

ESG & Innovation: Driving Sustainable Progress in R&D

As we approach the dawn of 2025, the intersection of Environmental, Social, and Governance (ESG) principles with innovation has never been more critical. Our company has been at the forefront of integrating ESG into our research and development (R&D) processes, setting ambitious goals and pioneering new methodologies to ensure sustainable progress. This article outlines our journey, key initiatives, and the impact of our efforts on the broader industry.

Historical Context and Baseline Establishment

In 2023, we laid the groundwork for our ESG efforts, embedding these principles deeply within our R&D framework. A significant milestone was achieved with the European Commission's official notification regarding our French IPCEI (Important Project of Common European Interest) program. This program addresses the demand for critical medicines, such as macrolide antibiotics and corticosteroids, incorporating disruptive environmental innovations and strong ESG and HSE components. The recognition by the European Commission will help us carry out innovative projects that are key to long-term European sovereignty and which will contribute to the green transition of the pharmaceutical industry. In short, the launch of IPCEI marked a turning point, placing ESG at the heart of our «Greening processes» and catalyzing our transformation.

In short, the launch of IPCEI marked a turning point, placing ESG at the heart of our «Greening processes» and catalyzing our transformation. The initial phase involved establishing a baseline for our ESG efforts. This was a crucial step, as it provided a clear starting point from which we could measure progress. At this stage, we conducted a comprehensive review of our existing processes and identified areas where improvements were needed. This review highlighted the need for a more structured approach to integrating ESG principles into our R&D activities.

Setting Ambitious Goals

Our grand objective is to ensure that 100% of our projects are covered by environmental performance indicators. One of the first key performance indicators (KPIs) we adopted was Process Mass Intensity (PMI). Specific targets for PMI reduction were set within the IPCEI project, serving as a demonstrator of our commitment to minimizing environmental impact while maintaining high standards of innovation.

The PMI metric is particularly significant because it measures the efficiency of our processes in terms of material usage. By focusing on reducing PMI, we aim to minimize waste, decrease water and energy consumption and improve the sustainability of our operations. This goal is aligned with our broader commitment to reducing our environmental footprint and promoting sustainable practices across all aspects of our business.



Collaborative Efforts and Methodology Development

The IPCEI initiative spurred a collaborative effort involving our R&D, Industrial Operations, and ESG teams. Together, we established the necessary ways of working to integrate environmental indicators as key performance metrics across all company projects. Our approach incorporates key environmental indicators such as greenhouse gas emissions, energy consumption, circularity and waste management, water usage, and biodiversity into our performance criteria.

In terms of partnerships, we also entered into a CDMO collaboration with SpiroChem, a leading Contract Research Organization headquartered in Switzerland. This agreement enables us to provide customers with integrated customized solutions to make their chemical drug development shorter, greener and more cost-efficient. CDMO is collaborative by nature and collaboration has been a cornerstone of our ESG strategy. By bringing together experts from different disciplines, we have been able to develop a holistic approach to sustainability. This collaborative effort has also fostered a culture of innovation, as team members are encouraged to share ideas and work together to solve complex problems.

Implementation Strategy and Tools

To achieve our ambitious goals, we developed a comprehensive implementation strategy. This included defining the indicators, establishing processes to evaluate them, and creating user-friendly tools to facilitate their application. Several tools were evaluated and tested on several complex molecules in our portfolio. This methodology not only helps estimate the carbon footprint of our products but also provides high-quality visualizations.

Let's take another concrete example: EUROAPI's Research and Development teams have made significant strides in enhancing the sustainability of solid-phase peptide synthesis (SPPS). A study recently introduced a groundbreaking method that combines real-time monitoring using Raman spectroscopy, the use of a rotating bed reactor, and the substitution of traditional solvents with greener alternatives. This pioneering work published in Sustainable Chemistry & Engineering of the American Chemical Society by EUROAPI's dedicated team not only advances the field of

peptide synthesis but also sets a new standard for sustainability in the pharmaceutical industry.

Key Drivers and Results

Our efforts have yielded significant results. For example, in the field of tuberculosis treatment, EUROAPI's rifampicin API has been improved. Thanks to the hard work of our R&D and industrial teams, we have been able to monitor and control all the parameters and can now provide our customers with a high-quality API that meets the new requirements for nitrosamine impurity standards.

By running reactions under more concentrated conditions, simplifying work-ups, and optimizing liquid-liquid extractions, we have achieved substantial reductions in PMI for several projects. These achievements demonstrate the effectiveness of our strategies and the potential for broader application within our projects. By improving the efficiency of our processes, we are able to reduce waste, lower costs, and enhance the overall sustainability of our operations.

Future Directions and Integration

Looking ahead, we aim to fully integrate these environmental indicators into our workflows. This includes defining roles and responsibilities, establishing training methods, and incorporating these objectives into employees' performance metrics. By aligning objectives across departments, we ensure a cohesive and committed approach to achieving our ESG goals. We plan to continue fostering a culture of innovation and collaboration, encouraging our team members to think creatively and work together to achieve our sustainability goals.

In conclusion, our journey towards integrating ESG principles with innovation is a testament to our commitment to sustainable progress. By setting ambitious goals, fostering collaboration, and developing robust methodologies, we are transforming our company. As we continue to innovate, we remain dedicated to minimizing our environmental impact and contributing to a more sustainable future.



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