



SUBOPTIC
Bangkok | 2023

Can Regulation Improve Environmental Sustainability of the Subsea Cable Industry?

Name: Anjali Sugadev, Hunter Vaughan and Sorcha French

Company: Sustainable Subsea Networks

Presenter Profile



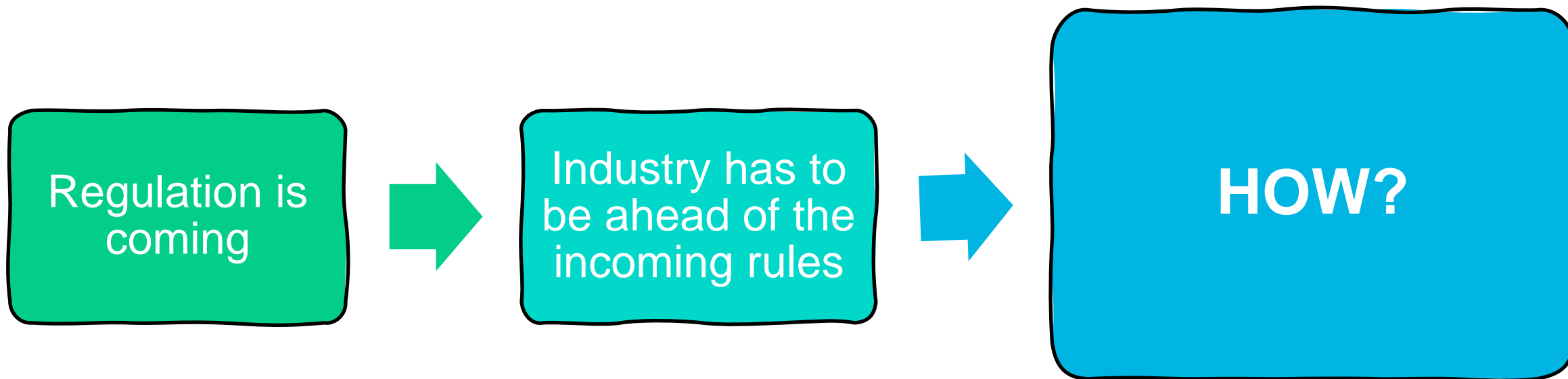
Law and Policy Lead, Sustainability Subsea Networks and independent legal consultant; Recipient of 2015 Rhodes Academy Submarine Cables Writing Award.

Sustainable Subsea Networks is a research initiative of the SubOptic Foundation, funded by the Internet Society Foundation. We are investigating the sustainability of the global subsea telecommunications network. We currently have three primary activities: generating a catalogue of sustainable practices, assembling carbon footprint of a cable system, and investigating policy and regulation.

Name: Anjali Sugadev
Title: Law and Policy Lead
Email: anjusuhadev@gmail.com



Why investigate regulation?



Contents



- International law on sustainability of subsea cables
 - What's in there for cablesheips?
- National sustainability regulations of selected countries
- Methods:
 1. Environmental Impact Assessments
 2. Decommissioning of cables
 3. Cable protection zones
 4. National framework for reporting emissions
- Current gaps and future direction in the legal system
- Way forward
- Conclusion
- References

International law on sustainability of subsea cables

Three legal frameworks form the foundation of international law on environmental sustainability for the subsea cable industry

The United Nations Law of the Sea (UNCLOS)

States have the obligation to protect and preserve the marine environment

The Paris Agreement

Legally binding treaty on climate change that commits Member States to adopt measures to reduce national emissions

The International Maritime Organisation's (IMO)

