Invest in GREEN ECONOMY in Emilia-Romagna

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The green economy in Emilia-Romagna is a cross-sector that is proving to be more and more of a resource to our region and an opportunity for new investments.

The green economy comprises both «what is produced» and «how it is produced». Those who invest in the region will discover a whole world of companies ranging from manufacturing to services and which are turning the theme of environmental sustainability into an instrument that combines ethics with competitiveness on international markets.

LEADING FACTORS

- 2,200 companies within the regional green economy
- Laboratories in the High Technology Network work directly on green issues
- International trade fairs on green themes
- There are 29,000 regional companies investing in environmental products and technologies
- Agro-food, Waste recycling and Building are the sectors in the region with the highest number of green companies

Green economy sectors

The companies belonging to the green economy sector in Emilia-Romagna represent a diverse range of productive sectors crossing into the main productive clusters of the region. Some examples are the processors of organic food products and the technology used in various ways in the **agro-food** cluster, companies that work in the bio-building in the **construction** cluster, transports with a low environmental impact in the **automotive mechanics** field. In addition, there are **more general sectors** such as the research of new materials and the supply of machinery as well as newly **emerging sectors** such as renewable energy and energy efficiency. On the other hand, **traditionally «green» sectors** are represented by waste management and water treatment. Regarding **services**, those incorporating environmental certification also play an important role.

Green economy and technological innovation

Research and Innovation are among the factors largely leading the green economy in Emilia-Romagna. A substantial number of **laboratories from the regional High Technology Network** work in the research fields which are more or less directly connected to the green economy. These structures are also part of the **various thematic Technological Platforms: Energy and Environment; Agro-food; Mechanics and Materials; Construction; Life Sciences, ICT and Design.** The laboratories of the network collaborate with regional companies and help to support «green» innovation in production. **Universities** and the **higher education system** provide qualified human resources to regional companies.

A green region

Emilia-Romagna is a green region also in its industrial areas and in the corresponding infrastructural facilities available to investors. A good example is given by the Ecologically Equipped Productive Areas**.** Even the supply of renewable energy in the region meets the growing demand of the production system. Moreover, there are **29,000 regional companies investing in environmental products and technologies**. The increase rate of the companies with environmental certifications is the highest at national level (Source: ER Region).

SOME COMPANIES OF THE REGION

Agro-industry

alce nero DAL 1978 · CPR SYSTEM · Barilla Center FOR FOOD & NUTRITION · FERRAZOOTECNIA di Ferraresi Fabio · CAVIRO

Waste and reclamation

Sall · RICCOBONI · GRUPPO fiori · MENGOZZI RIFIUTI SANITARI · TASSINARI BILANCE

Building

COPERTURE · GRUPPO CONCORDE CERAMICHE · umpi · KERAKOLL The GreenBuilding Company

Water cycle

HYDRO ITALIA srl Tecnologia Acque e Fanghi

Energy

baltur TECNOLOGIE PER IL CLIMA · ENERRAY Don't worry, be sunny · Beghelli · SANTERNO CARRARO GROUP · Bonfiglioli power, control and green solutions · Lucchi R. Elettromeccanica · Tozzi Renewable Energy fre

Transport

RIKER smart movement · ZAPI s.p.a. · LANDIRENZO · MICRO-VETT VEICOLI ELETTRICI · ELECTRIC VEHICLES · TAZZARI GROUP

invest in Emilia-Romagna · Regione Emilia-Romagna · ERVET EMILIA-ROMAGNA VALORIZZAZIONE ECONOMICA TERRITORIO

Green economy in the region: its structure and its sectors

Companies become part of the green economy universe both for "**how they produce**" **(Green Production)**, as well as "**what they produce**" **(Green Business)**.
Green Production is mainly recognized through the **tool of environmental voluntary certification.** With regard to the **Green Business,** we can distinguish between companies which **merely operate in environmental markets** (waste management, integrated water cycle, sustainable transport, management of natural heritage) **and those which are only partially oriented towards green markets** (bio-building, organic agro-food products, energy efficiency and renewable energy, environmental technology).

