

**New  
Sustainability  
Manifesto**



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**2021**

# 1

## CEO Open Letter

Writing a sustainability manifesto is an assumption of responsibility and a strong commitment that our Company makes towards its customers, partners, and employees.

The fact of being a global company imposes us a great responsibility, but it is first and foremost an incentive for the whole Group to improve its actions, both in large-scale processes and through local and targeted interventions.

The path undertaken by Olon is not new. It comes from far and it is deeply rooted in our history. As a Company of excellence of the chemical industry, we have always been facing with respecting the environment, reducing the impact on the environment we operate, optimizing processes and reducing consumption, with a consequent reduction of emissions and waste. Today we embrace a new dimension of sustainability.

Sustainability is an essential part of our mission, that we are pursuing with determination and perseverance, combined with an ambitious vision for the future: becoming a global leader in the production of APIs from an ethical and environmental perspective. We are representatives and promoters

of the new industrial model that sets far-sighted goals while never forgetting how precious people and natural resources are, which need to be protected. Playing the role of market leader also carries a social weight because it means performing a driving and motivational task.

Our concrete commitment is to build new sustainability, involving the company in all operations and business aspects.

A new sustainability integrates respect for the environment, with that for the people who work for us, through training and inclusiveness.

Finally, a new sustainability that positively influences all those with our Company works: suppliers, public and private bodies, and customers. And, of course, we do not forget all those who use the products we have contributed to develop and produce, as we are aware of the value we are generating in their lives.

Paolo Tubertini,  
CEO Olon Group



# 2



## The Olon Group

Olon Group is a global leader in the development and production of active pharmaceutical ingredients for CDMO and Generics, a reliable and preferential partner to the pharmaceutical, biotech and specialty ingredients markets.

We produce Active Pharmaceutical Ingredients (APIs) providing integrated full-service capabilities.

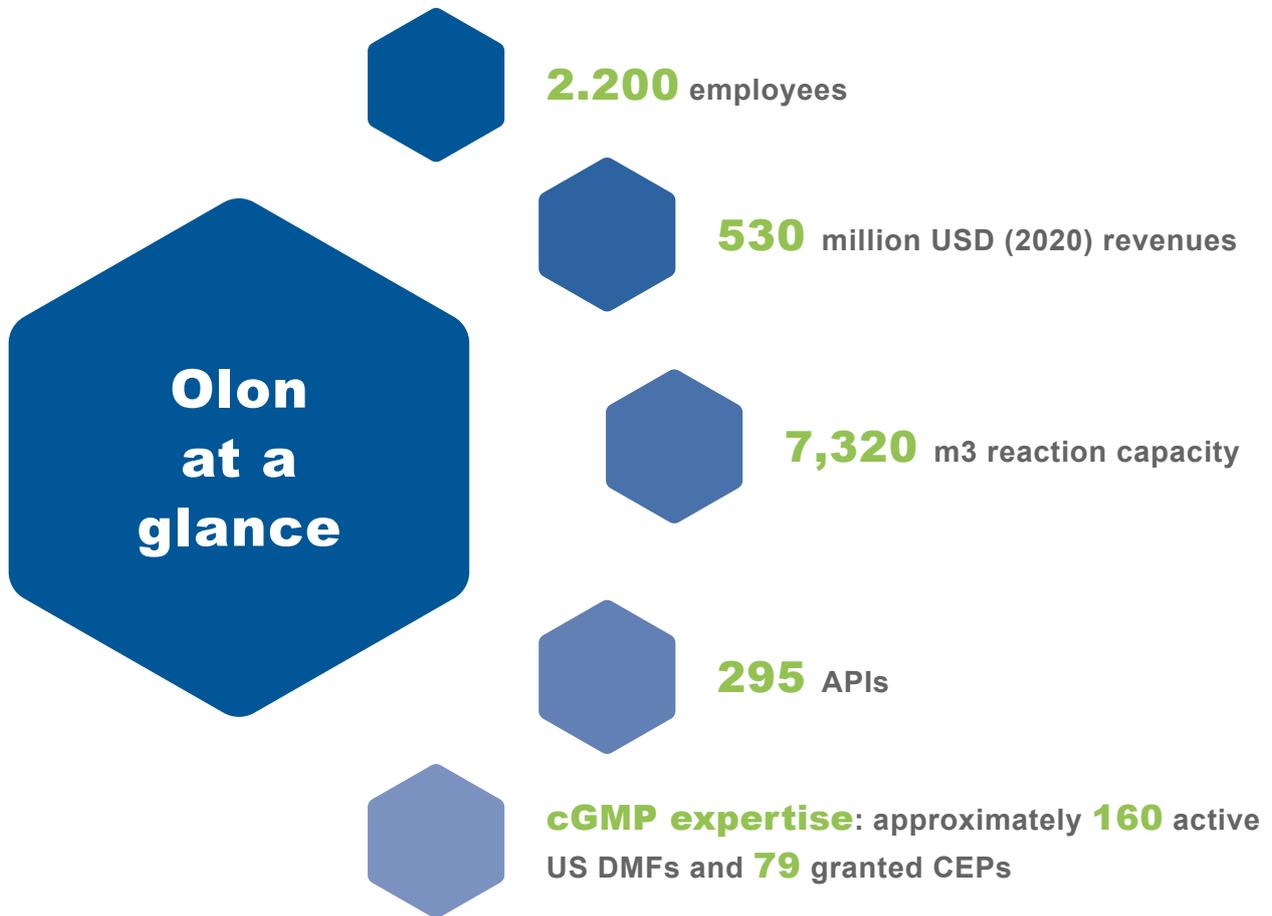
Olon's ability to develop and manufacture Active Pharmaceutical Ingredients (APIs) in our network of facilities allows clients full access to integrated services resulting in delivery timelines, with one of the most extensive track records. We rely on synthetic and biological processes both for generic and contract development and the manufacturing market, in a full cGMPs environment.