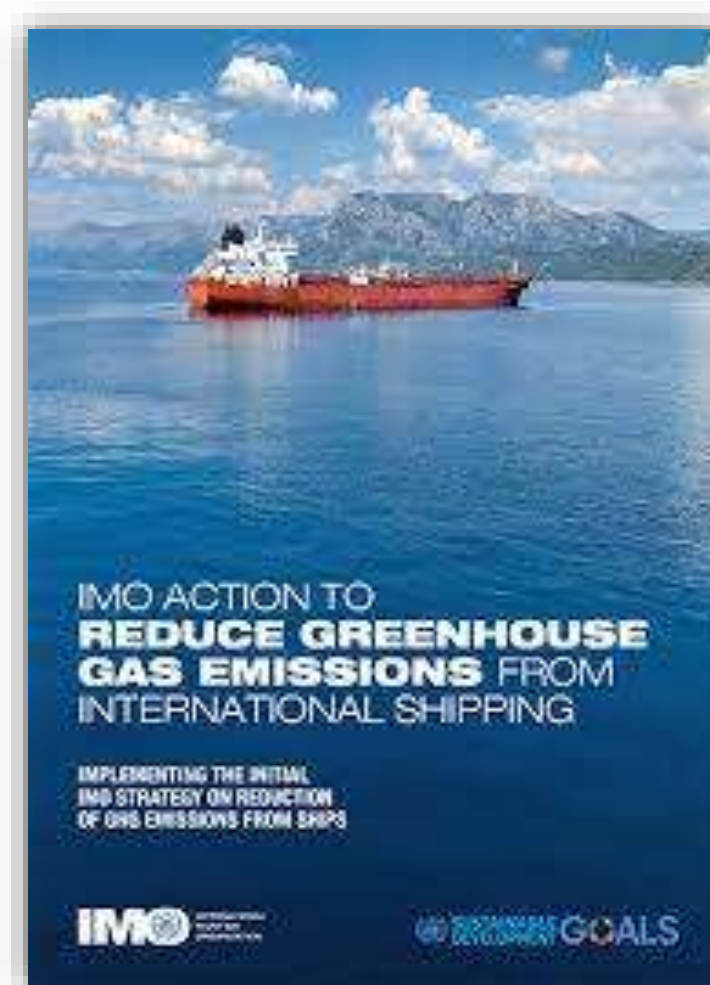
IMO's conventions and resolutions that regulate emissions from cableships

What's in there for cable ships?

International Maritime Organization's (IMO)

Measures for Sustainable Shipping

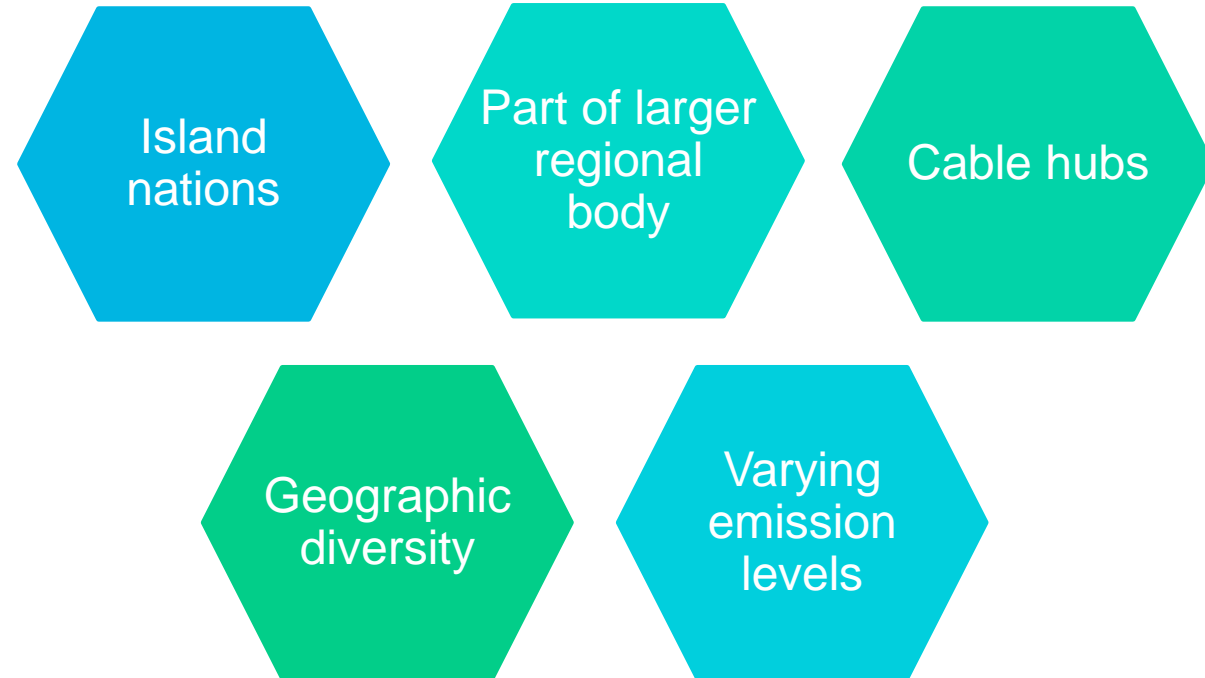
- 2018 Initial Strategy - phased emissions cuts
- International Energy Efficiency Certificate
- Central data repository



