge on large geological systems and on processes involved in development across regions and/or affected by climate change.

Groundwater management



With the water cycle as a whole affected by climate change and water resources subject to severe constraints, it has become vital to achieve sustainability in water management. The BRGM monitors the availability and quality of groundwater resources and works to anticipate and prevent phenomena arising from pollution, drought, flooding and salt wedge intrusions.

Risks and spatial planning



Every region is now faced with new threats arising from climate change. The issues for the BRGM are to help strengthen resilience across regions and to promote sustainable planning by anticipating and preventing risks. The work involved covers natural risks to surface, subsurface and coastal areas, but also risks that arise in mining and industrial sites.

Mineral resources and the circular economy



The BRGM handles the chain from start to finish: assessing available minerals, analysing their uses and life cycles and proposing recycling solutions. As the French geological survey organisation, the BRGM works to support the ecological transition towards a circular economy that consumes fewer mineral resources, by developing innovative technologies to re-use waste materials.

Subsurface potential for the energy transition



The BRGM's commitment to the energy transition involves exploring the potential contributions of the subsurface to the development of renewable and carbon-free energy resources. The aims here are to promote geothermal energy by making use of naturally existing subsurface heat to produce heat and electricity, and to contribute to CO₂, heat and energy storage.

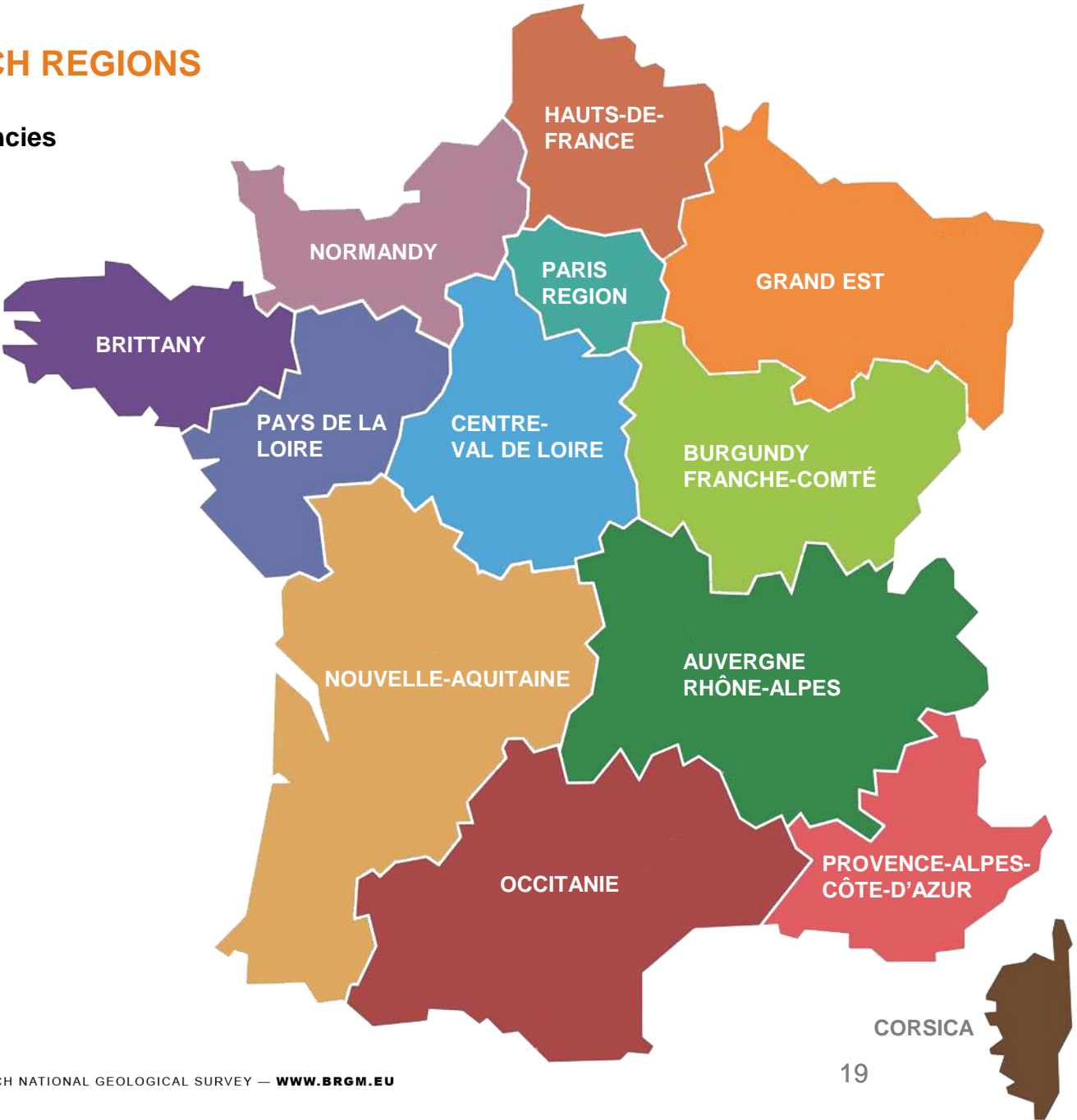
Data, digital services and infrastructure



