THE REPORT ON THE STATE OF THE GREEN ECONOMY

EXECUTIVE SUMMARY 2017

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ECOMONDO
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INTRODUCTION

The Third Report on the State of the Green Economy sets the scene for the 2017 session of the States General of the Green Economy that is taking place on the eve of the parliamentary general election. The Report focuses on policy proposals for a transition to a green economy to be submitted to political parties before the election, with the aim of putting concrete problems and related policies at the center of the confrontation.

The first part of the Report shows the results of a survey on citizens' opinion on green economy policies in cities, commissioned by the Foundation. The survey asked a representative sample of citizens on climate and energy, circular economy and urban regeneration, natural capital and green infrastructure, sustainable urban mobility and benefits of the green economy in local development. The results show that consensus on green economy policies on such issues goes beyond expectations. And a fact: efforts at the local level are acknowledged, though with significant room for improvement.

The second part of the Report updates the analysis of the status of the green economy implementation in Italy, with a focus on some key areas: GHG emissions, energy efficiency and energy saving, renewable sources of energy, circular economy, eco-innovation, organic farming, territory and natural capital, sustainable mobility.

The third part of the Report focuses on a comparison between the European Union, China and the United States, also taking into account possible changes in the United States under the new Administration. At the same time, it provides a snapshot of green economy implementation worldwide, as well as of significant international trends and achieved results.

The Report is coordinated by the Foundation for Sustainable Development, acting as the substantial secretariat of the National Council of the Green Economy.

THE 2017 REPORT ON THE STATE OF THE GREEN ECONOMY

Presentation by **Edo Ronchi**
President of the Sustainable Development Foundation

The States General of the Green Economy 2017 takes place on the eve of the parliamentary general election. This session will focus on green economy policy proposals that will be submitted to political parties in view of the upcoming election. While the political confrontation on the media and social networks will focus, as usual, on domestic issues, we are convinced that political parties' commitments on very concrete issues related to citizens' districts and cities, such as relieving traffic congestion, air controls, parks and green areas management, municipal solid waste management, etc., will influence electoral choices. We also believe that shifting the political debate towards concrete issues and related commitments is a good way to improve both the quality of the political debate and citizens' participation.

This is why we open this Report with a survey on citizens' opinions on green economy policies in major Italian cities.

1. Citizens' opinion on green economy in cities

CONSENSUS ON THE GREEN ECONOMY: BEYOND EXPECTATIONS

A point should not be overlooked: a wide majority of citizens (58%) is quite or very informed on the green economy and more than 70% attaches great importance to green economy implementation policies. Climate and energy policies are met with great public approval (over 90%), with a significant 64% of interviewees declaring to be willing to use 100% renewable energy even at a higher cost. 9 out of 10 interviewees are in favor of policies for urban renewal and circular economy and 8 out of 10 are in favor of policies for waterworks maintaining and water loss reduction. Moreover, fines for those not complying with recycling regulations meet high consensus (87%). A high majority (90%) also favors natural capital and green infrastructures protection policies, and 7 out of 10 interviewees are willing to spend 10% more for organic produce. Sustainable mobility policies are widely supported (about 90%), though the support lowers to 77% for significantly demanding policies, such as a gasoline and diesel cars ban in 10 years. While it is a common view that green economy policies are too burdensome during economic downturns (57%), it is also widely agreed (90%) that such policies can improve local development. Also interesting is the ranking list of driving factors for local development: the green economy is in the leading group, short after agri-food industry, young entrepreneurs and tourism, but well ahead of manufacturing and new technology. This survey shows wide consensus on the green economy with no significant differentiations based on gender, age, education, geographical area or city dimension. **It is clear that these issues can have a significant relevance in citizens' electoral orientation.** This further confirms the idea supported by the Manifesto for green economy implementation in urban areas launched in 2017: **green policies in our cities have a great potential for green economy implementation and green growth.**