National sustainability regulations of selected countries

Seven Countries Selected for Study

- *Ireland*
- *China*
- *Singapore*
- *Solomon Islands*
- *Australia*
- *United States and*
- *New Zealand*



Country	Relevant sustainability laws	Relevant subsea cable laws
1.Australia	<ul style="list-style-type: none"> Environment Protection and Biodiversity Conservation Act 1999 National Greenhouse and Energy Reporting Act 2007 No. 175, 2007 	<ul style="list-style-type: none"> The Submarine Cable (Northern Sydney Protection Zone) Declaration 2007 The Submarine Cable (Southern Sydney Protection Zone) Declaration 2007 The Submarine Cable (Perth Protection Zone) Declaration 2007 Telecommunications Legislation Amendment (Submarine Cable Protection) Act 2014, No. 33
2.China	<ul style="list-style-type: none"> Environmental Protection Legislation Regulations on Planning EIA (RPEIA) Regulations on Environmental Protection Management of Construction Projects Maritime Spatial Planning Directive 	
3.Ireland	<ul style="list-style-type: none"> Directive 2014/52/EU (EU EIA Directive) Maritime Area Planning Act 2021 	
4.New Zealand	<ul style="list-style-type: none"> The Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 	<ul style="list-style-type: none"> Submarine Cables and Pipelines Protection Act 1996
5.Singapore	<ul style="list-style-type: none"> Environmental Protection and Management Act 1999 Energy Conservation Act 2012 	
6.Solomon Islands	<ul style="list-style-type: none"> Environment Regulations 2008 The Environment Act 1998 (Act No. 8 of 1998) 	<ul style="list-style-type: none"> Telecommunication Act 2009, (No. 20 of 2009)
7.United States	<ul style="list-style-type: none"> The National Environmental Policy Act (NEPA) 	<ul style="list-style-type: none"> The Cable Landing Licence Act of 1921 (CLL Act)

1) Environmental Impact Assessments (EIA) for subsea cables

Mandatory

New Zealand
Singapore

Not mandatory

Ireland

Depends on location & environmental significance

Solomon Islands
Australia
China
US

- **Sustainability of the marine environment *versus* sustainability in carbon emissions**
- **SO WHAT???**



2) Decommissioning of Cables

- Emissions saved by re-using cable materials far exceeds that emitted by the current cable recovery ships dedicated to recycling
 - Retrieving cable is better than mining

New Zealand's law requires description of removal of submarine cable included in an application for marine consent