In a context where ever more varied data are being produced in every greater quantities by increasingly varied means, the BRGM has engaged fully in the digital transition. The challenge is to manage the geoscientific and environmental data cycle in the interests of predictive geology and broader knowledge dissemination among the public and policy-makers.

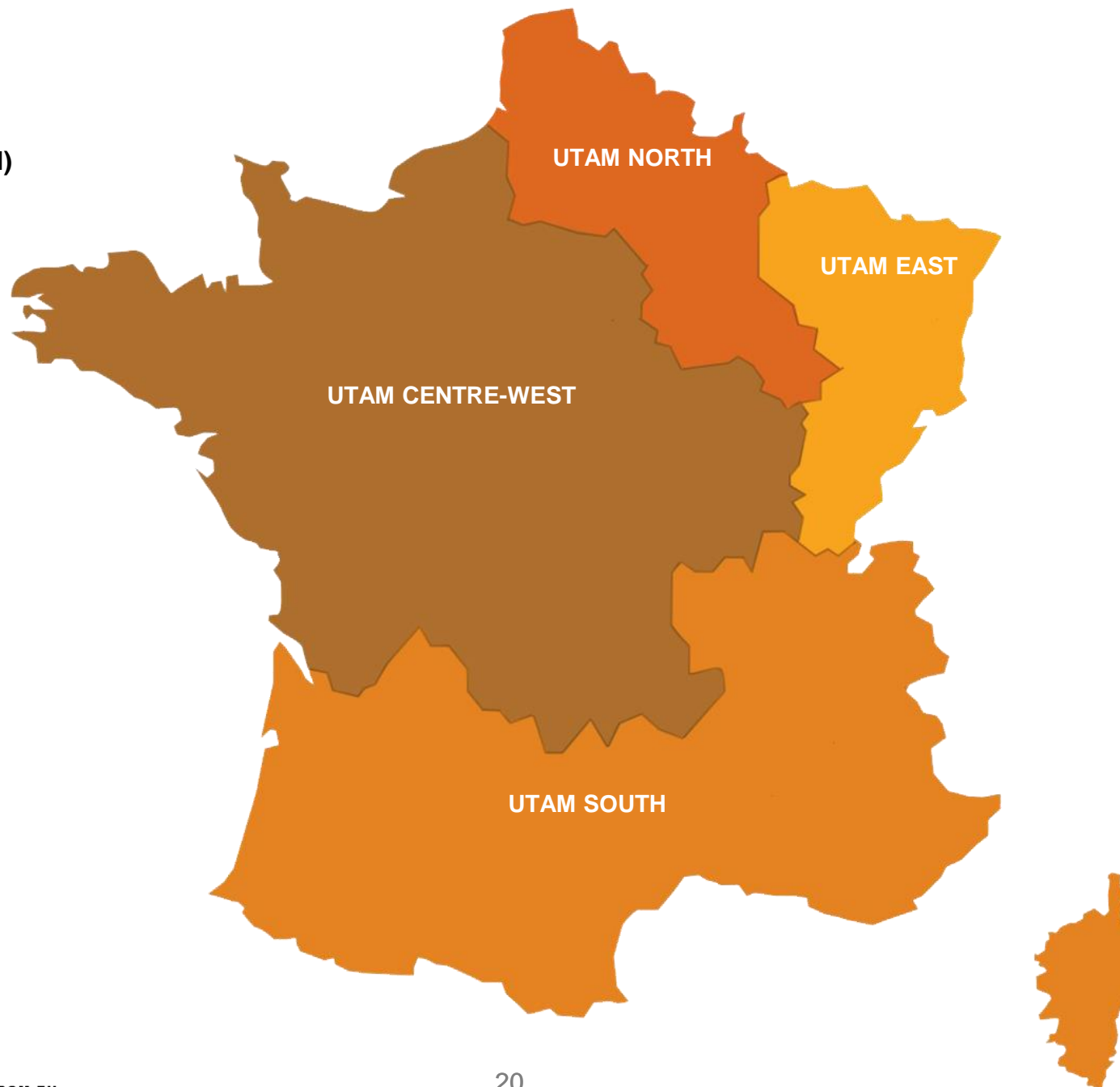
FRENCH REGIONS

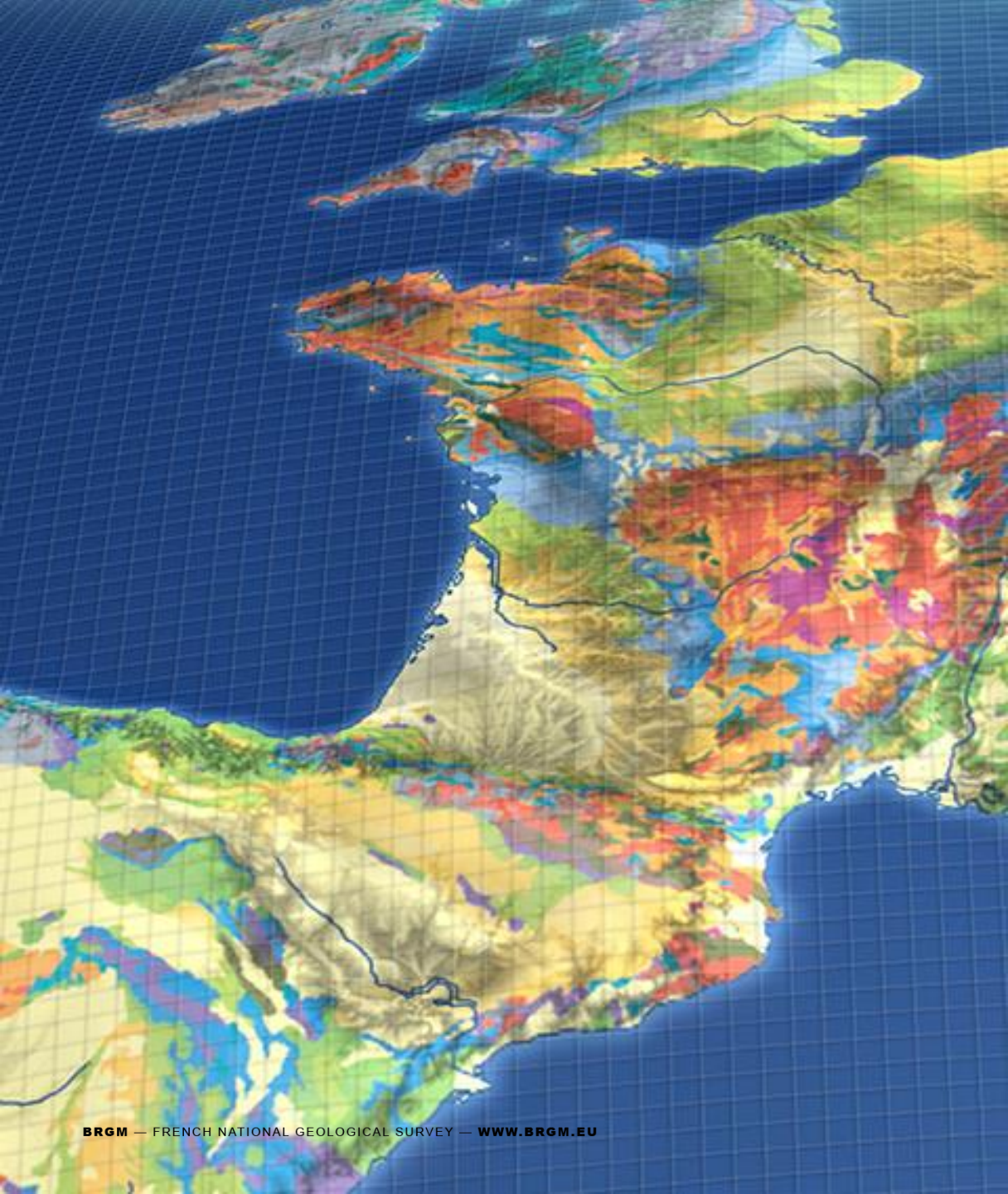
23 agencies



FRENCH REGIONS

4 regional post-mining units (UTAM)





