



SUSTAINABLE
DEVELOPMENT
FOUNDATION

Fondazione per lo Sviluppo Sostenibile

ECOMONDO



EXECUTIVE SUMMARY

REPORT ON THE STATE OF GREEN ECONOMY

Italy in Europe and worldwide

2016

INTRODUCTION

This second edition follows last year edition of the Report on the State of the Italian Green Economy, widening its boundaries with new analysis on the comparison of Italy, Europe and the International context.

The first part of the 2016 Report compares the Italian performance with major European countries and the Ue28 average on strategic themes of the Green Economy, pushing forward the study already conducted in the 2015 edition. This results in Italy being top ranking among the five major European economies.

In the second part, the survey conducted by Jeremy Tamanini from the "Dual Citizen" consultancy of Washington DC, on the international positioning of Italian green economy compared with 80 other countries around the world, takes into account two comparative scales: performance and perception. The outcome is the result of the elaboration of quantitative and qualitative parameters, and the answers given by a selected and qualified group of experts from various representative countries.

Finally, the third part deepens the international situation of green economy and its progress, considering international entities, large companies with an industrial relevance and the broad economic policy.

This Report, that has been set and coordinated by the Sustainable Development Foundation as structure of support of the National Council of the Green economy, introduces the work that will take place during the States General of the Green Economy 2016.

ITALY IN EUROPE AND WORLDWIDE

Presentation of **Edo Ronchi**

President of the Sustainable Development Foundation

1. The Italian green economy is one of the best in Europe

The 2016 report starts by a deep focus on **the situation of the Italian green economy compared to other major European countries (Germany, UK, France and Spain)** and to the EU average. This study is conducted through the use of 16 key indicators for 8 strategic themes: greenhouse gas emissions; energy efficiency; renewable energy sources; waste recycling and resource productivity; eco-innovation; organic farming and certification of food products quality; land use and European protected natural sites; greenhouse gas emissions in transport and road weight transport.

EMISSIONS OF GREENHOUSE GASES

Between 1990 and 2014 Italy has reduced its emissions of greenhouse gases of about 20%, reaching the 2020 target earlier than expected. In EU28 ranking Italy is slightly above the average decrease of 24%, while in the top 5 of the great European countries, Italy occupies the 3rd place following the United Kingdom (which has reduced emissions by 34%) and Germany (28%), and before France and Spain. **Italy's performance in reducing greenhouse gases was therefore generally positive until 2014. In 2015**, according to a first estimate of the Foundation for Sustainable Development, and then according to data subsequently published by Eurostat in the final balance, related to 2015 CO₂ emissions from energy source (about 80% of greenhouse gas emissions in Europe), Italy's position **has significantly worsened**: emissions increased of 3.5% compared with the average +0.7% of EU28. These results locate Italy among the worsts five major European countries (-2.9% UK, Germany 0%, +1.7% France and +2.3% Spain).

ENERGY EFFICIENCY,

As regards energy efficiency, measured in tonnes of oil equivalent (toe) per million Euros of GDP, **Italy has a good performance (data 2014)** and does better than the European average, occupying the 2nd place out of the 5 largest EU countries, immediately after the United Kingdom. On the other hand, by analyzing the trend over time from 2005 to 2014, it appears that the energy intensity of Italy's GDP has improved by 16%, less than the European average (18%), reaching no more than the 4th place of the ranking, closely tied with France but behind the United Kingdom (26%), Spain (20%) and Germany (19%).

RENEWABLES

As for the share of gross final consumption (GFC) with **renewable energy sources, in 2014 Italy** - according to Eurostat data - **reached 17.1% of share, a higher result than the European average** of 16%, which place Italy in 1st place among the five major European countries, followed by Spain (16.2%), France (14.3%), Germany (13.8%) and the UK (7%). Italy, however, must pay attention to this primacy between the major countries, since it is likely to be short-lived: in the last three years, from 2013 to 2015, Italy has in fact stopped the growth of new investments in renewable sources, growing on average of only 0,2% per annum. **As regards new investments in renewable energy source, in 2014 Italy has dropped to the 4th place**, right behind Germany, France and the UK, although it remained, as a percentage of GDP, inside the European average of 1%.