Green production

- Environmental certification of products
- Adoption of green practices
- Implementation of environmental technology

Green business

Agro-food	• **Processors of organic food and products** • **Manufacturing, installation and repair of machinery and technology**
Waste recycling	• **Environmental technology and/or finished products** (production of bins, machinery to move, treat and transport waste, etc.) • **Products made of recycled materials and/or regeneration** (regeneration of tires, cartridges, pallets, plastic, polystyrene, etc.) • **Services for the management of recycled waste** (urban waste management, waste storage facilities, disposal and recycling of material, composting plants, recovery and production of energy from waste, cleaning up of contaminated sites, etc.)
Building	• **Building materials** (production and/or commercialization) • **Construction** (construction and maintenance of buildings/plants, construction of eco-compatible houses made of wood, installation of electrical systems and equipment, doors and windows, flooring, isolating/waterproofing materials) • **Plants and Technology** (air/water treatment, lighting technology, energy efficiency systems for buildings, doors and windows, heating/cooling plants, acoustic barriers, etc.)
Integrated water cycle	• **Technology and/or finished products** (water purifying systems, lifting pumps, chemical reagents, etc.) • **Services for water cycle management** (services and management of various infrastructures, collection and purification of waste water, management of drainage systems)
Renewable energy and efficiency	**Renewable energy: bio-energy, water, solar, wind.** •**Production of components and technologies** (wind turbines, solar panels, inverters, high efficiency lighting systems, boilers, air-conditioning systems, micro-generators, etc.) •**Plants construction** (including planning, installation and maintenance) •**Production/commercialization of energy**
Transport	• **Alternative means of transport to rubber /** Electric mobility
Mechanics	• **Supply of machinery, equipment and components that support the other sectors** (energy, waste, water, etc.)
Management of natural heritage	

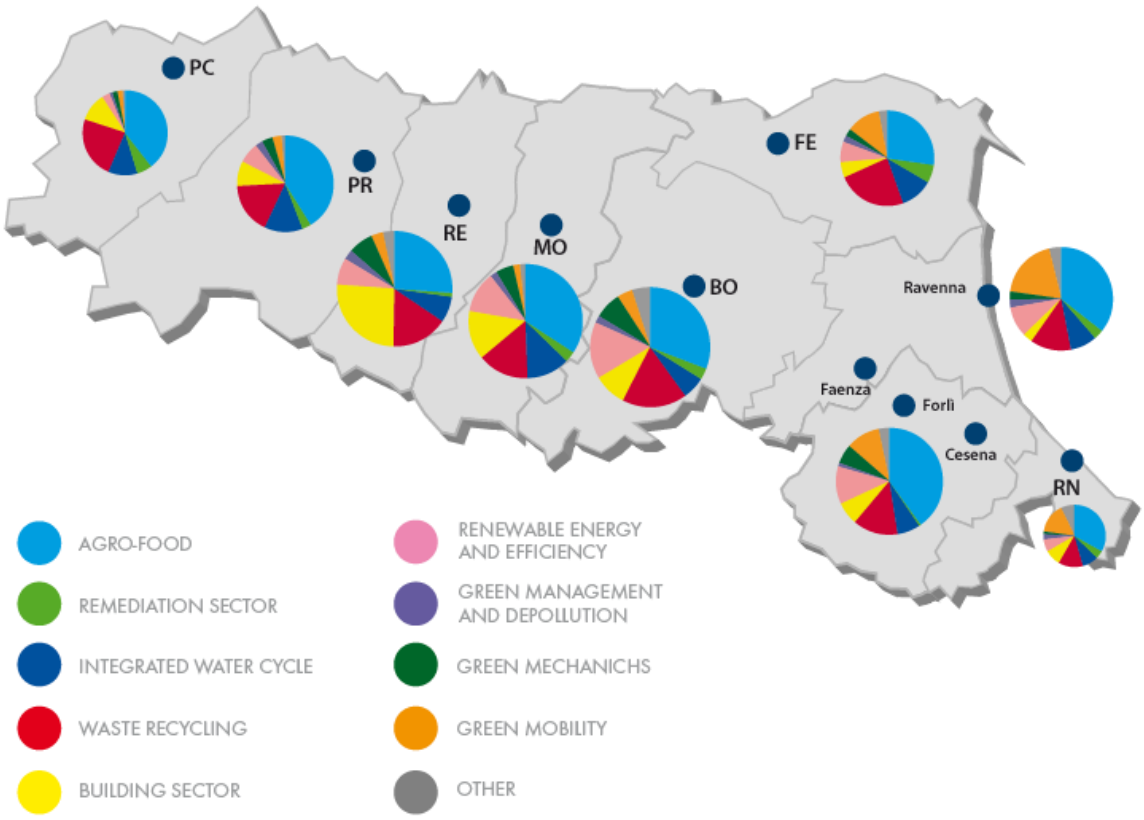
Companies - Source: Monitoring centre ERVET, 2014

