TOWARDS INDUSTRY 5.0

THE NEW INDUSTRIAL ERA **HAS ALREADY BEGUN!**

We are ready for Industry 5.0. After the first industrial revolution, those that followed it, and the very recent Industry 4.0, the world of production is already preparing for the next one: Industry 5.0. The announcement came from the European Commission through a dedicated document "Industry 5.0: towards a sustainable, human-centric and resilient European industry", which puts the well-being of the worker at the center of the production process and uses new technologies to provide prosperity, jobs and growth, while respecting the limits imposed by the planet.

Making Industry 5.0 a concrete reality means for industries in every sector to adapt and evolve to embrace the green and digital transition, while continuing to be competitive and productive.

DIFFERENCE TO INDUSTRY 4.0

The main difference between the fourth and fifth industrial revolutions is that the latter seeks to foster a more balanced working relationship between increasingly intelligent technologies and humans. The most representative element, at a technological level, of this virtuous interaction between man and machine will be cobots, collaborative robots, integrated into industrial processes for the most repetitive and trivial tasks, providing humans with more opportunities to use their creative flair.

Industry 5.0 also attaches great importance to sustainability, aims to create a more ergonomic and individual-centred working environment, aims to respond to social and environmental needs, promoting the circular economy, corporate social responsibility and sustainable production for a more resilient future oriented towards the well-being of man and the planet.

→ WHY WE TALK ABOUT INDUSTRY 5.0

- The first revolution was defined by mechanisation through power generated by water and steam.
- The second focused on the concept of mass production and was characterised by electricity, iron and steel.
- The third saw the rise of the computer and automation.
- Industry 4.0 is characterised by connection and digitalisation, the creation of smart factories with cyber-physical systems, and communication through the Internet of Things.
- Industry 5.0 takes the next step, which consists of exploiting the collaboration between increasingly powerful and precise machines and the unique creative potential of the human being.

INDUSTRY 5.0 AND **ENVIRONMENTAL SUSTAINABILITY**

THE IMPORTANCE OF ECO PRODUCTION

Industry 5.0 places a particular emphasis on environmental sustainability, recognising the vital importance of an eco-friendly manufacturing approach for the well-being of the planet and future generations. This new industrial era, encourages the adoption of processes that minimise environmental impact through increased energy efficiency, the use of sustainable materials, and waste recycling. The circular economy becomes a fundamental pillar, pushing companies to rethink the life cycle of products, from design to the end of their use, promoting the creation of durable, repairable and fully recyclable products. In addition, the integration of smart technologies makes it possible to optimise the use of resources and reduce waste, thanks to real-time monitoring systems and predictive algorithms that ensure a more efficient use of energy and materials.
Sustainability in Industry 5.0 is not only limited to ecological aspects, but also includes corporate social responsibility, with a focus on working conditions and the economic and social impact of production activities on local communities. In this context, eco-sustainable production becomes a strategic imperative for companies.
This new industrial revolution encourages companies to integrate renewable energy solutions into their production processes, optimise energy consumption, and improve overall sustainability performance. Through the use of advanced technologies, it is possible to monitor and manage the flow of energy in real time, identifying and reducing waste. These smart systems can also predict peak demand and adjust production accordingly, maximising efficiency and minimising the carbon footprint.

CHALLENGES AND OPPORTUNITIES OF INDUSTRY 5.0: INVESTING IN NEW TECHNOLOGIES

Among the main challenges posed by Industry 5.0 is the need for significant investment in new technologies and infrastructure, as well as managing the transition to smarter and more interconnected production systems.
The bottling and packaging plants produced by SMI are part of the investments envisaged by the government's Industry 4.0 and Transition 5.0 plans, as they are equipped with the most modern automation and IoT (Internet of Things) technologies. The latter make it possible to collect and integrate the operating data of all the machines supplied by SMI into a single control and management platform, to provide constant monitoring of the level of efficiency and energy consumption of the same in real time, to intervene even remotely to vary the processing parameters or in case of problems.

THE SOLUTIONS ADOPTED BY SMI FOR INDUSTRY 5.0

SMI manufactures fully automated and ergonomic systems for primary, secondary and tertiary packaging, user-friendly and able to interconnect in digital networks. This makes it possible to increase the flexibility and efficiency of production, as well as an accurate control of the consumption of the machines, fully meeting the current criteria of Industry 4.0 and the new ones of Industry 5.0. Thanks to the digital intelligence with which they are equipped, the latest generation of SMI machines can benefit from the SMYIOT platform, which has the task of collecting all the operating and life cycle data of the same, allowing them to be verified, processed and enhanced. Enhancement made in a collaborative perspective and synergy between man and machine and AI, so as to speed up and improve the accuracy of decision-making processes, flexibility, adaptation of production, efficiency and energy control of plants. All this is also guaranteed by constant monitoring, through a control room, by the SMI after-sales service office; in addition, the HMI of SMI plants is another element of Industry 5.0 that aims to simplify human-machine collaboration. From the control panel, the operator can select various dashboards that facilitate the management and maintenance of the machine, allow the selection of processing parameters and provide the user with guided and interactive procedures. All these elements ensure the user-friendly management of the bottling and packaging systems produced by SMI.