

Sustainable Practices in Biopharmaceuticals

BioPhorum’s Influence on Industry-wide Green Initiatives to Support Eco-Friendly Biomanufacturing

BioPhorum, an industry collaboration group, focuses on advancing sustainability within the biopharmaceutical sector. In an exclusive interview, Nicola Coles, Director of BioPhorum Sustainability, shares insights into the organization’s commitment to environmentally responsible practices. Coles, who has led BioPhorum’s sustainability initiatives since 2021, discusses their strategic vision, achievements, and challenges with Christene Smith from CHEManager. From carbon footprint reduction to innovative plastic waste management, BioPhorum aims to shape a more sustainable future for the biopharma industry.

CHEManager: *Mrs. Coles, could you provide an overview of BioPhorum’s mission and impact on the biopharmaceutical industry? How does BioPhorum facilitate knowledge sharing, best practices, and industry progress?*

Nicola Coles: BioPhorum’s mission is to create environments where the global biopharmaceutical and device industry can collaborate and accelerate its rate of progress, for the benefit of all.

Since its inception in 2004, BioPhorum has become the open and trusted environment where senior leaders of the biopharmaceutical industry come together to openly share and discuss the emerging trends and challenges facing their industry.

Growing from an end-user group in 2008, BioPhorum’s membership now comprises top leaders and subject matter experts from global biopharmaceutical manufacturers and suppliers, working in both long-established and new phorums. They articu-

late the industry’s technology roadmap, define the supply partner practices of the future, and develop and adopt best practices in drug substance, fill finish, process development and manufacturing IT.

In each of these phorums, BioPhorum facilitators bring leaders together to create future visions, mobilize teams of experts on the opportunities, create partnerships that enable change and provide the quickest route to implementation, so that the industry shares, learns and builds the best solutions together.

From a sustainability perspective specifically in 2022 we developed a roadmap for the industry. This sets out our vision to “improve patient health by providing biopharmaceuticals while respecting the planet and responsibly using its resources”. This vision was originally driven by three central goals:

- 1. To improve transparency of environmental impact
- 2. Decarbonize to net-zero across the value chain
- 3. Embed circularity across the product lifecycle



Nicola Coles, BioPhorum Sustainability

During 2024 we have been discussing the need to update these goals to include nature and biodiversity in recognition of the growing crisis in this area, and in recognition of emerging frameworks such as the Science Based Target for Nature and the Taskforce for Nature Disclosure.

We will also be building out a maturity model this year across these four goals and across the product lifecycle, from raw materials-manufacturing-distribution-product use and end of life.

Can you share some of the key sustainability initiatives currently underway at BioPhorum?

N. Coles: A key focus for us is emissions as you would expect. We are targeting all scopes through HVAC Optimization and Decarbonization of water and are also working to understand our industry scope 3 hotspots. Alongside this improvement work we are working on transparency of environmental impact across the value chain—looking at

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supplies into the biomanufacturing space and supporting efforts to understand the impact of a biopharmaceutical product in totality.





We have a strong plastics program, looking at opportunities for learning and innovation in both the plastics we use at the manufacturing phase—single use technology systems, and the plastics which enable product use through devices—autoinjectors, pens etc. During this year we will broaden our focus from plastics to consider wider material stewardship as we start to develop an approach to circularity and really understand what this means across the product lifecycle.

Biopharmaceuticals require access to significant volumes of high quality water, so we also have work in this area—beginning with water stewardship where we have recently published a paper, and moving to look at better water management though circularity and decarbonization.

How has the spirit of collaboration within BioPhorum led to breakthroughs in environmental responsibility?

N. Coles: BioPhorum has a long history of connecting suppliers and biomanufacturers to overcome technical challenges so when we began to look at environmental excellence we were al-

ready building off a strong foundation of trust and mutual respect. We are now using the voice of the patient/customer as articulated by the NHS to fo-

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cus our work in this area. We recognize the NHS as the most ambitious health system we have seen to date in terms of supplier requirements and their work with the Sustainable Markets Initiative Health System Taskforces is galvanizing effort to improve transparency and reduce impact. We have leaned into other collaborations such as Together for Sustainability for the chemical sector to build off their experience and avoid duplication.

Can you share a moment or achievement from your tenure since 2021 that you feel has significantly accelerated BioPhorum’s progress towards its sustainability goals?

N. Coles: Our work on circularity is a key focus for me right now. This is an area where there is less clarity across the industry. Though there are pockets of innovation at specific points in the value chain—particularly at the devices end, few companies have a tangible strategy/vision for this area and very few if any are really measuring circularity. In my view there has been an over focus on recycling which is fraught with challenge—the infrastructure is not in place, there are many regulatory/quality challenges to consider at both a global and a local level and finally it’s not clear with the data we have that recycling will contribute to reduced GHG emissions. In terms of the work we are doing—we are digging into the data—to understand our materials use, particularly for plastics where we see a growth in demand right across the product lifecycle. We are advocating for better LCA data so that we can be science lead in our decision making. We are connecting with organization such as the WBCSD , to learn from the work

they are doing with other sectors on metrics for circularity. We are developing waste hierarchy guidance for the industry to drive better decision making. And in the meantime we are sharing best practice to enable all members to do the best they can with the technology they have available.

Can you provide an example of a project where BioPhorum’s connections have led to responsible water stewardship?

N. Coles: We believe that there is a move towards stronger water regulation and recognize water stewardship as an important mindset shift the industry needs

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to mak —particular in the wake of extreme weather events. We have recently published a paper in this area which provides a case for water stewardship. The paper discusses the opportunities that effective water stewardship affords and some of the barriers organizations phase in terms of accessing funding for water projects based on perceived lower returns on investment. We held a joint webinar with PSCI and WWF on this topic and we will continue to track the industries progress in this area, developing solutions along the way.

What lessons can other organizations in the industry learn from BioPhorum’s approach to sustainability?

N. Coles: I am often blown away by the generosity of individuals in the sustainability community to share, guide, support, champion and celebrate peers success. I have tried to take this spirit into my connections with other collaborations—to accelerate progress or amplify each other’s messages. No one organization can do this alone, no one collaboration can do this alone. Connecting procurement, technical operations and regulatory voices to drive industry progress is essential if we are to hit the ambitious targets we have set ourselves and deliver our sectors central purpose to improve global health.

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