

FRENCH NATIONAL GEOLOGICAL SURVEY

AT A GLANCE

INSTITUT CARNOT brgm

Geoscience for a sustainable Earth

brgm

IDENTITY

Geoscience for a sustainable Earth

brgm

THE FRENCH GEOLOGICAL SURVEY

THE BRGM IS FRANCE'S PUBLIC REFERENCE INSTITUTION IN EARTH SCIENCE APPLICATIONS FOR THE MANAGEMENT OF SURFACE AND SUBSURFACE RESOURCES AND RISKS. OUR ACTIVITIES ARE GEARED TO SCIENTIFIC RESEARCH, SUPPORT TO PUBLIC POLICY DEVELOPMENT AND INTERNATIONAL COOPERATION.

4 KEY OBJECTIVES

UNDERSTANDING
geological phenomena and associated risks

DEVELOPING
new methodologies and techniques

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

DELIVERING
the necessary tools to support the management of soils, subsoils and their resources, risk prevention and policy responses to climate change

KEY ROLES

SCIENTIFIC RESEARCH

BRGM research is deployed in three areas:
→ furthering geological knowledge and understanding through observations and modelling of surface and subsurface processes,
→ developments to support government policy objectives,
→ transfers to industry.
These activities are conducted through projects co-financed by a range of regional and EU sources and partnerships with targeted agencies (ANR, ADEME). Research under contracts is expanding rapidly. The BRGM is one of the Carnot Institutes.

SUPPORT TO PUBLIC POLICY DEVELOPMENT

Our public service activities cover all expert studies, monitoring and analyses conducted to support public policy development.
These tasks are funded by a subsidy for public service expenditures and through contracts with the State, local authorities, public institutions or businesses and other economic players.

Activities of four types:
→ building knowledge through observations of soils and subsoils and designing systems to support broad dissemination of the information,
→ production of syntheses and methods development,
→ public independent expert studies,
→ training and knowledge transfer.
A national steering committee representing our supervisory ministries sets out overall guidelines for our activities to support public policy development. The committee takes into account all needs expressed by central government departments and regional bodies after consultations with the parties concerned under the aegis of the Regional Prefects.

TOTAL CURRENT OPERATING INCOME AND EXPENSES IN 2012

INCOME	EXPENSES
143.28 M€	138.62 M€

+4.66 M€
OPERATING RESULT IN 2013

INTERNATIONAL COOPERATION

The BRGM provides know-how and expertise, internationally as well as in France, particularly in the fields of "geological infrastructure", mineral resources, natural risks, groundwater, geothermal energy and the environment.

We act on several fronts:
→ policy-development support to French cooperation activities;
→ support to activities run by the EU, the World Bank and other multilateral agencies; policy-development support to other states;
→ services to businesses;
→ contributions to the work of international geological bodies.

MINE SAFETY

In 2006, the French State handed over responsibility to the BRGM for monitoring, risk management and pollution prevention in former mining sites, and for overseeing all safety engineering work.
The BRGM has a specific department for this purpose, comprising head offices, a support unit in Orleans and four regional units (in Billy-Montigny, Freyming-Merlebach, Orléans and Gardanne).

NATIONAL SCHOOL OF APPLIED GEOSCIENCES (ENAG)

ENAG, the BRGM's training school, offers both diploma courses and continuing training. In partnership with the University of Orléans, ENAG offers a 2nd year Master's course (M2) on "Geology and Sustainable Management of Mineral Resources". This is designed for students who have completed the first year of a Master's course (M1) or for qualified engineers with 5 years of study in higher education, as well as for professionals in the sector on continuing education schemes. ENAG also offers continuing training in its areas of expertise to businesses and public-sector organisations in France and abroad.

www.brgm.eu/content/training-enag

A PUBLIC INSTITUTION FOR RESEARCH AND EXPERT STUDIES

The BRGM (Bureau de Recherches Géologiques et Minières) was created in 1959. It operates as a public industrial and commercial institution, under the joint authority of the Ministry for Higher Education and Research, the Ministry for Ecology, Sustainable Development, Transport and Housing and the Ministry for Productive Recovery and the Digital Economy.

