Regulatory inputs to international bodies

Dissemination of SBCC among international regulatory regimes

Deliverable D5.3.1

Author: Erik Vroegrijk

Release Status: FINAL

Dissemination level: Public

Date: 27 March 2025

Filename and version: D.5.3.1 EverLoNG - WP5 - Task 5.3 - Regulatory inputs to international bodies - v1

The EverLoNG project is funded through the ACT programme (Accelerating CCS Technologies, Horizon2020 Project No 691712). Financial contributions have been made by the Ministry of Economic Affairs and Climate Policy, the Netherlands; The Federal Ministry for Economic Affairs and Climate Action, Germany; the Research Council of Norway; the Department for Business, Energy & Industrial Strategy, UK; and the U.S. Department of Energy. All funders are gratefully acknowledged.

Document History

This document is stored in the following location:

Filename	D.5.3.1 EverLoNG - WP5 - Task 5.3 - Regulatory inputs to international bodies - v1
Location	EverLoNG SharePoint

Revision History

This document has been through the following revisions:

Version No.	Revision Date	Filename	Brief Summary of Changes
1	27/03/2025	…Regulatory inputs to international bodies - v1	Final report

Authorisation

This document requires the following approvals:

AUTHORISATION	Name	Signature	Date
WP Leader	Erik Vroegrijk		27/03/25
Project Coordinator	Marco Linders		27/03/25

Disclaimer

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the Funders. Neither the Funders and bodies nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

Table of Contents

1. Introduction

This report summarises the dissemination activities conducted for Work Package (WP) 5 of the EverLoNG project.

1.1 Background

The EverLoNG project set out to develop and demonstrate the SBCC technology. For this, they installed a demonstrator onboard the Seapeak Arwa LNG Carrier *(chartered by TotalEnergies)* and the SSCV Sleipnir. The demonstrator's operational risks were assessed in a HAZOP workshop. Full-scale concept designs were further developed for a new build LNG Carrier and the SSCV Sleipnir based on the same technology and working principles and assessed in dedicated HAZID workshops.

1.2 Objective

The objective of Task 5.3 was to publish and disseminate the knowledge gained through these risk workshops amongst the wider maritime community, thereby accelerating the uptake of SBCC in a safe and certifiable manner.

2. Activities

The partners of WP5 participated in the following dissemination activities.

2.1 Public reports

2.1.1 Task 5.1 – Regulatory review and CO_2 hazards

In the original project plan, the report on the regulatory review and the CO_2 hazards *(D5.1.1 & D5.1.3)* was not envisaged to be made public. However, upon completing the report and defining its conclusions, the consortium partners agreed that there would be substantial benefit for the maritime industry if it would be made public. Agreement was received from all project partners and the report was duly published on the EverLoNG website.

2.1.2 Task 5.2.3 – Generic safeguards for SBCC systems

Where the full-scale concept design workshops were focused on ship-specific designs, a substantial number of safeguards were identified that could be applied to any SBCC system. These were summarised in deliverable D5.2.3 and published on the EverLoNG website. The report also formed the basis of the INF paper written for the IMO, which is in the process of being submitted.

2.2 Webinars

2.2.1 EverLoNG Webinar – 15 May 2023

Following the completion of Task 5.1, the WP5 partners participated in the 1st EverLoNG public webinar on the 15th of March 2023. During this webinar, the findings of Task 5.1 were presented, and attention was drawn to the public report *(D5.1.1 & D5.1.3)*.

2.2.2 EverLoNG Webinar – 13 March 2025

In the EverLoNG closing webinar, the WP5 results were presented to a wide audience. In this webinar, the partners highlighted that the regulatory framework was well-established and that a substantial number of generic safeguards were due to be published on the EverLoNG website (D5.2.3). In addition, it encouraged everyone to incorporate a risk-based approach as early as possible in the design cycle, as it ensures an intrinsically safe and well-integrated design.