Sector	Companies	% of total
Agro-food (including processors of organic products)	741	33,6%
Waste recycling	358	16,3%
Building	244	11,1%
Integrated water cycle	196	8,9%
Renewable energy and energy efficiency	216	9,8%
Green mobility	156	7,1%
Green mechanics	107	4,9%
Other (environmental certification, adoption of green practices, implementation of environmental technology)	71	3,2%
Remediation sector	64	2,9%
Green management and depollution	50	2,3%
Total regional Green Economy	**2,203**	**100%**

The green economy in the region

GREEN ECONOMY IN EMILIA-ROMAGNA - NUMBER OF COMPANIES DIVIDED INTO SECTORS

(SOURCE: GREEN ECONOMY MONITORING CENTRE, ERVET - 2014)



Areas with the highest concentration of Green companies

Source: Report ERVET Green Economy in Emilia-Romagna 2014

Agro-industry

The highest concentration of companies is in the area of the city of Bologna (124) followed by Modena (117), Parma (98) and Forlì-Cesena (92). It is the leading green sector in all regional provinces.

Waste management and Reclamation of polluted sites

High concentration of companies in the province of Bologna (82 companies), followed by Modena (60), Reggio Emilia (57) and Ferrara (51).

Building

High concentration of companies in Reggio Emilia (86 companies), followed by Modena (47 companies mainly from the ceramic industry) and Bologna (35 companies).

Ecologically Equipped Productive Areas (APEA)

The Emilia-Romagna Region together with the Provinces and Municipalities have located the industrial areas to be transformed into Ecologically Equipped Productive Areas (APEA).
The **characteristics of the APEA** mainly concern energy supply, the drainage system, the disposal and recycling of waste and the separate collection of rubbish, the infrastructural facilities available in terms of ICT network and access to the area, harmonization within the environmental context, the presence of green spaces and specific services for working people. Another characteristic element is the presence of a unique managing body for the area, which allows companies to obtain permissions and authorizations more quickly.

Research and Innovation

High Technology Network - Platforms and laboratories for the green economy

ASTER - www.aster.it

Important themes for technological development within the Green Economy as highlighted by Aster: White Biotechnology (bio-materials and bio-refineries), Renewable resources, Green building, Materials, Eco-sustainable products and systems, ICT for green/sustainable transport, Methods, techniques and technologies for environmental controls, Monitoring and assessment. Below is a selection of laboratories from the network involved in various research areas connected to the green economy.

Energy and Environment Platform

CIRI ENERGIA AMBIENTE - www.energia-ambiente.unibo.it
Research areas: Bioenergy; Biomass; Industrial Eco-design ; Waste disposal and the life cycle of products; REACH (Registration Evaluation and Authorization of Chemicals).

CRPA LAB - http://crpalab.crpa.it
Research areas: Agro-food; Energy and Environment. In particular; innovation in the food production processes of traditional products; quality control; organization of the production supply chain; sensory analysis to enhance typical food products; biomass; valorization of organic waste into materials and energy through anaerobic digestion.