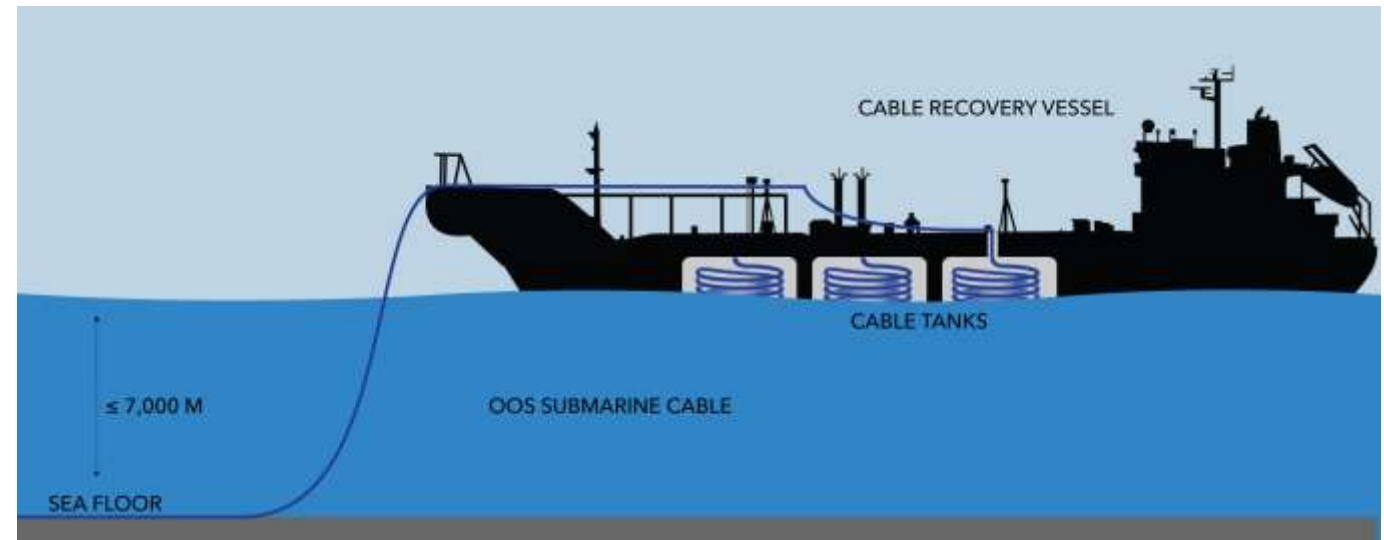
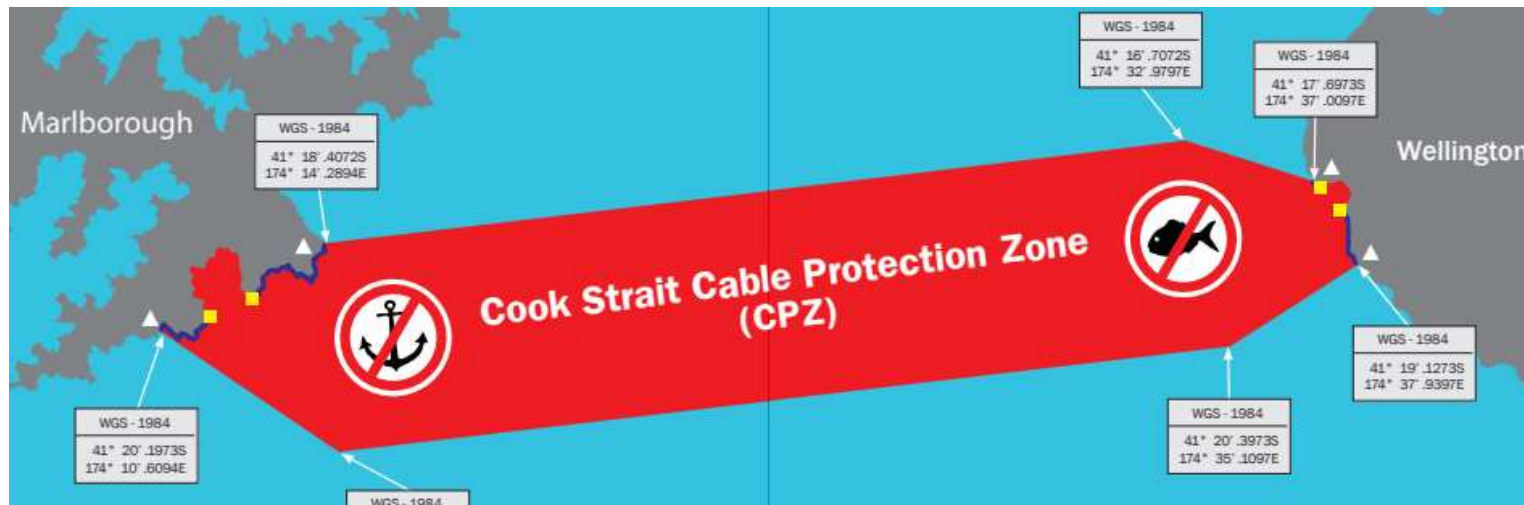


