



LR classed LNG-Powered Greenland. Credit: © Ferus Smit



**Sustainable
Shipping
Initiative**

Progress to 2015

A future for sustainable shipping

About the SSI

The Sustainable Shipping Initiative (SSI) is an ambitious coalition of shipping leaders from across the industry and two influential NGOs (Forum for the Future and WWF), which is taking practical steps to tackle some of the sector's greatest opportunities and challenges in order to achieve a vision of a shipping industry that is both profitable and sustainable by 2040.

Our goal is to transform the global shipping industry and the wider maritime sector, establishing a new sustainable approach as normal. We want to help companies and organisations throughout the shipping supply chain look beyond their immediate concerns by understanding the long-term challenges that they face, and in doing so, the opportunity to build better businesses and generate more profitability by embracing sustainability.

In the Case for More Action, our first progress report published in September 2013, we reported on outcomes from our initial work streams and members' individual

actions. Over the last two years SSI members have worked to formalise their shared commitments, communicate knowledge and learnings, report on the developments of the global megatrends published in the Case For Action in 2011 and, based on engagement with multiple stakeholders and experts within the industry, develop a live working Roadmap to 2040 for the maritime industry.

Well-managed businesses are responding to these drivers to deliver increased competitiveness, and ensure their survival. However, truly progressive businesses are not simply reacting to pressure. By thinking big and working together they are proactively shaping the context and commercial environment in which they operate. This collaboration is creating a multiplier effect, and dynamic attitude to change, which will lead to a positive paradigm shift in the industry.

The SSI is committed to helping to create this collaborative platform for leaders from across the shipping value chain to deliver a sustainable, and more profitable shipping industry.

SSI project partners:

Holman Fenwick Willan,
Southampton Solent University, University
College London Energy Institute, Carbon
War Room.

Thanks to the SSI members and project partners for their input into our working groups and in developing this progress report.

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Date of publication:

January 2016

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Front cover image (credit: Ferus Smit)

The LNG-powered cement tanker Greenland was christened and launched on 31 October 2015, at a ceremony hosted by the shipbuilder, Ferus Smit.

The vessel will be the first dry cargo vessel ever with an LNG-fuelled propulsion system, in which a pressurised LNG tank is incorporated inside the hull.

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Introduction

Alastair Fischbacher, Chief Executive, SSI

To meet our Vision of a more sustainable shipping industry by 2040, we must inspire all stakeholders to change to new ways of thinking and operating. This is one of our greatest challenges in an industry of traditional values. As we highlight in this report, the Roadmap that we have developed clearly sets out the key priorities and milestones that must be met in order to realise our Vision.

However, to achieve this, it is important to continually remember, and remind the industry of what the core elements of a truly sustainable industry are, and the prize, which we are ultimately aiming for:

- *A formal system of global ocean governance, where rights and responsibilities of those that use it are recognised.*
- *The majority of commercial vessels using a range of biofuels, oil, wind and hydrogen power, and emitting 90% less CO2 than they did in 1990.*
- *Large, efficient, integrated supply chains driving shipping forwards, working together, collaborating, sharing knowledge and resources.*
- *Safe and healthy port communities, where corruption is a distant memory.*
- *People wanting to work in shipping as an industry of opportunity and a place to thrive.*

- *Decisions being made based on ecosystem valuations and credible sustainability rating schemes.*
- *An industry where transparency and accountability are the core values of all.*

This is what we are working so hard to achieve; a more profitable, environmentally responsible, safer and truly sustainable industry. As we continue forwards, this vision must always be front of mind, motivating and inspiring us as the leading voice and driver of sustainable change in the shipping industry.

Since our Case for More Action report was released in 2013, the SSI has been through a significant transition. We have progressed from a group of like-minded organisations into a formal organisation and charity with governance and administrative functions that facilitate the work of the members in the Vision areas and also the outreach to the wider industry. The structure ensures that members are able to focus on the activities that will achieve the goals while the co-ordination, research, drafting and support is provided centrally.

Having been part of the SSI from the beginning as a member representative before taking over as CEO in June 2014, it is rewarding to chart the progress that the SSI is making with this our second report since the Vision 2040 was launched in 2011. Demonstrating leadership in transformational change across a multifaceted and traditional industry like shipping is tough, but I continue to be inspired by the tenacity and passion of our members in rising to the challenge. Critically, real, tangible progress is being made; progress that is being recognised both within, and outside of the shipping industry.

