



BUILDING SUSTAINABILITY INTO OUR DNA
A roundtable discussion hosted by Linesight

Key takeaways



Sustainability is rising rapidly up the life sciences agenda, due to combined demand from shareholders, customers and employees

Corporate ESG targets are leading to **major changes** at facility level

Phasing out fossil fuels and buying certified renewable electricity are key strategies for **reducing scope 1 and 2 emissions**

Organisations have **reduced control over scope 3 emissions**, which will remain a much bigger challenge

Work to **shorten supply chains** is driving greater investment in European facilities, discouraging manufacturers from relocating to avoid ESG standards

Regulators and insurers need to be brought on board, to enable the sector to **adopt more sustainable materials and solutions**

Participants



Brendan McGrath
Ireland Site Head and VP
Manufacturing
WuXi Biologics



Dermot Gough
Senior Manager - Global
Design and Construction
Boston Scientific



Giles Heather
Director
Linesight



Michael McCabe
Director
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Nigel Barnes
Head of Life Sciences
Linesight



Oliver Bevan
Director of Project
Services
AstraZeneca



Peter Higgins
Managing Director, EMEA
Region
IPS



Rory Mullen
Head of Biopharma and
Food, IDA Ireland
Discussion Moderator



“When we talk about construction, quality, cost and schedule are interchangeable as drivers of a project, but safety is always given. Sustainability isn’t quite there yet as a driver or a given, but I think it’s getting there.” Nigel Barnes, Linesight

DISCUSSION SUMMARY

Companies across the life sciences sector are setting ambitious environmental, social and governance (ESG) targets – but what does this mean for their facilities in construction or currently in operation?

Linesight convened an expert panel to discuss how sustainability is playing out at a project level, and what the future holds as the world moves closer towards the goal of net-zero emissions by 2050.

WHAT’S DRIVING ESG WITHIN PROJECTS?

IDA’s **Rory Mullen** kicked off the discussion by asking whether sustainability targets set at board-level were actually filtering down to projects.

Boston Scientific has a stated objective to be carbon-neutral in its scope 1 and 2 emissions for key manufacturing and distribution sites by 2030. The company has also set a science-based target to reach net-zero across scopes 1, 2 and 3 in its value chain by 2050. But it also has a shorter-term target to phase down fossil fuels by sourcing 90% of their energy demand from renewable sources by 2027, said **Dermot Gough**. “You’ve got to have interim goals,” he explained.

“It’s not enough to have one goal at the end. We have three or four buildings in construction that are totally fossil-fuel free, and the electricity they use will be certified carbon-neutral too. Electrification often triggers upgrades to electrical infrastructure, and it does have an opex knock-on because it’s more expensive than gas. It’s all well and good stating these targets, but ultimately, you have to make near-term decisions.”

WuXi Biologics is also aiming for carbon-neutrality by 2030 and net-zero emissions by 2050. All the electricity used across its sites is now certified renewable, and the diesel oil in its back-up generators has been replaced by Hydrotreated Vegetable Oil (HVO). “You can buy carbon offsets, but it’s a bit of a cheat,” said **Brendan McGrath**. “Our policy is to cut energy use, convert to renewables, and then compensate by investing in virtual power purchase agreement’s (VPPA’s) or solar farms. But the first step in the hierarchy is cut, cut, cut.”

AstraZeneca’s Ambition Zero Carbon – which involves reducing its scope 1 and 2 emissions by 98% by 2026 – means that sustainability is much less likely to be value-engineered out over the course of a project, said **Oliver Bevan**. “We’ve certainly seen tighter controls on sustainability targets for a project. We set the targets at the front end. Thereafter, at every stage-gate review there’s a mandated deliverable which indicates whether the project is on track to meet its sustainability objectives; aligned to any site-specific roadmap and/or broader corporate goals. Once that ambition is set, to deviate it from it has to be a deliberate choice, typically via a change notice which could go to sponsor-level for decision. Sacrificing sustainability measures is happening a lot less these days.”

HOW CAN WE ADDRESS SCOPE 3 EMISSIONS?

“People talk about scope 1, 2 and 3 emissions as if they’re equal, but they’re very different things. You have control over your scopes 1 and 2, but your scope 3s are someone else’s scope 1 and 2. So would we better focusing on what we can control?” **Rory Mullen, IDA**

Scope 1 and 2 emissions – from the fuel that the companies burn and the electricity they buy – are relatively straightforward, agreed the panel.