Image Courtesy of Subsea Environmental Services



3) Cable Protection Zones

- Protection zones act as de facto marine reserves [6]
- More repairs = More fuel burned
- A well-protected cable leads to fewer repairs and less CO2 emitted
- Only **Australia** and **New Zealand** have adopted cable protection zones



Source: Transpower NZ
<https://www.transpower.co.nz/cook-strait-cpz-cable-protection-zone>

4) National Framework for Reporting Emissions

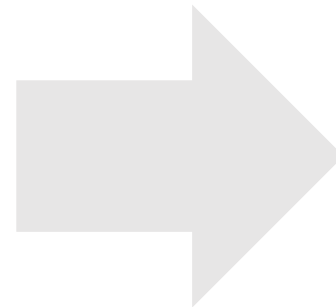


The screenshot shows the website for the Australian Government Clean Energy Regulator. The page is titled "The Emissions and Energy Reporting System" and is dated 05 July 2022. It features a navigation menu with categories like "About the Clean Energy Regulator", "Emissions Reduction Fund", "National Greenhouse and Energy Reporting", "Renewable Energy Target", "Information hubs", and "Our systems - logins and guidance". The main content area includes a sidebar with links to "EERS release 2021-22", "Archived EERS releases", "Tools to assist you", and "News and updates". The central text states: "Access to the EERS. EERS allows all NGER reporters to submit emissions and energy reports under sections 19, 22G and 22X of the NGER Act." Below this text are two buttons: "LOGIN" and "SIGN UP". On the right side, there is a "Suggested Reading" section with links to "Client Portal", "Frequently asked questions", and "Tools to assist you".

Source: <https://www.cleanenergyregulator.gov.au/>

Current gaps and future directions in the legal framework

Existing gap



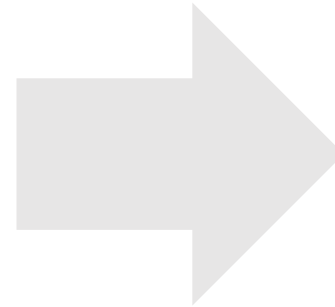
Future direction



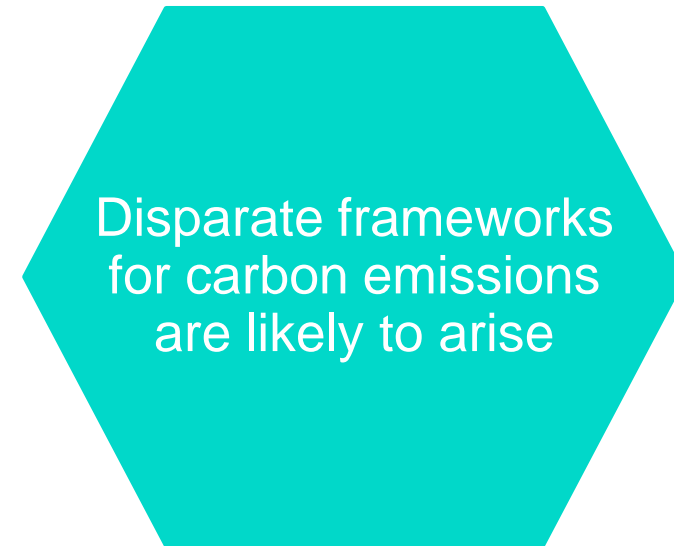
***Does the industry want to set these norms or
have these norms imposed?***

Current gaps and future directions in the legal framework

Existing gaps



Future direction



Does the industry want to get ahead of these incoming regulations?



