

Eco-innovation in Italy

EIO Country Profile

2014



Eco-Innovation Observatory

The Eco-Innovation Observatory functions as a platform for the structured collection and analysis of an extensive range of eco-innovation information, gathered from across the European Union and key economic regions around the globe, providing a much-needed integrated information source on eco-innovation for companies and innovation service providers, as well as providing a solid decision-making basis for policy development.

The Observatory approaches eco-innovation as a pervasive phenomenon present in all economic sectors and therefore relevant for all types of innovation, defining eco-innovation as:

“Eco-innovation is any innovation that reduces the use of natural resources and decreases the release of harmful substances across the whole life-cycle”.

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Eco-Innovation Observatory

Country Profile 2014: Italy

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A note to Readers

Any views or opinions expressed in this report are solely those of the authors and do not necessarily reflect the position of the European Union. A number of companies are presented as illustrative examples of eco-innovation in this report. The EIO does not endorse these companies and is not an exhaustive source of information on innovation at the company level.

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Summary

Italy is a high income country and the fourth largest economy in Europe. Its GDP per capita ranks at a level of 'up to 10%' above the EU-28 average. The relative importance of activities in terms of their contribution to Italy's gross value added is composed of agriculture (2.0%), industry (18.4%), manufacturing (15.6%), construction (5.9%) and services (73.6%). Nevertheless, the highly industrialised and prosperous North contrasts with agricultural and less prosperous South. Moreover, Italy ranks second in terms of debt to GDP ratio (ca.133%) remaining thus vulnerable to risks.

In terms of expenditures on the protection of the environment (measured in absolute values of GBAORD¹), Italy is among the three countries in the EU with major expenditures, namely as a result environmental legislation and related opportunities for implementing environmental management systems and processes. Innovation in general and eco-innovation processes in particular has shown a significant growth trend over the last decade, stimulated by public finance and by EU funding and EU R&D projects (Determann, 2011). This has been reflected in the GBAORD figures for Energy, Environment and Industrial Products, and Technology – showing a sharp increase in 2007-2008. In recent years however the trend has been interrupted as shown in the 2012 GBAORD figures.

Environmental challenges as identified in earlier EIO reports have been addressed and notable progress has been made in improving energy efficiency, renewable energies (solar, hydro, geothermal), material recycling, as well as in greening transport and eco-innovations in industrial biotechnology. In fact, according to Eurostat, in the areas of R&D, GHG emissions and renewable energies Italy has been closer to its national targets than the EU average (2013).

The relative positioning of Italy based on the analysis of the 2013 Eco-Innovation Scoreboard has improved, from an overall score of 91 to an overall score of 95. It has in fact moved up in the EU-28 ranking from 15th to 12th.

Good opportunities identified include advanced biofuels production, organic agriculture, smart cities networks, industrial symbiosis and sustainable construction. A number of national measures targeting eco-innovation have gained momentum such as green public procurement, Guarantee Funds and other incentive policies.

¹ Government Budget Appropriations

1 | Introduction

Limited national resources combined with growing costs and shortage of raw materials and energy (e.g., lanthanides, crude oil/natural gas) are among the notable environmental tendencies observed in recent years as identified by Determann (2011). In recent times however inefficiencies in terms of water consumption, energy transportation of goods, energy buildings stock, have been addressed and actions towards concrete solutions have been undertaken. Finally, significant land consumption still occurs often in highly sensitive areas.

In fact, the environmental challenges identified as most prominent according to the OECD (2013) summarize the aforementioned tendencies under the following three headings: managing the natural asset base; transition to a low-carbon, energy and resource-efficient economy; and improving the environmental quality of life.²

The need to tackle existing problems - environmental, socio-economic and systemic, linked to current tendencies and resulting challenges – have been reflected in the recent work of ISPRA revealing the progress recorded thus far:

- Water and marine environment: this report goes beyond mapping the problem and policies in place introducing solutions and innovative projects for sustainable water management. It also introduces the systemic dimension of water in urban areas.³
- Production, separate collection, management of municipal waste and management of system of packaging waste: this report analyses the data collected in the period 2011-2012, financial planning of municipalities and evaluation of the costs.⁴
- Quality of the urban environment: this report assesses the state of the urban environment, the dynamics of pollution and the effectiveness of policies based on data from the system of environmental agencies and other national databases. The data analysis is coupled with strategies of remediation of problems and is harmonised to allow for comparisons across urban areas.⁵

Other challenges related to governance as described by Determann (2011) and reiterated in the OECD report (2013) include the limited coherence among European, national and regional policies (e.g., interpretation of secondary raw materials at European and national level, efficiency of financing schemes, energy efficiency measures at local level), administrative hurdles and inefficiencies (e.g. effective financial distribution of available national and European funds) and complex bureaucracy (from national to regional and local scale).