THE ROLE OF THE GREEN ECONOMY IN CITIZENS' ORIENTATION

While the Report acknowledges local efforts, such efforts should be improved. Many green economy activities have, in fact, significant room for improvement, according to trend indicators on some green issues. While 80 out of the 109 surveyed provincial capitals joined the Covenant of Mayors for Climate & Energy, only seven of them did set a challenging target of 30% emissions reduction by 2020. Photovoltaic energy production in the 109 cities dropped from 74 watt per capita in 2011 to 3 watt per capita, following cuts on subsidies, and waterworks losses increased from 35.6% in 2012 to 38.3% in 2015. In 2015, 80,000 cars fueled by clean sources of energy were sold in provincial capitals and the share of electric and hybrid cars is rising and bike lanes increased by 25% over five years. Nonetheless, available bus places decreased by 17% from 2010 to 2015. Urban waste recycling share in provincial capitals increased from 10% (2010) to 40% (2015), though with a deep geographical differentiation: 56% in the Northeast, 48% in the Northwest, 41% in the Center, and 24% only in the South.

Implementation by Provincial capitals of minimum environmental requirements in Green Public Procurement (GPP) rose to 46% (+2%). Provincial capitals implemented minimum environmental requirements in at least 1 out of 11 different types of procurement procedures: a good starting point with significant room for improvement.

2. Stocktaking on the green economy in Italy

Again this year the Report also updates the analysis on green economy strategic themes: GHG emissions, energy efficiency and saving, renewable sources of energy, circular economy, eco-innovation, organic agriculture, the natural capital, and sustainable mobility.

GHG EMISSIONS

While we are not yet able to assess the impact of the 2015 Paris Agreement, GHG emissions data in Italy show a stalemate situation with a possible worsening. **After increasing in 2015, CO_2 emissions decreased in 2016, but 2017 estimates show an apparent trend reversal especially in the electric sector. CO_2 in the electric sector**, after decreasing for years, increased from 309 gCO_2/KWh in 2014 to 330 gCO_2/KWh in 2016, with a negative trend in the first semester of 2017. Incisive policies and actions to effectively implement the Paris Agreement are yet to be adopted. **Climate change impact in Italy is significant and it is worsening**: 2017 saw an alarming drought and warm season, followed by rainstorms that caused significant damages in many areas. On World Water Day, 22 March 2017, the National Institute for Statistics (Istat) reported alpine glaciers have lost almost 50% of their volume over the last 40 years.

ENERGY EFFICIENCY

Energy consumption, after decreasing for a long time thanks to energy efficiency and energy saving, as well as to the economic crisis, **started increasing again in 2015-2016, especially for gas.** The 2014 National Plan for Energy Efficiency set a 15.5 Mtep energy consumption reduction target for the period 2011-2020. In 2015, a 6 Mtep reduction was achieved, meaning approximately 40% over five years. Therefore, **this trend will not meet the 2020 target.**

RENEWABLE ENERGY

In 2015, Italy met the renewable energy target on the internal gross consumption, reaching 17.5% as compared to a 16.7% European average. However, we should be careful: **in the electric sector, which accounts for 40% of the entire renewable energy sector, an overall decrease occurred for the first time in 2017 with downturn in hydroelectric power production and a minor increase in photovoltaic energy, barely compensating for a wind energy reduction, and a stable share of biomass energy.** In addition, investments in renewable energy dropped from 3.6 billion € in 2013 to just 1.7 billion € in 2016.

CIRCULAR ECONOMY

The year 2017 marks the 20th anniversary of the adoption of legislative decree 22/97, which,

developing a consistent waste management reform, triggered deep changes: twenty years ago, 80% of urban waste was disposed in landfills, with an insignificant share of recycling. Today 26% of waste is disposed in landfills and **recycling rates reach 47% with 14mln ton of waste recycled by approximately 5,000 companies, employing 120,000 people and making dozens of billion euros.** We are also on the eve of the adoption of an EU Directive on waste management and circular economy that will require a stronger commitment to achieve new challenging targets, that Italy will only be able to achieve recovering delays in some regions, making the supply chain more efficient, improving recycling plants network, and making waste prevention and reuse policies more effective.

ECO-INNOVATION

According to the latest available data, public spending on research and development decreased by 5.8% in 2015 compared to 2014, against an 8.7% increase in Europe. **Italy ranks number 10 in Europe for R&D spending on environmental issues, with 8.7 euros per capita compared to 15.6 euros EU average.** Such low public investments in R&D will possibly reduce eco-innovation potential of the industrial system and its competitiveness.

