Department for Sustainability

The Department carries out research and development activities finalized to technology, innovation, knowledge transfer and implementation in support of enterprises, public administrations and civil society within the overall framework of transition towards more sustainable production and consumption model.

STRATEGIC OBJECTIVES

The general objectives are:

- to contribute to the valorization of economic, natural and social capital, by providing technological and methodological tools for sustainable and competitive growth and improvement of citizens life quality;
- to support Policy elaboration and implementation promoting the reduction of emissions, the mitigation of climate change effects, the transition towards innovative economic models (circular economy, bioeconomy, blue economy).

The Department also assures technical support to public authorities within the main national, EU and international fora; in European EIP platforms and working groups; in international Experts Commissions and within international negotiations (UN, UN-ECE, EU etc.)

Organizational structure

Department for Sustainability
Director: Roberto Morabito

540 researchers and experts organized in six Divisions, four technical-scientific Sections, two Administration Services

11 Research Centres distributed along the whole Country

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our mission

"ENEA is a public body with the aim of pursuing research and technological innovation, as well as providing enterprises, public administration and citizens with advanced services in the sectors of energy, the environment and sustainable economic development."

Act. 28th December 2015, N° 22

ENEA's mission is to contribute to Italy's competitiveness and sustainable development by conducting research and technology development activities in support of Public Administration, companies- particularly SMEs- and citizens.

ENEA is structured into four Departments developing research, technology innovation and advanced services, with approximately 2,400 employees, including researchers, technicians and administrative staff distributed in 13 research centers throughout Italy.

ENEA has over 50 years' experience in research and innovation in the fields of energy, new technologies and the environment.

ITALIAN NATIONAL AGENCY FOR NEW TECHNOLOGIES,
ENERGY AND SUSTAINABLE ECONOMIC DEVELOPMENT

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ENEA REL PROM 11/2022

we research innovation

sustainability

ITALIAN NATIONAL AGENCY FOR NEW TECHNOLOGIES,
ENERGY AND SUSTAINABLE ECONOMIC DEVELOPMENT

Department's goal

The Department's main goal is the knowledge transfer to the productive system, to the local and national institutions and to the citizens, with the aim of fostering new consumption and production systems based on a more sustainable use of the resources and on the emission reduction. Thanks to its in-house multidisciplinary skills and its marked ability to integrate and systemize this resource, the Department is able to respond systemically and synergistically to the demands regarding various thematic ambits posed by the country seen as a system.

Strategic themes

- Climate changes
- Natural capital and sustainable tourism
- Closure of cycles, industrial areas and circular economy
- Sustainable cities
- Sustainable supply chains and food systems
- Materials and processes for competitive manufacturing industry
- Innovative health products and systems
- Air quality and health
- Protection and enhancement of our artistic, historical and architectural heritage
- Territorial security
- Biotechnological systems, products and processes

The actions of the Department are aimed at:

- Competitiveness of production systems, innovation and work

  Research and development activities in the eco-innovation sectors throughout the life cycle and all phases of production and consumption of goods and services, as well as on new materials, for improvement of overall performance in terms both of costs and environmental impacts.

- **Enhancement, management and protection of the environment**

  Development of models and systems for the analysis of scenarios from local to continental scale, and of trends displayed by anthropogenic impacts on the atmosphere, on waters, on the marine environment and on the territory; these analyses are preparatory to remedial measures and policy interventions both central and regional.

- **Quality of life, nutrition and health of the citizenry**

  Research and development of innovative technologies and tools for the protection of health and quality of life; analysis for traceability, authenticity, quality, safety and sustainability of the agricultural and food industry supply chain.

- **Urban and territorial regeneration**

  Finalizing, programming and carrying out projects, accompanied by a holistic, systemic approach, regarding urban regeneration based on closure of cycles, on requalification of our heritage of buildings and of abandoned industrial areas, on innovative enhancement of urban and suburban farming activities, and on the safeguarding and enhancing our cultural heritage.