Data collection, harmonisation and integration from multiple sources for analysis and policy making also represents a challenge. Its importance is reflected in the work of ISPRA on the aforementioned report on quality of the urban environment and two other reports on the national emission inventory outlining roles and responsibilities.⁶ There is another technical report on the use of environmental core indicators adopted by Italian EMAS-registered organisations that generate electricity by using renewable energy sources.⁷

² <http://www.oecd.org/env/country-reviews/italy2013.htm>

³ <http://www.isprambiente.gov.it/en/publications/publications-of-the-agency-sistem/focus-on-water-and-marine-environment>

⁴ <http://www.isprambiente.gov.it/en/publications/reports/urban-waste-report-edition-2013>

⁵ <http://www.isprambiente.gov.it/en/publications/publications-of-the-agency-sistem/ix-report-quality-of-the-urban-environment>

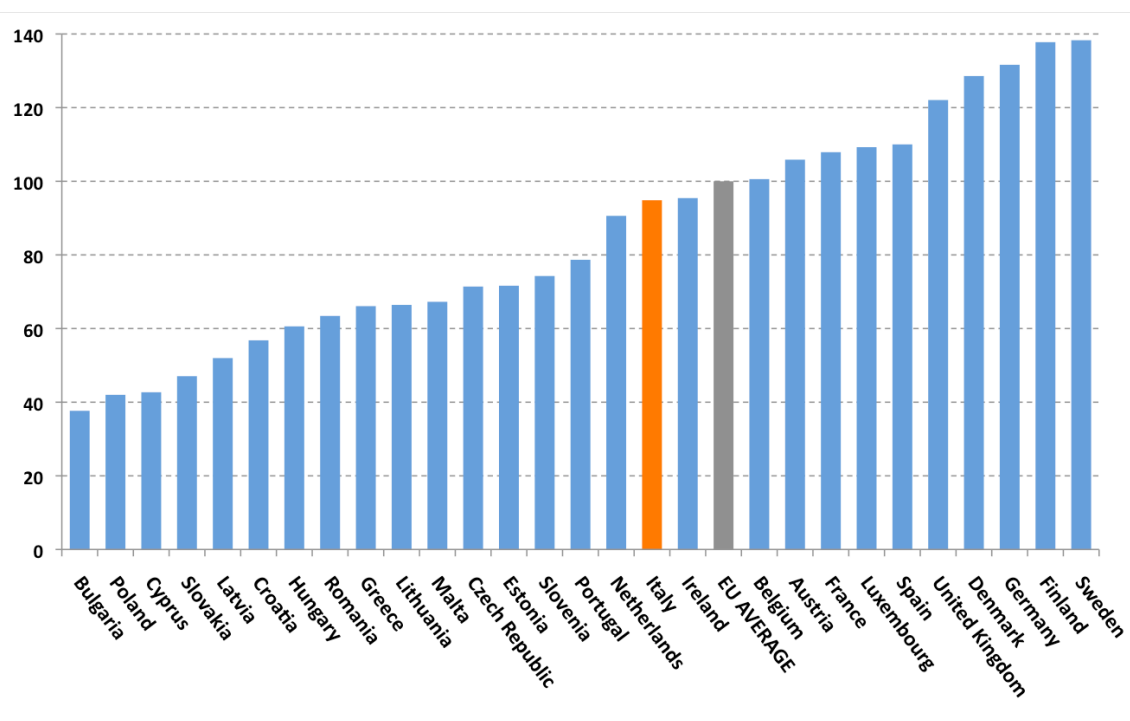
⁶ <http://www.isprambiente.gov.it>

⁷ <http://www.isprambiente.gov.it>

2 | Eco-innovation performance

The analysis in this section is based on the EU-28 Eco-innovation scoreboard (Eco-IS) for the year 2013 (see Figure 2.1). The Eco-IS via its composite Eco-innovation index demonstrates the eco-innovation performance of a country compared with the EU average and with the EU top performers. What we observe in the case of Italy is that in comparison with the 2012 Eco-IS, the updated index for 2013 shows that Italy has improved its position from an overall score of 91 to an overall score of 95. It has in fact moved up in the EU28 ranking from 15th to 12th.

Figure 2.1 EU28 Eco-innovation Scoreboard 2014, composite index



Source: EIO, 2014

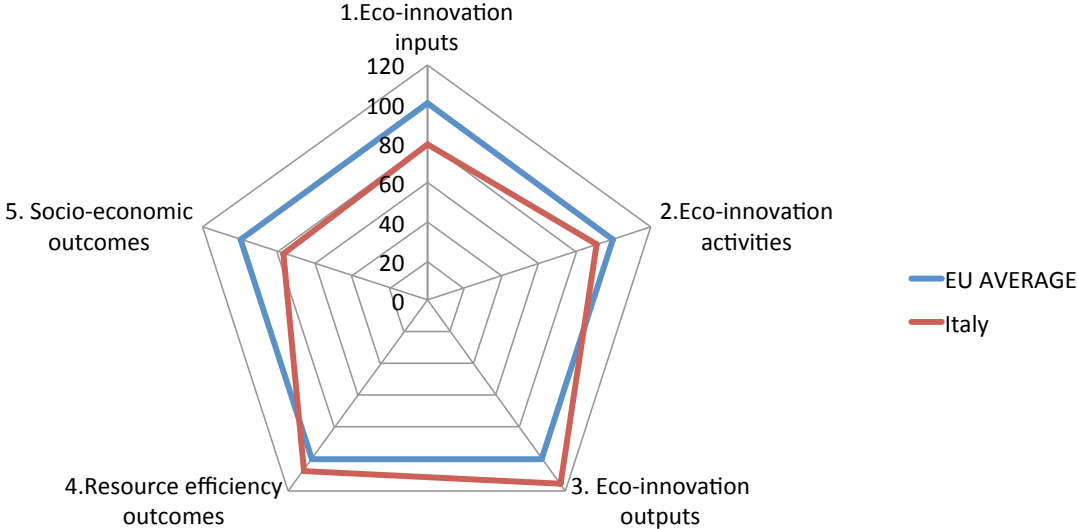
To understand the reasons behind Italy's performance level we look into the five aggregate components of Eco-IS, including a total of 16 indicators: eco-innovation inputs, eco-innovation activities and eco-innovation outputs as well as environmental outcomes and socio-economic outcomes.

