

A BLUE INDUSTRY GOING GREEN

BY NICOLE STAROSIELSKI AND NICK SILCOX

In 2021, the Sustainable Subsea Networks research project was launched. This was one of the first projects of the newly-formed SubOptic Foundation, a charitable arm of the SubOptic Association that is working to advance education and research initiatives for the subsea cable industry.

The Sustainable Subsea Networks research project grew out of SubOptic's Global Citizen Working Group, which focuses on developing ways for the subsea cable industry to better itself and the world. This research project's focus is on the investigation of the cable system's energy use and impact across various sectors, from supply to recycling. Even though the industry is already relatively green, industry and academic members of the research project are working to enhance environmental sustainability as much as possible--a crucial project given the devastating impacts of climate change.

Over the past decade, many companies have begun to investigate green data centers, but very little attention has been paid to subsea

cables' role in a greener telecommunications future--possibly because cables clock in at a smaller footprint. This is something that many in the industry already know, but it needs to be documented especially as green regulation and legislation is rolled out globally.

From talking to companies, the research team has found several already ahead of the curve on

greening their operations. Below, we share some of these best practices to generate inspiration and conversation about the path forward.

ABOVE AND BEYOND: ORANGE MARINE TAKES STEPS TOWARD A GREENER INTERNET

Some companies have begun to consider the environment at nearly every level of their operations and practices. This is certainly the case with Orange Marine, a subsidiary of the French telecommunications company Orange. Since 2017, Orange Marine has prioritized sustainability and made significant strides toward reducing their environmental impact in both technical and business practices.

Installing and maintaining subsea cables is a fuel-intensive component

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of the industry. These tasks often require ships that are often powered by fossil fuels at every stage of the process. To combat the carbon density of their fleet, Orange Marine powers some ships in port using the onshore electrical grid rather than the fuel stores to reduce overall emissions. In at least one port, Orange Marine has installed solar panels to generate and store their own electricity to power these stations. Furthermore, they have begun to consider sustainability in designing the newest ship in their fleet--it will be fuel efficient and have reduced atmospheric pollutants.

In addition to these initiatives, Orange Marine has partnered with several French and European organizations and initiatives, including act4nature, the Souffleurs d'Ecume association, and Euro Argo to pre-

serve biodiversity and to minimize local environmental disturbances, as well as to contribute to ongoing monitoring of the ocean environment for scientific study of climate change's impact on the ocean. Some of Orange Marine's other efforts include powering their cables with low sulfur fuels to minimize pollution, improving their workplace QSE management system, and reducing waste in their offices.

Orange Marine's efforts were propelled by existing and anticipated regulation, but the real catalyst was a shared commitment of the company and the individuals who work there to improve the sustainability of their work. Bénédicte Bigot, Orange Marine's Sales & Communication Development Director, took the initiative to pursue many of these opportunities. While these ef-

forts demonstrate the ways Orange Marine has gone above and beyond, it also suggests that these kinds of initiatives are possible in other parts of the cable industry where there is a willingness to make it happen. In fact, similar efforts are happening in other corners of the subsea cable industry all around the globe.

REDUCING EMISSIONS, INCREASING EFFICIENCY: NJFX GOES CARBON ZERO

In the United States, the New Jersey Fiber Exchange (NJFX) cable landing station campus recently chose to go carbon-neutral. They signed a multi-year contract to power their station with nuclear energy generated in nearby Pennsylvania, a decision that moves the broader telecommunications network toward a more sustainable future. The decision to go carbon-neutral was the