First and foremost, our members' work streams have continued to advance the core elements of our Vision 2040. These include increasing the development and use of clean technologies and access to finance for implementation; taking a bold position on, and facilitating action to address the challenges of

responsible ship recycling; improving the transparent exchange of information to educate and drive better decision-making; and analysing attitudes to life at sea, both ashore and onboard, and what makes for an attractive career and workplace. In addition to this progress report, we look forward to providing further updates in the future as our work evolves. In support of these initiatives we have aligned with a number of other leading organisations, including University College London, Southampton Solent University, the Carbon War Room and Forum for the Future to accelerate advancement of our shared agendas.

In 2014, members further underscored their dedication to sustainable practices through signing up to a set of Shared Commitments. These set a clear benchmark for demonstrable sustainable practice as well as providing greater collective transparency and accountability to drive improvement within the membership group. In addition to the baseline measures, there are more ambitious measures to which members will be working.

On a broader level, the SSI has consciously increased its visibility to be a progressive and authoritative voice on sustainability for the industry. By leading debates and setting agenda in the media and at conferences, as well as directly with key shipping stakeholders and influencers, we aim to encourage greater sharing of knowledge and experience to stimulate progress right across the shipping supply chain. This has extended to publishing two reports identifying current dynamics and future trends that are currently influencing, or may shape, the sustainability of the industry. To track these in real-time we have also launched a knowledge share platform on the future of shipping through the Futures Centre.

One of our biggest achievements in this period, which ties everything together, is the finalisation of our 2040 Roadmap. Developed by our members from the Vision and validated by consultation with a cross section of industry stakeholders earlier this year, it is a 'living' tool that sets out key milestones and

critical areas that must be addressed to chart a path to success by 2040. Not only does it provide a guide for the work of the SSI, it is also intended for use by the industry and will be reviewed and updated periodically.

As we move forward, we do so with a clear course of action, and conviction that our goals are truly achievable by working collectively together. I hope that you find our work stimulating and thought provoking, and which inspires action.

We welcome feedback as well as discussions with those who may consider joining and contributing to achieving the goal of a sustainable industry by 2040.

Stephanie Draper, Chair, SSI Board of Trustees

We have a bold vision at The Sustainable Shipping Initiative. As leaders across the shipping value chain we are helping the industry to make sustainability mainstream. We want to see a shipping industry that is a central part of a thriving economy, providing rewarding and safe jobs to those that it employs, and value to local communities, whilst dramatically reducing its environmental footprint.

The decisions that the industry makes today will shape what we can achieve into the future. This is brought into sharp relief by the SSI's new Roadmap to 2040. This charts a course to a sustainable industry. It highlights how far we have come, but also how much more we need to do collectively to reach our 2040 aspirations.

This is a fantastic resource for the industry and I am excited to see it taken up and used to drive progress at an ever-faster rate.

The Roadmap is all part of our endeavor to provide a future voice for the industry – helping our members and the wider industry to understand the challenges they need to be ready for, and helping them to respond in a sustainable way. Our role is to tangibly demonstrate to them that being more sustainable in an industry of ever-increasing regulation and scrutiny makes sound commercial sense, increasing their competitiveness and their profitability.

In this ever-changing world no industry can afford to stand still. At the SSI we see this dynamic environment as an opportunity to do things differently – more sustainably.

Members of the SSI are already responding – showing leadership so that they can be ahead of the pack, differentiated and future-ready. This year all of the SSI members have signed up to a set of shared commitments to show that they are playing their part. Delivering leadership as individual companies is a core part of what the SSI does and I am proud to be working alongside companies who are not just reaching our minimum standards of leadership, but going beyond.

Radical change requires broad perspectives, big ideas and the resources and tenacity to turn concept into realities. We see the future perspective and individual leadership as critical to realising our vision, but we also need collective, scalable action. This is the third key element of the SSI's purpose to tackle particular issues that need a collective response, innovation or scale. In 2015, and as we continue into 2016, we are making progress on difficult challenges like engaging the customer, cost effective ship recycling, low carbon shipping and enhancing living and working conditions for seafarers, of which you will find more in this report. There is still far to go and much to do. We must continue to push hard to achieve practical results and to generate the scalable support and uptake to create impact. Whilst working to meet clear expectations, we must keep our eyes on the horizon and have the resilience and ambition to identify and adapt our programme in line with emerging trends. Doing so will help us to ensure that we remain on track to achieve our ultimate goal – that of a shipping industry where sustainable behaviour equates to success in 2040, but hopefully much earlier.