EUROPE

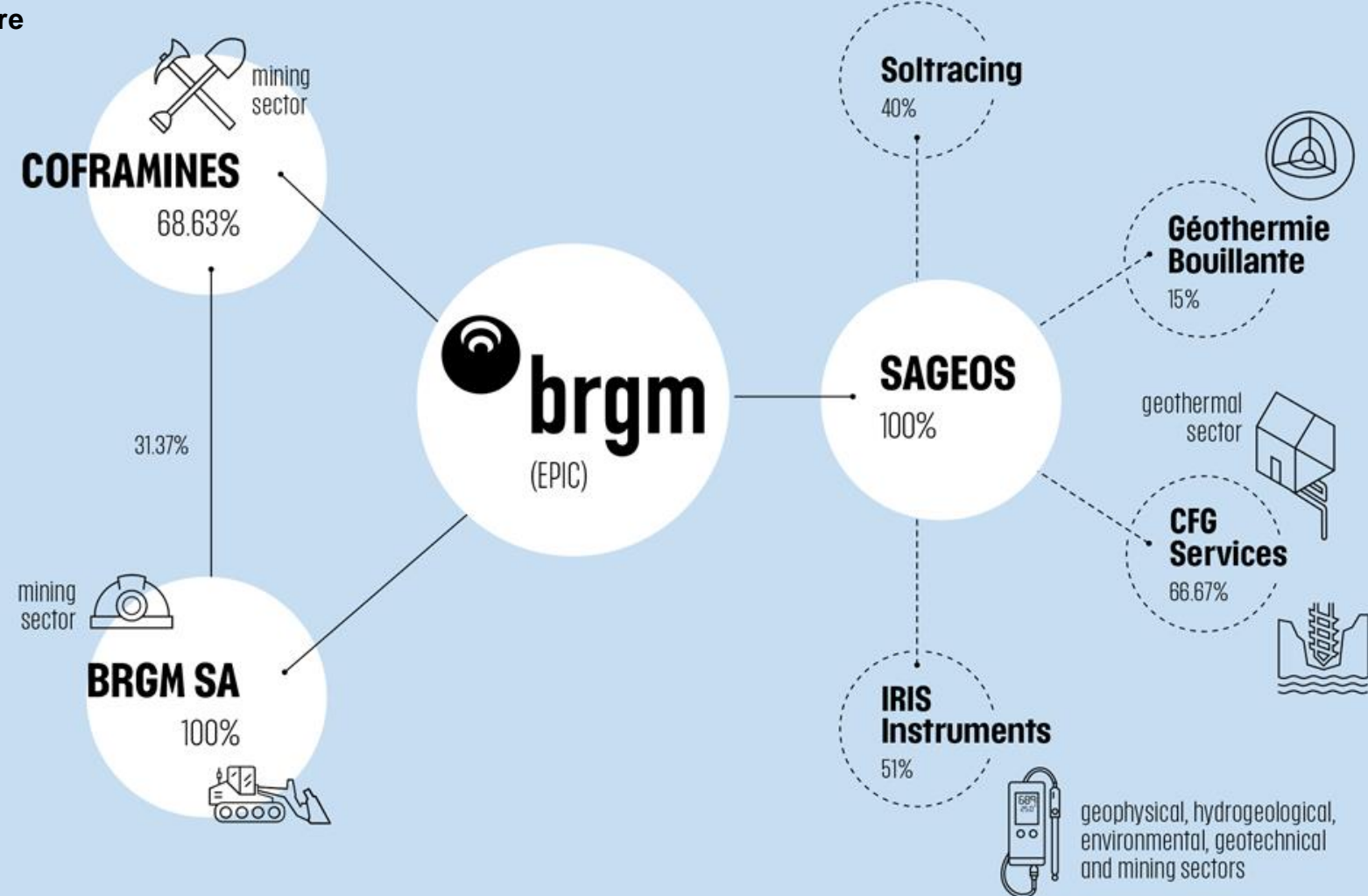
The BRGM in Europe

At the EU level, the BRGM has been involved for many years in research programmes, support to public policy development and international cooperation, thereby forging many enduring partnerships.