With our expertise in chemical synthesis and microbial biomanufacturing, we are one of the most important players of API and HPAPI production, including controlled substances, innovative and generics drugs, advanced intermediates, enzymes, proteins, peptides and food biomanufacturing. Our sites are equipped with multi-purpose, dedicated lines where we can produce at different levels of high containment, up to OEB 5.

Headquartered in Rodano (Italy), we have 11 manufacturing facilities - 8 located in Italy, 1 in Spain, 1 in the USA and 1 in India, all compliant with international requirements, and 3 branch offices. Two of these facilities (Capua and Settimo Torinese in Italy) are biotech centers, while the one in the USA is focused on R&D.



We challenge and innovate the way to deliver science to improve human health. Our competitiveness is based on creative ideas and pathways for prompt and sustainable solutions in the life science industry.





# 3



## A Path of Sustainability

The chemical industry has always had to deal with the dynamics of sustainability, because it is one of the sectors in which the assessment of environmental impact is most crucial.

Our responsibility towards people implies both the wellbeing we ensure through the attention for the environment, and through the compounds we produce to improve public health.

It is also one of the sectors that has developed a more structured and profound technological and process know-how, backed by over a century of industrial tradition: a history of optimizing processes and reducing consumption.

We have endorsed this progress thanks to an enlightened and successful entrepreneurial mentality, combined with a strong ethical motivation: investing to produce better and consume less.

Improved production and sustainability are closely linked and connected: there cannot be one without the other. Above all, these dimensions are linked to our global strategy, operations and initiatives.

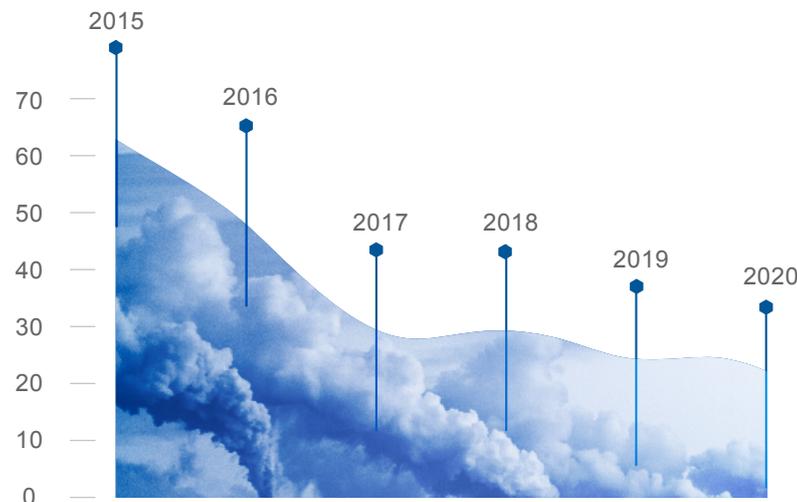
Olon's goal is to apply a systematic approach, which covers all aspects of its business, involving people, machinery, processes, technologies, and products on a global scale, given the global size of the company.

To achieve results on a global scale, however, it is necessary to act locally: we strive to make effective changes at each of the group's sites, involving all of them, and influencing the wider network of suppliers, distributors, collaborators and the customers themselves, as well as the territories surrounding the sites and the people living there.

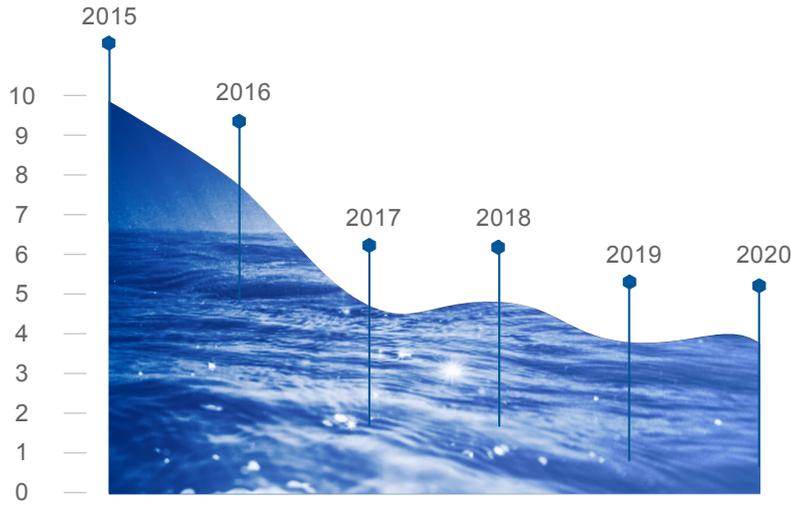
Our business model is based on organic growth. Our path has been enhanced for several years now by the inclusion and implementation of an environmental report, which has been constantly reviewed and updated over the last ten years according to ambitious target objectives.

We started reducing systematically the inefficiencies along manufacturing processes: overhaul, modernize or, where necessary, replace machinery to achieve a reduction in consumption and therefore in emissions, both direct (combustion of methane for heating and for chemical reactions) and indirect (generated by the consumption of electricity).