What we observe is that major contributor to this growth is the Eco-innovation output index and particularly the Eco-innovation related media coverage. The latter of which improved the relative position of Italy from 13th in the 2012 Eco-IS to 6th in the 2013 Eco-IS. In Eco-innovation related patents there was an improvement of the relative positioning of the country from 13th in the 2012 Eco-IS to 9th in 2013.

Nevertheless according to the composite index calculations, Italy remains below the EU28 average (EU28 average=100). Its relative positioning in terms of the five different Eco-IS components is as follows: it is below the EU28 average for Eco-innovation inputs ranked 13th, for Eco-innovation

activities ranked 14th and finally for Socio-economic outcomes ranked 11th. It is above the EU28 average for Eco-innovation outputs ranked 9th and for Resource efficiency outcomes ranked 8th.

Figure 2.2 EU27 Eco-innovation Scoreboard 2013, components



Source: EIO, 2014

3 | Selected eco-innovation areas and new trends

Leading and upcoming eco-innovation areas either due to the emergence of new areas or notable changes that have occurred compared to previous years can be summarised by area as follows:

Smart Cities: Under the auspices of the Joint Programme Smart City, a research network consisting of 12 research institutes (including ENEA, CNR and the leading Italian universities) and four companies (ENEL, Telecom, Ericsson, Luccioni) was created. This network is coordinated by ENEA. These research institutions are integrated as a thematic working group on Smart Cities in the context of a wider network of Italian research (AIREN) connected to the European network EERA.

Next to the Joint Programme Smart Cities and under the umbrella SET-Plan a European industrial network is developing. The Smart Cities Stakeholder Platform, which launched in 2012, brings together key industry players in order to aggregate requests for funding to the European community around shared themes. In Italy this initiative is forming an industrial network organised by 'Confindustria' which built together with ENEA and RSE a Task Force on the Smart Cities Initiative.

Moreover, the Covenant of Mayors⁸ initiative in Italy has been considered a success story (2,038 participating municipalities out of a total of 4,043 in Europe) showing the sensitivity of local governments to the issues of energy efficiency and renewable energy sources. This organisation, supported in Italy by many associations of municipalities and provinces (including ANCI and UPI) is inching closer to the issues of smart city. In fact, a large number of cities are frontrunners, notably Genoa (which has won several European projects on smart cities), Turin, Bari, Florence and L'Aquila. Each has already embarked on the development of smart cities while many others will initiate significant projects in the coming months.

Finally, mention should be made of the government's actions in recent months focusing on the topic of 'smart city' with an investment in a research program of around EUR 1 billion (provided by MIUR; national operative programme PON Calls REC Industrial Cluster). The call PON REC, which just closed, generated more than 100 design ideas. It is a portfolio of ideas that cannot be fully funded, nor manifest high quality in all projects, but as a whole represents a boost to the project preparation of proposals for the foreseen Horizon 2020 calls on smart cities.⁹

Environmental Equipped Productive Areas (EEPAS): The Environmental Equipped Productive Areas have been established by a national legislative decree (art. 26 n.112 1998) but only recently their implementation has been sped up at regional level. The EEPAs are centrally managed industrial areas with high quality environmental standards and innovative services and infrastructures for enterprises.

⁸ See: http://www.covenantofmayors.eu/index_en.html

⁹ See: <http://www.enea.it/it/produzione-scientifica>

The Life+ ETA BETA in particular started in September 2010 and concluded in April 2013, and has promoted the further development of EEPAs in Eco-industrial Parks (project called Eco-managed Industrial and Business Estates, EIBEs) with local governance and policy tools for implementing the European Union's Eco-innovation Action Plan (EcoAP). Eight Italian Regions have been clearly established so far: Piemonte, Liguria, Emilia Romagna, Toscana, Marche, Abruzzo, Puglia and Calabria. The Ministry for Environment is currently facilitating their replication in other southern Italian regions.

Industrial symbiosis Network: Industrial symbiosis has recently been recognised as part of the European strategy for the efficient use of resources. The term industrial symbiosis is the exchange of resources between two or more different industries, intending "resources" as not only those of a natural material (by-products or waste), but also waste energy, services and expertise. It is a strategy for closing resource cycles and optimising their use in the context of adequate territorial economic revenue. There are many implications resulting from the effective realisation of industrial symbiosis programmes that can affect the possible productive uses of waste and by-products, processes of exploitation and transformation of by-products and waste with a view to re-using them, instruments and data banks, technical-administrative procedure and regulations. In Italy there are examples of industrial symbiosis, including an ENEA initiative for the creation of the first regional platform of industrial symbiosis in Sicily. It is a three-year project as part of the support for the productive development in the regions of southern Italy.¹⁰

Organic Agriculture: Italy, with more than 1 million hectares cultivated with organic methods and almost 50,000 certified operators, ranks among the leading countries in the field of organic agriculture on a global scale. The characteristics of Italy outline the most appropriate framework for a sustainable rural development based on the model of biological districts, in other words production areas where the protection and promotion of organic farming - which is its main feature - are combined with the recovery of traditions, local specialties and values of environmental sustainability. The biological district is a positive example for the integrated management of territory, where the relationship between agricultural production (in this case biological ones) of a specific area and the main factors affecting the environment (i.e. production of energy and water) is transformed with an eco-innovative process.¹¹ Since the last publication in 2010, according to statistical data of the National Information System on organic agriculture (SINAB), the number of organic farmers has increased by ca. 4% with an increase of 4.6% of cultivated surface. (SINAB - Bio in cifre 2012).^{12,13}

