Italian National Agency for
New Technologies, Energy and
Sustainable Economic Development

Italian National Agency for
New Technologies,
Energy and Sustainable
Economic Development

ENEA is a public body dedicated to research and technological innovation, as well as to the provision of advanced services to enterprises, public administration and citizens in the fields of energy, environment and sustainable economic development.

About us

2250 people work in our research centres and laboratories. Supported by **excellent experimental facilities**, **infrastructure** and **instrumentation,** we carry out projects, studies, tests, evaluations and analyses with the aim of transferring technological innovation and our wealth of expertise to the national system.

Our strategic sectors

RENEWABLES

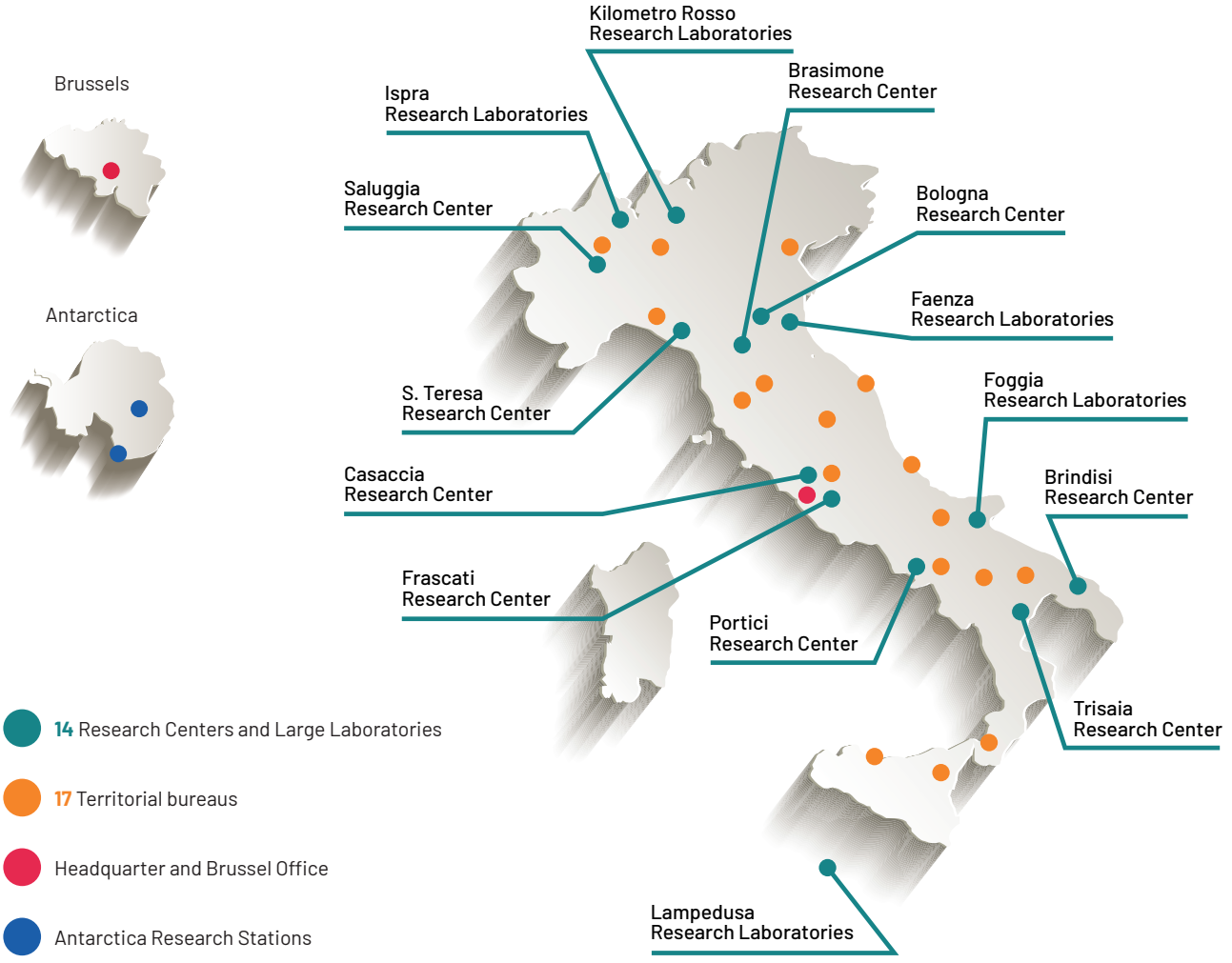
NUCLEAR

SUSTAINABILITY

ENERGY EFFICIENCY

TECHNOLOGY TRANSFER

Where we are


Brussels
Antarctica
Kilometro Rosso
Research Laboratories
Brasimone
Research Center
Ispra
Research Laboratories
Saluggia
Research Center
Bologna
Research Center
Faenza
Research Laboratories
S. Teresa
Research Center
Foggia
Research Laboratories
Casaccia
Research Center
Brindisi
Research Center
Frascati
Research Center
Portici
Research Center
Trisaia
Research Center
Lampedusa
Research Laboratories
14 Research Centers and Large Laboratories
17 Territorial bureaus
Headquarter and Brussel Office
Antarctica Research Stations

Facts and figures about ENEA

+600	Collaborations with companies
+20.000	Industrial sector employees involved
+900	Registered patents
+100	Framework agreements and partnerships with universities
+160	Projects financed by the European Union (to 2023)
+40	Projects for development cooperation

60
years of research and innovation

2250
people

14
research centers

17
territorial bureaus

8
technical and administrative directorates

4
departments

What we do

We do applied research in all **energy sectors** (renewables, storage, sustainable mobility, hydrogen, smart cities, energy communities), including nuclear power.
As National Agency for Energy Efficiency, ENEA also promotes the efficient use of energy in Italy.