Way Forward

GOVERNMENT






INDUSTRY

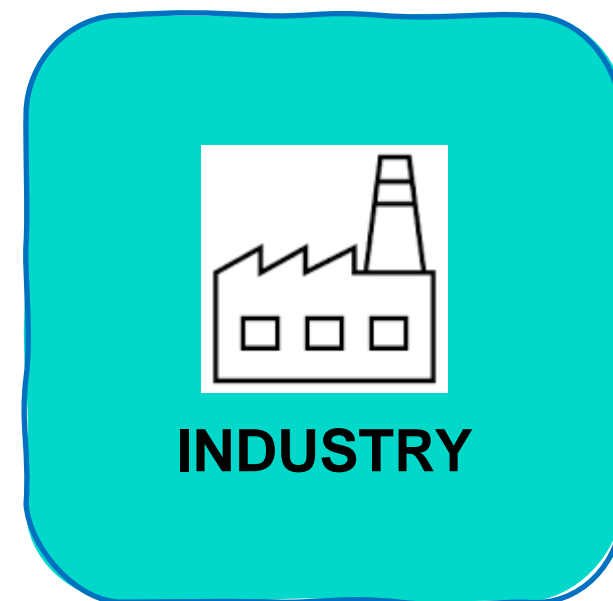


Reducing carbon emissions and enhancing sustainability is increasingly gaining attention by regulators.

- Ongoing consultation with industry
- Establish incentives and subsidies for compliance

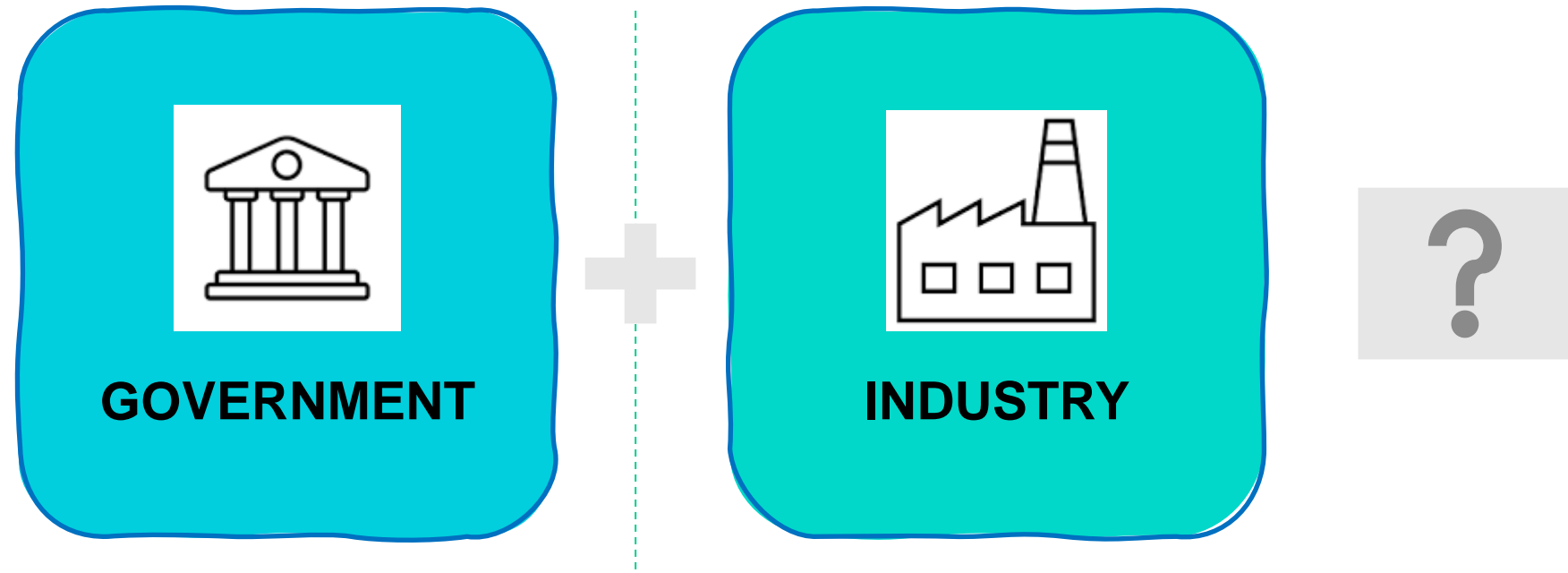
Way Forward

-  Account and disclose emissions
-  Set targets and achieve emissions reduction
-  Adopt Subsea Cable Emissions Index (SCEI)
[CO₂e/km/max data capacity/expected lifetime?]



Way Forward

So “Can Regulation Improve Environmental Sustainability of the Subsea Cable Industry?”