Recycling: Italy ranks first in Europe in regenerated oil. In fact, about 90% of the mineral oil used is collected and regenerated, a process that allows to transform a hazardous waste - used oil - in raw materials for the production of new lubricant bases. The remaining 10% of the used oil is collected for combustion and, in the case of highly polluted oil, eliminated through incineration. Regeneration, privileged form in the hierarchy of waste management, not only eliminates a hazardous waste but also allows mineral bases to be used to produce quality lubricants. In Italy, 89,4% of used oil collected is regenerated and the Italian market of base oils is supplied for 25-30% of oil used by industry.¹⁴

¹⁰ See: <http://www.enea.it/it/produzione-scientifica/EAI/anno-2013>

¹¹ See: <http://www.enea.it/it/produzione-scientifica/EAI/anno-2013>

¹² See: <http://www.sinab.it>

¹³ For further information on agriculture activities please consult the following sources: Information on Agriculture and Innovation (focused on production process during 2014-2020) can be found in: <http://www.reterurale.it>; Information on a specific network for youth and young farmers has been created by the National Rural Network can be found here: <http://46.137.91.159/yourruralnet>; information on a national report on Social Cooperation in Agriculture (INEA, 2012) can be found here: <http://www.reterurale.it/flex> and here: <http://dspace.enea.it/handle/inea>. The Agricultural Research Council (CRA) gathers the experience of 28 Agricultural Research Institutes and their relative 54 peripheral operational units for a total of 82 offices throughout the nation. The research results and innovative concepts can be viewed at the "Agritrasfer" information system (<http://sito.entecra.it/portale>); The short production chain (km 0) is increasing all over the national territory thanks to the G.A.S (solidarity purchasing groups) Network with more than 900 registered groups (800 during last EIO report) (www.retegas.org). Within the network, there is the energy efficiency group 'GAS Energia' (<http://www.retegas.org>).

¹⁴ See: <http://www.enea.it/it/produzione-scientifica/EAI/anno-2013>

Waste Electrical and Electronic Equipment (WEEE): A valuable contribution towards improving services for the collection of Waste Electrical and Electronic Equipment (WEEE) while reducing the cost is the project of the Municipality of Genoa (LIFE 12 ENV IT 001058 www.weeenmodels.eu) titled "Waste Electric and Electronic Equipment - New Model for Logistic Solutions". In fact, through the application of an innovative logistic model and the central coordination of services for the collection of WEEE, it is envisaged that the targets set by the WEEE Directive (2012/19/UE) will be reached and even overcome.

Considering that the WEEE sector is evolving into the manufacturing of the new generation, particular focus should be given not only to the mechanical separation of materials recovered, but also on refining and recovering valuable substances such as rare earths and precious metals, with a view to continuously improving the environmental sustainability in the treatment of this particular type of waste. In Italy, the trial of this "second phase" of treatment began due to several specific projects that study the best approaches to the enhancement of substances in WEEE.¹⁵

National Programme on Environmental and Carbon Footprint: Companies' voluntary commitment for the evaluation of their environmental footprint and for the reduction of the GHG emissions are increasingly becoming an important tool to enhance the measures foreseen in the legislation and governmental policies of the Kyoto Protocol and of the "Climate and Energy package" adopted by the Council of the European Union in 2008.

In this context the Ministry for the Environment, Land and Sea, already involved in support of the voluntary initiatives of the Italian private sector, spearheads a programme on the environmental footprint of goods/services (carbon footprint and water footprint) to test on a large scale and optimise different evaluation systems of environmental performance, taking into account the differences of each economic sector, in order to harmonise and make them repeatable. Moreover, the initiative aims at identifying the companies' procedures of carbon management and at supporting the use of low-carbon content technologies and good practices in the manufacturing processes. The Ministry collaborates with the Italian enterprises to jointly test their environmental impact and to identify measures for reduction (public/private partnership, bottom up approach) through voluntary agreements. The Ministry has co-financed so far almost 200 companies with EUR 5.6m to increase the investments for sustainability also in SMEs. The projects involve Italian companies that work also in partnership with developing countries and thus promote international cooperation and sustainable initiatives with foreign enterprises.

Sustainable Constructions: Urban planning and housing are regional competences in Italy with considerable differences among the different regions. However, it must be noted that national organisations are working to spread and harmonise good practices both in the housing and the planning sector. One example is the Italian Chapter of the Green Building Council, whose work was recently focussed on the release of a standard for sustainable retrofit and renovation of historic buildings. This protocol, called the LEED-Historic Building (HB), is pivotal in Europe and will be diffused all over the world through the GBC international network.¹⁶

Sustainable Urban Planning: According to the Italian constitution, urban planning is devoted to regional competences. However, every region has to foresee the integration of environmental considerations into its planning procedure, according to the Italian Environmental Code, through the application of the Strategic Environmental Assessment SEA (2001/42/EC Directive). In parallel the Italian Institute of Urban Planning (<http://www.inu.it/>) carries out specific initiatives to raise awareness on sustainability in planning and the built environment, especially on SEA. Moreover the aforementioned Italian Chapter of the Green Building Council has released a LEED protocol of Eco-quarters, which is a regionalisation of the International LEED-Neighbourhood Development protocol.¹⁷

¹⁵ See: <http://www.enea.it/it/produzione-scientifica/EAI/anno-2013>

¹⁶ See: <http://www.gbccitalia.org/risorse/169>; Many cases of successful application of the LEED protocol in Italy can be found on the GBC website: <http://www.gbccitalia.org/risorse/170>

¹⁷ See: <http://www.gbccitalia.org/risorse/161>

4 | Eco-innovation barriers and drivers in Italy

Eco-innovation barriers may result from the efforts to reduce public debt, which in turn impact public but also private demand. A persistent low demand for eco-innovation resulting from an unbalanced policy mix that points towards supply side compared to demand side measures, may ultimately hinder eco-innovative activities in both the short and longer term. Notwithstanding the efforts that have been made with, for example, the introduction of environmental criteria for public procurement (Green Public Procurement) and incentives to consumers, businesses and local authorities, a proper assessment of the implementation of those policies would shed more light to the need for further intensification or adjustment of these initiatives.