- **Close involvement in European research programmes.**
- **Activities to support EU public policy development,** interfacing between the authorities, public and private-sector managers and research.
- **International cooperation: promotion of French and European approaches,** exchanges of good practice, EU-funded development projects.
- **Partnerships with numerous excellence networks in the EU.** Decisive role in the organisation of Europe's geological sphere.

SUBSIDIARIES AND HOLDINGS

Simplified BRGM Group structure
as of 31 December 2021



2021 ACCOUNTS

+€4M

BRGM Epic **operating result** in 2021

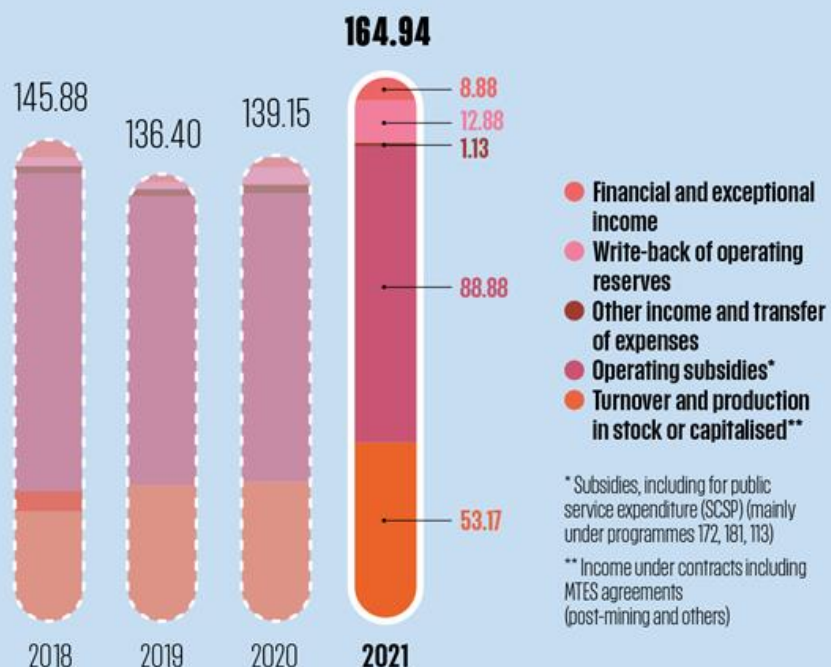
156
Operating **income 2021**
in millions of euros