Conclusion

The United Nations Secretary General
*‘Climate change is the defining issue
of our time, and we are at a defining
moment’.*[8]

Law is going to be used as an instrument of
change for a more ecologically sustainable
future within the industry’s operations

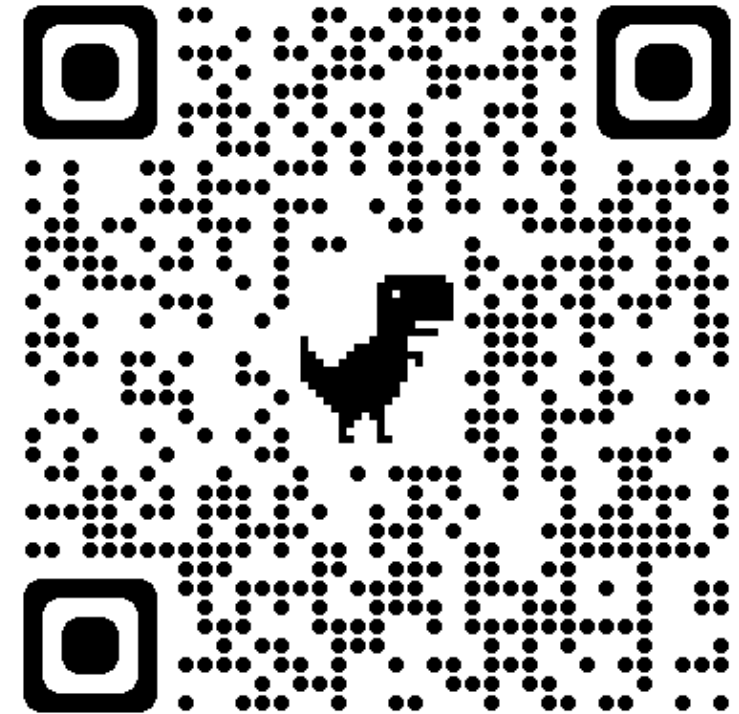
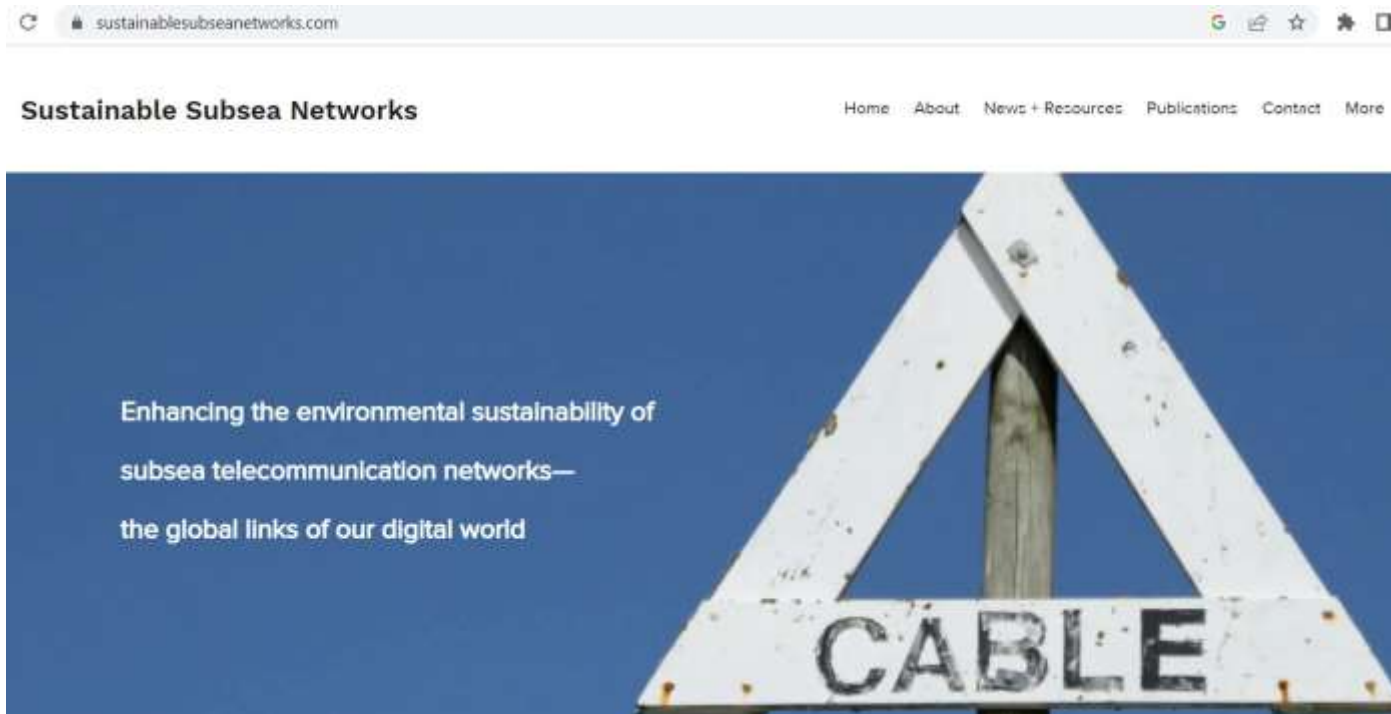
***WE NEED TO DEFINE HOW THIS WILL
HAPPEN***