In terms of access to finance, the availability of risk capital for eco-innovative projects / start-ups remains scarce. Combined with the economic crisis and uncertainty about future financing possibilities, barriers arise to both the continuation and start-up of eco-innovative activities. The latter may particularly be the case of young citizens with limited access to the job market and to financing for innovative projects (Ministry for Occupation and Social Policy, 2011).

Organisational aspects and limited efficiency gains due to complex bureaucracy and fragmentation of the eco-innovation governance within the public administration system have been highlighted by Determann (2011) and more recently in an OECD report (2013). Initiatives in the last two years toward increasing organisational efficiency have been undertaken addressing inefficiencies like the unification of the three Commissions EIA, SEA and IPPC (see | Eco-innovation policy landscape). Barriers to eco-innovation potential may however still arise from uncoordinated initiatives to address the multi-level governance complexities.

Eco-innovation drivers in Italy from a regulatory standpoint include the strong legal framework concerning environmental protection. Significant policy initiatives have also been undertaken stimulating innovative solutions and facilitating their practical implementation.

Social awareness with regard to needs and opportunities in the context of sustainability and eco-innovation has also strongly grown over the recent years. The widespread radio and media coverage of environmental topics may explain the strong positive trend.

Moreover the availability of examples of excellence across different areas show the potential of Italy for example the trading of environmental goods and services, green technologies etc. The examples of excellences across regions could also drive further diffusion of good practices to other regions (Determann, 2011).

5 | Eco-innovation policy landscape

The latest developments related to eco-innovation policy measures, funding schemes and policy targets in Italy can be summarised as follows¹⁸:

Energy Efficiency & Renewables: The new National Energy Strategy (SEN) that allows a gradual but significant evolution of the system and overcomes Europe's '20-20-20' targets was approved in March 2013. The implementation of this strategy is expected to facilitate the achievement by 2020 of 19-20% of the impact on gross final consumption of renewable energy. In particular, it is expected for renewables to become the first source in the electricity sector along with gas with an incidence of 35-38%.

The Ministry for the Environment, Land and Sea – and specifically the Department for Sustainable Development, Climate Change and Energy – has been particularly active in supporting policies to encourage renewable energy.¹⁹ The Ministerial Decree issued on 9 October 2013, n.139 foresees simplified authorisation procedures for innovative bio-energy plants, as those producing bio-ethanol from lignocelluloses material. Such decree is a national initiative (beyond the current European legislation), which aims to promote innovative plants from renewable energies.

National Revolving Fund for Green Jobs: The National Revolving Fund For Green Jobs was established by the national 'Growth Decree' D.L. 83/2012 (Art. 57) in order to facilitate private and public investments in the green economy (innovative renewables, energy efficiency, eco-innovative processes, services and products etc.) but also in sectors related to the safety of the territory from hydro-geological and seismic risks. The first call closed in May 2013 and 70 projects will be 'co-financed' through loans with a subsidised interest rate of 0.5% for 6 years, mobilizing EUR 150M (public) plus EUR 100M (private) and 200 long-term jobs plus 900 temporary jobs or jobs created from spin-offs (youth employment is a boundary requirement to receive the loans). SMEs represent 75% of the beneficiaries.

Green Agenda and incentives for Green Economy: Provisions on environmental measures to promote the 'green economy' and for the containment of 'excessive use of natural resources' have been approved within the national law of Stability in November 2013 by the Council of Ministers. The text is seen as a major step forward in the definition of national environmental policies with a logic that links them to innovative industrial - economic policy choices. This is the reason why this bill has been called a real green agenda that the government promotes. The measure deals with nature protection, environmental impact assessment, procurement and green procurement, waste management, soil protection, water service and public water. It contains a package of rules capable of activating environmental policies, simplifying the regulatory framework and making it more modern and efficient while creating the conditions for investment and economic growth in the field of green economy. All rules are characterised by a strict focus on cost reduction, simplification and administrative transparency.

Another measure, 'Tools at no cost, calls for a more efficient environmental policy in all areas and combines environmental and industrial policies. It is the result of a continuous dialogue between ministries - Environment, Economy and Production Activities – following the logic of institutional collaboration aimed at achieving a common goal of sustainable development and civic progress.

Arrangements to facilitate 'green procurement' in Public Administration (Green Public Procurement): The purpose is to introduce an incentive for economic operators participating in public contracts that are equipped with EMAS registration (which certifies the environmental quality of the organisation) or Eco-label (which certifies the ecological quality of 'products', including e-

¹⁸ The main source for chapter five is: <http://www.governo.it>

¹⁹ See: <http://www.isprambiente.gov.it/en/publications>

service of goods). The benefit is a reduction of 20% of the security to support the tender under the procurement code. The arrangement also introduces environmental criteria in assessing the economically most advantageous tender. These measures are cost-free to ensure less impact on the environment and a consequent reduction in spending in the short to medium term.

Application of minimum environmental criteria in public procurement for supplies and services, including food: Among the most important environmental issues that Italy has to deal with are related to the consumption of energy from non-renewable sources and those related to the production of waste. For both issues, mandatory reference to the environmental criteria for public procurement (Green Public Procurement) is expected to significantly contribute, with positive effects also in economic terms. In addition to the instrument of voluntary agreements with major players in the distribution sector (especially supermarkets) – there are mandatory instruments that reward those operators who, in the management of the catering or the supply of foodstuffs, act in a virtuous manner.