### Carbon emissions per ton of manufactured product (Ton CO<sub>2</sub> / Ton)



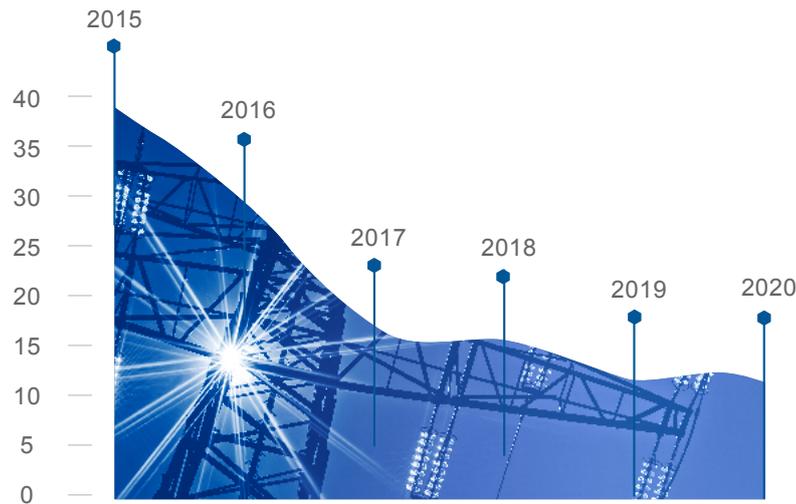
### Water consumption per ton of manufactured product (m3 / Ton)



### Total waste per ton of manufactured product (Ton / Ton)



## Energy consumption per ton of manufactured product (TEP / Ton)



For example, between 2019 and 2020 alone we invested more than €14 million in the Rodano (Milan), Casaletto Lodigiano (Milan), Dorno (Milan) and Settimo Torinese (Turin) production plants in work to make the sites more sustainable. Derivados Quimicos, our site in Murcia (Spain), has invested €5.5 million over the last 5 years in sustainability and the environmental impact.

Optimization has also involved water consumption, and all research, development and control processes dependent on digital innovation, both in terms of software and hardware.

Olon Biotechnology Centers have a significant fermentation capacity, Microbial fermentation is an eco-friendly and highly sustainable process that mostly utilizes just water, natural nutrients and microorganisms. It significantly reduces the use of chemical solvents. The last important step in this process was to broaden the concept of sustainability to 360°, also integrating aspects of a professional, ethical and social nature into this dimension, such as training and inclusiveness of workers, the dynamics of internal company growth and the demand for guarantees from the supply chain.



# 4



## The Last two years and the Covid-19 Pandemic

The Covid-19 pandemic in February 2020 had direct and indirect effects on the group.

From an operational point of view, we had to firstly incur extraordinary costs to ensure total compliance with the requirements in terms of individual protection and distancing of workers in the production sites. The investment was considerable. However, thanks to forward-looking leadership and a capacity for resilience and flexibility, we have been able to guarantee the drug supply chain without any disruption in terms of access to treatments for the patients.

The pandemic has in fact caused a major shock to the market due to the situation that has arisen of extreme uncertainty regarding supplies, has affected the entire pharmaceutical supply chain, with consequent sudden peaks in demand. We have been able to respond quickly, meeting the demands of our partners.

In this context, our Group, a global leader in the production of active pharmaceutical ingredients, has also made a significant contribution both to the production of drugs to treat Covid-19 and to the development of new compounds.

The privilege of being able to continue to operate despite the limitations imposed by the pandemic has given us with an additional responsibility and made us reflect on our role: we represent a value for the community, not just for ourselves. We have opened a specific aid program to the municipalities where our plants are located. These entities are the first structures that have faced the difficulties of communities.

Among the initiatives we have supported, there are the distribution of masks to citizens in the Municipality of Casaleto Lodigiano, the activation of a psychological listening service in the Municipality of Dorno, the purchase of material for the Red Cross in Capua, and free meals to people in difficulty in Mulazzano.

Finally, we would like to underline that the emergency situation has not changed the commitment and objectives in terms of short and long-term sustainability; actually, it demonstrated the importance and absolute centrality in a path of industrial growth that follows ethical principles and social responsibility.





# 5

## A new Sustainability

A modern industrial vision must start from respect and protection of the environment, and build the foundations of new sustainability around this pillar. We place people at the center, as driver of change, acting as an inspiration for the whole sector. This approach to sustainability must represent, first and foremost, the idea of the future that guides all Olon's next steps.

In recent years we have strived to continually improve our environmental performance by involving and informing the whole management structure and all the employees, fostering a culture of responsibility and participation, and providing the necessary resources and training.

