

# The Crofter: Sustainable Communications

SECTION EDITOR



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## Editorial

Greetings from the croft. As medical writers/communicators who provide services to pharmaceutical companies, we are part of a pharmaceutical company's supply chain.

In this issue, we follow-up on EMWA's November 2022 Expert Series Seminar (ESS) on Sustainability by reprinting an interview with Dr Amy Booth and her research on carbon emissions and sustainable supply chains in the pharmaceutical industry. Dr Booth was the opening speaker of the ESS and her interview

with Kim Thomas for *World Pharmaceutical Frontiers* captures her main findings and insights.

About a week after the ESS, I was excited to learn from Chris Winchester, CEO of Oxford PharmaGenesis, that the US Department of Health and Human Services (HHS) announced their sustainability plans for the healthcare sector at COP27,<sup>1</sup> which includes a joint plan with the National Health Service (NHS) of England to align procurement requirements for emissions and energy use. (These requirements will also

cover pharmaceuticals.) That's collaboration, just as Dr Booth advocates! 😊

Best,  
Kimi

## Reference

1. HHS shares health sector emissions reduction and climate resilience announcements at COP27, 2022 [cited 2023 23 January]. Available from: <https://www.hhs.gov/about/news/2022/11/10/hhs-shares-health-sector-emissions-reduction-climate-resilience-announcements-at-cop27.html>

## Sustainable supply

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Corporate efforts to reduce environmental impact through policies targeted at limiting CO<sub>2</sub> output and dependence on fossil fuels come under the umbrella of ESG (Environmental, Social and Governance) – and sustainability throughout the supply chain is a significant part of that. Here, **Kim Thomas** speaks to **Dr Amy Booth** of the University of Oxford to find out how significant supply chains are in the journey to become carbon neutral.

**H**ealthcare systems in the world's largest economies are responsible, on average, for nearly 5% of a nation's greenhouse gas emissions. If the global health care sector were a country, it would be the fifth largest polluter on earth.

Tackling carbon emissions is now a priority for many health-care systems. NHS England has set a net zero target of 2040 for the emissions it controls directly, and 2045 for the emissions of supply chain companies it can influence. Net zero

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involves cutting greenhouse gas emissions to as close to zero as possible. It differs from another frequently used term, carbon neutrality, which refers to balancing an organisation's greenhouse gas emissions against measures to offset those emissions, for example by planting trees.

A large chunk of the NHS's emissions (25%) comes from medicines, with anaesthetic gases and metered dose inhalers making up one-fifth of that chunk. The remaining 20% of emissions from medicines, according to an NHS document, are "primarily found in the manufacturing and freight inherent in the supply chain." The NHS's ambitious net zero commitment of necessity requires pharmaceutical suppliers to reduce their carbon emissions, who in turn require their suppliers to reduce their carbon emissions.

The Greenhouse Gas Protocol (GHGP) defines three scopes of emission, which can be used to measure an organisation's carbon output. Scope 1 refers to direct

Sanofi opened a continuous manufacturing plant in Massachusetts that emits 80% less carbon dioxide than its first-generation facility.

### Comparing emissions between companies is difficult

Amy Booth, MD, now undertaking a PhD at the University of Oxford on the environmental impact of health systems, has looked at the company reports of the 20 biggest (by prescription revenue) pharmaceutical companies to find out the extent to which the industry has engaged in emissions reduction. In a recently published conference paper, Booth and her co-authors

found that 19 of the 20 companies had made commitments to reduce carbon emissions, with half committing to carbon neutrality and 40% to net zero emissions by a range of target years. Ninety percent had committed to improving reporting and reducing emissions across their supply chain.

While this is promising, Booth notes that it is difficult to compare what companies are doing: "Pharmaceutical companies have different baseline emissions, different baseline reporting years,

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run different operations, have different product scopes, and different employee sizes. This all affects their emissions, and makes comparing their commitments to reduce these emissions difficult. In addition, there are different ways companies can make commitments to reduce their emissions. Some make pledges to carbon neutrality, some to net zero, or some to reducing their emissions by a certain percentage by a certain year.”

Some of the commitments are vague, she adds, lacking clarity about whether they refer to emissions only in scope 1 and 2, or across scopes 1, 2 and 3. Where companies have reported emissions, says Booth, most of the 20 companies had succeeded in reducing scope 1 emissions, and all had reduced scope 2 from their respective baseline years of reporting.

Positive initiatives cited by Booth include the implementation of renewable energy sources such as solar panels or wind farms. Many companies said that they were planning to “switch to more energy-efficient equipment, optimise manufacturing processes through green chemistry principles, and switching their vehicles from petrol or diesel to hybrid or electric”.

GSK, for example, is undertaking a series of initiatives to meet its target of achieving net zero by 2030. At its large manufacturing facility in Irvine, Scotland, it intends to install two new wind turbines (8 MW) and a 56-acre, 20 MW

solar farm. It is also redesigning its rescue metered dose asthma inhalers to use a lower greenhouse gas propellant that has the potential, the company says, to reduce greenhouse gas emissions from its inhalers by 90%.