AGRICULTURE

Expo 2015 was a significant stimulus for Italian organic agriculture, putting Italy at the center of the world discussion on agriculture sustainability and on values connected with gastronomical culture. **In 2015, 12% of the total national agricultural area was employed in organic farming**, a wider extension than Spain (7.9%), Germany (6.5%), and France (5%). Italy is also the top producer of certified agri-food products, accounting for 22.7% of the EU total, ahead of France (22.6%). **The CETA trade agreement between the EU and Canada will possibly slow down the increase in organic farming in Italy**, as Canadian agriculture could compete with the Italian one thanks to less restrictive environmental and health standards.

TERRITORY AND NATURAL CAPITAL

The first Report on the State of Natural Capital in Italy was drawn up in 2016, showing Italy is rich in biodiversity: **the value of ecosystem services is estimated to be 338 billion euros (approximately 23% of GDP), vis-à-vis about 579 million euros of public spending for nature and environmental protection (0.03% of GDP).** The increase in soil consumption is especially alarming: **from November 2015 to May 2016, 50 square km of territory were artificially covered, 30 hectares per day on average**, with every region going separate ways and the Parliament will hardly pass a new bill for limiting soil consumption.

TRANSPORT

As is well known, measures for sustainable mobility are diverse and articulated, especially for urban or medium-long distances. This Report focuses on one of such measures, namely the change towards vehicles with less environmental impact. **While Italy still has a low level of electric cars registration, the share of hybrid cars is rapidly increasing and it accounted for 2.1% of total vehicles in 2016 and the share of Liquid Propane Gas (LPG) and methane fueled cars is steady and positive.** In 2013-2015, Italy adopted a stimulus program for low emissions cars, though shorter and with less funds than programs in other EU countries where such programs are still active.

3. The international framework: a focus on Europe, China and the United States

As per the analysis of the international framework for the green economy, the 2017 Report focuses on a comparison between Europe, China and the United States, and it observes some significant trends.

EUROPE

While Europe met well in advance the 2020 Climate and Energy package targets, the new 2030 Climate & Energy Framework sets a target (at least a 27% share for renewable energy and an indicative energy savings target of 30%) that will not possibly meet the

GHG emissions cut target of 40%. It is widely agreed that the implementation of the Paris Agreement will require a review of the EU 2030 targets: the EU will maintain the world leadership on climate change only if it will implement this review on time (as pushed for by France and Germany). We are also on the eve of the adoption of **a new important directive on waste management and circular economy, aiming at making EU economy the most efficient one in the world in resource use**, meaning greener and more competitive, by boosting waste reduction and reuse, setting new challenging recycling targets and reducing incineration and waste disposal in landfill. The EU is also devoting increasing attention to the protection of natural capital, as 66% of species and 77% of habitats in Europe are in poor state of conservation, also because of climate change impact.

CHINA

In the past, China has focused on an accelerated, export-based, low quality and high environmental impact growth model, with huge use of coal as prevailing source of energy. This growth model not only made China a world economic power, but it also made this country the top world GHG emitter (29% of CO_2 world emissions), with total emissions higher than the United States and per capita emissions higher than Europe. Now **China is apparently willing to change: coal use is diminishing and renewable energy is increasing. While GHG emissions in the country have not increased since 2014**, China submitted an inadequate implementation plan for the Paris Agreement, and it plans to continue to increase greenhouse gas emissions until reaching a peak in 2030 and start decreasing afterwards. **This trend would make virtually impossible to keep the trajectory for containing global warming well below 2°C, as set by the Paris Agreement.** On the other hand, recent studies suggest that China could reduce its emissions well before 2030, thanks to economic growth and technological advancements. **It is to be stressed that other indicators further show a green turn in China**: the increase in turnover of environmental goods and services and in stock forests, the reduction in pesticides and fertilizers consumption, the increasing number of green buildings, the huge investments in renewable energies and the issue of green bonds. **Furthermore, it should not be overlooked that China reiterated its support for the implementation of the Paris Agreement**, even after Trump administration in the United States announced its intention to withdraw from it.