### Environment

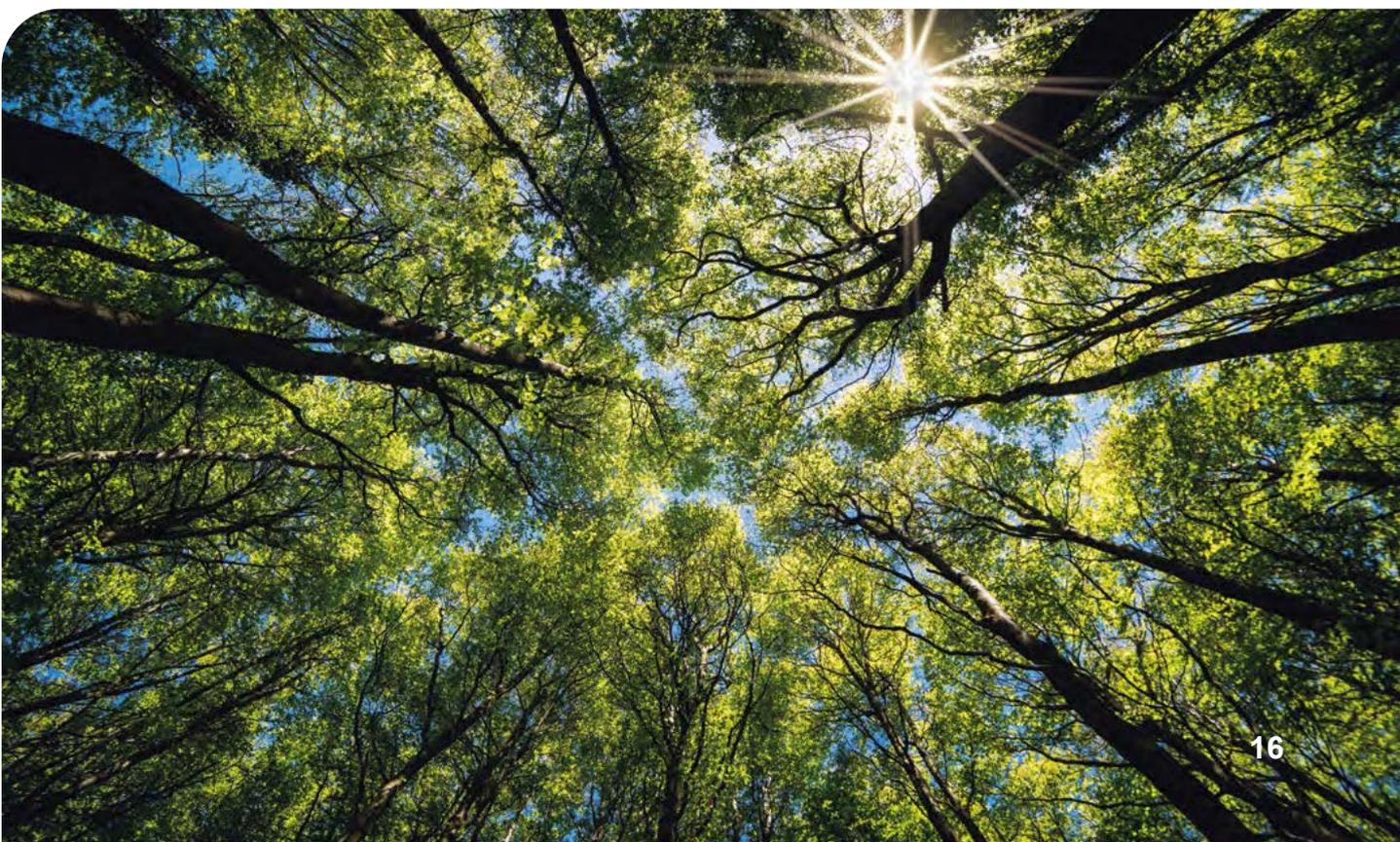
It is the first pillar of sustainability, and it cannot be otherwise. We operate with a global and responsible approach to minimize adverse impacts on the environment, complying with all applicable environmental regulations. We invest systematically in sustainability of our manufacturing network.

Our systems in place ensure the safe handling, movement, storage, recycling, reuse, or management of waste, air emissions and wastewater discharges, and prevent and mitigate accidental spills and release of fuels, raw materials, chemicals, intermediates, products, and other hazardous materials into the environment.

Among the activities dedicated to sustainability in the last three years on our sites, we can mention:

- high-efficiency co generators with reuse of thermal waste (obtaining white certificates);
- new thermal power plants for steam production (reduction of CO2 emissions and specific methane consumption);
- technologies to increase the degree of production containment to protect workers and the environment;
- distillation columns for solvent recovery (reduction of generated waste, reuse of solvents, circular);
- green chemistry projects for the replacement of chlorinated solvents and reduction of critical substances (particularly toxic, especially on new processes).

The aggregate data of the entire Group over the last five years, also shows how our commitment to the environment has led to significant results, with the substantial halving of CO2 emissions, water and energy consumption, and waste production.



## Targets

To promote environmental sustainability, according to the United Nations 2030 Agenda for Sustainable Development Olon to set the following targets by 2025:





## Good practices

### **Dorno (Italy)**

For 2021 alone, our expectation is to reduce electricity, methane, diesel and water consumption by 5%, thereby reducing CO2 emissions.

### **Rodano (Italy)**

With an investment of over €2 million, a regenerative thermal oxidizer has recently been installed on the site in addition to the previous one, increasing the capacity to manage department emissions by eliminating pollutant compounds from gaseous effluents.

### **Garbagnate (Italy)**

In order to lower the total volume of waste and to improve separation, condensate drains have been replaced in 2021. The site has improved steam efficiency and has reduced consumption, waste and emissions, while solvent consumption has been optimized.

### **Derivados Quimicos (Murcia, Spain)**

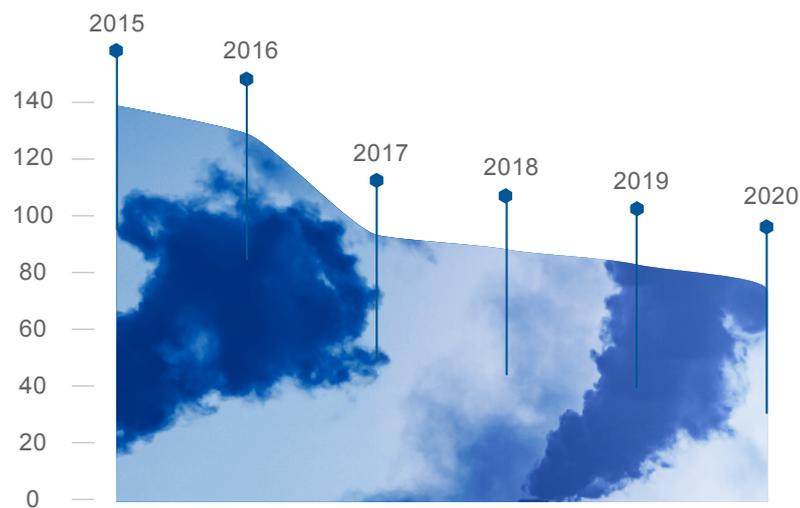
Derivados Quimicos has planned an annual constant reduction in total emissions of 5% compared to the previous year, a decrease in the use of water and solvents, thanks to their recovery and reintroduction into the process, and the elimination of emissions into the atmosphere, by conveying the gases emitted into new regenerative thermal oxidizers.

