The turn towards green is irreversible, lesson learned from the crisis

With the last two Strategic Plans Eni has turned irreversibly towards the goal of becoming totally carbon neutral by 2050. The crisis has definitely taken us out of our comfort zones and convinced us that we must accelerate the energy transition. For this reason, over the next four years we will invest one billion euros in technological innovation and four billion euros to continue our industrial transformation as we move towards complete decarbonisation.

Con gli ultimi due Piani strategici Eni ha intrapreso una svolta irreversibile verso l'obiettivo di diventare totalmente carbon neutral al 2050. La crisi ci ha portato definitivamente fuori dalla confort zone e ci ha convinto che dobbiamo accelerare sulla transizione energetica: per questo nei prossimi 4 anni investiremo un miliardo di euro in innovazione tecnologica e 4 miliardi di euro per proseguire nella trasformazione industriale verso la completa decarbonizzazione.

Interview with **Claudio Descalzi,** *CEO ENI*

In recent years Eni initiated a transformation of its strategy and business model, moving towards sustainability and the reduction of carbon emissions. A green turning point that was also confirmed by its top-five ranking in the oil & gas sector according to the FTSE4Good Developed Index which measures the performance of companies in their attention to environmental, social and corporate governance. Mr. Descalzi, what is the origin of this choice and what does the future hold with respect to energy transition objectives and the Green Deal?

The Strategic Plan that we presented last year, together with the new developments that we introduced with the plan we just announced recently, represent an irreversible turning point for Eni: we have marked off the path that will lead us to becoming a leader in the production and sale of totally decarbonised products generated by industrial processes with net zero emissions. With a very important goal, which is the biggest piece of news from the recently announced plan: we will become totally carbon neutral by 2050.

> **"The crisis has taken us out of our comfort zones"**

But this new strategy is only possible because it builds on years of work that's already been done. In fact, anticipating an energy crisis, in 2014 we decided to assume the great responsibility of taking the lead in the fight against climate change, with the awareness that our industry had to play an essential role: we have

literally transformed the company, its internal organisation and its mission, now inspired by the 17 Sustainable Development Goals of the UN's 2030 Agenda. We have the most powerful supercomputing system in the industrial world and have developed and deployed numerous projects and technologies. These

> "…we will produce green energy by developing renewable energy and natural gas, LNG, green and blue hydrogen„

are the foundations that we built our plan on, concrete and marked off by intermediate objectives announced to the market. And this while the pandemic forced us over the past year to work hard to rationalise investments and costs to protect the company's solidity. A crisis that has definitely taken us out of our comfort zones, convincing us that instead of slowing down we needed to accelerate, as evidenced by the billion euros that we will spend over the next four years on technological innovation, and the four billion euros that we will invest to continue our process of industrial transformation, moving towards complete decarbonisation.

From the point of view of results, what were the most successful initiatives under Eni's new strategy?

Our new strategy has some great strengths that I like to highlight: it's based largely on technologies that are already available, on projects that are already operational or implementable in the short term, it has intermediate objectives that prove its concreteness and it contains the mechanisms of value creation that fuel its implementation. Finally – and critically – it is based on the development of multiple strands of decarbonisation that are integrated

with each other and that we will carry forward at the same time, since such challenging and important objectives are achieved pragmatically using different tools.

Tell us more.

In addition to reducing the carbon footprint of our upstream portfolio through efficiency actions, an increased use of gas, CO_2 capture projects and participation in REDD+ forest conservation projects, we will produce green energy by developing renewable energy and natural gas, LNG, green and blue hydrogen (starting from steam reforming of gas with the subsequent capture and storage of CO_2), ENI will produce biofuels in its biorefineries, as well as methanol and hydrogen from waste recovery projects, will engage in sustainable chemistry by exploiting recycled materials and renewable raw materials, and will produce biomethane from biogas upgrading processes. All this by being able to direct the decarbonised products we generate towards a vast domestic customer base in sectors that range from retail, commercial and industrial to sustainable mobility. And this is where the other big news from the recently presented Plan comes in. We will integrate our activities related to renewable energy within the Eni gas and electricity company: this way we will be able to make the most of our retail customer base, destined to reach over 11 million customers in 2024 and offering an increasingly complete range of decarbonised products.