CIRCULAR ECONOMY

With 42% **of urban waste recycling** (as for 2014 data), Italy is just **one percentage point below the Ue28 average, and 3rd among the five major European countries**: far behind Germany (over

60%), just behind the United Kingdom, and before France and Spain. In 2012 in Italy were recycled about 99 million tons **of hazardous waste**, representing 76% of the produced waste. This resulted in **Italy being first compared to the five main European countries**, followed by Germany (69%), France (61%), Spain (52%) and the UK (49%), and 30 percentage points above the European average (46%).

Relating to 2015 Eurostat data **on resource productivity**, measured as domestic material consumption per unit of GDP (in euro of GDP per kilogram of material consumed), **Italy's ranking is appreciable**: with 3 euro of GDP per kg, Italy does better than the European average (2 €/kg) and is 2nd among the five major European countries, behind the United Kingdom (3.4), but ahead of France and Spain (2.8) and Germany (2.1).

As for **ecoinnovation** - according to the European Monitoring index that evaluates investments and researchers involved, companies that have implemented innovation, patents and publications, environmental benefits and socio-economic benefits in terms of jobs, exports and revenues (with data of 2015) - **Italy is above the European average, but only 3rd in the ranking of the top five largest countries**: same place as the United Kingdom and Spain, but behind Germany and France.

ECOINNOVATION

With 1.4 million hectares cultivated with biological criteria, representing 11.2% of the utilized agricultural area, **Italy is well above the European average, and 2nd in the European ranking**, after Spain (1.7 million hectares), but well ahead of France (1.1 million), Germany (1 million) and the UK (0.55 million). Furthermore, **Italy is 1st in Europe and well above the average in terms of food products certified for quality and traceability**, this sector involving almost a quarter of national agricultural production, ahead of France, Spain, Germany and the United Kingdom.

AGRICULTURE

As it regards the **consumption of soil, with a consumption of 7% Italy is in worse condition than the European average (4.3%), and 4th** among the five major European countries, behind Spain (3.5%), France (5.2%) and the UK (6%) and similarly to Germany (7.2%) (data 2015).

SOIL AND NATURAL CAPITAL

As for the extension of **terrestrial sites of Community Importance of Nature 2000 (SCI and (SPAs)**, **Italy protects around 57,000 Km², being the 3rd country** among the five major European countries, after Spain (about 137,000 km²) and France (about 70 thousand), but ahead of Germany (about 55,000) and the United Kingdom (about 21,000). Looking at the percentage of total land area, the Italian 18,97% is slightly above the EU average of 18,12%.

For the transport sector, Italy's 1.72 tons of **CO2 emissions per capita are lower than the European average (1.76)** and bring the country at 1st place among the great European countries, before Spain (1.77), the United Kingdom (1.78), Germany (1.91) and France (1.99), (data 2015).

TRANSPORTS

As for terrestrial freight traffic, in 2013 in Italy 85% of the tons/km went by road, doing worse than the European average of 73%, with 5.88 t/km transported by road for each ton transported on rail. Italy results to be the **3rd place** among the five major European countries, behind Germany (2.28 t/km) and France (4.86), but ahead of the United Kingdom (6.20) and Spain (13.60).

Considering the position of Italian green economy by the analysis of 16 key indicators applied to the 8 strategic sectors mentioned above, it emerges that Italy is in a better situation than the European average for 9 of these indicators, for 3 of them is within the EU average, while for 4 of them Italy's ranking is below the European average. For instance, **Italian green economy for these strategic themes has a good European positioning and mostly positive results.**

In any case, the very best result for Italian green economy is the sum of all placements using the above-mentioned 16 key indicators. The result ranks Italy among the top five European countries with the following achievements:

- Four 1st places: in the achieved share of renewables in energy final consumption, in the recycling of hazardous waste, in per capita CO₂ emissions in transport sector and food products with quality certifications
- Three 2nd places, also to be considered a good result: in energy efficiency per unit of GDP, in productivity of resources and in organic farming
- Five 3rd places, a middle ranking position: in the reduction of greenhouse gases from 1990, in the recycling of urban waste, in ecoinnovation, in the extension of protected natural sites, in the relationship between rail and road freight traffic by land
- Three 4th places, meaning that there is space for recovery and progress: in improving energy efficiency over the last 10 years, in the growth of renewables over the last three years and land use
- One 5th place in the growth of greenhouse gases in 2015, that raises concerns for the future and requires corrective measures in view of the major commitments envisaged by the implementation of the Paris Agreement

THE RANK IN EUROPE

Starting from these ranking positions it was then possible to draft a sectoral performance index which comes from the sum of the positions that each country achieved in the application of the 16 key indicators, and the subsequent normalization on a scale of 0 (worst possible performance and 16 fifth places) to 100 (best possible performance and 16 first places).