Other **relevant areas of research are**: **climate change**, the **circular economy**, **cultural heritage**, **seismic protection**, **food safety**, **biotechnology**, **health** and **critical raw materials**.

ENEA state-of-the-art instrumentation and advanced technical services with dedicated consultants are available to Italy's public administration and productive sectors.
We can also help them access to EU funding programmes and partnerships, as well as an extensive network of collaborations at national and international level.

How we operate

Our research activities are carried out in **four Departments**:

- Energy Technologies and Renewable Sources;
- Nuclear;
- Sustainability and Climate Change Adaptation of Production and Territorial Systems;
- Energy Efficiency.

The exploitation of our research results by enterprises, organizations and PA is promoted by the Technology Transfer Directorate.

The management and coordination of ENEA's activities/resources is the responsibility of the *General Director*, who ensures the achievement of the objectives defined in the Agency's mission and sets out its strategies; the director ensures the implementation of the resolutions of the Governing Board and of the measures adopted by the President.

Energy Technologies and renewable sources

The Department researches materials, technologies, components, systems and processes for the **decarbonisation of the energy system**, pursuing the objectives of **environmental, social, technical and economic sustainability**. In particular, activities are focussed on renewable energy sources and vectors, energy production, transport, storage and distribution, consumption optimisation, and the integration of enabling technologies for the digital transition.

The department carries out technology qualification, **assessment** and **analysis** of methodologies and processes, development and characterization of materials; the **design**, **implementation** and **testing** of prototype plants, with the aim of **providing advanced technical services** and the **transfer of technologies** and **knowledge** to industry.

