

## SUSTAINABILITY AT PTC '23: THREE TAKEAWAYS

BY GEORGE N. RAMÍREZ AND NICOLE STAROSIELSKI

Sustainability was a hot topic at this year's Pacific Telecommunications Conference. Many sessions reported on sustainable practices as well as pressing challenges for sustainable development. A highlight of the event was the SubOptic-sponsored series of panels on Sunday, where subsea cable leaders discussed the state of sustainability in the industry. Posters documenting the subsea industry's carbon footprint, environmental progress, and policy futures were displayed on the walls. Over the following days of the conference, many subsequent panels focused on data centers, with participants often arguing that sustainability is now a necessity. Data center customers, many speakers noted, were increasingly looking for fully sustainable offerings that could be implemented as soon as possible. Joley Michaelson of The Sun Company stated about the future: "The main thing is a turn-key solution option, a full sustainability offering, as quickly as possible. We don't want anything that is less than 100% renewable." Others wondered where the drive and investment would come from for sustainability initiatives.

The Sustainable Subsea Networks team of the SubOptic Foundation attended PTC '23, presented our research, and listened in to these conversations. We found many points of agreement between speakers, regardless of where they fell on this spectrum between full-on determination

and cautious hesitation. For example, most people agreed that there is no single solution to sustainability out there--no easy or quick fix. Whether they were in the data center or subsea industry, companies needed to think carefully about how sustainability might be implemented across all parts of their business rather than search for a blanket solution. Some common areas and factors affecting sustainability included: limitations on real estate, energy availability, ESG targets, water usage, and the circular economy.

Across the conference, however, participants repeated a strong sentiment that sustainability is an opportunity, not a cost; it is an imperative, not an option. If they don't get ahead of the sustainability curve, companies

will be hit by a tsunami of government regulation. Many companies are already paving the path forward. Below we chronicle three resounding practical takeaways from the conference: a need for cooperation and collaboration; a search for both low-hanging fruit and long-term solutions--working efficiently, investing renewable energy, and working remotely; and a call for better metrics.

### COOPERATION AND COLLABORATION

A refrain at PTC '23 was that industries and companies should work with one another, adapting existing strategies, best practices, and technologies in new contexts. There was no need to re-invent the sustainability wheel. In the lunchtime panel on

# sustainable SUBSEA

submarine cables, chaired by Elaine Stafford of DRG Undersea Consulting, Stephen Alexander of Ciena made a point of how sustainable practices can be scaled according to different company needs: “One of the biggest things that we have learned is that we can scale up and scale out. We want to scale out a little more. Scaling out means that you have to work with other companies.” On the same panel, Tunde Coker of Open Access Data Centres (OADC) pointed out the need to work with others to motivate change across the supply chain: “We do that through our own supply chain if you are going to be part of our business ecosystem,” Coker said. “We have process accreditation to drive these behaviors.” And as Nigel Bayliff of Aqua Comms stated, “We can all do this together.”

PTC participants suggested that subsea cable companies must not only work with one another, but with others across sectors, especially drawing inspiration from the data center business. The iMasons Climate Accord was consistently named as an example of the ways that companies could collaborate together in order to set strategic goals for this issue. Tunde Coker thought the Accord did a good job of thinking in depth about methodology, measurement, and statistics. This makes collaborative work within an industry and across sectors possible, he observed. When speaking about the iMasons Accord, Joseph

Kava of Google shared, “That’s how you certify what the embedded carbon is in all the equipment that is along the supply chain in building our digital infrastructure.”

The subsea industry has no such Accord or industry-wide agreement. Yet there are many companies that are working together and looking across industries. One example that several participants mentioned was

ous environmental certification and scientific organizations, including Green Marine Europe, ACt 4 Nature France, and Euro Argo among others.

Andrew Robinson of Xtera suggested another mode of collaboration: subsea cable companies could consider reusing existing materials or sharing resources. Robinson challenged the audience to think about sharing high impact resources like factories and

ships more effectively, and how this could lead to improved sustainability. Another strategy: he pointed out that new systems are designed with new cable even though the necessary capacity could be achieved using redeployed cable. While some still believe that sustainability should be a closely-guarded secret, he argued that collaboration could help reduce time and costs, helping everyone in the long run.

In sum, the subsea and data center industries already have a long history of collective action and collaboration in building connections. This provides a firm foundation on which to direct efforts now and in the future towards sustainability.