Italy reaches the score of 59/100, ahead of Germany with 53, the UK with 50, France and Spain with 48. Italy, in relation to 16 key indicators on the strategic themes of the green economy, shows the best overall performance among the top five European countries.

There is space for improvement in information and communication, and it is important not to ignore the difficulties and the delays occurred. However, this doesn't change the fact that **on average, relating to the strategic themes of the green economy, Italy has a leading position in Europe that makes it a competitor with the other major European countries, standing all on the same level.**

2. The Italian green economy and its inadequate perception in the world

The second part of the report analyzes the international position of the Italian green economy in a comparative assessment that considers 80 countries. The process of change towards green economy is, actually, a worldwide movement: it is important to be aware of this and analyze the developments occurred in order to guide national choices in the right direction. Furthermore, the international comparison of green economy between different countries allows a deeper acknowledgement of the strengths and weaknesses of Italian green economy. For these purposes, in this report we have used a study on the Italian green economy by Jeremy Tamanini, from the research center "Dual Citizen" of Washington DC, carrying out a comparative analysis on the green economy of 80 countries.

Dual Citizen's analysis considers and compares four dimensions: leadership and climate change; efficiency of the green economy sectors; market and investments; environment. For each of these dimensions the analysis proceeds with two types of comparisons - **one related to the performance and one to the perception of it**. For both of them, it sets out a classification and reports the ranking changes of each country, since the previous report of 2014. The analysis of performances relies on a mix of quantitative and qualitative objective parameters, from investments in renewable sources to media interests and coverage of green issues. The perception analysis is based on the responses given by a group of qualified experts and representative of various countries.

The positioning of Italy's performances on leadership and on climate change is in 32nd place in the world ranking of 80 countries: a position that certainly leaves room for improvement, but is still better than the one of the UK (74/80), Spain (55/80) and even Germany (36/80). It is, though, worse than France (25/80) whose good international positioning has been influenced by the strong leadership role practiced at the Paris COP 21. The analysis, that mostly relies on qualitative parameters, shows on one hand that Italy has a good performance as regards levels and reduction of greenhouse gas emissions (without considering, however, the worsening in 2015 not yet listed in international databases); on the other hand this highlights the lack of media coverage and the need for attention from government representatives. If we consider **the perception on leadership and climate change, Italy's international ranking plummets to the 68th place**. Conversely, Germany climbs up to the 1st place, France on the 3rd, the United Kingdom and Spain to 11th and 25th. This clearly reveals how doesn't stress at all the communication of its green value, which is evidently not seized by international observers, while other countries, like Germany, made communication their trademark. Furthermore, compared to 2014, **the performances of the green economy in Italy remained stable (+1), while the perception has even worsen(-9)**.

LEADERSHIP
AND CLIMATE
CHANGE

As for the efficiency and the quality of some key sectors (buildings energy efficiency, renewable energy, sustainable tourism, sustainable mobility and circular economy), **Italy's performances of green economy are good (11th place out of 80 countries) and the international perception is acceptable, although always lower than the performance (20th place out of 80)**. Comparing the results of the 2014 report edition, some significant improvements have been made as regards both the performance (+14), and the perception (+10). Italy's performance in these policy areas are better than those of France, the UK and Spain and not much lower from those of Germany (6/80). But then, all these countries overtake our country and surpass us as soon as we consider the perception scale: Germany leaps to the 1st place, followed by the United Kingdom (8th), France (14th) and Spain (19th), all surpassing us.

SECTOR
EFFICIENCY

As regards the market and the investments in the green economy - analyzed with 4 composite indicators (investments in renewables, new businesses and green patents, major companies sustainability reporting, the availability of data and information for green investors) - **Italy's performance drops to the 41st place, more or less equal to its international perception ranking, that finds our country in 40th position**, with a slight decrease compared to the 2014 report both regarding performances (-2), and international perception (-12). The international perception of green investment market is much better for Germany (1st place), the UK (3rd place), but also for France (15th place) and Spain (19th). **Italy results unattractive for global investors interested in green market**. This strongly relates with the lack of capacity, already analyzed in other dimensions, to promote, primarily through political leaders and media, its excellence in the sector of green economy. Adopting a clear national strategy on green economy would provide stability and certainty to potential investors.