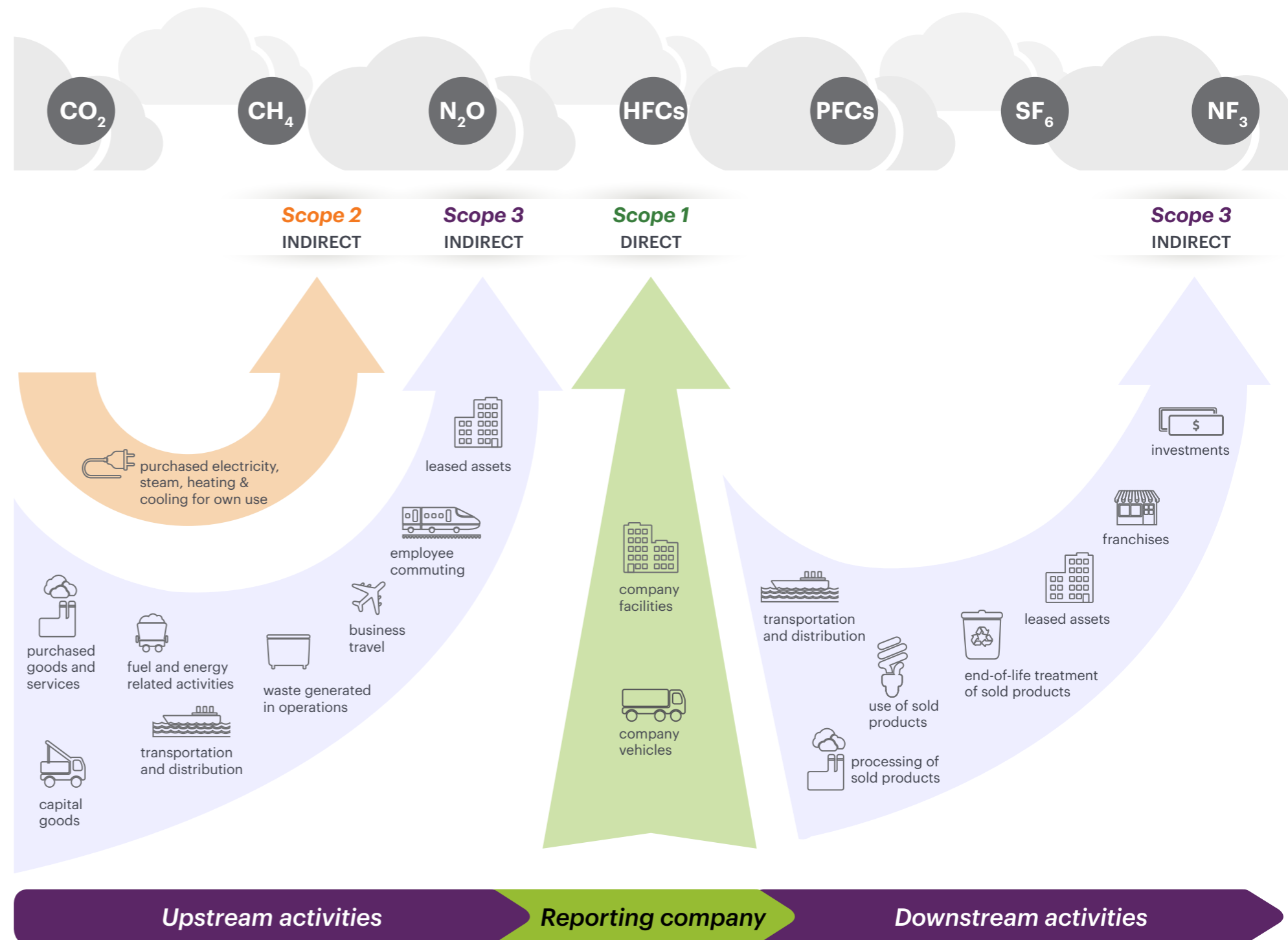
Scope 3 emissions from up and down the value chain are much harder to get a handle on. “The question people are asking is ‘what can we do?’” said **Peter Higgins** of IPS. “Companies can influence, but there’s an utter reliance on the entire supply chain.”

Gough said that Boston Scientific’s purchasing teams are deploying supplier engagement programs to tackle scope 3 emissions. They’ve started to look at vendors’ carbon emissions alongside factors like capacity and pricing, “If you put ESG as a selection criteria on your scorecard, suddenly that message goes out to all the suppliers that they need to do something, and causes a chain reaction down the whole supply chain.”

The embodied carbon in building materials is also an important source of scope 3 emissions, and this is starting to drive different development behaviour. “We’re seeing clients coming in and asking for a frame, a shell and core of a building that allows flexible functionality in 15 or 20 years, across different modalities and on the other hand, there’s a push for clients with existing facilities to sweat their assets more,” said **Higgins**.