500
People

6
Technical divisions

18
Research laboratories

The Department's main research areas are:

- Bioenergy, biorefinery and green chemistry
- Hydrogen and new energy vectors
- Storage
- Sustainable mobility and transport
- High-performance scientific computing
- Solar photovoltaics
- Critical infrastructures and energy communities
- Smart sector integration and distributed generation from renewable energy sources
- Enabling technologies for the digital transition

Nuclear

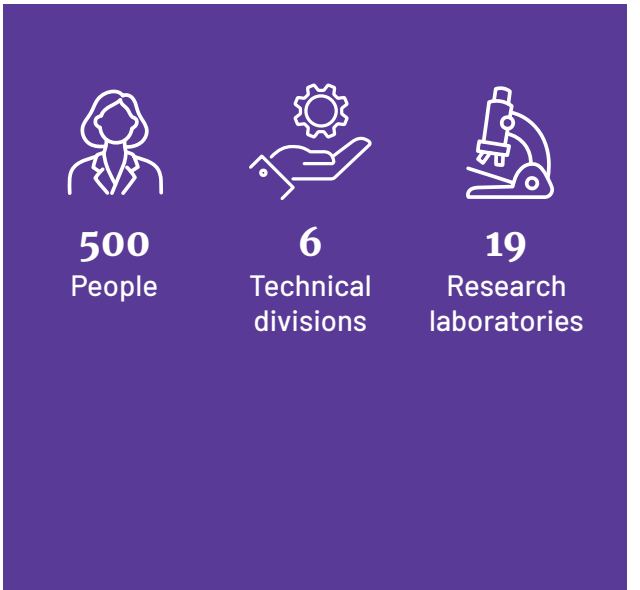
The Department designs and develops **components** and **experimental plants** for **new-generation reactors**, as well as new applications in areas such as the diagnostics and **conservation of cultural heritage**, security technologies and the **prevention of terrorist attacks**.

The Frascati Research Centre is currently building the **DTT, Divertor Tokamak Test**, an experimental facility that will help provide solutions to some critical problems that may hinder the development of **nuclear fusion**.

Concerning nuclear fusion, ENEA represents Italy in EUROfusion, the European Consortium that manages the economic resources made available by the European Union for the research and development activities of the European fusion programme. ENEA also acts as Industrial Liaison Officer for Fusion for Energy, the European Agency that manages the community resources for the realisation of **ITER**, the largest scientific experiment, called for and promoted by the European Union, to demonstrate the feasibility of a fusion reactor.

The Department's main areas of research are:

- Plasma physics
- Fusion energy development
- Experimental Engineering
- Radiation systems and applications
- Nuclear energy systems
- Physical Technologies and Safety



Sustainability and Climate Change Adaptation of Production and Territorial Systems

500
People

6
Technical divisions

16
Research laboratories

The **Department** adopts a **cross-sectoral** and **interdisciplinary** approach to the issue of **sustainability**, promoting **new production** and **consumption models** and advocating new eco-friendly behaviour, as a means to enhance the economic, natural and social resources of the country.

Its research areas include the **circular economy**, **industrial symbiosis**, the study and monitoring of the **environment** and **climate**, the qualification of products and materials, mitigation strategies, the sustainable management of the waste cycle and **water resources**, **nano-materials**, strategic **raw materials,** and biotechnologies for the agro-industry.

Other important areas are: **biomedical technologies**, **seismic engineering**, and the study of **biodiversity**.

The Department's main research areas are:

- Circular economy and industrial symbiosis
- Efficient use of resources and closing cycles
- Models and technologies for the reduction of anthropogenic impacts and natural hazards
- Protection and enhancement of land and human capital
- Biotechnology and agro-industry
- Technologies and methodologies for health protection
- Materials technologies and processes for sustainability

Energy Efficiency Unit

The **Energy Efficiency Unit Department** carries out the functions assigned to ENEA as National Energy Efficiency Agency, the Italian reference institution for the **promotion of energy efficiency**.

Its role is to support the country in achieving Italy's **decarbonisation** targets by improving **energy end-use** efficiency, in compliance with the EU directives.