What are your strengths and which areas need to improve?

We saw the first fruits of our strategy in 2020, with the excellent performance achieved by businesses related to the production and sale of decarbonised products, with the EBIT of Eni gas and electricity increasing by 17% and the processing of organic refineries growing by 130%, about 1 GW of generation capacity from solar and wind already installed or under development. And we estimate that over the course of the Plan the biorefining-marketing segment alone can generate €750 million of EBIT, while the integration between retail and renewables can yield €1.2 billion in EBITDA. In essence, notwithstanding the unprecedented situation we are experiencing we are still beating expectations, and if we were to identify any weaknesses along the way we are guaranteed to have all the flexibility we need to deal with them.

Looking globally, do you believe that the COVID-19 pandemic will somehow slow or even halt the decarbonisation process, as some prominent proponents of the energy sector have warned?

No, to the contrary, I believe that this crisis has catapulted us out of the routines that we were stuck in – of course I'm talking about developed countries – and has called into question all our traditional models. Lifestyles, levels of consumption, the way globalisation is conceived. It's now clear that globalisation means that vaccinating all Europeans against Covid would be of absolutely no use unless all Africans, all Indians, the Arab world and so on are vaccinated as well. Likewise, the most effective battles against climate change conducted at a European level would be a drop in the ocean if not associated with as many actions carried out globally: at this point we're all on the same boat when it comes to the great issues that underlie our existence. This is one of the great lessons that we must learn, and that's why institutions, economic actors, organisations and individuals must take advantage of the great mass of resources made available by the nations for this great global crisis and devote it to improving and accelerating policies aimed at saving our planet.

> **"…Research, development and technological innovation are the foundation and accelerator of our new strategy: we are talking about more than 7,500 patents and 450 projects…"**

Eni has stipulated and is stipulating numerous agreements with research institutions in Italy and abroad for the development of innovative and low-carbon technologies. What role does scientific research play in the Group's strategy, and what is the approximate value of the investments made and planned for the energy transition and decarbonisation?

Research, development and technological innovation are the foundation of our new strategy. They are both the foundation and the accelerator. We're talking about more

than 7,500 patents and 450 ongoing projects. In addition to our Ecofining technology, used in our biorefineries in Venice and Gela, and waste-to-fuel technology, used for the production of bio oil from the organic fraction of municipal solid waste (OFMSW) and which is evolving towards an industrial scale, we are expanding the use of plant biomass to produce bioethanol, advanced biofuels and biomonomers to be used as intermediate products for bioplastics, electronic components, cosmetics and agrochemistry. We are marketing high quality products from the mechanical recycling of post-consumer plastic waste, with a recycled content of 75%, and we are developing a pyrolysis technology to recycle mixtures of non-mechanically reusable plastics known as Plasmix.
For the capture and use of CO_2 we have an ongoing project for a pilot plant in Ravenna for the mineralisation of CO_2, which can be used for the manufacture of products that can be used in the construction sector. We are also developing another technology for the biofixation of carbon dioxide from algae, with a pilot plant in Gela in Sicily.

Why do you think a closer and more continuous relationship between the research system and the industrial system is important and how can this be promoted?

In light of these many examples I can say that we are fully committed, and indeed we are working with more than 70 universities and research institutes, among which ENEA is undoubtedly among the most prestigious. In fact, with ENEA we are pursuing the promising project on magnetic confinement fusion.

"…It is too soon to say if Italy can become a real hydrogen hub"

Other areas of focus that we are developing with ENEA concern Supercomputing (HPC), energy storage, concentrated solar energy, the exploitation of biomass, the identification of optimal solutions for the end-of-life management of technologies, including renewable ones such as batteries, and finally the recovery and recycling of waste products from industrial and municipal processes.
For us, the relationship between the research system and industry is essential with respect to the achievement of our objectives and should be incentivised so that it becomes a well-established part of the great system that the country needs at this time of pandemic and economic suffering. This relationship has a fundamental value for the entire national system, especially now that the ecological and energy transition process must be concretely initiated.

Let's talk about Italy. In your opinion, what are the main strengths and the critical issues to be resolved in order to achieve the European objective of climate neutrality by 2050?