2.3 International Maritime Organization (IMO)

2.3.1 CCC 9 – 21 September 2023

To draw global attention to the EverLoNG project at the highest regulatory level, the WP5 partners delivered an afternoon presentation to delegates attending the 9th session of the Sub-Committee on Carriage of Cargoes and Containers (CCC). During this presentation, progress with the onboard technology demonstrator was reported and delegates were informed that:

- For the technologies used in Ship-Based Carbon Capture (SBCC) systems Regulatory and Class Rules frameworks exist that allow for their safe implementation onboard.
- Where prescriptive Rules and Regulations are missing, the alternative design assessment pathways are suitable and available, with knowledge gained from other parts of the shipping industry, i.e. LNG.
- The risks associated with SBCC installations are credible but well understood, with well-established safeguards and design principles available from other parts of the marine industry, like LNG-fuelled vessels.

The audience showed great interest in the project and were particularly interested afterwards in the Techno-Economical Assessments (TEA) to be published at a later stage in the EverLoNG project.

2.3.2 CG for Marine Safety Committee (MCS) 108

As a direct consequence of the presentation at CCC 9, the EverLoNG consortium was invited to deliver a presentation for the *"Correspondence Group (CG) on Regulatory Framework for Ships Using New Technologies and Alternative Fuels"*, which reported to the Marine Safety Committee (MSC) 108. In total 59 delegations were present, representing a wide range of Member States and Non-Governmental Organisations. The aim of the presentation was to again emphasize the Technology Readiness Level (TRL) of SBCC and to encourage the delegates to prioritise the associated regulatory developments, especially when it comes to offloading and transporting CO_2 across borders.

2.3.3 INF paper for Marine Safety Committee (MCS) 110

To inform the maritime community on the results achieved in the EverLoNG project and in particular to draw attention to the well understood safety requirements for SBCC, the generic safeguards report of D5.2.3 was summarised in an INFormation paper that is in the process of being submitted to the Marine Safety Committee (MCS) 110, which is scheduled from the 18th to the 27th of June 2025.

2.4 Class Rules

Perhaps the most important impact of the EverLoNG project on the regulatory framework was the inclusion of the SBCC in the Class Rules of the project partners. The knowledge gained and shared in the EverLoNG project allowed for rapid inclusion in the respective Rules sets, thereby clearly defining the pathway for approval onboard.

2.4.1 Bureau Veritas (BV)

Bureau Veritas published their rules on SBCC in January 2023, by introducing the new section *"NR467, Part C, Chapter 1, Section 12 - Onboard Carbon Capture and Storage Systems"*.

2.4.1 Lloyd's Register (LR)

Lloyd's Register published their rules on SBCC in July 2023, by including new sections in their existing *"Rules and Regulations for the Classification of Ships, Part 5, Chapter 24 - Emissions Abatement Plant for Combustion Machinery and other Machinery and Equipment"*.

2.4.1 Det Norske Veritas (DNV)

Det Norske Veritas published their rules on SBCC in July 2024 in *"July 2024 - DNV Ship Rules Part 6 Chapter 7 Section 9 - Onboard carbon capture and storage - OCCS and OCCS ready"*.

2.5 International collaboration

2.5.1 International Association of Class Societies (IACS)

The Classification Society partners in WP5 *(LR, BV, DNV)* are also connected to the International Association of Classification Societies (IACS). IACS publishes Unified Requirements (UR) for various technologies and has started work developing an UR for SBCC. This will set the minimum standards to which the equipment needs to comply to achieve Class approval. Although Classification Societies can opt for additional requirements based on their own experience and Rules, an SBCC system that complies with the UR stands a very good chance on being approved for use onboard. The knowledge acquired in the EverLoNG project has indirectly impacted the UR for SBCC via the partners' participation in both.

2.5.1 Maritime Technologies Forum (MTF)

Some of the Classification partners in WP5 *(LR and DNV)* have also been involved with writing the Maritime Technologies Forum (MTF) report on "Safe onboard carbon capture and storage", which can be downloaded here: https://www.maritimetechnologiesforum.com/documents/2025-mtf-safe-onboard-carbon-capture-and-storage.pdf. Cross sharing of knowledge is integral to the generation of these types of reports.

3. Acknowledgements

The EverLoNG project is funded through the ACT programme (Accelerating CCS Technologies, Horizon2020 Project No 691712). Financial contributions have been made by the Ministry of Economic Affairs and Climate Policy, the Netherlands; The Federal Ministry for Economic Affairs and Climate Action, Germany; the Research Council of Norway; the Department for Business, Energy & Industrial Strategy, UK; and the U.S. Department of Energy. All funders are gratefully acknowledged.