About ENGIE

The ENGIE project aims to turn the interest of girls to study geosciences and geo-engineering, and thus to improve the gender balance in these disciplines. The project is developing an awareness-raising strategy and creating a stakeholder collaboration network for the implementation of a set of outreach actions in more than 20 European countries.

Web: www.engieproject.eu
Social media: @engie_project

This activity has received funding from the European Institute of Innovation and Technology (EIT), a body of the European Union, under the Horizon 2020, the EU Framework Programme for Research and Innovation.

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Why does geoscience matter to society?

Geoscience underpins the provision of most of the **resources** on which Europe's population and industry depend, including energy, minerals, water and food. A wide range of vital services depend on geoscience, including management of the **waste** we produce; ground engineering for the construction of **buildings, roads, dams, tunnels** and other large **infrastructure** projects; and remediation of a wide range of environmental problems, including land contaminated by industrial use.

The work of geoscientists to understand **natural disasters and hazards** is essential for preparedness and mitigation of their effects and geoscience is integral to the study of **climate change** – understanding its causes and impacts and how to mitigate them as well as **adaptation strategies**. The safeguarding of clean, available **drinking water** and the provision of varied **ecosystem services** depends on an understanding of both the underlying geology and its multitudinous interactions with surface processes. The future security of Europe's **energy supply** relies heavily on geological skills in a wide range of contexts, from **mineral exploration and extraction** to the **transition to renewable energy** and use of the subsurface to store carbon dioxide and radioactive waste.

Source: Geology for Society report, https://eurogeologists.eu/geology-for-society-report-launch

Why should girls consider to study geoscience?

"I would encourage girls to study geoscience because it matters so much. It's really fundamental to the concerns of the moment, to the concerns of the world. It's fundamental to sustainable development. It's fundamental to understanding and responding to climate change. It's fundamental to developing society. And then because of the huge range of opportunities and flavours. The essence of geology is a different way of looking at the world that the general population doesn't necessarily have. We look at the world and we visualise, we conceptualise the rocks under our feet, the interior of the earth."

Ruth Allington, Treasurer
European Federation of Geologists

Watch this and other statements on our website, under the tab "Inspiration"!

ENGIE

Empowering girls to become the geoscientists of tomorrow

What is geoscience?

Geoscience (or Earth Science) is the study of the Earth and in particular its oceans, atmosphere, rivers and lakes, ice sheets and glaciers, soils, its complex surface, rocky interior, and metallic core. This includes the study of the natural resources we use, our planet's structure, the processes which have shaped it throughout its history and how living things, including humans, interact with the Earth. Geoscience encompasses sciences such as geology, geomorphology, geophysics, geochemistry, geodesy and is closely related to a number of engineering disciplines that are concerned with the earth and earth materials, such as mining engineering, coastal engineering, geotechnical engineering, structural engineering, and civil engineering ("geo-engineering").

Career pathways

Geologists work in a broad range of sectors:

Natural hazards & risks

Geoscientists study the features and effects of earthquakes, volcanic eruptions, landslides and tsunami, or work to forecast them and minimise damage. They also play an essential role in advising on the construction of flood defences, understanding and managing natural defences, and ensuring land use is planned effectively.

Hydrogeology

Hydrogeology is concerned with underground water, its movement, behaviour and quality. Hydrogeologists are involved in exploration for water resources, their management and sustainable production.

Engineering geology

Engineering geologists are involved in processes that modify surface and sub-surface geology for the built environment. They oversee particular geological aspects of wider projects and are critical to the development of a conceptual ground model for a given site.

Research, Teaching & Communication

Geoscientists working in universities, schools and other educational establishments have an enormous influence on students and are important for the future of the science. Many spend part of their time conducting research to increase scientific understanding. Geoscientists also conduct research within government organisations, research councils or museums, and play a vital role in communicating science to the general public or decision makers.

Mining & quarrying

Geoscientists are employed in the search for and production of mineral resources. Mining and minerals exploration usually refer to operations that search for and extract minerals that can be processed to produce metals such as iron, copper, gold and zinc in addition to other essential elements such as phosphorus (used in fertilisers). Industrial minerals companies also explore for and extract minerals that are used in their largely unprocessed form. This includes resources extracted by quarrying including aggregates (sand and gravel), slate and limestone and those extracted by more complex mining methods such as clays and gypsum.

Energy

Energy companies (and oil & gas exploration companies) employ a wide range of geoscientists in the search for and production of hydrocarbon reserves. They are also employed in the nuclear sector in a variety of roles, from resources (Uranium mining) to engineering and hazard consultancy. Another growing sector is geological storage of radioactive waste. Renewable energy is fast growing area of employment. This sector includes geothermal energy, wind and tidal power.

Environmental geology

Environmental geologists apply geological principles to solving environmental problems of water and land on which people, animals and plants live, which may have resulted from human activities or natural processes.

More information and resources on career pathways:

www.geolsoc.org.uk/Geology-Career-Pathways