LAERTE - www.laerte.enea.it
Research areas: energy efficiency in buildings; safety and sustainability of infrastructures, plants and buildings; the uses of heat and the conversion of heating (and cooling) systems .

LEAP - www.leap.polimi.it/
Research areas: thermal energy gauges; biomass boilers; biomass plants and bioenergy zones to generate electricity and/or heat ; CO2 based gas blends for separation processes; software for power plant assessments.

LECOP - www.lecop.enea.it
Research areas: LCA and Eco-design for eco-innovation; integrated technology for the management of water resources; models and the characterization of air pollutants.

PROAMBIENTE - www.consorzioproambiente.it
Research areas: Environmental Controls (environmental monitoring and modeling, instruments and certifications); Environmental Remediation (compensation and mitigation of environmental externalities: depuration, purification and decontamination).

TerraeAcquaTech - www.unife.it/tecnopolo/tat/home-1
Research areas: water quality; hydrogeology; metallurgy, corrosion of polymeric materials; electrochemical methods and environmental sensors; management of water networks and sanitary and environmental engineering; biogeochemical cycles, water bioprocesses and bio-indicators; reclamation and optimization of agro-environmental resources.

Agro-food Platform

CIRI AGROALIMENTARE- www.agroalimentare.unibo.it
Green research areas: studies into shelf-life and packaging, functional foods, recovery and use of bioactive constituents from agro-food industry byproducts and waste, etc.

BIOGEST-SITEIA - www.biogest-siteia.unimore.it
Green research areas: packaging of active ingredients and microbial techniques to improve food conservation.

CIPACK - www.cipack.it
Green research areas: analysis of the impact of packaging on the environment (sustainable packaging); materials and treatment techniques for packaging; bio and eco-designed films.

CIM - www.cim.unipr.it
Green research areas: Quality and safety in food transformation. **(Life Sciences Platform).**

Construction industry Platform

CENTRO CERAMICO (Ceramic center) **-** www.cencerbo.it
Green research areas: chemical and physical characterisation of raw materials, semi-finished and finished products; energy and environmental diagnosis of processes.

CIRI Edilizia e costruzioni - www.edilizia-costruzioni.unibo.it/
Green research areas: production and management of building heritage: sustainability, safety and energy efficiency; fluid dynamics for energy and environmental applications.

EN&TECH - www.enetech.unimore.it
Green research areas: improvements of energy efficiency in buildings. Eco-design and LCA (Life Cycle Assessment)

LARCO ICOS - www.larcoicos.it/
Green research areas: materials and components for high performance, low energy consumption and low environmental impact buildings; sustainable construction.

TEKNEHUB - www.teknehub.it
Green research areas: recovery of degraded areas in terms of indigenous biodiversity and creation of nature trails.

CIRI ICT - www.ciri-ict.unibo.it
Green research areas: ICT Technologies and services for sustainable development (e.g.: Controls for processes and logistics, monitoring of industrial environments, business intelligence, automated software and systems for pattern recognition).

Mechanics and Materials Platform

CIRI AERONAUTICA - www.aeronautica.unibo.it
Green research areas: Mechanics and technology applicable to transport.

CIRI MECCANICA AVANZATA e MATERIALI (Advanced mechanics and Materials) **-** www.mam.unibo.it
Green research areas : Development of: low environmental impact vehicle propulsion; accumulation, conservation and integration of energy; low power wind generators; photovoltaic systems; systems for the generation of variable speed hydroelectric energy; energy saving; energy-efficient systems for electric and hybrid propulsion.

MIST E-R - www.laboratoriomister.it
Green research areas: high performance, efficient and eco-sustainable lighting; innovative systems for the production of energy from renewable resources and energy saving; development of functional biomimetic materials.

MECH-LAV - www.unife.it/tecnopolo/mechlav
Green research areas: services to the building and construction sectors; vibration-acoustic certification and product development.