Operating **expenses 2021**
in millions of euros

152

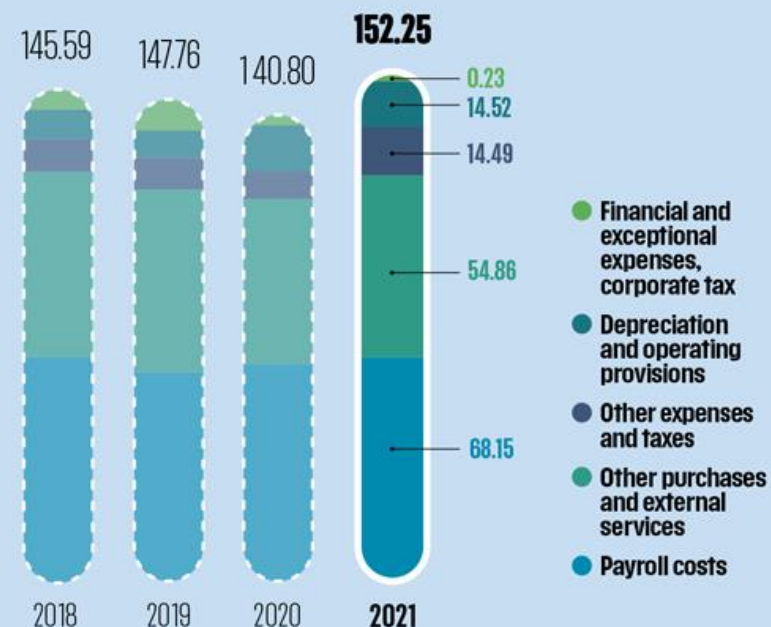
Evolution of total income 2018-2021