Figure 1. Submarine Cable Luncheon, “Pulling Together,” featuring (left to right) moderator Elaine Stafford (Managing Partner, DRG Undersea Consulting), Ayotunde Coker (Chief Executive Officer, Open Access Data Centres), Stephen Alexander (Senior Vice President & Chief Technology Officer, Ciena), Nigel Bayliff (Chief Executive Officer, Aqua Comms), and Bruce Neilson-Watts (Chief Executive Officer, Global Marine Systems Ltd.)

the work of subsea cable companies to branch out to marine renewable energy markets. Didier Dillard of Orange Marine reported that his company was deploying service offerings in the marine renewable energy markets, providing installation and repair of energy cables at offshore wind farms. Orange Marine has also established connections with numer-

## LONG-TERM SOLUTIONS: EFFICIENCY, ENERGY, REMOTE WORK

Collaboration takes trust, which takes time to build. Solutions have to be carefully thought through, rather than simply dropped into new contexts. Building collaborative transformation through contracts, supply chains, and partnerships are often long-term strategies. Many confer-

ence participants wondered: “What can be done now to build toward long-term sustainability?”

One area of vibrant discussion about sustainable development at PTC was efficiency. Throughout PTC, we heard stories about industries across the ICT sector striving to be energy efficient and work at maximum capacity. We heard from many that this was simply “com-

mon sense.” Companies are installing new energy efficient technologies, ranging from engines to light bulbs. But this work is not yet universal.

The move toward energy efficiency is a matter not simply of technological upgrades, but of efficient management. According to Chris Thorpe of Leading Edge Data Centers, “The problem in our industry is that... it’s not 100% usage. Of the 105 GW of capacity in physical locations, we have a minimum of 37 GW never used ever.” Many factors can play into this, from redundancy and buffers to utilizations and underestimations. Taking sustainability into account is a matter of doing business better and of maximizing the use of infrastructure.

In the subsea cable industry, efficiency not only means ensuring that the cable landing station or data center is energy-efficient, but that cable surveying and laying operations themselves are well managed and conducted efficiently. In Sunday’s submarine cable sessions, Bruce Neil-



Figure 2. SubOptic-sponsored submarine cable panel on sustainability, “Leading By Example,” featuring (left to right) Nicole Starosielski (Associate Professor, New York University), Takahiro Kashima (Professional, NEC Corporation), Emmanuel Danjou (Head of Business Development, Alcatel Submarine Networks), Andrew Robinson (Director System Engineering, Xtera, Inc.), Peder Naerboe (Founder and Chairman, Bulk Infrastructure Group), and Didier Dillard (Chief Executive Officer, Orange Marine).

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son-Watts of Global Marine pointed out, “my biggest way to reduce carbon is finding ways to better manage my ships.” Proper planning can minimize marine transportation, reducing the number of trips needed and thus the

CO2 emitted. New technologies also enable the efficient use of ships themselves. Earlier that day, Emmanuel Danjou shared that ASN had many energy efficiency projects underway, including heat recovery and reuse at manufacturing sites.

A second action companies can undertake is investment in renewable energy. PTC ’23 featured innovative sustainable technologies across the telecommunications landscape. Of interest for immediate adoption for the subsea industry is renewable energy, which can be purchased from energy providers or installed on site. In a presentation on Bulk Infrastructure, Peder Naerboe highlighted three facilities powered by green energy: the Oslo Internet Exchange, the N01 Campus, and the DK01 Campus. Didier Dillard shared that his company, Orange Marine, uses electricity from solar panels. “Since 2020, our ships in La Seyne-sur-Mer use 100% green energy following the installation of solar panels...seventy-five percent

of our fleet is electrically connected to the shore-based grid during stand-by and therefore produces no direct emissions.” Emmanuel Danjou highlighted ASN’s solar projects in cable landing stations and Takahiro Kashima of NEC’s Submarine Network Division described an elaborate network of solar powered energy at their factories in Japan.

The third immediate action that can be undertaken is to find creative ways to work remotely. Emmanuel Danjou of ASN reported that reducing business travel during the pandemic resulted in an 895 tonnes CO2 emissions reduction between 2020 and 2021. The evident sustainability benefits of this approach has led to reduced travel for many companies. For Stephen Alexander, “Travel is the biggest thing.” For some, the minimal disruption posed by remote work today even provides a clear business advantage. Andrew Robinson shared that the NO-UK cable system was mostly completed virtually: “our experience on the NO-UK project shows that [CO2 emissions] can be reduced significantly with no impact on project outcome,” he said.

What can companies do now? Ensure that they are not just meeting the ESG targets of regulatory and other environmental bodies in their industry sector but exceeding them; stay ahead of the curve that is the growing level and intensity of government oversight by investing in and deploying sustainable R&D initiatives; work with suppliers and customers to improve the sustainability of products, processes, and practices; and look for ways to make one’s operation more efficient. Sustainability does not necessarily mean extra cost.