In the last 5 years alone, 15 interventions have been carried out for a total investment of 5.3 million euros.



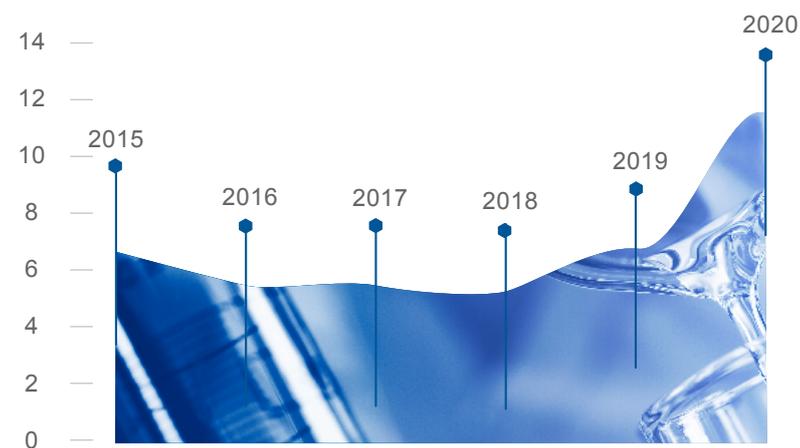
## Derivados Químicos Data

### Evolution Decrease of Emissions (t)



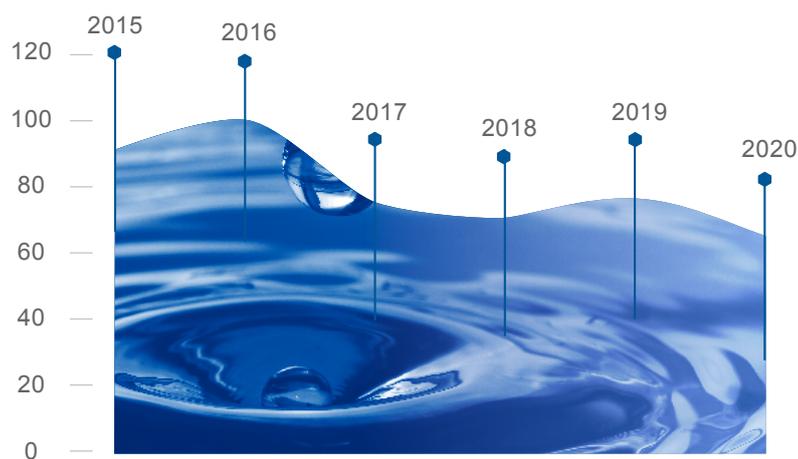
Effective Emissions

### Solvent Recovered with Respect to the Total (%)

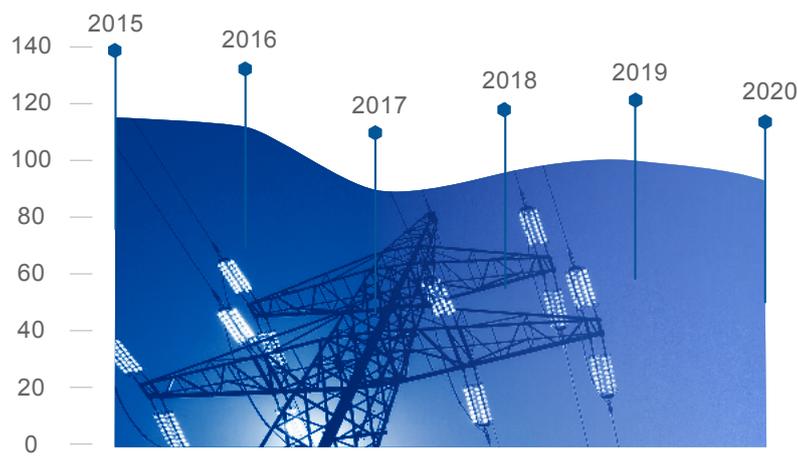




### Water Consumption (km<sup>3</sup>)



### Electricity Consumption (kWh)



## Mahad (India)

Mahad has already implemented some important processes aimed at ensuring greater environmental sustainability, such as the installation of a steam generator, which guarantees 100% use of biomass instead of fossil fuel, producing zero greenhouse gases.

- Up to 40% renewable energy will be used from Jan 2022
- 100% use of bio mass in place of fossil fuel for steam generators
- Zero greenhouses gases
- 50% reduction of fresh water consumption by the end of 2024

The optimization of existing machines and processes will continue over the next years in all our sites.

We also firmly believe that the complete and positive integration of our activities with the local environment and responsible behavior towards stakeholders are the most important conditions to achieve our development objectives.

## Olon Supply chain

We have developed a document with a **code of conduct and a declaration of sustainability** requirements that we submit to all suppliers and external businesses with which we collaborate globally

The document binds the signatories to guarantee our same standards in terms of environmental protection, treatment of workers and production safety certifications.