NGO commentary

SSI 2040:

NGO commentary,

August 2015

When the SSI was established in 2010, the Case for Action set out the key challenges and opportunities that the industry is likely to face by 2040. Five years on, while fuel prices have taken an unexpected plunge, challenges such as the availability of skilled labour, workers welfare, increased demand for transparency and increasing regulation continue to challenge the industry. Perhaps of greatest concern, climate change is no longer a distant threat, but is considered by prominent scientists to have reached a tipping point that will impact within our lifetime. The need for ambitious sustainability leadership in the shipping industry is stronger than ever.

Five years into the Vision 2040 journey, and after two years as an independent charity, the SSI is growing in confidence.

In 2014, the Members of the SSI publically set out their Shared Commitments – the minimum standards required of organisations wishing to be part of the leadership group. These set a clear benchmark for sustainable practices as well as greater collective transparency and accountability to drive improvement.

The Shared Commitments are a great and significant start, and we look forward to seeing them increase in ambition, matching the rapid pace of change in the industry to ensure that the SSI and its members maintain a leadership position. We would also like to see the Shared Commitments backed up with a wealth of Leading Practice case studies, supported by tangible on the ground efforts to realise such progress from the SSI members, which will help to both inspire and motivate the wider industry.

With the development of the Roadmap, the SSI has brought more clarity and accountability to the work required to achieve the Vision 2040. No longer is this just a distant ambition, but a clear set of milestones against which the SSI and other stakeholders can measure progress of the group and of the industry as a whole. We look forward to seeing the Roadmap with its clear measurable milestones for achievement in coherence with futures work and the ambition increase /

change via adaptive management dependent on the changing seascape used to define future work programmes, and to engage the wider industry and other stakeholders with the shared challenge of achieving a sustainable future. In addition to use this pathway to target new leaders and partners to help deliver the roadmap milestones and realise tangible progress towards our future goals.

Cross-industry collaborations

We're pleased to see the SSI expanding areas of activity in order to address the societal aspect of Vision2040; specifically the welfare of seafarers with the Seafarers On Board Charter, of ship-breaking workers and their communities, and the overall attractiveness of shipping careers. The breadth of the SSI Vision across key environmental, social and economic issues requires wide collaboration. We're pleased that the SSI has taken concrete action to engage and deepen collaborations with likeminded organisations including the Sailors' Society and the World Ocean Council. This builds on previous formal and informal work with University College London Energy Institute, the Carbon War Room and Southampton Solent University.

We see the Roadmap as being a core unifying tool, helping to identify shared interest groups and building a sense of common purpose across a range of campaigns, trade organisations and academic bodies.

We also welcome the SSI's efforts to engage with the wider shipping community through the Future Centre topic hub.

We would like to see the level of ambition continue to increase, as it must do, if the milestones as set out on the Roadmap are to be achieved and a sustainable future realised. In particular, as outlined in the introduction, the SSI members should be highlighting strong commitments significantly reducing the sector's contribution to GHG emissions and in doing so helping to lead and take the whole sector on the journey towards a fossil fuel free future.

Being bold

The SSI has taken a courageous stance in the controversial area of ship recycling. The enormous health and safety and

environmental issues associated with poorly run ship recycling facilities are well known, and company policies and legal constraints are quite rightly directing trade away from problem sites.

By adopting an engagement approach, the SSI has taken the bold, challenging, but potentially highly effective – and the right – strategy, which will serve to improve selected recycling areas in India and Bangladesh rather than simply disengaging. This forward-looking approach recognises that current practices in relation to health, safety and environment are unacceptable – but provides an opportunity for the ship recycling industry to change and begin to play a positive and more socially and environmentally responsible role for local communities and the wider industry.

Powerful voice

The SSI has become increasingly confident and vocal on a number of issues, from mariner welfare and ship recycling, to representing the voice of sustainable shipping to the UN Global Compact Consultative Meeting with Industry and Trade Associations in 2014. We would welcome an even more vocal and confident SSI, bringing to bear the political clout afforded by their combined market capitalisation of \$0.5trn, and their excellent reputations within the shipping industry and wider maritime world. Now in its fifth year, the SSI should be confident in supporting specific progressive regulation, or openly requesting specific areas for action where political will is lacking. In particular influencing policy where such change has been identified on the Roadmap as a pivotal step on the journey towards sustainability. In this context we would welcome a more vocal role in supporting:

- *The delivery of a strong regulatory framework for the shipping industry, implemented by the International Maritime Organisation (IMO) that supports the UNFCCC's target of below 2-degrees warming, agreed at COP21 in December 2015 either through direct public statements, or adding a powerful shipping voice to cross-sector campaigns such as WeMeanBusiness;*
- *Supporting and contributing towards the UN Sustainable Development Goals to ensure those most dependent on marine resources can continue to be;*
- *Improved energy efficiency standards for new and*

existing ships which lead to market based measures, significant fuel use reduction and ultimately GHG emission reduction targets for the sector, which deliver the sector's contribution towards avoiding catastrophic climate change.