MARKET AND
INVESTMENTS

ENVIRONMENTAL
QUALITY

Environmental quality, key factor of a green economy, have been measured with different indicators (impacts of agriculture, air quality, treatment and availability of water, biodiversity and natural habitats, fish stocks and forests) and **sees Italy standing in good ranking position** (21st place out of 80, with improvements from the 2014 Report, +4), **but always with a negative international perception (34th) that is even worse if compared to the 2014 Report (-8)**. For its environmental performance Italy is placed better than other large European countries, except France which is in 6th place. It is increasingly clear that our country, despite the importance of natural capital that goes from biodiversity heritage to the quality of its agro-forestry systems, is unable to put it to good use, and unable to attract investments and increase its international position in green economy, like other countries with worse environmental quality, are doing.

Considering the four above-mentioned categories, **the Italian green economy does perform well as regards efficiency and quality of some strategic sectors (energy efficiency of buildings, sustainable tourism and mobility, circular economy and renewable sources)**, being 11th in the world rankings, while there is certain room for improvement regarding air quality, where our country takes the 21st place. **On the other hand, though, Italy does record the worst performance in green economy market and investment, especially as regards the low attractiveness of foreign investments**, where Italy drops down to the 41st place. In leadership skills and fight against climate change, Italy is in 32nd position, and this could even worsen considering the latest developments, as the 2015 increase in greenhouse gas emissions.

Usually, the Italian performances are best when based on quantitative data on assets and operating performance of the green economy, beginning with the quality of the environment and the efficiency of the sectors. Performances collapse dramatically, however, when qualitative parameters, directly or indirectly related to the reputation of the country, come into play; for example as regards the attractiveness of investment and the ability of the leaders and the media to adequately represent Italian green economy. This leads to the conclusion that the green potential of the country is good but its exploitation, unfortunately, very poor. With some further improvements in strategic sectors, Italy could climb up in a top ten position, while there is a lot more room for improvement for public policies, which should focus on market conditions and investments in the Italian green economy. If we do not catch up soon with new investments in renewable, with eco and green start-ups, and with providing more information to green markets, the chances of future development will be compromised.

ITALY
RANKING

The result of the weighted average of the different dimensions analyzed shows that Italian green economy is 15th out of 80 countries analyzed: a discreet position, slightly lower than the global burden of the Italian economy, that could significantly improve by catching up with the weaknesses already analyzed. This result is strongly contrasting with **the extremely low perception of Italian international green economy, where the country falls down to the 29th position** (68th for leadership and climate change).

The qualitative survey depends on the experts chosen to give their opinions. However, despite all the precautions and the possible margins of uncertainty, the recorded result is way too sharp not to stress the consistency of Italian green economy issue: **the lack of consideration from abroad**. There is the need for a truth operation, in order to put on the same level the perception of the Italian green economy with the results that the country really achieves. However, in order to make this happen, this operation needs the cooperation of institutions at various levels, the media, research centers, green businesses and their organization.

This retrieval of knowledge and regain of international credibility is vital and urgent for the Italian green economy prospects of development and, considering the growing importance for markets and public opinion worldwide for the green, it is also vital for the credibility and the future of Italy.

3. The advances of green economy at international level

The year 2015 ended with the Paris Climate Agreement that triggered a wide participation of countries, including major emitters (China and the US), and could mark a turning point in international climate policy. The agreement is based on national commitments and fixes advanced targets (well below the 2°C with carbon neutrality from 2050), control mechanisms and periodic checks, which should lead to more effective measures than nowadays. The international framework where the Paris Agreement was reached highlighted several positive signs:

PARIS CLIMATE
AGREEMENT

- In 2014 -2015 the growth of global greenhouse gas emissions has stopped;
- The amount of power plants using renewable sources, the production of renewable energy and worldwide investment in renewable sources are continuously growing since 2013;
- The attention towards green matters from the world of finance keeps rising stronger, as evidenced by the continuous increase of green bonds;
- Since 2013 the number of hybrid and electric cars is steadily increasing, while the growing amount of per capita car registration didn't stop.