T3 LAB - http://www.t3lab.it
Green research areas: energy models, telemetric energy monitors; energy efficiency in buildings; innovative solutions for transport.

TRACCIABILITÀ (Traceability) **-** www.tracciabilita.enea.it
Green research areas: energy production in general; treatment and disposal of waste.

International Trade Fairs

ENVIRONMENT	
ECOMONDO www.ecomondo.com	**International Trade Fair of Material and Energy Recovery and Sustainable Development** held at the Rimini Trade Fair site**.** Commodity sectors: Waste Treatment; Recycling and Services; Collection and Transport; Treatment, recovery and demolition of inert waste; Decontamination; Air and Water. The show received over 100,000 visitors and hosted 1,200 companies at the 2014 edition. The figures include those of the **KEY ENERGY and COOPERAMBIENTE** fairs **(Cooperate for the environment - www.cooperambiente.it)** that take place at the same time as ECOMONDO.
KEY ENERGY www.keyenergy.it	**International expo for Sustainable Energy and Mobility**. Commodity sectors: production of energy from the following renewable sources: Biofuels, Biogas, Biomass, Photovoltaic & Solar heat, Mini – Wind power. From alternative sources: Use of waste as an energy source. Energy saving and efficiency including Cogeneration; Sustainable Mobility .
H2O – ACCADUEO www.accadueo.com	International exhibition of **technologies for the treatment and distribution of drinking water and wastewater treatment** held in Ferrara. The 2014 edition received 11,171 visitors and hosted 330 exhibitors.
REMTECH www.remtechexpo.com	**Remediation Technologies**. Exhibition on the remediation of contaminated sites and the requalification of territory.
BUILDING	
CERSAIE www.cersaie.it	**International exhibition of ceramics for architecture and bathroom sanitaryware**, held at the Bologna Trade Fair site. 176,000 m² of exhibition space with 945 exhibitors and over 100,000 visitors 36% of which were foreign (Data 2014).
SAIE www.saie.bolognafiere.it	**International building exhibition**, held at the Bologna Trade Fair site, with a focus on renewable energy and low energy consumption technology for sustainable construction. In 2014 it hosted 1,408 exhibitors and received 93,000 visitors.
AGRO-FOOD	
CIBUS www.cibus.it	**Cibus – International Food Fair** held at the Parma Trade Fair site. The fair also includes Dolce Italia, the exhibition for the confectionery industry. The 2014 edition hosted 2,700 exhibiting companies, 67,000 visitors, 12,000 buyers and foreign operators from the sector. The fair gives good exposure to organic products.
SANA www.sana.it	**SANA** – **International exhibition of organic and natural products**: food, health, environment, held at the Bologna Trade Fair site. The 2014 edition received 43,500 visitors.
RESEARCH & DEVELOPMENT	
RESEARCH TO BUSINEES www.rdueb.it	**International Exhibition on Industrial Research** held at the Bologna Trade Fair site – A meeting point between Research and Business including several links with green economy sectors. The 2014 edition hosted 197 exhibitors and received 5,746 visitors.

Foreign investors

Some important foreign investors in the Green Economy in Emilia-Romagna - Source: Aida - Bureau Van Dijk, 2014

Company	Investor	Country of Origin	Type of business (Ateco 2007)	Why they are considered GREEN
TETRA PAK ITALIANA	TETRA LAVAL HOLDINGS B.V.	Holland	Repairing and maintenance of machines for dosage, packaging and packing	They are very conscious of environmental sustainability, they have adopted green practices in the production process : they use FSC certified paper in the manufacture of their containers and packaging
NORD MOTORIDUTTORI	GTNI GETRIEBETECHNIK -NORD INTERNATIONAL	Germany	Wholesale trade of machinery and equipment	They produce technology that involves green markets and practices (e.g. energy efficiency, renewable sources)
MANITOU COSTRUZIONI INDUSTRIALI	MANITOU BF SA	France	Production of equipment and machines for building, lifting and digging	They produce technology that involves green markets and practices (e.g. refuse, building)
ITALPIZZA	BAKKAVOR ACQUISITIONS LIMITED	United Kingdom	Production of pre-packed pizza	They are part of the category of transformers/preparers of products from organic agriculture