Incentives for Green Economy: A set of principles and incentives to consumers are legally provided to businesses and local authorities to support the purchase of products made with raw materials derived from post-consumer waste collection in order to promote the recovery, recycling and reuse in addition to the energy recovery, for which there are already many forms of incentives (green and white certificates, eco-bonus for renovations). One of the advantages of such incentive policies is not only to prevent the waste of materials, but also to reduce the consumption of raw materials with the immediate consequence of a rational use of scarce material resources, less energy use, and the progressive reduction of greenhouse gas emissions.

Measure to increase the collection and recycling: This measure is necessary to adapt the legislative data to real data and to avoid that municipalities incur the penalties related to failure to achieve these objectives in the current terms of the law. This change is necessary in the light of recent data on the collection from which it is clear that the objectives of the legislation have not been brought to the same level throughout the country. Currently the national average percentage of separate collection amounted to the value of 39.9% (preliminary data source Ispra: Ed Urban Waste Report 2013). This provision provides an incentive for municipalities that achieve their objectives since they will be rewarded by paying only 20% of the regional tax for landfill waste. For municipalities that do not reach the objectives additional measures have been established in the tribute. All revenues, and additional interest, go into a fund for regions used to encourage the recycling market and then the green economy.

Guarantee Fund for the national water service: a Guarantee Fund was established in 2014 aimed at: 1) enhancing water infrastructure throughout the country in order to raise the necessary investment programmes for the maintenance and development of water infrastructure, 2) ensure adequate protection of water resources and the environment according to the European requirements, and 3) limit tax burden. Priority objectives of the Fund are: launching the policy of infrastructure development in the sector; complete drainage systems and water purification; avoid EU sanctions for breach against Italy; reduce the financial burden; start the implementation of infrastructure adopted for the implementation of the principles of the strategy Blue Print. The Guarantee Fund is fed by a specific tariff component of integrated water services which should be properly defined.

6 | Good practice examples

Italian Environmental Footprint Program

The Ministry for the Environment, Land and Sea, which is already involved in support of the voluntary initiatives of the Italian private sector, has started an intensive programme on the environmental footprint of goods/services (carbon footprint and water footprint) to experiment on a large scale and optimise different evaluation systems of environmental performance, taking into account the differences of each economic sector, in order to harmonize and make them repeatable.

The initiative aims at identifying the companies' procedures of carbon management and at supporting the use of low-carbon content technologies and good practices in the manufacturing processes.

Economic Performance

The programme is a competitive tool for the whole system of Italian companies, which nowadays takes into account the importance of the "eco-friendly" requisites of products on the market. It is perceived as an important mean in favour of economic development toward a more and more sustainable economy.

Environmental impact

The programme serves as an environmental driver.

Social performance

The programme is at the same time viewed as an opportunity to raise awareness for users, and encourage increasingly responsible choices and good practices.

Further Information

Source: <http://www.minambiente.it>

Eco -innovation Sicily

The project 'Eco -innovation Sicily' started as an initiative of the Italian government aiming at facilitating the



promotion of coordinated projects in the field of environmental protection and the development and promotion of innovative methodologies and technologies, in order to enable the industrial development of Southern Italy. The project focuses on some significant sectors of the Sicilian region: 1) the recycling industry, and in particular the field of electronic equipment and plastics, with a pilot project for energy and recovery of valuable raw materials from waste from electrical and electronic equipment (WEEE) and those from plastics, which is also the first application of the principles of the methods and tools of 'industrial symbiosis' in Italy, and 2) sustainable tourism with a pilot project in the Egadi islands, with particular reference to the island of Favignana, developed in a 'Smart Island' perspective.

Economic performance

The project promotes the eco-sustainability of some significant sectors of the region of Sicily, encouraging environmentally friendly business strategies that foster their competitiveness through the implementation of a series of research, development, promotion and through technological tools and methodologies. The project also raises awareness of particularly SMEs, about the need to interact with each other and create a system of available knowledge and skills.

Further Information on: <http://www.uttamb.enea.it/progetti/ecoinnovazione Sicilia>

Emission-free Groundwater and Soil Remediation (SMARTSTRIPPING)

The project proposes a new approach for soil and groundwater in situ remediation by a new process that reduces concentrations of Volatile Organic Compounds (VOC) and semi-VOC which are produced by chlorinated compounds²⁰ and petroleum fractions²¹, which are adsorbed into saturated zone and dissolved in groundwater at industrial and civil sites and especially at sites with Underground Storage Tanks. The process differs from other technologies because it operates without any releases to the atmosphere, to surface water or to sewer networks and because remediation results are achieved quickly. The on-going project examines the benefits and the limits of VOC removals by stripping and will bridge the gap between technological demonstration and prototyping on one hand and market replication in the other.

Environmental Impact

Extraction of contaminant from groundwater with no release to the environment.

Economic performance

Market uptake opportunity.

Further Information

Source: <http://eaci-projects.eu>

Insulating high strength-controlled porosity geopolymer floor tiles for the mitigation of global warming (ENERGEO)

EnerGeo is a project that aims to demonstrate the feasibility of the application of geopolymers to the production of flooring tiles. It will be done through a production cycle that will allow for a reduction of energy consumption and greenhouse gas emissions by over 80% compared to the traditional production of standard tiles where firing is done in gas furnaces. In addition, the new process is expected to reduce the global energy consumption by about 60%.

