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Health and Climate: The Biopharmaceutical Industry's Challenge of Carbon Neutrality

The biopharmaceutical industry is at a crossroads. While it plays a crucial role in public health through major therapeutic advances, it must also face a reality: its environmental footprint. Energy-intensive processes, logistics, and resource use generate significant greenhouse gas emissions. In the face of climate emergency, stakeholder expectations –clients, investors, regulators– are becoming increasingly urgent.

"The biopharmaceutical industry must combine innovation and climate responsibility to ensure a sustainable future," says Charles Ruban, CEO of VERDOT.

The industry can meet this dual challenge by focusing on sector-specific issues and concrete solutions that reconcile health and sustainability. By leveraging complementary initiatives, companies like VERDOT demonstrate that coordinated actions can transform constraints into opportunities.

As Guillaume Panthou, CEO of Stock CO2, points out: *"Every ton of CO_2 emitted is a debt we pass on to the planet. It is time to act collectively to reduce this debt."*

The challenge is immense, but by integrating parallel approaches and committed partnerships, the industry can pave the way for a sustainable transition.

Environmental Challenges in the Biopharmaceutical Sector

The biopharmaceutical industry faces significant environmental challenges related to its industrial infrastructure and logistics operations. Factories, laboratories, and research centers consume vast amounts of energy, increasing the sector's carbon footprint. Its global supply chains, essential for raw material sourcing and product distribution, contribute heavily to greenhouse gas emissions. Additionally, the intensive use of chemicals and specialized packaging creates waste that is difficult to process, further exacerbating environmental concerns.

"Our industrial processes, while efficient, require rethinking to reduce their environmental impact without compromising quality." says Charles Ruban.

However, some companies prove that an alternative model is possible. For over a decade, VERDOT has been proactively adopting eco-design principles to minimize its carbon footprint, making sustainability a core strategic priority. The company optimizes its use of high-carbon-footprint materials like stainless steel, reduces waste, and favors suppliers committed to sustainable practices. From the early development stages, every decision is made with environmental impact in mind.

M.E.R.C.I: Structuring Change for the Industry

Developing an effective climate strategy requires a clear and structured approach. The M.E.R.C.I. methodology: Measure, Avoid, Reduce, Contribute, Inform, provides companies like VERDOT with a framework for deep transformation, rather than just isolated actions.

At the heart of this approach lies the necessity to understand one's environmental impact in order to take targeted action. Conducting a carbon footprint assessment is more than a formality—it is a strategic tool that highlights critical points and prioritizes action areas. VERDOT has leveraged this analysis to identify concrete opportunities for improvement and optimization of its processes.

Innovation plays a key role in this transformation. By integrating eco-friendly technologies, VERDOT optimizes the design of its equipment to reduce energy consumption without compromising performance. Eco-design, which anticipates environmental impacts from the development phase, has become a major driver for limiting emissions while meeting industry demands.

However, despite technological advances, some emissions remain unavoidable. Rather than ignoring them, VERDOT has chosen to actively contribute to carbon neutrality through targeted initiatives. By 2025, its purification columns and equipment will be delivered as carbon-neutral products, reinforcing the company's commitment to a more sustainable industry.

According to Guillaume Panthou, CEO of Stock CO2, this initiative is part of a broader vision: *"Carbon offsetting is not a free pass but a complementary commitment."*

Beyond technical actions, a successful climate strategy also relies on engaging stakeholders. Raising awareness among employees and involving partners creates a true ecosystem of shared responsibility. This collective approach amplifies the impact of initiatives and integrates sustainability into the DNA of organizations.

Responsible Procurement: Building a Sustainable Value Chain

To accelerate its green transition, the biopharmaceutical industry must go beyond its own activities. Implementing a responsible procurement policy is essential to mobilizing the entire value chain.

VERDOT is committed to responsible purchasing by integrating sustainability criteria into its procurement processes, prioritizing local partners to shorten supply chains and limit CO_2 emissions.

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Collaboration is key in this effort. VERDOT, in partnership with Stock CO2, is developing initiatives to offset its operational impact while actively contributing to carbon neutrality.

According to Charles Ruban, these alliances are essential:*" Partnering with those who share our values is crucial to building a supply chain that aligns with our environmental commitments."*

These efforts go beyond regulatory compliance; they enhance corporate credibility and position companies as leaders in the transition to a sustainable future.

The 2050 Vision: Acting today to transform the industry

Achieving carbon neutrality by 2050 is a global commitment, but this goal will only be met if immediate action is taken. In the biopharmaceutical industry, which combines innovation and high carbon intensity, time is running out.

Carbon neutrality projects often take decades to deliver tangible results. As Guillaume Panthou stresses: *"Carbon sequestration projects take 30 years in forests to absorb today's emissions. The time to act is now."*

VERDOT recognizes this urgency and is committed to delivering carbon-neutral equipment by 2025. This initiative aligns with a broader vision, where every innovation contributes to a sustainable future.

"Anticipating the future means acting today to ensure our innovations do not become a debt for future generations," says Charles Ruban.

By combining immediate actions and long-term ambitions, the biopharmaceutical industry can become a model for climate engagement. The initiatives of VERDOT and Stock CO2 demonstrate that coordinated, concrete solutions can transform constraints into opportunities and build a sustainable future.

Conclusion: Reconciling Health and Climate, A collective Challenge

As a key player in public health, the biopharmaceutical industry now faces a broader responsibility. Its environmental impact can no longer be ignored, and climate emergencies demand a clear and ambitious response. Beyond individual efforts, the industry must redefine its role in the ecological transition.

Current initiatives show that reducing environmental impact is possible without compromising innovation. However, true transformation requires moving beyond an individual mindset to build a collective model.

How can all industry actors—manufacturers, suppliers, partners, and regulators—work together to create a truly sustainable biopharmaceutical industry?

This challenge extends beyond technical measures; it touches the industry's culture, its approach to value chains, product design, and its interaction with society. By engaging stakeholders and

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making sustainability a core strategy, the industry can balance scientific progress with environmental responsibility.

Charles Ruban reminds us: *"We have a responsibility to both our customers and our planet."*

But this conversation must continue.

- How can we accelerate the deployment of climate innovations on a global scale?
- How do we overcome economic and logistical barriers to scale up sustainable practices?
- And most importantly, what will future generations expect from an industry that claims to both heal and protect?

As Guillaume Panthou puts it: *"Carbon neutrality is a shared ambition that requires a collective effort."*

The challenge is immense—but exciting. It invites us to rethink priorities through a collaborative approach, where each player contributes to building an industry that meets both climate and societal challenges.

The time to act is now. Not just to meet regulatory requirements, but to truly reconcile health and climate for the long term.

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