In 2016 the OECD released the database of 4 green economy key indicators at a global level: carbon productivity, material productivity, the protection of natural capital and changes in land use, and the trend of annual media coverage and exposure on fine particulate (PM2.5).

OCSE
INDICATORS

The carbon productivity - which measures the added value in dollars per kg of CO₂ emitted – from 1990 to 2014 has approximately doubled at a global scale, while productivity of China and the United States has improved, even if well below the OECD one.

The material productivity - which measures the added value in dollars per ton of materials consumed (fossil fuels, abiotic and biotic substances with the exception of water) - despite the improvements made in Europe and North America, the world record is worsening since 2000, due to the deterioration of China, India and Indonesia.

As for the protection of natural capital and land use, agricultural area since 1990 worldwide slightly increased (while it decreased in OECD countries), the one occupied by pastures and meadows is almost constant worldwide since 1990 (while it decreased in OECD countries), the forested land since 1990 is decreasing worldwide, while urban land use and other destinations are rising.

As regards exposure to fine particulate matter (PM2.5) - measured as an annual average concentration in micrograms per cubic meter – with 1990 year base, 2013 data revealed some progress for Europe (Germany and Italy reductions halved from 30.6 to 18, 3µg/m³), even if air quality remains a critical aspect in terms of environment and health. In the United States conditions remained stable but with poor results (11µg/m³), and the situation worsened in China and India (39 to 54.4µg/m³).

STATE OF GREEN
BUSINESS 2016

In 2016 was published the international report "State of Green Business 2016", produced by GreenBiz - American society for industrial sustainable development - in partnership with Trucost, research companies on natural capital. This report, called "Green Business Index", in its ninth annual edition, analyses 1,600 large companies in 24 countries (500 are American) that have a strong industrial value and are important drivers of international economy. This report focuses on 10 strategic themes for the green economy on an industrial scale: the circular economy, eco-innovation in the value chain, green infrastructure, the sharing economy, sustainability inclusion in business strategies, sustainability of the mining industry, regenerative agriculture, carbon recycling, electrical microgrids and the blue economy.

The GreenBiz Report provides a series of analyzes of green indicators of these large companies:

1. **The natural capital levy** is estimated at just under US \$ 3 billion (around 1 in the US), slightly less from 2013 (while a slight increase from US companies).
2. **Companies declaring natural capital protection investments** are an important and growing share (from 40% in 2010 to 56% in 2014).
3. The relationship between the **average environmental costs and company profits** is higher globally and keeps growing (from 138% in 2010 to 153% in 2014), while it is lower and decreasing for large US companies (by 116% in 2010 to 111% in 2014).
4. **The reduction in investment in fossil fuels** both regards the growing number of companies and in divested amounts.
5. **Investments in renewables**, which in large companies suffered from 2011 to 2014, raised up again in 2015.
6. The offer of **green bonds for interventions on climate** and more generally for the environment is booming.
7. **The capital invested by companies with environmental and social purposes** is growing (in 2014 these companies would exceed \$21 billion and US \$4 billion).
8. However, **the greenhouse gas emissions** of these large companies, from 2010 to 2014, have increased by 5%, despite the carbon intensity - emissions per unit of turnover - has decreased by 9% and despite the energy intensity has improved. The increase in emissions is due to the arising end-use of electricity (+ 21% from 2010 to 2014 of these large companies) and the deterioration of the electricity mix, with a reduction in the share of renewables and an increase in gas, that is abundant and cheap especially in the US. The recovery of investments in renewable energy in 2015 may improve the situation. Businesses declaring commitments to reduce their greenhouse gas emissions are still less than 50%.
9. **End uses of water** did not decrease, but there was a slight increase from 2010 to 2013 (1, 2 billion m³ in 2010 to 1.25 billion m³ in 2014). Businesses declaring water-saving commitments are 20%.
10. **Waste management** from 2010 to 2014 recorded a slight decrease in production and a modest increase (7%) of their recycling.

This analysis shows that management of large multinational companies gives increasing attention to the green economy, is updated enough on their core issues and in some cases has fielded or implemented tools of knowledge or updated environmental assessment. However, these large companies have not yet achieved a real decoupling between the growth of their businesses and their turnovers, and environmental impacts, which do not decrease (greenhouse gas and final uses of water) or improve in a still inadequate way (waste reduction and recycling).

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