ASSOLOMBARDA

Energy, innovation, competitiveness

ENERGY, INNOVATION, COMPETITIVENESS

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Summary and Conclusion

By **Fabrizio Di Amato**

"If we can't all swim together, we all will sink. There is no plan B because we do not have a planet B", stated UN Secretary-General Ban Ki-moon in September 2014 at the Climate Summit in New York. Today, these words are the new generation of climate-change protesters' slogan, and effectively capture the increasing public awareness and sense of urgency about environmental issues.

The numbers are clear. The Earth has registered an increase in temperature of 0.8°C from the first industrial revolution to today, and as many as two thirds of this increase happened from 1975 onwards. 2015, 2016, 2017 and 2018, namely the last four years, have been the hottest ever. Moreover, since 1900 the sea level has increased by 20 cm and by 2100 it will increase further by 7 cm (perhaps even more) because of glaciers melting and water warming up.

The 2015 Paris agreement, adopted by 195 countries, pursues the central aim of keeping a global temperature rise well below 2°C above pre-industrial levels, with the objective of avoiding irreversible changes in the natural ecosystem. The actions to be undertaken to reach this goal concern both mitigation, to anticipate future trends and obtain global benefits in the long run, and adaptation, to react to current trends and find solutions at the local level in the short run.

The massive use of fossil fuels is one of the main sources of the increase in carbon dioxide emissions (+63% from 1990 to today), which in turn figure among the causes of the greenhouse effect and climate change at last. Hence the necessity of a new paradigm in the energy landscape: the energy transition is the great challenge ahead that we – as individuals and firms - must fully understand in order to face it and seize its opportunities.

Founded on such philosophy, this study aims at offering an

in-depth analysis of both current and prospective scenarios and, at the same time, advance policy proposals to combine sustainability and competitiveness.

Based on the current state of the commitments by different countries, the International Energy Agency estimates a progressive decrease in the use of fossil fuels by 2040, to 75% of global demand from the current 80%. At the same time, energy demand is forecast to grow by 27%.

To cope with these dynamics, the energy landscape will evolve following some key trajectories: the ever growing relevance of renewable sources in total electricity generation (from 25% in 2017 to 41% in 2040), the key role of natural gas as a "transitional" energy source (from 22% to 25% of demand), the increase in the demand for electricity (+2.1% a year from today to 2040, twice the rate of overall energy demand) and the increase in energy efficiency (with a decrease in the energy intensity over GDP by over 40%).

Within this context find their place the increasingly ambitious measures developed by the European Union. After the 2020 targets, known as the "20-20-20 strategy", at the end of 2016 Europe approved "Clean energy for all Europeans package" including new binding targets to be reached by 2030. The three main goals are: the reduction of greenhouse gas emissions by 40% compared to 1990 levels; the increase of renewable energy sources to 32% in the energy mix; for energy efficiency, the reduction in gross final energy consumption by 32.5%. The new European package is customizable by single member countries, which are pursuing their objectives through national plans.

Italy, on its part, after almost reaching the 20-20-20 targets, is now setting new national objectives in the Integrated National Energy and Climate Plan (PNIEC), which will become binding at the end of 2019.

According to the Energy Transition Index, developed by the World Economic Forum, Italy is among the "leading countries"

in this transitionary phase, ranking 29th out of 115 countries. However, there are some key issues to be addressed: the strong dependency on energy imports, amounting to almost 80% of national demand, with negative effects on security; the high costs paid by industrial end users, with an energy bill more expensive by 25% compared to the European average; the relevance of fossil fuels, which still represents more than 80% of final energy consumption. The energy transition can therefore represent a great opportunity to increase energy security, sustainability, economic growth and competitiveness.

The energy transition requires the adaptation of existing infrastructure and the realisation of new ones. To this purpose is fundamental to go ahead with decisive simplification interventions and an adequate investing strategy. The European Commission's document "A Clean Planet for all" records investments in the energy sector and in energy infrastructure for as much as 2% of European GDP at present. In the next years, to reach the targets, investments should increase to 2.8% (i.e. to more than 500 billion euros per year).

Investments in energy equipment and infrastructure, also intended as distribution networks, will be crucial for our country. According to recent estimates by Confindustria Energia, new energy infrastructure projects will activate as many as 96 billion euro of private business investments by 2030, with positive externalities on employment and value creation for the entire country.

The energy system is in fact characterised by high capital intensity, which makes it crucial for the country's investment stock and infrastructure equipment.

Our findings confirm that the energy sector is an ecosystem of firms that are highly valuable to the economy: for every euro of added value of the energy segment, 1.1 additional euro are activated in the rest of the Italian economy (1.2 in Lombardia). It is a wide ecosystem that comprises and integrates more segments (from components, engineering and construction services, to

energy production, sale and distribution), that is worth 62 billion euros of added value, 11 of which in Lombardia alone, and that employs over 600 thousand workers, 93 thousand of which in Lombardia.