The new "Geopolfloor" products mainly consist of aluminosilicate powders, to which an alkaline silicate solution will be added to completely eliminate the use of concrete. Furthermore, the new Geopolfloor materials will be lighter, more resistant, acoustically and thermally isolating compared to traditional tiles.

Environmental Impact

- 80% reduction of CO2 emissions;
- 60% reduction of energy consumption;
- At least 40% recycling of the weight of the waste;
- No VOC (volatile organic compounds) emission.

Economic performance

Market uptake opportunity.

Further Information

Source: <http://ec.europa.eu/environment/life/project>; <http://www.gardenia.it/eco>

²⁰ Tetrachloroetilene, trichloroetilene, dicloroetilene, cloruro di vinile

²¹ Benzene, Etilbenzene, Stirene, Toluene and Xilene: BESTX, and Methyl tert-butyl ether: MTBE

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ANNEX 1. Policy measures addressing eco-innovations in Italy

	GROUP OF POLICY MEASURES	TYPE OF POLICY MEASURE	SPECIFIC MEASURE (national, regional) Please provide reference to or brief summary of specific measures add cells if necessary	FOCUS OF POLICY MEASURE					
				Generic focus on eco-innovation	Resource efficiency improvement	Energy efficiency improvement	Reduction of emissions incl. CO2	Other relevant areas (e.g. renewable energy, etc)	
SUPPLY SIDE FOCUS	Equity/business support	Venture capital funds	<ul style="list-style-type: none"> - Regional Funds exist that invest in eco-innovation or related projects/companies (e.g. Toscana Innovazione) - The China Development Bank Securities has chosen Italian research facility Nomisma to consult on investments in Europe. Among other investments, the "Made in Italy" sectors with brands, process innovation and technology are supposed to be the primary targets in Italy. Eco-innovation is not an explicit target, but might benefit from similar financing. 						
		Public guarantee funds	<ul style="list-style-type: none"> - http://www.insme.org/it/12019associazione-insme#implique (finanziato da MiniSvEconomico) - http://www.fondidigaranzia.it/ MiniSvEconomico - Guarantee funds provided through the Ministry for Economic Development are managed through Mediocredito Centrale (http://www.mcc.it/) - The Ministry for economic development has granted new funds to a public guarantee fund with focus on innovation and renewable energy in SMEs, especially in southern Italy. - Also, regional agencies manage regional guarantee funds, e.g. Agency "Veneto Sviluppo" has made available funds granted by the Veneto region for a guarantee fund available to industry. This fund is generic and has no explicit focus on eco innovation. 					X	
	Support for R&D in public sector and industry	R&D funding	<ul style="list-style-type: none"> - POR FESR: such funds support industrial research and experimental development of SMEs - http://denaro.it/blog/2011/04/30/innovazione-nasce-agenzia-regionale-unica/ (Campania Innovazione Spa) - http://www.fondieuropei2007-2013.it/sezioni/scheda.asp?id=17 (FESR) - http://www.regione.piemonte.it/agri/ita/link/servizi_enti.htm (Assessorati regionali agricoltura ed enti regionali di sviluppo agricolo) - http://www.unimi.it/ricerca/finanziamenti_nazionali/49872.htm 	X					X
		Collaborative grants	<ul style="list-style-type: none"> - http://www.uniud.it/ricerca/finanziamenti/comunitari/programmi-di-cooperazione-internazionale 						No information available on relevance to eco-innovation
		R&D infrastructure	<ul style="list-style-type: none"> - No information obtained 						No information available on relevance to eco-innovation
		Fiscal measures	Tax incentives for R&D and start-ups	<ul style="list-style-type: none"> - http://www.istruzione.it/web/ricerca/agevolazioni-fiscali-per-finanziamenti-alla-ricerca-scientifica - http://www.fasi.biz/it/news/ultime-notizie/4150-di-98-2011-nuovo-regime-fiscale-agevolato-per-le-start-up-di-giovani-imprenditori.html 	X *)				

		(generic for all business purposes)						
	Tax incentives for R&D personnel	- http://www.risorsedisumane.com/592/bonus-ricerca-al-via/ This measure is generic and has no explicit focus on eco innovation. - http://www.professionisti24.ilsole24ore.com/art/Professionisti24/Lavoro/Dossier-Lavoro/2010/manovra_correttiva/GL_24_2010_Annicchiario_Costa.pdf - http://denaro.it/blog/2011/11/03/atenei-incentivi-ai-ricercatori-18-mln-per-premiare-il-merito/ (generic for all business purposes)	X *)					
Education, training and mobility	Tailored training courses for companies, entrepreneurs	- Chamber of commerce (e.g., Roma - http://www.careernews.it/21948-formazione-per-nuovi-imprenditori/) - CmCom MI FORMAPER - Camera di Commercio di Milano - Via Santa Marta 18, Milano - Erasmus - http://blog.giovanisi.it/2011/07/27/fly-off-feel-your-own-business-15-borse-di-studio-per-nuovi-imprenditori/ - CATANZARO - http://www.fasi.biz/it - http://minambiente.it/home_it - http://www.riditt.it/ (No measures with explicit focus on eco-innovation were identified, however they reasonably apply also to eco-innovation)	X *)					
	Advise/consulting for start ups, companies, entrepreneurs	- support start ups Lombardia, InnovHub Milano (Chamber of Commerce Milano),	No information available on relevance to eco-innovation					
	Placement schemes for students	- Spinoff Politecnico, fondo Mecenati No measures with explicit focus on eco-innovation were identified, however they reasonably apply also to eco-innovation	X*)					
	Support for R&D workers recruitments	- Incentives for R&D workers to return to Italy http://www.sr.camcom.it/files/promozione/INCENTIVI_AUTOMATICI_PER_ASSUNZIONE_RICERCATORI.pdf	No information available on relevance to eco-innovation					
Networks and partnerships	Competence centres, clusters, science-technology parks	Brescia - http://www.kilometrorosso.com Turin - Environment Park		X	X			X
	Technology platforms and innovation networks	- Technology parks (Trieste Area Science Park, ...) http://www.kilometrorosso.com/index.php?option=com_content&view=article&id=220&Itemid=182&lang=it - http://www.venetoinnovazione.it/ The regional agency for applied research, innovation and tech transfer (no explicit focus on eco-innovation) - http://www.regione.piemonte.it/pianocompetitivita/misure.htm - APSTI – Associazione Parchi Scientifici e Tecnologici Italiani, the national network of scientific and technological parks (PSTs); the majority of PSTs are members of APSTI (31 associati); a number of PSTs have areas that are focused on eco-innovation	X					