in millions of euros

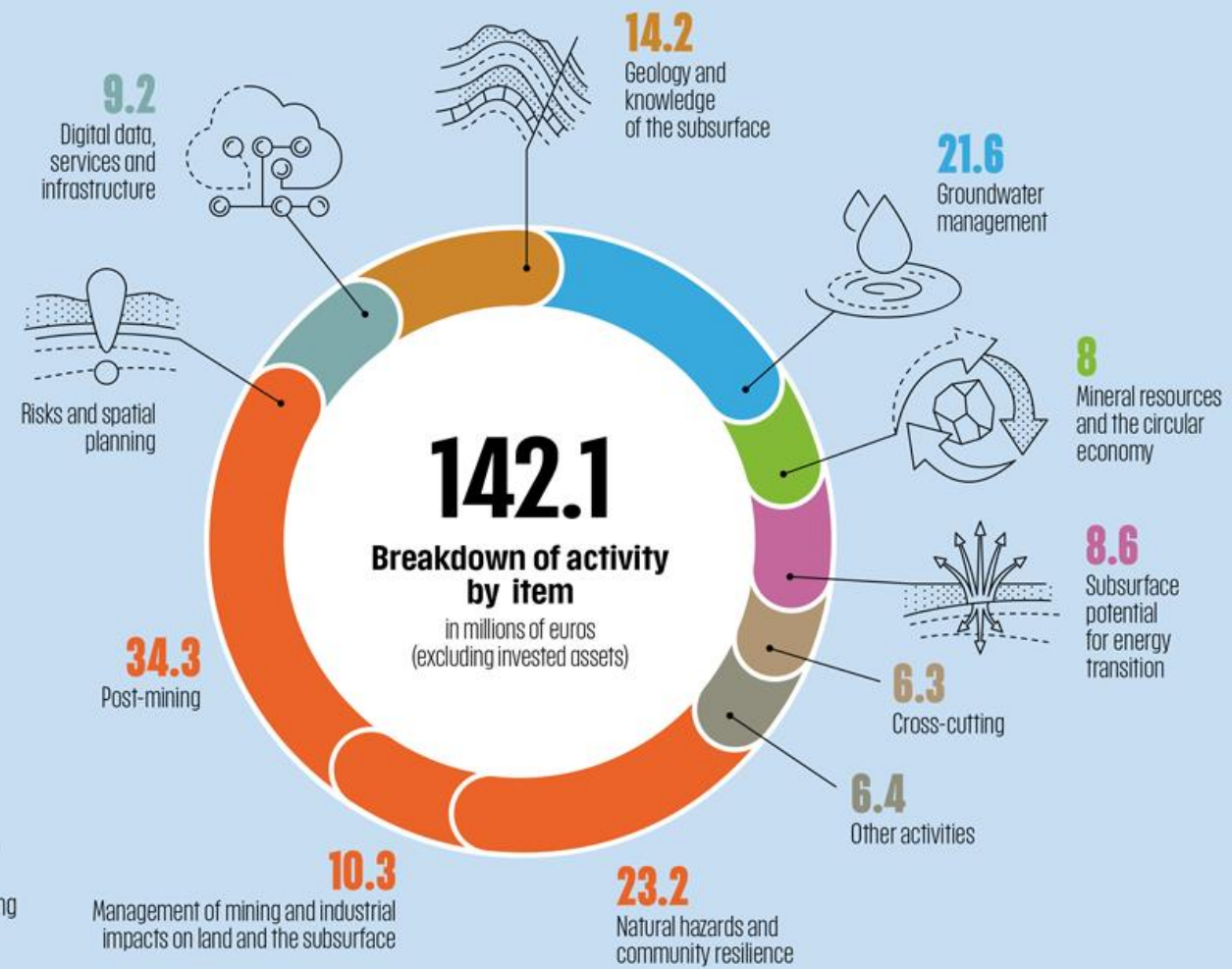
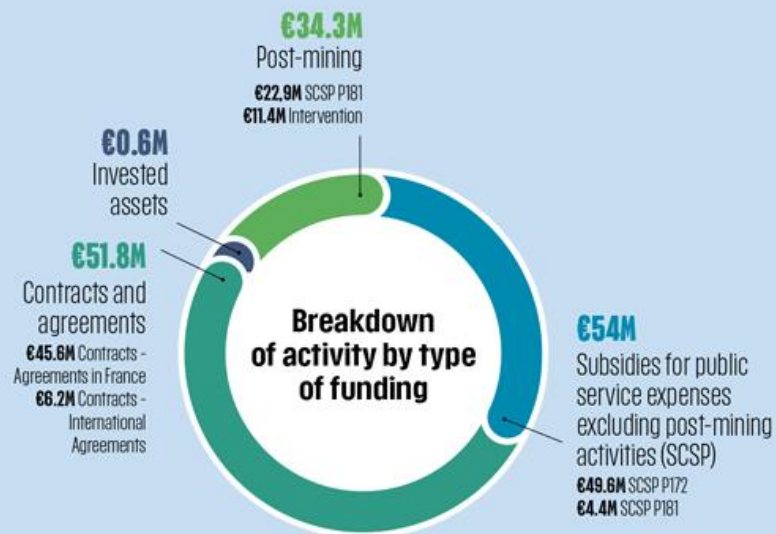
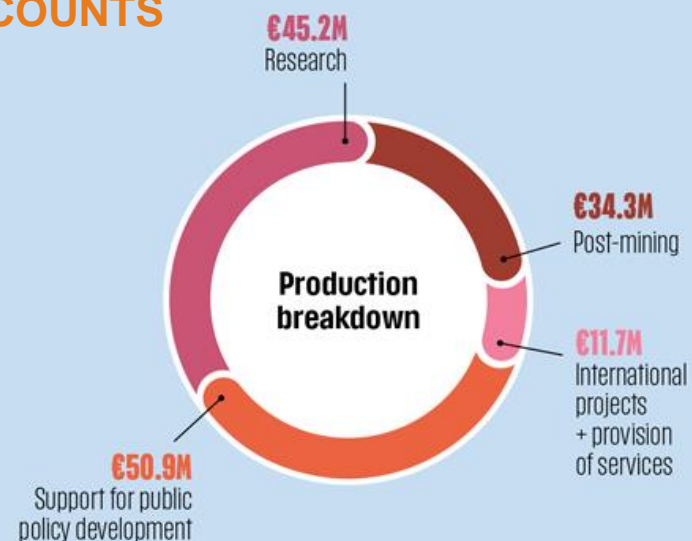