All new suppliers must sign the document and ensure our same level of sustainability at 360°. Our corporate guidelines provide that we close the collaboration in case of failure to sign. Since adopting the document, we have already entered into more than 40 new sustainable trade agreements.





## Social responsibility

We take on a social responsibility, monitoring and responding to the economic, environmental and social expectations of all stakeholders.

We have always paid the utmost attention to the communities that reside where we operate, as demonstrated by the actions taken to react to the pandemic crisis. But it can also be exemplified by the approach adopted towards the population of Mahad, India, when we acquired the API production plant in 2019: a comparison in which we collected needs and requirements, which then contributed with the purchase of an ambulance for the hospital, rebuilding the main road and the school building, donating equipment and organizing educational courses for women and children.

A **social responsibility** that can also be understood in a broader sense, towards developing countries. In 2019, we also contributed to the distribution of hydroxyurea-based treatments in Ghana: the Novartis group invited us to participate in a **public-private partnership involving the African state's own government**, unique in its kind and aimed at helping the local population suffering from sickle cell disease.

Olon, covered the costs of more than 24,000 treatments.

The partnership has included the establishment of national guidelines for treatments, newborn screening and centers of excellence for treating sickle cell disease; the provision of accessible treatment options in line with global standards of care; the use of digital technologies to monitor and assess patient registration, report data in real time and help ensure the safe introduction of drugs on a large scale.



## People

It may seem like a cliché, but the major strength of a Company is represented by the people who make up its organization, and sustainability in its broadest meaning cannot fail to take this into account.

Successful research and development require the sharing of ideas and viewpoints between individuals: the more diverse the background origins, training and career pathways and experiences, the greater the possibilities will be to think **outside the box**, propose alternative solutions, and innovate.

We carry out human resources development initiatives and programs such as the Olon School Project, which selects a group of young graduates, invests in their personal and professional growth within the organization and creates a pool of high-potential talent for critical roles, based on the concept of **diversity & inclusion**.

We strive to create an organization that enables all individuals to reach their highest potential, investing in training and skills development, in job rotation programs and talent development to grant both the people and the company sustainability and growth over time.

Participation in the project is strongly stressed on female candidates, also thanks to the collaboration with Assolombarda on STEAMiamoci, an initiative that aims to enhance female talent in the field of science and technology.

The induction process in joining the Group is combined with great attention to personnel safety, with an ambitious goal, already undertaken, of zero accidents, and the centrality of continuous training, which guarantees all employees an annual amount of hours dedicated to it.

We are also extremely proud of the dynamism that characterizes us in terms of professional paths in the company: it is a pride to be able to give everyone the opportunity to cultivate and express their talent, to put it at Olon's service, and to build their own personal success story doing it.

## Olon's vision of the future

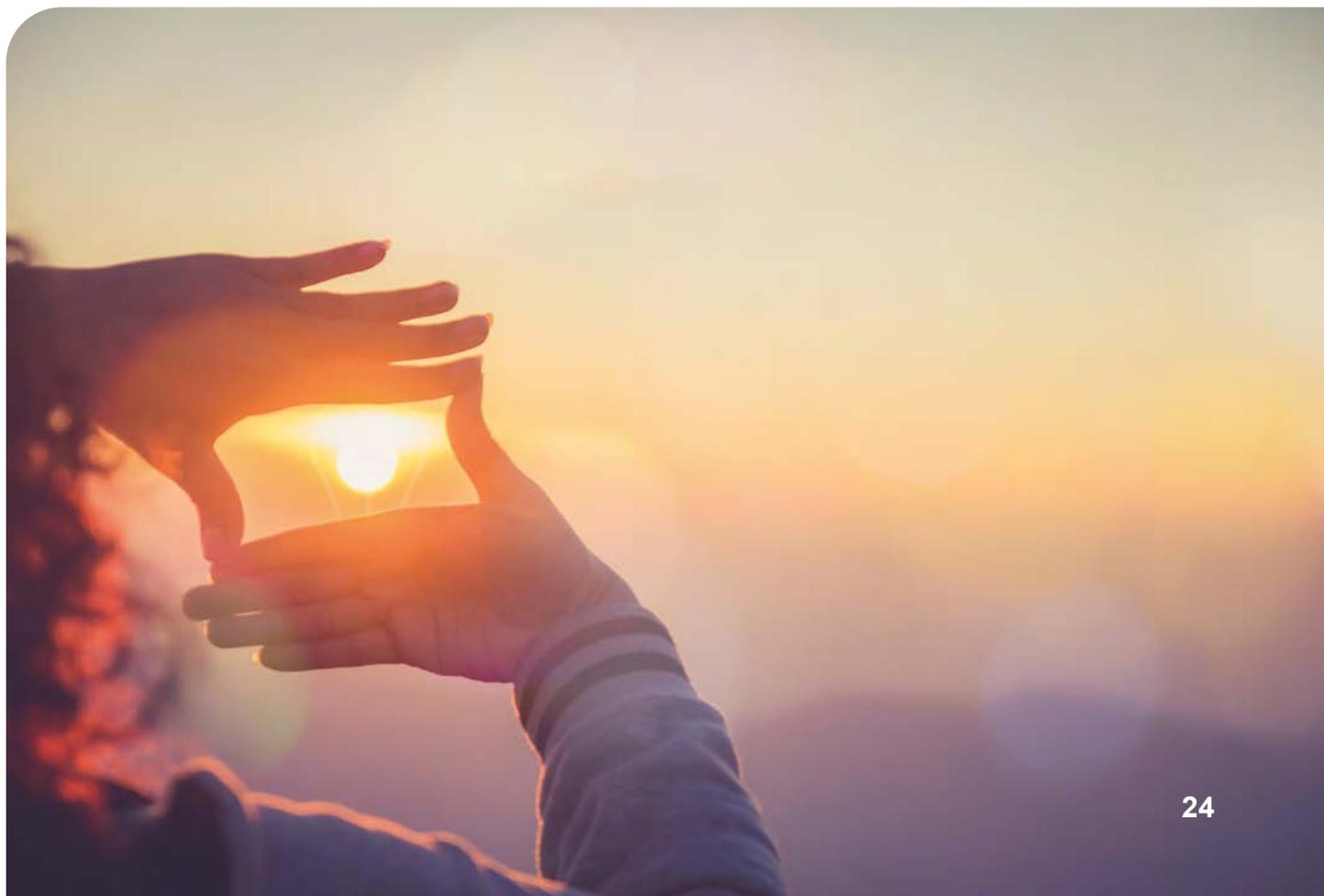
Our vision starts from the business and extends to the entire sector, looking at the will to be a persistent enabler of skills. Our ambition is to promote a more sustainable production of APIs, meeting the highest standards of quality, investing in innovation and technology processes.