QUALITY CERTIFICATION

The BRGM obtained ISO 9001 certification in 2004, and ISO 14001 certification 2012, both covering all of our activities.
Our analytical laboratories are COFRAC-accredited for environmental matrices.

99
CONTRACTS SIGNED WITH LOCAL GOVERNMENT BODIES

1098
STAFF, INCLUDING OVER 700 ENGINEERS AND RESEARCHERS

1500+
BOOKS, CD-ROMS, MAPS AND PUBLICATIONS FROM "BRGM EDITIONS"

35
ONGOING EUROPEAN RESEARCH PROJECTS, INCLUDING 3 AS THE COORDINATING ORGANISATION

40
COUNTRIES SERVED THROUGH 200+ INTERNATIONAL COOPERATION PROJECTS

163
CLASS A INTERNATIONAL SCIENTIFIC PUBLICATIONS

EXPERTISE

GEOLOGY, OUR CORE COMPETENCE, IS THE HUB AROUND WHICH THE BRGM DEVELOPS EXPERT KNOWLEDGE ON RESOURCE MANAGEMENT, RISK PREVENTION AND INNOVATIVE ECO-TECHNOLOGIES. THESE ACTIVITIES ARE ORGANISED AROUND 10 TOPIC AREAS THAT ADDRESS THE MAJOR INDUSTRIAL AND SOCIAL ISSUES OF TODAY.

GEOLOGY

MINERAL RESOURCES

GEOTHERMAL ENERGY

GEOLOGICAL STORAGE OF CO_2

POST-MINING

NATURAL RISKS

WATER

ENVIRONMENT AND ECO-TECHNOLOGIES

LABORATORIES AND EXPERIMENTATION

INFORMATION SYSTEMS



GEOLOGY

Our core function is to improve geological knowledge on the subsurface to meet the needs of society. **To address needs both in France and in developing countries** (for resource management, risk management, underground storage, etc.), we acquire, collect, manage, validate and disseminate data from different sources to create databases, maps and models.
As part of the programme for the French Geological Reference Platform (RGF), we design **new digital products in 2D, 3D and 4D that can be transferred to media of every kind and at different scales** to cater for a wide range of user needs, including government administration, planning, industry and teaching.
Tel: +33 (0)2 38 64 30 21



GEOTHERMAL ENERGY

Our approach is fully in line with policies for **renewable energy, energy efficiency and reducing greenhouse gas emissions**. We work to promote **geothermal energy** and develop its use **in every form**, including geothermal heat pumps for new and renovated individual housing (in particular through a nationwide experimental platform), geothermal heat distribution to heating networks and electricity production. The volcanic islands of overseas France are of particular importance for the BRGM's research and expert assessments and the activities of our subsidiaries, as are the deep geothermal resources in mainland France that hold out promise for innovative developments in CHP.
Tel: +33 (0)2 38 64 30 21



POST-MINING

In 2006, **the French State handed responsibility to the BRGM for monitoring former mining sites** and for action to prevent risks and pollution arising from the closure of coal and potash mines in particular.
We are responsible for sustainably managing safety and environmental conditions in areas affected by post-mining issues, from **surveillance to the management of safety engineering projects**. The diversity of substances, methods and periods of operation concerned demand **a thorough understanding of information sources, extraction techniques and remediation methods**. Our areas of competence include the operation of environmental monitoring networks, knowledge on physical phenomena and kinetics, management of safety facilities (water and gases) and technical studies to propose corrective measures. The BRGM's activities are supported by the GISOS and GEODERIS expert groups attached to the Risks and Prevention Division.
Tel: +33 (0)2 38 64 35 43



WATER

Our core activities focus on water resource management, studies on hydrosystem functions and their protection, identifying untapped reserves and studies of **climate change impacts** on water resources, especially its consequences for drinking water supplies, flooding and drought. We are closely involved in studies on the mechanisms governing **contaminant transfers and water pollution** in aquifers, especially from diffuse sources and by emerging pollutants. We apply our expertise to support implementation of the EU Water Framework Directive, through the development of the new hydrogeological reference map, databases (e.g. ADES) and methodological guides for public policy makers. **We combine physics, biogeochemistry and socio-economics to design methods and tools to support integrated and sustainable resource management and to maintain or restore water resource quality**.
Tel: +33 (0)2 38 64 48 71