Evolution of total expenses 2018-2021

in millions of euros



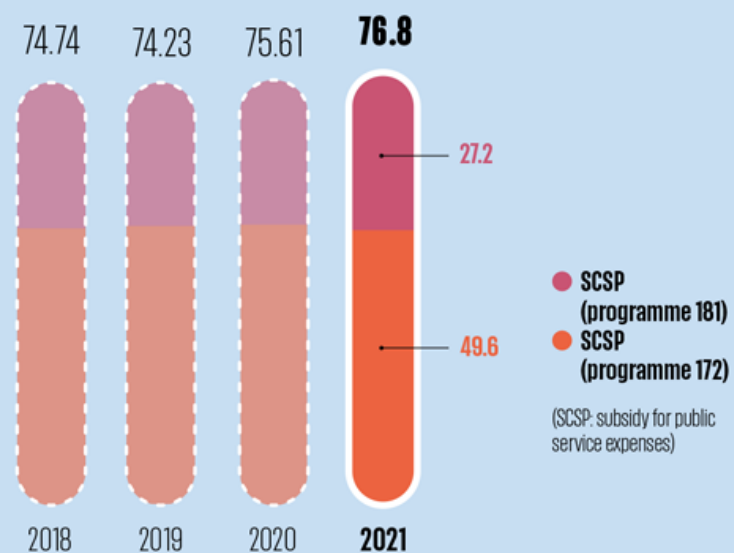
2021 ACCOUNTS



2021 ACCOUNTS

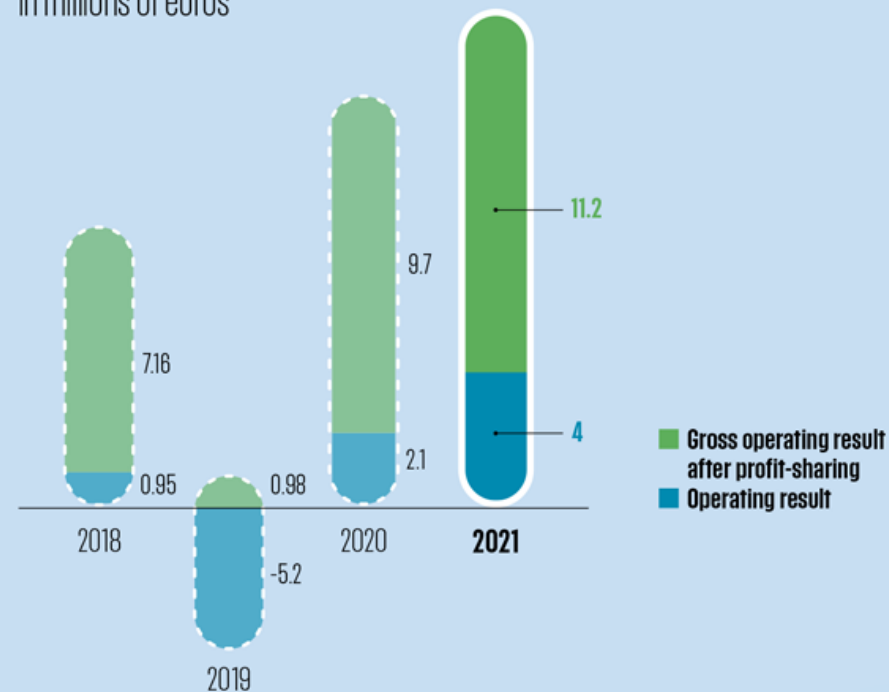
Evolution of government grants

in millions of euros



Evolution of operating result

in millions of euros



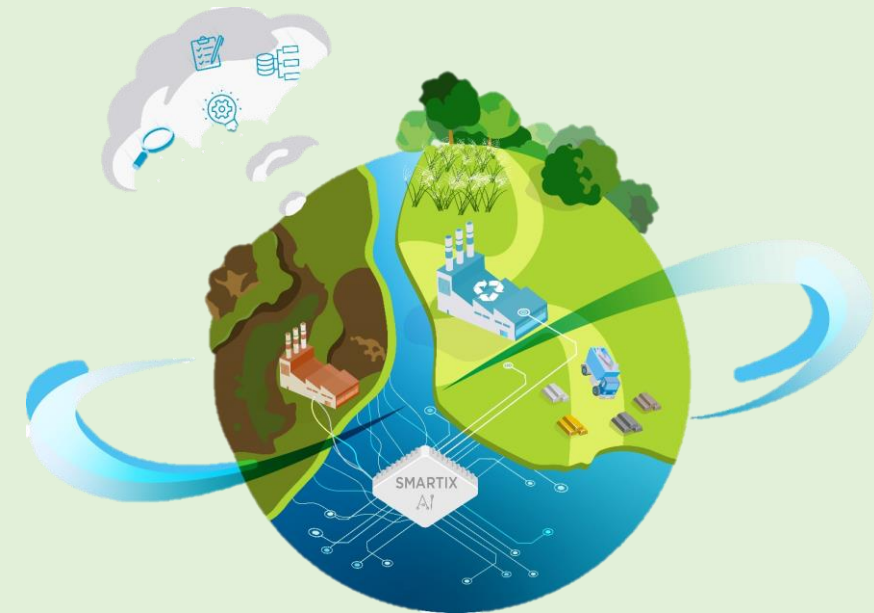
BRGM activity in the project

Aim :

Evaluate geophysical techniques for mapping metallic compounds rate in past metallurgical sites and deposits (PMSD) wastes

Propose a strategy using geophysical techniques

- Identify a test site in France
- Develop an on site geophysical measurement strategy for PMSDs (F, UK)
- Extract samples from test sites (UK, F, B)
- Measure geophysical properties at sample scales
 - Complex conductivity (i.e. Induced polarization effects)
 - Broad frequency range (0.01 to 10 000 Hz)
 - Magnetic susceptibility
- Integrate geophysical techniques in the strategy for mineral industry wastes valorization





FRENCH NATIONAL GEOLOGICAL SURVEY



Geoscience for a sustainable Earth

brgm

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