The main activities include the technical and scientific support to **public administration** and **economic sector operators** for improving energy efficiency, **information and communication** services aimed at creating an **energy culture** among citizens, and the qualification of new professional skills related to **green jobs** in the energy efficiency sector.

The Department has also developed tools and methodologies for implementing energy efficiency projects through public-private partnerships with the Italian Ministry of the Environment and Energy Security, the Regions, and central and local PA.

The Department's main research areas concern:

- Digital applications for energy efficiency in PA
- Energy efficiency in economic sectors
- Energy efficiency policy monitoring
- Improvement of energy efficiency in urban development buildings and production processes
- Programmatic activities for energy efficiency
- Integrated services for territorial development
- Information and training campaigns

156
People

2
Technical divisions

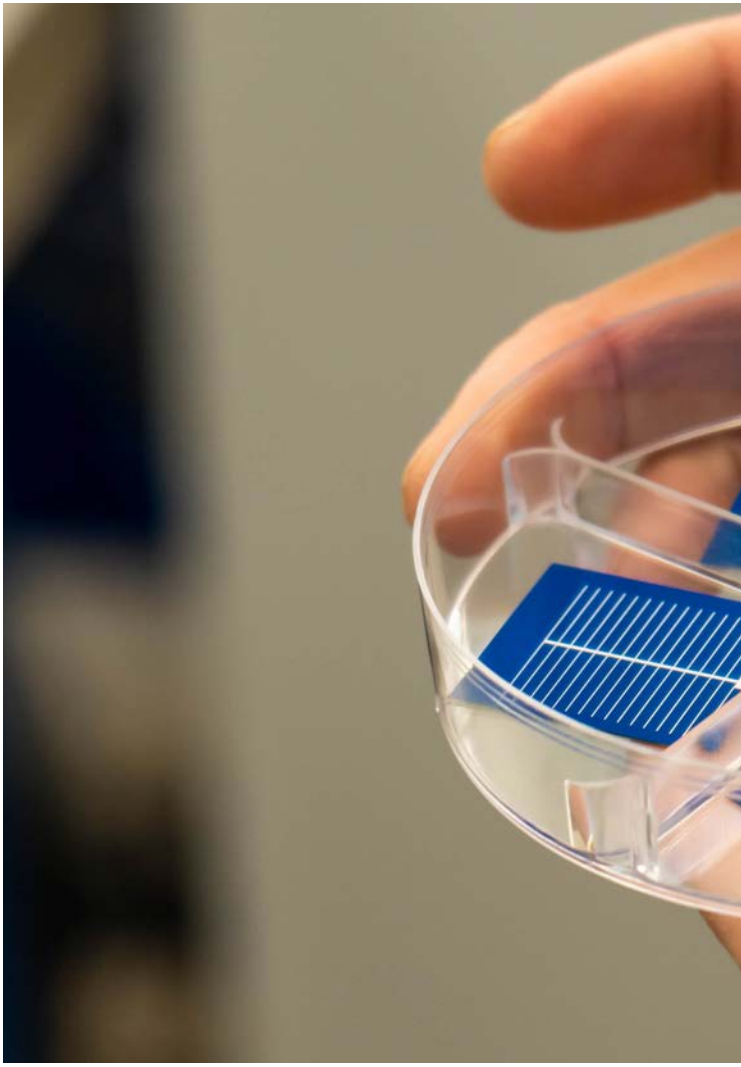
10
Research laboratories

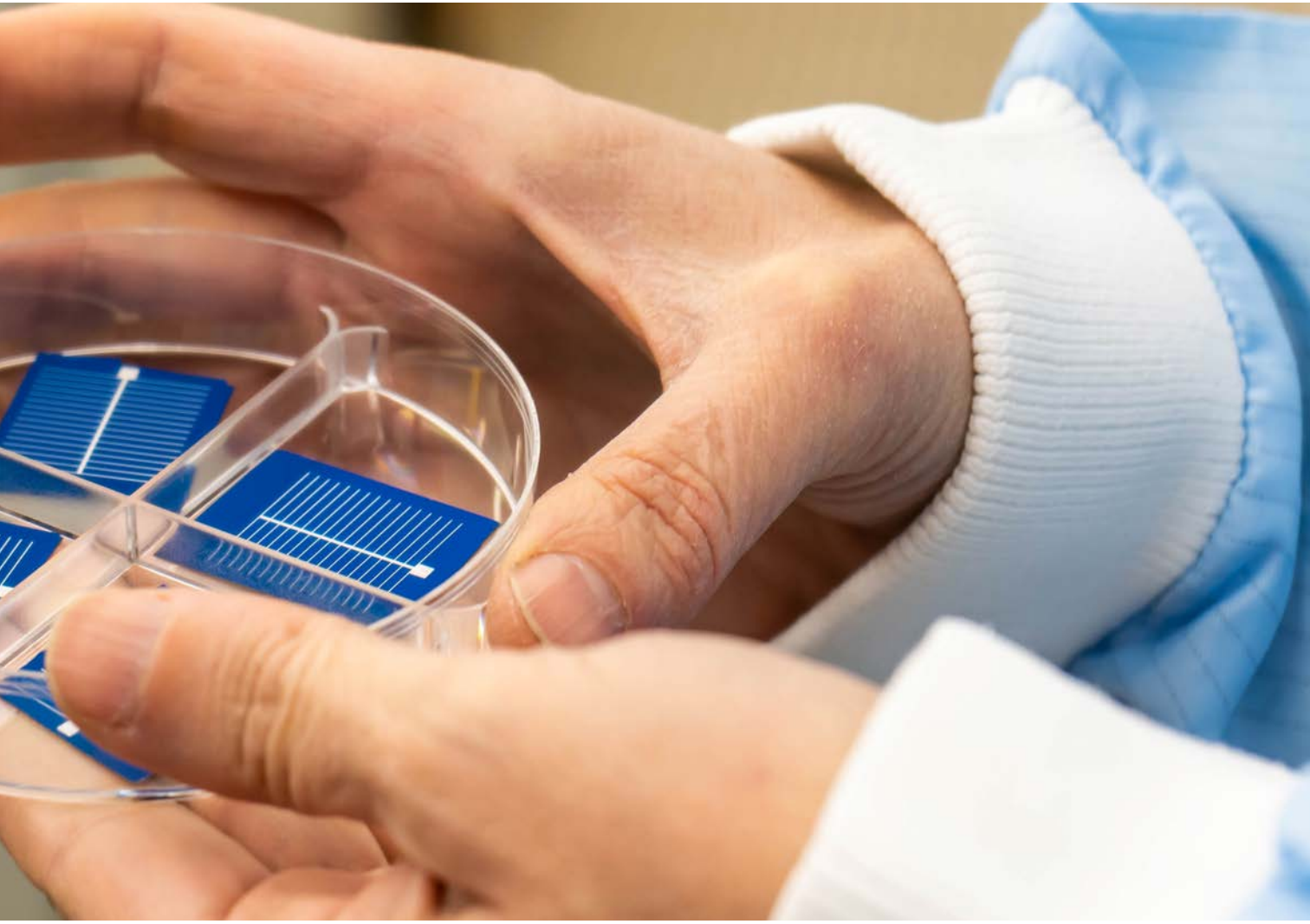
Technology Transfer

The **Technology Transfer Division** promotes technology transfer from the laboratories to civil society, through partnerships, agreements, patents, digital platforms and high-tech services, as a means for achieving Italy's sustainable economic development.

Main activities include:

- Patent database
- Spin-off support service
- Proof of Concept Fund for the development of joint enterprise-ENEA research projects
- Knowledge Exchange Program (KEP) to strengthen technology and innovation transfer through partnerships with companies and associations





Investing in research means investing in our future

enea.it

info@enea.it