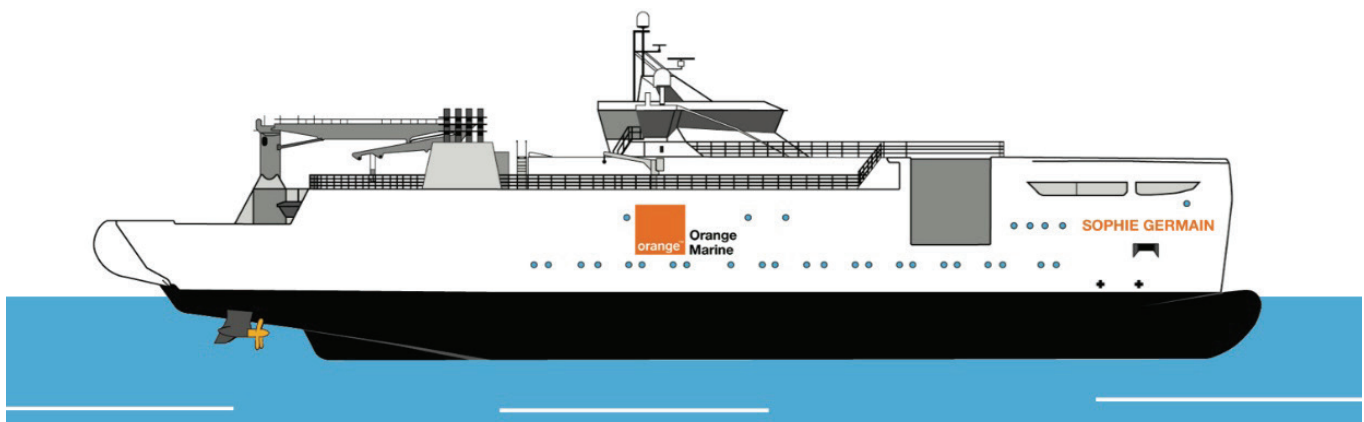
20%

reduction in CO2 emissions



80%

reduction in NOx (nitrogen oxide) emissions



Orange Marine is constructing a new vessel, the Sophie Germain, which will specialize in cable repair and replace their oldest vessel in the fleet, the Raymond Croze, launched in 1984.

sustainable SUBSEA

culmination of NJFX's efforts to increase energy efficiency and reduce their environmental footprint.

A new landing station on the NJFX campus was designed in 2016 with environmental impact and energy efficiency as a central concern. The campus offers direct access to multiple independent subsea cable systems interconnecting North America, Europe, South America and the Caribbean. The design of the new station was in part a response to the challenges posed by the 2012 devastation of Hurricane Sandy. In particular, it was equipped with an electrical cooling system that doesn't rely on access to water. Rather, the facility is regulated by sustainably designed cooling units installed on its roof and powered by carbon neutral energy. It also uses energy efficient LED lights that are timeset and motion sensitive to reduce energy consumption. With all of these updates, the CLS Campus is part of a new generation of sustainable network hubs. In contrast, as NJFX CEO Gil Santaliz observes, the downtown carrier hotels, built in "seventy-five year old one-time office and department store buildings with hundreds of windows were never meant for energy efficiency."

The NJFX station is natural gas free, which allows them to ensure safety while advancing their commitments to sustainability initiatives--instead of using natural gas for heat, they use the energy from the customer equipment to heat the landing stations. NJFX has plans to install solar panels this year to expand their sustainable energy resources and they hope that New Jersey moves forward with proposed investments in wind power. In

Operations Specialist Brad Graves rides his bike every day weather permits to NJFX.



addition to these design and energy choices, business operations are also calculated into the company's green mindset: employees of NJFX live on average only seven miles away from the facility and some of them are able to bicycle to work. To further

incentivize sustainable transportation for employees, NJFX installed charging stations for electric vehicles in 2020.

Cable landing stations like the ones operated by NJFX are already more efficient and less energy

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intensive than other elements of the broader telecommunications infrastructure. However, NJFX's efforts to increase the overall energy efficiency of their work and their facility, as well as their choice to power their campus with carbon neutral energy sources, is evidence that the subsea cable industry can still contribute in many ways. Cable landing stations can play an important role in the development of a more sustainable Internet.

EVERY LITTLE BIT COUNTS: THE SOLOMON ISLANDS SUBMARINE CABLE COMPANY

Access to telecommunications infrastructure is not distributed equally. Many smaller countries, particularly islands, are the most dependent on subsea cables because they are limited by their geography. Likewise, countries with limited economic resources are often unable to secure consistent access to the Internet. These obstacles can make sustainable initiatives for telecommunications companies in these areas difficult. However, the work of Andrew Joel Siru of the Solomon Islands Submarine Cable Company suggests that, even in situations where sustainability programs may not be easily realized, small steps are still possible.

The Solomon Islands Submarine Cable Company began operations in 2020 after many years of planning and development. By 2021 Andrew Joel Siru, an employee at SISCC, started to work on developing a green agenda for the organization to act responsibly for the environment. This included measures to increase efficiency and reduce energy consumption, taken after consulting with people who developed similar

programs at other companies. As a start, Siru helped to launch company initiatives to turn off lights, air conditioners, and devices in the offices of SISCC when these were not in use. He was able to install nozzles on sinks in the facility to reduce water consumption. In addition to these initiatives, Siru started the process of tracking energy usage for SISCC.

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These efforts might not seem to compare to the construction of a cable ship, but it is important to remember that every little bit counts.

A SUSTAINABLE FUTURE STARTS NOW

These cases reveal how sustainable initiatives are attainable across every scale and sector of the industry. There are many models for how different companies with vastly different resources can approach sustainability. In taking these steps, Orange Marine, NJFX, and the Solomon Islands Submarine Cable Company have already helped to shape a more sustainable future, a task that is urgent and critical given the realities of climate change. These companies have been able to get ahead of the curve and often take

steps without being forced, or even asked, to do so.

However, regulation is on the horizon because of the many environmental challenges facing the world today. As is true for much regulation affecting the industry, environmental regulation is often crafted without much consideration for the unique features of subsea cables. This makes it all the more important to document what is already happening.

Even if the subsea industry is one of the most sustainable elements of the global network infrastructure, there is still an opportunity for the industry to think creatively and proactively. A sustainable future for the subsea cable industry starts now. **STF**

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