Source: Jean-Michel Cousteau’s Ocean Futures Society
<https://www.oceanfutures.org/news/press-releases/jean-michel-cousteaus-statement-on-climate-change>

Questions or comments?
anjusuhadev@gmail.com

For more information on our project, **SUSTAINABLE SUBSEA CABLES**



Sustainable Subsea Networks Map

TeleGeography



Amongst other indicators, the map also identifies selected countries that have national laws and policies on sustainability

What makes a network sustainable?

Extend Lifetime The more years a cable is in operation, the more sustainable it generally is.	Connect to Green Energy Locating data centers and cable landings on green grids, purchasing carbon neutral power, and building renewable installations all reduce carbon emissions.	Lend Cables to Science Scientists use coopt fiber-optics and SMART cables to monitor coral and climate conditions.	Meet Standards, Obtain Certifications, Commit to Targets Adherence to industry standards and commitments to public goals.	Account and Disclose Companies can track their carbon emissions and disclose them to the public.	Recycle Cables Recycling returns cable materials to the circular economy and saves CO2 emissions.
Increase Bandwidth The more capacity, the more sustainable the network. Upgrading capacity, as Ciena has with WaveLogic 8, means avoiding the construction of new cables.	Plug into Shore Power When shore-side electric power is available for cable uses, they do not have to burn CO2 emitting fuel.	Be Regulation-Conscious These countries have established environmental regulation for data centers within landing stations.	Offset Emissions Companies can offset their emissions and should favor durable carbon removals over tree planting and conservation offset efforts.	Be Energy Efficient Owners of cable landing stations, factories, and ships have all pursued energy efficiency upgrades to reduce both CO2 impact and cost of electricity.	Protect Cables A well-protected cable, and regulations that restrict cable-damaging activities, leads to fewer repair events and less CO2 emissions.

References

- [1] 47 CFR §1.306, Actions which are categorically excluded from environmental processing, note 1.
- [2] Submarine Cables - Domestic Regulation, <https://www.noaa.gov/gc-international-section/submarine-cables-domestic-regulation>.
- [3] Directive 2014/52/EU of the European Parliament and of the Council OJ: L/124/3.
- [4] Section 38, The Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 as amended in 2017.
- [5] 'National Marine Planning Framework' (Department for Housing, Local Government and Heritage 2021) 174.
- [6] Lionel Carter, 'Submarine cables and the oceans: Connecting the world' (UNEP WCMC, January 2009). 28.
- [7] Kristian Nielson, 'Calculating a Subsea Footprint' (Subtel Forum Magazine July Issue July 20, 2022) <https://subtelforum.com/stf-mag-feature-calculating-a-subsea-footprint/>.
- [8] António Guterres, 'Secretary-General's remarks on Climate Change as delivered' (United Nations Press Conference, 10 September 2018) <https://www.un.org/sg/en/content/sg/statement/2018-09-10/secretary-generals-remarks-climate-change-delivered>.

Hosted by



Organised by