UNITED STATES

For the green economy and climate change global policies it is of great importance to start evaluating possible effects of President Trump's decision, officially announced at G7 Summit in Taormina last June, to withdraw the United States from the Paris climate change Agreement. **The effects of this decision are not quite predictable.** Approximately 40% of GHG emissions in the United States are produced by States that officially declared their intention to implement the Paris Agreement. In June 2017, the United States Conference of Mayors, representing 1,408 cities with populations of 30,000 or more, not only supported the Paris Agreement, but also proposed targets that are more ambitious. Beside commitments, some key indicators will need to be monitored. **Investments in renewable energy in the US are currently growing: in March and April 2017, solar and wind energy exceeded 10% of electricity demand for the first time. The United States is still the world leader in biofuels production, as well as in energy efficiency technologies. Green bonds emissions in 2016 were 80 times higher than in 2012, reaching 38.4 billion dollars.** At the moment Trump's statements on the Paris Agreement do not seem to be producing any tangible effects on the concrete economic and technological measures for climate change mitigation that are being implemented in the United States. In addition, the Administration showed some hesitations and put forward ideas of renegotiating the withdrawal as well as the possibility of renegotiating the Agreement itself: this means the Government is acknowledging the difficulties in implementing a decision that would imply an

isolated position, since the Paris Agreement was, and still is, supported by almost all countries.

In 2016, world CO_2 emissions did not increase for the third consecutive year. This does not mean that the expected peak in world emissions was reached and that we can expect emissions to start decreasing soon, but this can be a good starting point for the implementation of the Paris Agreement, also considering that the potential of electric energy production from renewable sources has doubled over the first 15 years of the century, while in 2016 there was a decline in coal consumption by 1.7%.

In 2017, OECD released its third Report on Green Growth. The Report estimates that 6.9 billion dollars will be needed yearly from 2016 to 2030 to comply with the 2°C scenario, with positive effects not only on climate and health, but also on economic growth and employment. OECD also points out that, while the overall trend for investments in renewable energy is positive, those programmed in coal-fired power plants, 28% of all energy production investments, are still too many and must fall to 8%, also because incentives to fossil fuels are still high (60 billion dollars per year). According to OECD, a green economic growth is feasible, but significant reforms will be needed to improve resources efficiency and productivity, retune fiscal policies from a green perspective, increase investments in low-emissions technologies and clean technologies R&D, and improve integration between climate and biodiversity policies and policies for food security and poverty reduction.

UNEP introduced a Green Economy Progress (GEP) index, assessing the transition towards a green economy in 98 countries by 13 indicators: a positive GEP index value means progress towards a green economy, while a negative value means no progress. The green economy is growing worldwide: most countries (79%) have a positive GEP value, while 21% (including China) have a negative one.

In 2017, the International Energy Agency (IEA) assessed 26 energy technologies tendencies in the 2°C scenario. Renewable energy sources, electric vehicles and electricity storage are growing at a good pace and are expected to continue to do so. Energy saving and efficiency in the industry should increase at a higher rate because the final energy consumption trend in this sector would still be too high. While gas consumption is increasing, further improvement is needed in order for it to contribute, together with renewable sources, to replace coal that is still the main source of energy worldwide (40%). Less efficient coal plants should be closed and new plants without carbon capture and storage (CCS) should not be opened, although CCS projects stopped because of lack of investment. New generation biofuels should increase by 25 times by 2025. The average energy consumption in the building sector should decrease by at least 10% by 2025 and renewable thermal energy should increase by 32% by 2025 compared to 2014.

In addition, UNEP published an analysis stating that low-carbon technologies have the potential of reducing by 34% world emissions by 2050. UNEP points out that those technologies, besides reducing GHG, also reduce other pollutants and mitigate adverse environmental impacts. The importance of taking into account effects on both demand and supply sides is also stressed. UNEP further emphasizes the need for a full electrification of the transport network and the importance of the effect of green technologies in increasing the demand side that could possibly eliminate or decrease the positive effect on the environment (i.e. lower emissions per product unit with higher production volume). UNEP also devotes great attention to lighting technologies and buildings thermal isolation, as well as to circular economy in order to promote an efficient use of resources and to increase the recycling rate in the industrial sector.

These reports by UNEP and IEA prove climate change policies are promoting a green transition for many technologies, thus defining a new world innovation era: "the green economy".

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