- **Training and information**

  Training activities for undergraduates and young Italian and international researchers, involvement in numerous training, promotion and dissemination actions in order to foster initiatives relating to strategic issues, both general and specific, as emerging within the various Divisions.

Efficient use of resources and closure of cycles

This Division develops and implements technologies, methodologies and tools for enhancement, use and efficient management of resources with a view to enabling circular economy in the value chain of products and materials, in production chains, in urban and industrial areas, and throughout the territory. The division deals with technologies, up to pilot project scale, for integrated, sustainable management of waste and water resources in civil and industrial fields, recycling/recovery of raw materials from complex end-of-life products and nutrients, materials and energy from waste.

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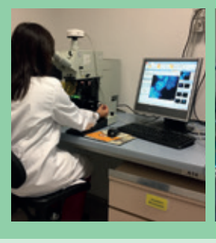

Materials technologies and processes for sustainability

This Division operates in the sector of innovative materials for applications to the production system, with particular regard to composite, ceramic, nanostructured and polymeric materials. It develops functional and structural materials with low environmental impact, related technologies (including additive technologies) and demonstration components. It fosters replacement of critical raw materials and develops analytic techniques regarding our artistic heritage.

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Models and technologies for risks reduction

This Division develops numerical models of the atmosphere and climate system to evaluate the impact of air pollution, climate variability and future scenarios on natural resources, human health and materials. It develops and applies innovative anti-seismic technologies to civil and industrial buildings and monumental heritage. It develops methodologies for the definition of seismic and geomorphological risks. It proposes strategies for the adaptation and mitigation of risks deriving from natural and anthropic causes.

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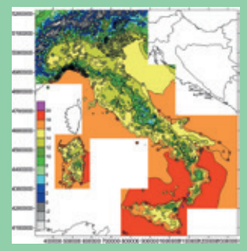

Support for the coordination of circular economy activities

This Section provides support to the Department in coordinating and fostering circular economy activities aimed at the efficient use of resources and eco-innovation of products, processes and systems. To this end, it provides an integrated and systemic vision in order to enhance planning and dissemination of knowledge and good practices regarding circular economy and foster dialogue with the main players (local, national and international).

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Protection and enhancement of the territory and natural capital

This Division acquires data and develops methodologies and technologies for the environmental characterization, protection, management and remediation and for understanding the climate system and its variability, collaborating with the corporate sector for the development of prototypes and innovative tools. It designs and manages integrated observatories and carries out studies for the enhancement and protection of ecosystems and natural resources. It develops microbial biotechnologies also applied to the areas of bioremediation and the conservation and restoration of cultural heritage.

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Biotechnology and agro-industry

This Division carries out research and innovation activities for the agricultural and food system, fostering the system's competitiveness and sustainability of production from a circular bioeconomy viewpoint, to boost performance in terms of quality, quantity, safety and traceability of products, thereby contributing to public health and wellbeing.

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Technologies and methodologies for health protection

This Division carries out research and innovation activities within the industrial biotechnologies and biomedical sector. It develops innovative solutions for health; identifies new molecular targets of therapeutic interest; devises new delivery strategies, new diagnostic, prognostic and radio-exposure bio-markers. Through the development of innovative experimental approaches and through risk assessment, it characterizes the impact of environmental changes on human health in terms of predisposition to chronic degenerative diseases and aging processes.

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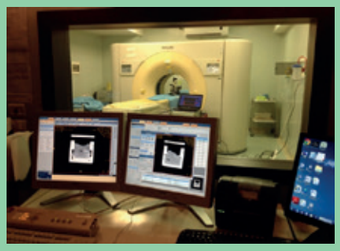

Technology transfer to developing countries relating to climate change

This Section coordinates support and technology transfer activities targeting developing countries in order to foster actions to combat the impacts of climate change, within the framework of the national commitments envisaged by the United Nations Framework Convention on Climate Change, and of collaboration with State administrative bodies.

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