- *Leading the industry on issues of ocean governance and management by supporting the use of tools such as marine spatial planning (including the establishment of Marine Protected Areas), Strategic Environmental Assessment, which help to inform and operationalise how ocean resources can be used sustainably and equitably.*
- *Leading and communicating to the sector on measures to mitigate the environmental impacts of cradle-to cradle-operations and development in particular when operating in sensitive and hazardous regions.*

Sam Kimmins
Forum for the Future



Simon Walmsley
WWF

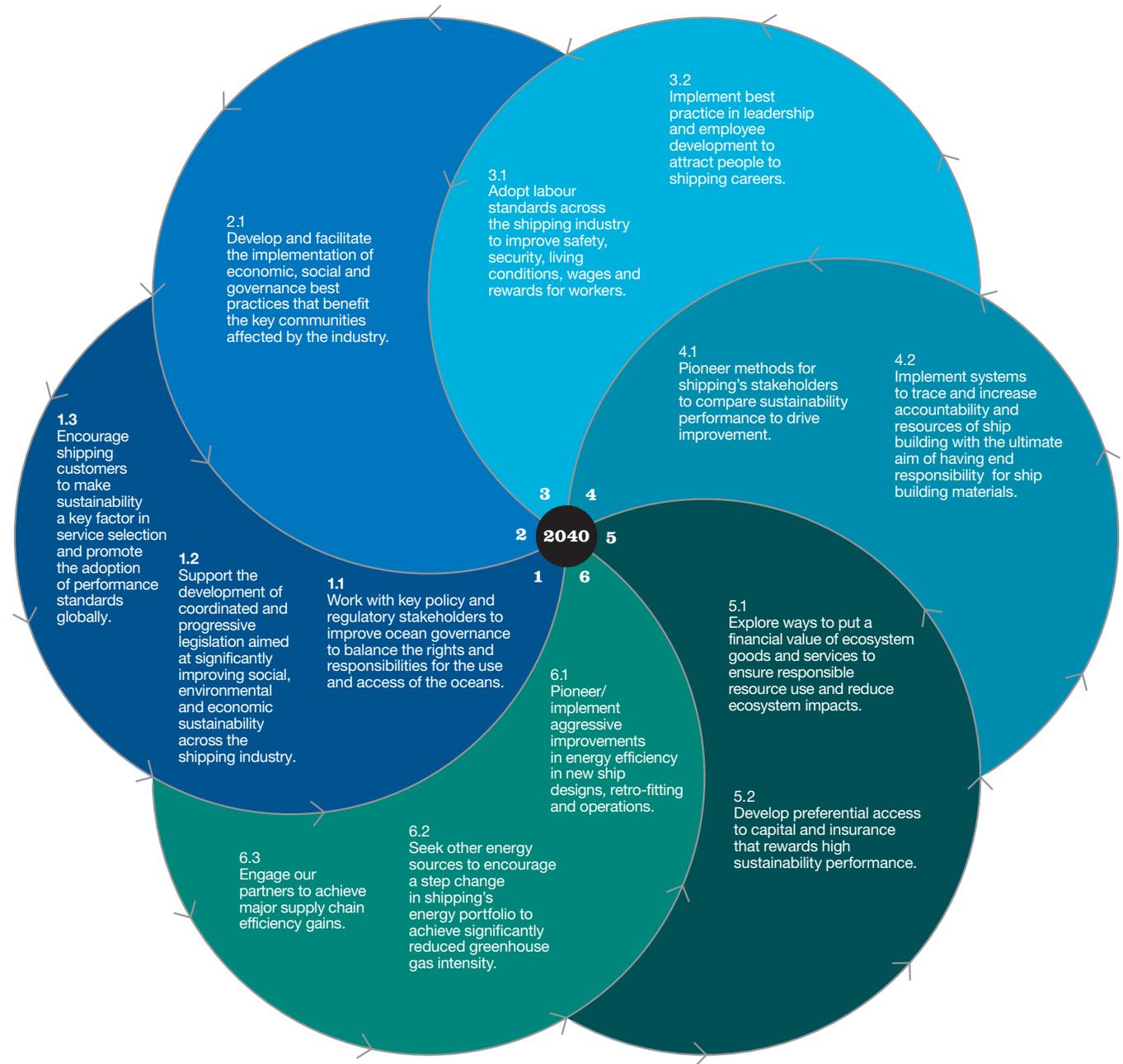


SSI vision and key areas for action

Shipping plays a critical role in the global economy. Recognising that the challenges of the future demand significant change, SSI members have developed a shared Vision for 2040 – a vision in which sustainability equals success.