Our country has many strengths: we have resources, skills and a great spirit of entrepreneurship and innovation. Our economic fabric is certainly made up of large companies with broad shoulders, but above all of small and medium-sized companies with a great capacity for innovation. The only major problem would be if we failed to work together as a system, bringing together the forces of the public and private sectors to pool our expertise. The challenge before us and the stakes involved are too great to be taken on separately by each of us.

In terms of innovative technologies, you are also focusing on frontier sectors such as nuclear fusion and hydrogen, the latter rapidly establishing itself as strategic for meeting the "zero emissions" objective. According to studies[1], by 2050 hydrogen will be able to cover 24% of final energy demand, will contribute to reducing 560 million tonnes of CO_2 and will generate a turnover of €820 billion/year and 5.4 million jobs. Furthermore, as underlined by Commission President Ursula Van der Leyen, hydrogen will be a priority for Next Generation EU. What is Eni's vision with respect to this element? And what are the prospects for Italy?

Historically, Eni has been the leading producer and main consumer of hydrogen in Italy.
We use hydrogen mainly as a raw material in traditional refining processes, as well as in biorefineries in Venice and Gela for the production of HVO biofuels, or "hydrotreated vegetable oils". As part of our strategy to decarbonise production processes, we have identified precisely in the so-called hard-to-abate sectors, including refining, the possibility of immediately reducing emissions by injecting the CO_2 captured from the chimneys of steam methane reforming plants into a safe storage site. This can be done in the Ravenna area where we

have one of the largest storage sites in the world.
This process, which will also allow us to obtain blue hydrogen, is based on safe technologies, tested and already used in many parts of the world, and represents the fastest way to concretely reduce CO_2 emissions without completely revamping existing industrial processes.
We are also working on projects to produce hydrogen from water electrolysis, using electricity generated from renewable sources (so-called green hydrogen), and, following a circular economy approach, also on technologies for the production of sustainable hydrogen from waste.
Indeed, we have joined the European Clean Hydrogen Alliance and are participating in the "Hydrogen for Europe" study together with 17 players in the energy sector, the purpose of which is to assess how hydrogen can contribute to achieving climate neutrality on the continent.
Promoting the use of low-carbon hydrogen in the decarbonisation process would undoubtedly make an important contribution to the reduction of emissions and move us along the path towards EU carbon neutrality by 2050, representing a solution to decarbonisation also in hard-to-abate industrial sectors where electrification is not currently a viable or definitive option. In this sense, the industrial initiatives that Eni intends to put in place to decarbonise its refining operations may offer benefits to entire districts, for which it may be possible to channel plant emissions to the same storage sites used by Eni.

Can we realistically become a hydrogen hub?

From the general point of view of the hydrogen strategy, I think it's too soon to say whether or not Italy will be able to become a real hub, but in order to become one we'll have to learn to see the various production technologies as complementary, not competing, and classify them in a shared manner based on their contribution to the reduction of greenhouse gas emissions. I believe that it is crucial to follow a technologically neutral approach, developing and applying all available and sustainable technologies from a low-carbon perspective, without excluding any of them. An effective hydrogen strategy must recognise and support the contribution of all forms of low-carbon hydrogen to decarbonisation, also in order to maximise resource efficiency and to implement principles of the circular economy.

One last question. Eni's green turn was very well received, but there was no shortage of accusations of "green washing". What's your response to this criticism?

We respond with what we've done so far. The extensive reorganisation that we carried out last summer, which with the creation of the two new Energy Evolution and Natural Resources Departments revolutionised Eni's internal structure in order to best support its energy transition and decarbonisation strategy; the big change that we introduced with the new Plan, namely the integration of renewables into our gas and electricity sales company, an important step in our positioning as a leader in the retail sale of decarbonised products; the huge amount of investments already made and planned in the new plan for research, development and transformation; the pace of the intermediate objectives that we have set and communicated to the market for each business line related to decarbonised products; the plants already in operation, such as biorefineries, and the pilot industrial scale-ups already under way based on the most important technologies, such as waste-to-fuel. These are just a few examples of concrete initiatives and changes that testify to the transformation that is taking place, which is extensive and irreversible.

1. Hydrogen Roadmap Europe: A sustainable pathway for the European Energy Transition" and the recent report of H2.it