LABORATORIES AND EXPERIMENTATION

The production of **high-quality analytical and experimental data** is the bedrock that supports high-level research in the geological and environmental sciences. We offer a **unique platform** of integrated facilities and expertise in chemical, isotopic and microbiological analysis, environmental metrology, mineral characterisation and multi-scale experimentation.
COFRAC accreditation of our laboratories recognises our competences in methods development and validation.
Tel: +33 (0)2 38 64 36 78



MINERAL RESOURCES

Our work covers all aspects of mineral **raw materials knowledge and management**, including research on processes and predicting, locating and evaluating reserves, the economics of mineral and metal resources and post-mining expert studies. Thanks to our know-how in development strategies and **our knowledge of resources and international markets, we are in a leading position to provide expert studies for mining policy development.**
Drawing on our comprehensive understanding of mineral deposits, our **life cycle analyses for different substances** – from deposit formation through to extraction operations and their management – are core components of the studies we perform for governments, institutions and businesses.
Tel: +33 (0)2 38 64 30 21



GEOLOGICAL STORAGE OF CO_2

In keeping with policies on **climate change and reducing greenhouse gas emissions**, the BRGM is a key player in research on **geological storage of CO_2**, particularly in deep aquifers. Our approach focuses on safety criteria, inventories of storage capacity, mapping likely geological formations in France and elsewhere, modelling interactions between stored CO_2 and cemented wells and reservoir rocks, and monitoring and assessing countermeasures to be implemented in the event of storage anomalies. We provide support for the development of public policies to implement the technique, which is set to make an increasing contribution to CO_2 emission reductions.
Tel: +33 (0)2 38 64 30 42



NATURAL RISKS

Anticipation, prevention and adaptation are the constant goals of our work to reduce risks, whether **telluric** (earthquakes, volcanic eruptions, tsunamis, landslides), **climate-related** (land movements, shrinkage and swelling of clay soils), **coastal** (coastal erosion and/or submersion) or of **human origin** (underground storage, mine cavities, etc.), in the context of climate change.
To study these **risks** and the **vulnerability of exposed areas**, we design and implement a range of tools that include monitoring systems, predictive models, risk maps, databases and assessments of physical and system vulnerability and risks. One of our key roles is to provide decision-makers with diagnostic and decision-support resources for **planning in highly exposed zones and for crisis management.**
Tel: +33 (0)2 38 64 38 14



ENVIRONMENT AND ECO-TECHNOLOGIES

We apply an integrated approach to the management of polluted environments, focusing as a priority on **polluted sites, soils and sediments** and on the **management of post-consumption, industrial and mining waste**. We address the entire cycle from characterisation of the bio-hydro-geochemical mechanisms that govern the mobility and transfer of pollutants to assessments of their environmental impacts and the development or assessment of processes for rehabilitating degraded areas or recycling primary and secondary minerals.
We develop and manage **permanently updated databases** such as the inventory of potentially contaminated former industrial sites (BASIAS), which is cross-referenced with data on water abstraction points and site uses. We perform expert studies and third-party expert assessments commissioned by industries or local and central government departments, and contribute to the **development of environmental standards and regulations**.
Tel: +33 (0)2 38 64 46 80



INFORMATION SYSTEMS

One of our key roles is to provide easily **accessible and usable information on the subsoil for central and local government, businesses, planners and the general public** to enable them to make **informed decisions in their respective spheres of interest**. To do so, we design, urbanise and implement information systems based on **interoperability standards to ensure maximum interactiveness with other areas relating to the environment, risks and resources**.
We contribute to the successful implementation of the INSPIRE Directive, in particular through our management of the **French Geocatalogue**.
Our well-tried experience in IT infrastructure for data distribution stands us in good stead for the organisation of data (InfoTerre portal) and the development of computing and simulation techniques.
Tel: +33 (0)2 38 64 35 15