A deep technological revolution, that challenges the production as we know it, must be carried on: the time frame to be taken into consideration will necessarily be longer but requires to develop more eco-friendly processes, which use fewer resources and produce less waste.

The approach to chemical synthesis implies steps of reactions, which may require significant amounts of energy. The challenge is to reduce energy consumption and the use of solvents that are needed along the chemistry process.

Our research for innovative technologies is therefore focused on tackling these issues.

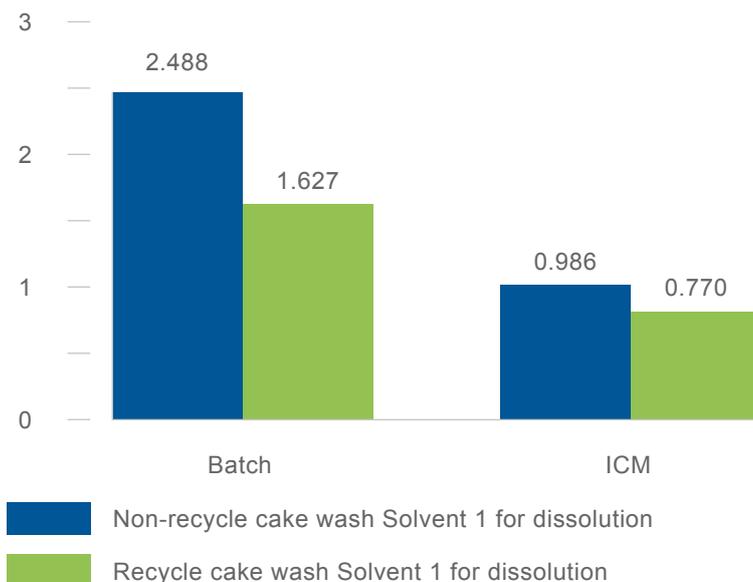
To overcome the significant amounts of energy required for reactors, we are implementing several continuous manufacturing processes investigating both the flow chemistry approach as well as CSTR (continuous stirred tank reactors). It means no batch reactors with loading and unloading phases, but constantly active production units (either microreactors or small classical reactors), which process fewer materials, thus requiring significantly less energy for cooling and heating procedures.



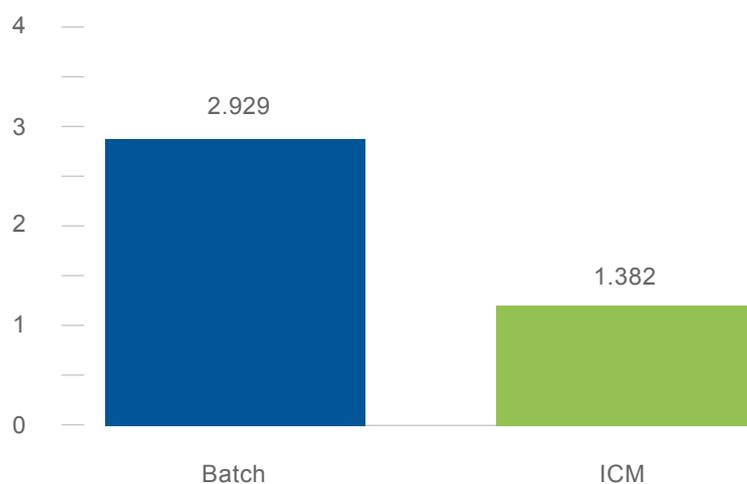
It also provides greater safety for operators and the process itself, due to using limited quantities of products that react together at any given time.

Moreover, the latest technological development will make it possible to use light (photochemistry) or electricity (electrochemistry) to run reactors, which would be unfeasible under more conventional conditions.

### E-factor (kg Waste/kg Product)



### Energy Intensity (MJ/kg)



$$\text{Energy Intensity} = \frac{\text{Total process energy (MJ)}}{\text{Mass of product (kg)}}$$

To reduce the use of solvents, **biocatalysis** is well established within our reactor portfolio: laboratory-created enzymes are able to transform a given starting material into the desired finished product by using water at room temperature, without requiring special technology.