Policy proposals by firms

The energy transition must strike the balance between a sustainable and low carbon economy and a safe and affordable energy supply to the benefit of a competitive, dynamic and innovative industrial fabric. This evolution has six key dimensions:

- **decarbonisation**, by moving on from fossil fuels;
- **sustainability**, with measures for energy efficiency and renewables;
- **safety**, both of the supply and the system, resilient in the face of an increasingly distributed production;
- **accessibility** of supply to guarantee its affordability;
- **innovation** and **digitalization** that can turn the energy transition into an economic opportunity for all actors in the value chain;
- **competitiveness** of the economic system in its entirety.

The 28 proposals that Assolombarda developed thanks to the contribution of the member companies taking part in dedicated working groups and described in detail in this volume, can be summarised in 9 main ideas:

1. Administrative/authorisation simplification and legal certainty

A stable, modern, simple and effective regulatory framework is essential. Only certain and clear rules can provide the Italian

industry with the conditions to equally compete with the other European industries.

2. Circular economy

Firstly, infrastructural capacity must be enhanced by increasing the efficiency of existing recycling and recovery plants and by assessing the need of building new ones, substituting the "emergency approach" with long-term planning and efficient management.

Secondly, it is fundamental to valorize by-products and materials meeting end of waste criteria, paving the way to research on new recovery and reuse solutions. Policy makers and authorizing bodies have to avoid restrictive approaches like the ones applied to the end of waste in the last year. By contrary, regional authorities have to be able to evaluate the plants converting wastes into products on a case-by-case basis, without any previous step at national level, as defined in the recently approved law by decree "DL 101/2019", introducing new authorization procedures agreed on EU level.

Finally, to start a circular market, it would be useful to foresee fiscal incentives for those projects, technologies and instruments with a focus on the efficient use of resources, and to set up concrete measures in favour of *Green Public Procurement* (GPP).

3. Gas

As to infrastructure, a focused strategy should include both the valorisation of existing assets, allowing transport and distribution operators to innovate the gas system with an eye to decarbonisation, and the investments in new strategic structures (such as the trans-Adriatic gas line and the East Med, which includes the Poseidon gas line). This approach can promote Italy's role as a gas hub, contribute to containing energy costs as well as diver-

sifying energy sources, thus increasing the safety of supply.

4. Hydrogen

Italy holds an industrial know-how in the hydrogen sector – especially for green hydrogen with zero CO2 emissions – which can provide a competitive advantage on global level. In particular, the high initial investments required by hydrogen production systems, together with the safety concerns on its storage, distribution and usage, are as of today a substantial barrier that technological research must contribute to lifting. In this regard, the commitment announced by the government to double R&D funds for hydrogen-based technologies as part of the Mission Innovation Hydrogen Challenge should be implemented.

5. Energy efficiency

The Energy Efficiency Titles scheme (TEE) should be kept to 2030 to the national level. In parallel, reward systems to the benefit of the most virtuous end users from an energy efficiency standpoint might be a useful instrument to bolster increasingly technologically advanced solutions, therefore encouraging the improvement of energy performances.

6. Biofuel and green chemistry

In these times of change of the energy paradigms, a great opportunity is offered by relaunching sectors that in Italy have always excelled, such as green chemistry and biofuels. These guarantee a complete renewability of the resource, the biodegradability of the product, a positive carbon balance (with a consequent greenhouse effect reduction), a positive energy balance in the production chain and better quality of emissions from biodiesel powered engines.

7. Biomethane

Keeping the Certificates of Release for Consumption (CIC) support system beyond 2022 is crucial both to guarantee the economic sustainability of investments into biomethane production plants and to give at least a medium-term perspective to the nascent sector.

8. Self-consumption

The optimisation of load distribution must be pursued by encouraging self-consumption and supporting investments and the diffusion of storage systems.

Moreover, a complete regulatory framework covering energy communities and aggregators is necessary to grant continuity to what has been recognised on a European level in terms of the contributions that these aggregations bring to the stability of the electric network.

9. Renewable energy sources and electric networks

Firstly, the support mechanisms designed to push renewable energy production should be based on a principle of technological neutrality, thus avoiding distortions in the development of the generation mix.

Furthermore, the 2030 renewable energy production targets cannot be reached by limiting the installation to roofing, covering, brownfields and landfills; by contrary, it is necessary to include unexploited or agricultural land among the eligible sites for renewable energy installation.

At the same time, the regeneration of existing plants should be incentivized by reducing authorisation times.

The role of firms in the energy transition is fundamental and, as an entrepreneur, I can testify businesses' strong sensitivity to

this matter, which is highly correlated to environmental sustainability.

Italian firms in the energy ecosystem are ready to deploy all the resources at their disposal to face the decarbonisation challenge. These are, in fact, firms with a strong international presence, remarkably innovative and particularly keen on human capital; features that altogether prove them robust in the face of this relevant paradigm shift.

It is important to acknowledge that industry and sustainability are not an oxymoron, because the incentives to the environmental and energy transformation cannot be found but in production through innovation.

The discontinuities of this transition offer great opportunities for the reindustrialisation and the redesign of production processes. The competitive disadvantages that we are experiencing, the high cost of both labour and energy, require an evolution in the direction of more innovation and digitalisation in the labour market as well as a new approach to energy production and distribution.

Italy's future is full of important opportunities and clear industrial policy decisions are needed to provide vision and perspective to an ecosystem that is valuable and pervasive to all economic activities.

The future is now.

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