Other companies are beginning to move from batch manufacturing – where materials are made in large bundles and are sometimes shipped to different locations between steps – to continuous manufacturing, a more efficient process in which drugs are made in a single location in an uninterrupted flow. Those who have adopted continuous manufacturing for part of their drug production include Eli Lilly, Vertex Pharmaceuticals, and Pfizer. Three years ago, Sanofi opened a continuous manufacturing plant in Massachusetts that emits 80% less carbon dioxide than its first-generation facility. It also reduces water and chemical usage by 91% and 94%, respectively.

### Supply chain diversity poses a challenge

While companies are taking positive steps to reduce scope 1 and 2 emissions, tackling scope 3 emissions is a tougher challenge. “The supply

chain for any company is quite diverse,” says Booth, “because you’re not just looking at raw material suppliers or waste management companies, you’re also looking at IT and lawyers and marketing and communications companies.”

Finding a standardised method for measuring and reporting emissions from such a diverse supply base is far from straightforward.

Some pharma companies have begun engaging with their supply chain, says Booth, through measures such as “implementing sustainability criteria into their vendor selection processes” and “committing to a programme where they assist suppliers to purchase more renewable energy”. Measures they could require from suppliers include “sourcing raw materials, water, and energy sustainably or using recycled materials in packaging”.

Pharma companies need to think both about how to bring suppliers on board and how to measure what suppliers are doing.

One way of doing this, Booth suggests, could be through encouraging suppliers to report emissions and targets via the Ecovadis website, which provides a common platform, scorecard,

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benchmarks, and performance improvement tools. The Carbon Disclosure Project is a similar initiative. By requiring suppliers to report to platforms such as these, they can determine the extent to which they are engaging with sustainability principles.

Yet achieving sustainability throughout the supply chain is far from straightforward. Heavy regulation restricts some of the measures companies can take. “If you look at green chemistry principles, a lot of that is about optimising the manufacturing process,” says Booth. “But once you start manufacturing a drug in a particular manner, if you want to make significant changes to that manufacturing process, you have to submit the proposed changes to regulatory bodies and that can place limits on optimisation.”

### Collaboration is essential

Drug packaging is another example: “If you want to change the way you package a drug to make it more sustainable, you have to consider the regulations around packaging. Obviously, there are good reasons for these regulations in many cases, because you don’t want your drug to change its composition or to be consumed by children, but those policies and regulations can be an obstacle to sustainability and I think that’s why there needs to be collaboration with policy makers and regulators.”

Some suppliers are small or medium-sized enterprises, Booth points out, that “might not necessarily have the capital to engage with a lot of these sustainability issues.” For that reason, she says, collaboration is essential: Both pharma companies and government should be prepared to help suppliers as far as they can to meet sustainability targets so that no one gets left behind.

The biggest challenge, perhaps, is the need for standardising reporting of emissions, especially scope 3 emissions. While most of the pharma companies whose policies Booth reviewed use the GHGP reporting method, they use it inconsistently: “Not everyone reports on scope 3 emissions, and not everyone reports on all the



categories of scope 3, so I think improving reporting and transparency is definitely needed. Getting data from suppliers is also going to be a challenge.”

Agreement on how to implement sustainability throughout the supply chain and how to standardise measurement and reporting can only be achieved through cooperation. There are already encouraging examples of pharma companies working together. The International Pharmaceutical Aerosol Consortium (IPAC), for example, is coordinating a programme amongst large pharma companies to encourage patients to return inhaler devices to pharmacies for green disposal. The Pharmaceutical Supply Chain Initiative (PSCI), which promotes responsible practice in the supply chain, is committed to improving environmental sustainability and, at the end of 2021, created a Topic Team to focus

specifically on the “measurement, management, and reduction of Scope 3 greenhouse gas emissions within the pharmaceutical sector”.

Pharma is a large, complex sector, in which any single company has relationships with other pharma companies, with suppliers, with regulators, and with policy makers. This web of inter-relationships means that progress on sustainability depends on cooperation, says Booth.

“There are a lot of gaps in innovative solutions to this problem, so finding those solutions, collaborating with academics, with people who are researching these novel solutions, is going to be important,” she explains. “And then sharing those ideas as well – there is always competition between companies, but in this case, I think we need to put aside this competition, because our planet is at stake.”



**Kim Thomas, PhD**, has been a freelance journalist for 25 years, writing for publications such as *The Guardian*, *Financial Times* and the *BMJ*. Her specialist area is health and medicine, and she has also published two books on postnatal PTSD and one about women committed to Broadmoor. Contact her at [kimthomas@ntlworld.com](mailto:kimthomas@ntlworld.com)



**Amy Booth** is a medical doctor and PhD candidate at the University of Oxford. Her research, which she has presented at national and international platforms, explores the climate change impact of the pharmaceutical supply chain and how to reduce it. Email: [amy.booth@phc.ox.ac.uk](mailto:amy.booth@phc.ox.ac.uk).