“There’s now an extra dimension to the decision to knock down a facility and rebuild it,” agreed **Nigel Barnes**. “It used to be about the asset value and whether it was fit for purpose, but now there’s a question about how to sustainably dispose of the material you’ve taken down, and the energy use of the retained building over 40 years, and whether you’d use less by building something more sustainable.”

“Saving embodied carbon means reusing what you have rather than building a new building. If you do have to build a new building, it’s about selecting the right materials and thinking about the whole lifecycle – can those materials be reused or recycled at the end of the building’s life?” **Michael McCabe, Linesight**



Boston Scientific ended up refurbishing a building in Galway that it had originally intended to demolish, and will do the same with another in Cork. “The facade was a bit tired, but we found it was a perfectly good frame,” said **Gough**. “By bringing it back into use, all that embodied carbon in the steel and the foundations has been retained.”

But regulators and insurers may need to catch up with the carbon agenda. For example, insurers may not be comfortable with PV

panels – a heat-attracting source – on top of storage warehouses with valuable products. Timber cladding is a less carbon-intensive alternative to aluminium, but is considered to be a fire risk or unsuitable for pharma environments, due to shedding. At an operational level, adopting continuous manufacturing technology could increase efficiency and reduce waste, but regulators are wary. “There’s a number of things we need to look at together,” said **Barnes**. “How do we get all of these bodies on the same page, to help us improve?”

WHAT'S DRIVING SUSTAINABILITY?

“Cost used to be the biggest driver for us, but carbon is catching up. It could even have the potential to overtake because there’s so much focus on operational emissions and embodied carbon now” Giles Heather, Linesight

Where is the impetus for all this coming from? Gough has seen a shift over the last couple of years from energy and carbon being primarily the concern of his facilities teams. “Suddenly our customers started asking about our ESG targets, because our emissions are their scope 3. That helps when we start investing – we can say, ‘it might be more expensive, but it’s what our shareholders and customers want’. So it almost becomes a non-negotiable.”

The pressure is also on from employees, added McGrath. “They don’t want to work for a company that isn’t green or doesn’t have any ESG policies.” He’s noticed this at a practical level too: WuXi Biologics originally installed 10 charging stations for electric vehicles at its Dundalk facility, but had to increase it this year, and will probably have to do so again in the near future.

“The newer generation are really interested in what companies are doing on ESG. It’s not just lip service, they really care. It’s almost a hiring criteria now.” Dermot Gough, Boston Scientific

The area that’s lagging behind is legislation, said Barnes. “It’s companies driving it, or investors looking at their portfolios, and it seems bottom-up. The legislation is almost too far away to make it real at the moment.”

SUPPLY CHAIN CONCERNS DRIVING UP STANDARDS

One factor that often gives legislators pause is the fear that multinationals will simply up sticks and relocate to markets with less stringent rules.

This is now tempered by a growing global consensus, said IDA Ireland’s Rory Mullen. “When you talk to regulators, from Europe, Japan, America, there’s definitely a convergence. Certainly on pharmaceutical regulation, and probably on environmental emissions as well.”

But it’s also less possible since the pandemic and the obstruction of the Suez Canal in 2021 revealed how fragile disparate global supply chains can be. “We’re looking now at far shorter supply chains and having the ability to supply closer to where it’s needed,” said McGrath. “With our project in Dundalk, we’ve had tremendous interest from all the European-based companies because they don’t want a long journey from China for their product, and they want continuity of supply. With that, you can bring opportunities to shift products in more efficient ways, and minimise the amount of packaging and waste.”

This could have far-reaching implications for how manufacturing facilities are developed, and how they are built, he added: “The future for sites like ours is that we will have more of them, but on a much smaller scale. I think the days of building large manufacturing facilities are going to reduce. It may even come to modular-type facilities, which might be a way to deliver units with a lot less embodied carbon.”

CONCLUSION

Ultimately the panel agreed, sustainability needs to become as embedded in projects as is on-site safety. Greater use of digital twins and AI will support this, and lead to a greater understanding of areas such as embodied carbon and scope 3 emissions. Discussion of these areas still raises more questions than answers, they felt – but there was no doubt that carbon is rising up the agenda, and could perhaps become as central a decision-making factor as cost in the not-too-distant future. As Gough put it, “It’s hurtling at a rate of knots towards us, and what we’ve achieved in the last 10 years, we will probably achieve in the next 10 months.”

“There needs to be a tangible understanding of the holistic approach. Instead of being driven by capex, we need to look at the lifecycle budget over the 25-30 years of the facility and the impact that it can have on scope 1, 2 and 3 emissions” Peter Higgins, IPS