		Foresight and common vision building	No information available	No information available on relevance to eco-innovation				
		Market intelligence and other forms of information sharing	- Banca Dati Ecosmes (ENEA) - http://www.riditt.it/temi/operatori/74	X	X	X		X
DEMAND SIDE FOCUS	Regulations and standards	Regulations, targets, cap & trade schemes	- Stringent national regulations with regard to environmental topics (air emission, waste water discharge, soil protection, hazardous substances, etc.) Environmental Action Strategy for Sustainable Development (EASSD-2002): EASSD's four broad priority themes: Climate Change and stratospheric ozone; Protection and sustainable valorisation of Nature and Biodiversity; Quality of the environment and quality of life in urban areas; Exploitation of resources and waste generation; Priorities addressed in this last section are the use of natural resources, production-consumption cycles, water resources and waste. - Common 20-20-20EU target: Italy has to reach a quota of renewable energy of 17% by 2020. - Italian National Energy Efficiency Action Plan (2007) - approximately 9.6% energy savings target by 2016	X	X	X	X	X
		Performance standards, labeling, certification	- 705 of Italian municipalities, i.e. almost 9% of the total number, have adopted criteria related to environmental sustainability in their town planning instruments, e.g. energy efficiency. - Incentives for environmental certification of SMEs (Decree SVS/03/2230), e.g. EMAS					
	Public procurement	"Green" public procurement of goods and services	- DM 12th October 2009 "minimum environmental criteria" for: paper, fertilizers - DM 22nd February 2011 "minimum environmental criteria" for: textile products, office furniture, public lighting systems, IT (computer, stampanti, apparecchi multifunzione, fotocopiatrici); per opportuna consultazione è disponibile la relazione di accompagnamento legislative decree n.24, 2011, implementing EU directive 2009/33/CE, introduces the requirement to verify energy efficiency, environmental impact, CO2 emissions, during the entire life cycle. - DM 25th July 2011 "minimum environmental criteria" for: Collective catering, food, external doors and windows http://www.dsa.minambiente.it/gpp/page.asp?id=78 ForumCompraVerde.it					
		R&D procurement	- ETAP (Environmental Technologies Action Plan) - CIP Eco-innovation In May 2010 the Ministry of Economic Development, together with IPI (Institute for Industrial Promotion), has recognised the opportunity to launch R&D procurement and anticipated pilot projects with focus on environment. Regional procurement for research and development projects	X				
		Pre-commercial procurement	- A framework is being prepared to launch tests for PCP.					
		Technology Transfer	Advisory support for technology adopters	- COTEC Foundation - RIDITT - Italian grid for dissemination of Innovation and Technology transfer among firms, promoted by the Ministry of Economic Development and managed through IPI (Institute for Industrial Promotion) (generic for all business purposes)	X *)			
		Financial or fiscal support for technology	- FESR - Projects Remake (region Lombardy) and Search and Develop IV, together with Innovhub, co-finance measures on energy efficiency and waste reduction	X	X	X		

		adopters (e.g. grants for purchasing new technology)						
Support of private demand	Tax incentives for consumers (e.g. for purchasing environmentally efficient products)	- 55% tax reduction, presently confirmed but with potential diminished percentages over the next years; private organisms (e.g., environmental association legambiente, GAS) are using group purchasing schemes to obtain better economic conditions; Fourth Italian feed-in tariff for PV is confirmed, though with decreased contribution over time, between 2011 and 2016; Green certificates; White certificates; between March and April 2011 national incentives for installation of GPL/methane-based motors in private vehicles (funds exhausted in April 2011)	X					
	Tax reductions for products and services (e.g. VAT reductions)	- Contribution for purchase of "greener" cars. - Property tax reduction for new cars with low emissions in a number of municipalities	X					
	Demand subsidies (e.g. eco-vouchers, consumer subsidies)	Vouchers for research and innovation and financial contributions for patenting						
	Awareness raising and information provision	- Forum Compra Verde (www.forumcompraverde.it), one of the main online actors with regard to GPP and also private public procurement. EcoSMEs is the main result of the eLCA project, a European project that has involved 45 experts from the United Kingdom, Germany, Italy, Spain and Greece who have combined their knowledge of IPP, Information&Communication Technologies, Management&Marketing and Training http://www.riditt.it/ - COTEC Foundation	X	X	X	X		

Source: *Determann*, 2011

About the Eco-Innovation Observatory (EIO)

The Eco-Innovation Observatory (EIO) is an initiative financed by the European Commission's Directorate-General for the Environment. Since 2009 the Observatory has been developing an integrated information hub on eco-innovation addressed to business, policy makers, innovation service providers and researchers. The EIO supports the implementation of the European Eco-Innovation Action Plan of the European Commission.

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