Services available to the green economy

Agencies and Associations

ERVET – Sustainable Development Unit

ERVET is the agency that handles development in the Emilia-Romagna Region. Among its various services, it manages the following websites:

- Tecnologie Pulite http://www.tecnologiepulite.it/

An *"organized container"* with open access to everything concerning the topic of the best practices available that allow to reduce the environmental impact.

The site also includes a **«showcase window» for suppliers of environmental technology** where it is possible for them to promote their company and products and/or look for useful partnerships for new investments.

- Cartesio Network www.retecartesio.it

The network operating on an inter-regional level and aiming at researching and coming up with collective solutions on topics that interest and involve both private and public organizations.

CISE (Centre for Innovation and Economic Development) **Forlì-Cesena -** www.ciseonweb.it/ambiente/

CISE is a Special Agency of the Chamber of Commerce in Forlì-Cesena. The Environmental Area deals with dissemination of knowledge and social responsibility and the implementation of environmental management systems.

Environmental Certification

A list of the major certification bodies that operate in the region:
•Bureau Veritas Italia - www.bureauveritas.it
•Cermet – www.cermet.it
•Certiquality – www.certiquality.it
•Csqa - www.csqa.it
•Dnv – www.dnv.it
•Imq – www.imq.it
•Rina – www.rina.org
•Tuv Italia – www.tuv.it

Professional training courses

Training institutions offering courses connected with the green economy:

- Ce.svi.p. www.cesvip.it
- CentroServiziP.M.I www.cspmi.it
- Cerform www.cerform.it
- Cfp Cesta www.cfpcesta.com
- CSE Parma www.parmaedile.it
- Dinamica www.csa.it
- Ecipar www.ecipar.it
- Efp.e www.efpe.it
- FORM.ART www.formart.it
- IAL Emilia-Romagna www.ialemiliaromagna.it
- I.i.p.l.e www.edili.com
- I.f.o.a. www.ifoa.it
- Infomedia www.infomediaformazione.it
- Irecoop www.irecoop.it
- ModenaFormazione www.modenaformazione.it
- Techne www.techne.org

Higher Education

Degree courses

University of Bologna - www.unibo.it
Faculty of Agriculture
- Territorial and agro-forestry environmental science
- Planning and management of agro-land, forestry and landscape ecosystems
-Ornamental plants and landscape protection (Imola)
- Marketing and Economics of the agro-industrial system (Approach oriented towards the sustainability of production and the enhancement of quality)
- Agricultural Sciences and Technologies
- International Horticultural Science

Faculty of Engineering
- Land and Environmental Engineering
- Energy Engineering
- Engineering for urban and building systems (Ravenna)

Faculty of Sciences
- Chemistry and technology related to the environment and materials (Rimini and Ravenna campuses)
- Environmental Sciences
- Environmental Assessment and Management [two year Masters] (Ravenna)

Faculty of Political Science
- Employment, market, environment, social policies and social work

University of Modena and Reggio Emilia - www.unimore.it
Faculty of Mathematical, Physical and Natural Sciences
- Environmental and Territorial Science (Modena)

University of Ferrara - www.unife.it
Faculty of Engineering
- Civil and Environmental Engineering

University of Parma – www.unipr.it
-Natural and environmental science/ Science and technology for environment and resources
-Ecology and nature conservation
-Environmental Engineering

Masters

University of Bologna - www.unibo.it
- Sustainable development and management of environmental systems
- Land and water conservation
- Biostatistics – (Faculty of Statistical Sciences)

University of Modena and Reggio Emilia - www.unimore.it
- Assessment of chemical substances **– REACH and CLP**
Faculty of Mathematical, Physical and Natural Sciences

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