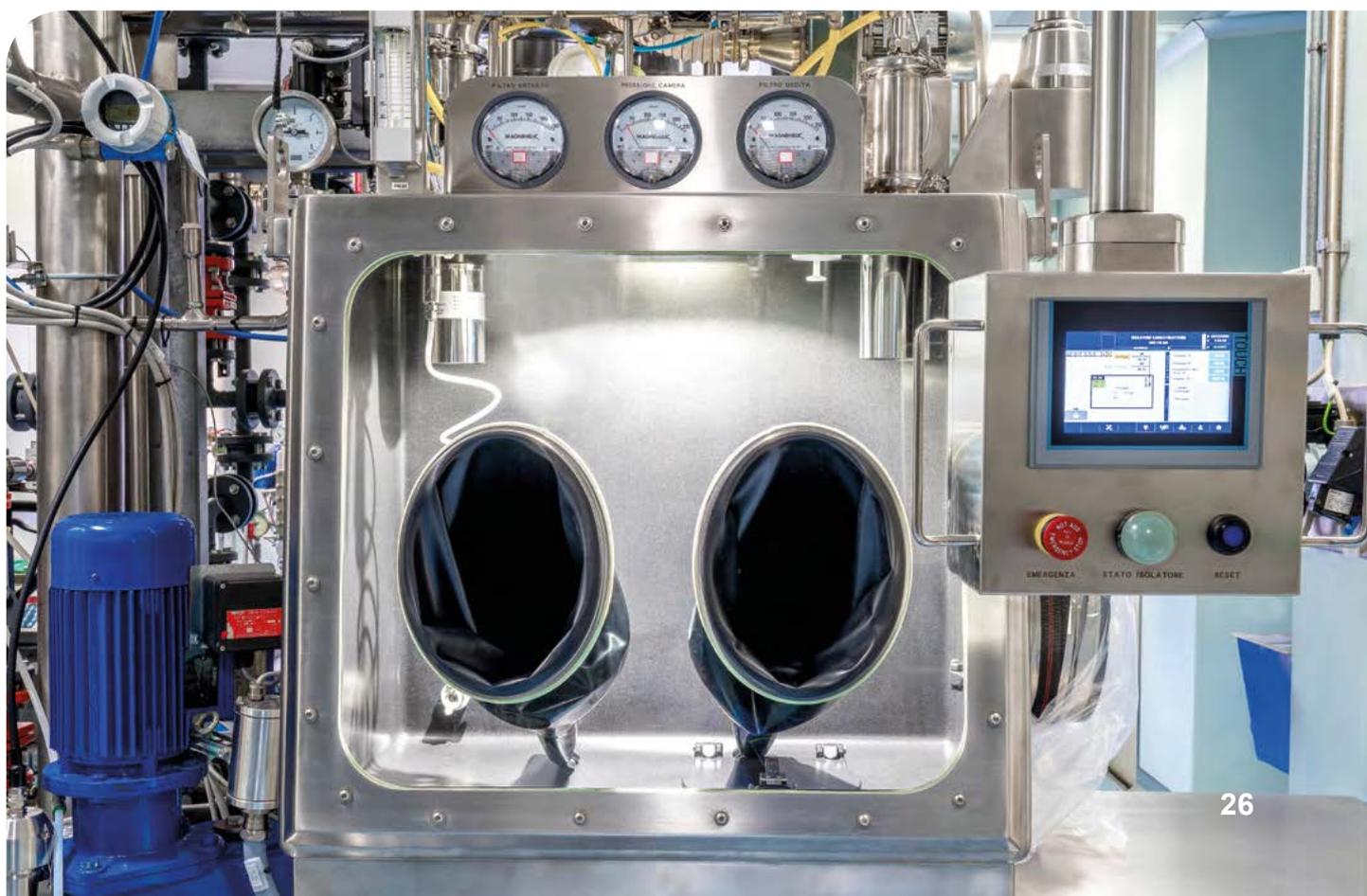
This revolutionary process reduces the energy required to heat water and potentially virtually eliminates the use of solvents, responding perfectly to sustainability targets. It is applicable to numerous types of transformations. We have started to put it into practice on an industrial scale.

We need to continue investing in research and development, in collaboration with universities and research companies that develop individual enzymes, as demonstrated by the pilot project we have been carrying out for more than two years in Segrate in collaboration with the University of Milan.

We are grappling with a change of mindset, in which there is a continuous exchange of knowledge and information between the chemical and engineering sectors, also generating new specific know-how.

This investment will have a double impact in terms of sustainability: it is less energy and labor-intensive due to the high level of embedded automation. All this is in a context of greater safety, with the aim of reaching end-to-end manufacturing: from raw product to ready drug, with fewer steps and purification processes.

Technological progress also has an impact on the entire production chain, producing a rapid evolution in terms of procedures and digitization, towards an effective Industry 4.0.



With its **Biotechnology Centers**, Olon is a global leader in **microbial manufacturing**.

Microbial fermentation is the first biotechnological process that has ever been applied to drug manufacturing. Several of these drugs have been revolutionary breakthroughs in the history of medicine and are still life-saving treatments for millions today. Olon began manufacturing by microbial fermentation in the 1960s, applying the technology to the production of antibiotics and later to many other molecules including cancer drugs. Today, fermentation, which is a recombinant DNA technology, is applied to manufacturing life-saving treatments such as insulin for diabetics, as insulin for people suffering from diabetes.

**Microbial fermentation is an eco-friendly and highly sustainable process** that mainly uses only water, renewable nutrients and microorganisms. It reduces the use of chemical solvents, which are already significantly limited in all Olon Biotechnology Centers.

However, we are firmly committed to further reducing the environmental impact and strive to limit the use of chemical solvents in all our manufacturing processes.

We want to take on a leading role in the chemical-pharmaceutical sector from an ethical and social point of view even before the economic and productive one, by being bearers of a new perspective.