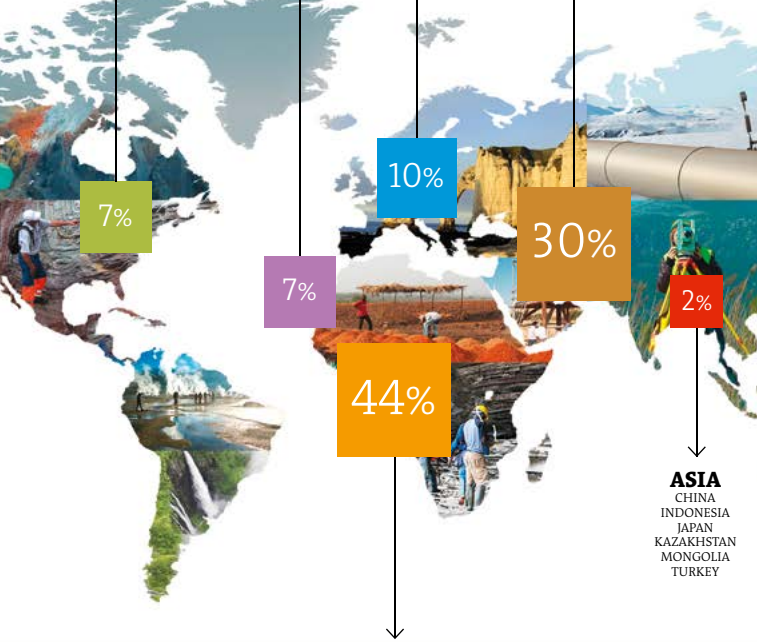
INTERNATIONAL TURNOVER BY REGION

AMERICAS &CARIBBEAN
ECUADOR • HAITI
DOMINICAN REPUBLIC

EUROPE
GERMANY • SWITZERLAND
FRANCE • SLOVENIA • POLAND
GREECE • KOSOVO • UKRAINE
BELGIUM • CROATIA

MIDDLE EAST
SAUDI ARABIA
IRAQI KURDISTAN
JORDAN

MAGHREB
ALGERIA • TUNISIA
MOROCCO • EGYPT



ASIA
CHINA
INDONESIA
JAPAN
KAZAKHSTAN
MONGOLIA
TURKEY

AFRICA
BENIN • BURKINA FASO
CAMEROON • CONGO
CÔTE D'IVOIRE • GABON
GUINEA-CONAKRY
MADAGASCAR • MAURITANIA
UGANDA • DEMOCRATIC
REPUBLIC OF CONGO
SENEGAL • TANZANIA • CHAD



RESEARCH AND PUBLIC SERVICES

Geoscience for a sustainable Earth

brgm

HEAD OFFICE
Tour Mirabeau
39-43, quai André-Citroën
75739 Paris Cedex 15 - France
Tel: +33 (0)1 40 58 89 00
Fax: +33 (0)1 40 58 89 33

SCIENTIFIC AND TECHNICAL CENTRE
3, avenue Claude-Guillemin
BP 36009
45060 Orléans Cedex 2 - France
Tel: +33 (0)2 38 64 34 34
Fax: +33 (0)2 38 64 35 18

DOCUMENTATION CENTRE
Maison de la Géologie
77, rue Claude-Bernard
75005 Paris - France
Tel: +33 (0)1 47 07 91 96
Fax: +33 (0)1 43 36 76 55

brgm.eu

SCAN THIS CODE WITH YOUR TABLET OR SMARTPHONE TO GO TO THE **NEW BRGM WEBSITE**

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE L'ÉDUCATION NATIONALE, DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE

MINISTÈRE DE L'ÉCOLOGIE, DU DÉVELOPPEMENT DURABLE ET DE L'ÉNERGIE

MINISTÈRE DE L'ÉCONOMIE, DE L'INDUSTRIE ET DU NUMÉRIQUE

EuroGeoSurveys
European Geoscience for Society
The Geological Surveys of Europe

paplers
Help recycle paper with the BRGM and Ecofolio.

MIXTE
Papier
FSC® C005567

COMMUNICATION AND PUBLICATIONS DIVISION, BRGM EDITIONS - DESIGN AND LAYOUT: EFIL +33 (0)2 47 47 03 20 / WWW.EFIL.FR - COVER PHOTO: THE UPPER REACHES OF THE GORGES OF PÉLITES ROUGES DU CIANS - MERCANTOUR NATIONAL PARK. © FRÉDÉRIC ESNAULT / NATURIMAGES.
PRINTED BY VINCENT IMPRIMERIES (TOURS) - ISBN 978-2-7159-2396-0