## BETTER METRICS AND DATA SHARING

At the conference, in both panels and in conversations, we witnessed a widely felt need for better metrics for measuring sustainability progress. Especially within the subsea cable industry, several panelists called for transparent strategies for sharing data with customers and stakeholders. Once a portfolio of metrics was agreed upon, several argued, compa-

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nies would be better able to assess their own progress. However, there remains no industry-wide approach to measuring sustainability. “If we don’t share knowledge, how do we learn?” Bruce Neilson-Watts asked the audience. “If we all have that information, then we can do something about the problem.” Many agreed: sharing data across the industry would make it easier for everyone to measure progress and growth. “Being able to measure is critical. You can’t fix what you can’t measure,” said Stephen Alexander.

Creating a common language for measuring improvements in sustainability is essential, several panelists argued. Having metrics for carbon emissions, for example, will enable companies to assess and reduce their emissions in new and different ways. Doing this requires increased time, management, and coordination that can best be leveraged through collaboration based on professional relationships. “If we don’t take charge, it’s going to be done to us,” Tunde Coker said, “So we can set the agenda and lead globally.” Collaboration in data gathering, data sharing, and in supply chain management is the way forward and companies can be proactive in helping to develop this culture.

In particular, one important approach to accountability is committing to lifecycle assessments and to sharing high-level data publicly. Transparency with data is critical to progress. This is particularly true when it comes to measuring carbon emissions, as good data is increasingly a request among customers, suppliers, and vendors. Speaking about the data center sector, Jonathan Atkin of RBC Capital observed that there should be more information “imparted to policymakers and regulators about the fact that there is inherently a more efficient way to consume IT.” He suggested that data centers should have a common scorecard to measure the progress of sustainability that includes carbon intensity, renewables, and Power Usage Effectiveness (PUE). The iMasons Climate Accord is one example of how collaboration across an industry can facilitate data sharing.

Some companies are moving in this direction by following standards and earning certifications for

their environmental efforts, many of which require data collection. Bulk Infrastructure is one: as both a sub-sea cable and data center company, it has accreditations and standards that account for sustainability. Beyond quality, environmental, and business continuity management, Peder Naerboe reported that they also follow the European Standard for Data Center Design (EN 50600) and the European Commission Code of Conduct for Data Centre Energy Efficiency. In other cases, existing standards don't quite fit the reality of industry practices on the ground, and so need to be re-tailored. ASN created a Green Charter based on their analysis of the gaps in the standards on sustainable development and social responsibility. In doing so, they ensured legal compliance, reduced energy consumption, and promoted "green" ways of working for employees and contractors."

This is also a strategy that NEC has implemented for their carbon neutrality goals. They are leveraging Scope 3 standards in order to reduce CO2 emissions from the supply chain. Takahiro Kashima said that Scope 3 efforts boost engagement to encourage suppliers to reduce emissions. NEC was able to accomplish reductions by announcing their policies and plans to their suppliers as well as surveying suppliers to learn about their emissions: measurements, standards, and information circulation all facilitate progress.

Conferences like PTC help to disseminate practices and knowledge across the industry. Here, companies can share the meaningful sustainability initiatives they are pursuing--and inspire others to follow. We look forward to seeing the same process

at the upcoming SubOptic conference in Bangkok, Thailand. Here the SubOptic Foundation will host the first Congress on Sustainability, which will be held Monday March 13 at 8:30am. The Congress will feature leading representatives from

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all industry sectors, drawing expertise from planning, manufacturing, supply, installation, operation, and recycling. During the Congress, through an open and guided conversation, participants will discuss a series of sustainability metrics aimed at heightening awareness and improving the industry carbon footprint across a cable's life-cycle. It is our hope the Congress and the many environmental sessions at SubOptic will continue the important conversations begun at PTC '23.

*Participants in the SubOptic Foundation Congress on Sustainability: Nigel Bayliff (Aqua Comms), Merete Caubet*

*(Bulk Infrastructure), Michael Clare (National Oceanography Centre), Mike Constable, René d'Avezac de Moran (Fugro), Emmanuel Danjou (Alcatel Submarine Networks), Alwyn du Plessis (Mertech Marine), Takahiro Kashima (NEC), Brian Lavallée (Ciena), Andy Palmer-Felgate (Meta), and Dean Veverka (Southern Cross Cables).*

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**VIDEO LINK HERE:** <https://drive.google.com/file/d/1qAslSPZFQETUI6a7Gx9ZkYu87DrFji6C/view?usp=sharing>



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