How to read the chart: 1–6 are the Vision statements. The subtext refers to the Key Areas for Action.

- 1**
Proactively contributing to the responsible governance of the oceans.
- 2**
Earning the reputation as a trusted and responsible partner in the communities where we operate.
- 3**
Providing safe, healthy and secure work environments so that people want to work in shipping, where they can enjoy rewarding careers and achieve their full potential.
- 4**
Transparency and accountability drive performance improvements and enable better, sustainable business decision making.
- 5**
Developing financial solutions that reward sustainable performance and enable large scale uptake of innovation, technology, design and operational efficiencies.
- 6**
Changing to a diverse mix of energy sources, using resources more efficiently and responsibly, and dramatically reducing greenhouse gas emissions.



Roadmap introduction

The shipping industry is transitioning from understanding the advantages of sustainably improving environmental, social and commercial practices, to a position where companies are challenged with understanding how to practically implement change. In addition to aligning their internal CSR objectives with business strategy, there are a myriad of complex pan-industry issues that will shape how businesses respond to these challenges. These include areas such as regulation, governance and infrastructure, as well as factors such as emerging energy sources.

To frame and prioritise some of the issues that need addressing on a pan-industry level, the SSI has created a 2040 Roadmap. By plotting milestones that shipping will collectively need to tackle over the next four decades to meet the Vision2040,

the Roadmap intends to give greater direction to stakeholder discussions as well as providing organisations with a practical tool to help shape their own sustainability strategy.

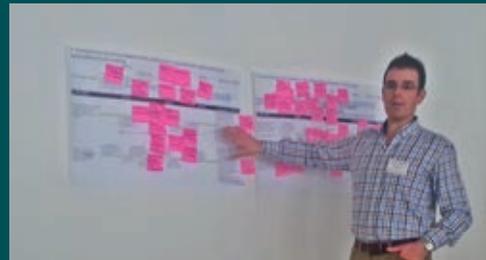
In March 2015 in London, the SSI, led by our members, instigated a series of group consultations with relevant and influential stakeholders from across the shipping supply chain to finalise the initial stages of the Roadmap to ensure that it is as representative as possible. The stakeholders' comments and suggestions were added and brought back to members for further validation at the members meeting in Singapore in April 2015.

The finalisation of the first stage of our 2040 Roadmap is one of SSI's most significant achievements to date. As we progress in 2016 and beyond, it is important that the Roadmap is shared as much as possible with the industry, as it provides a clear and

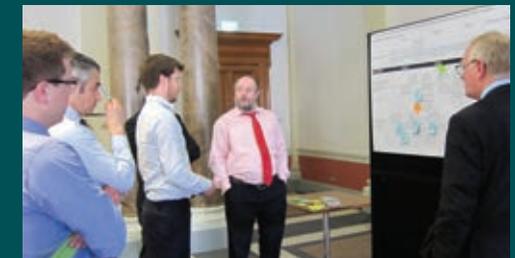
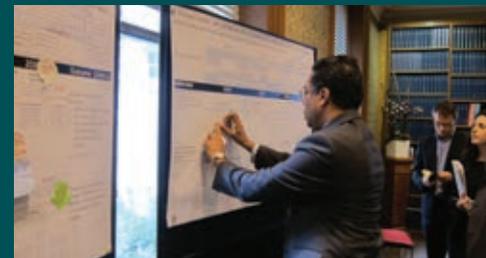
tangible overview of what sustainability actually looks like, and the practical steps that must be taken to achieve it. It is available online and we are actively seeking opportunities to use it as the basis for discussions at industry events and in meetings as well as incorporating this into our media relations activity. As it is a 'live' working tool it will also be reviewed and updated periodically as the industry landscape changes; information, which will be fed back into the market. It is an opportunity to keep up the momentum and ensure that the industry maintains a clear focus on sustainability, as well as highlighting the progress that is being made, and the hurdles that need to be overcome.

The Roadmap is now available to view on www.ssi2040.org

SSI members roadmap consultation in Japan 2014

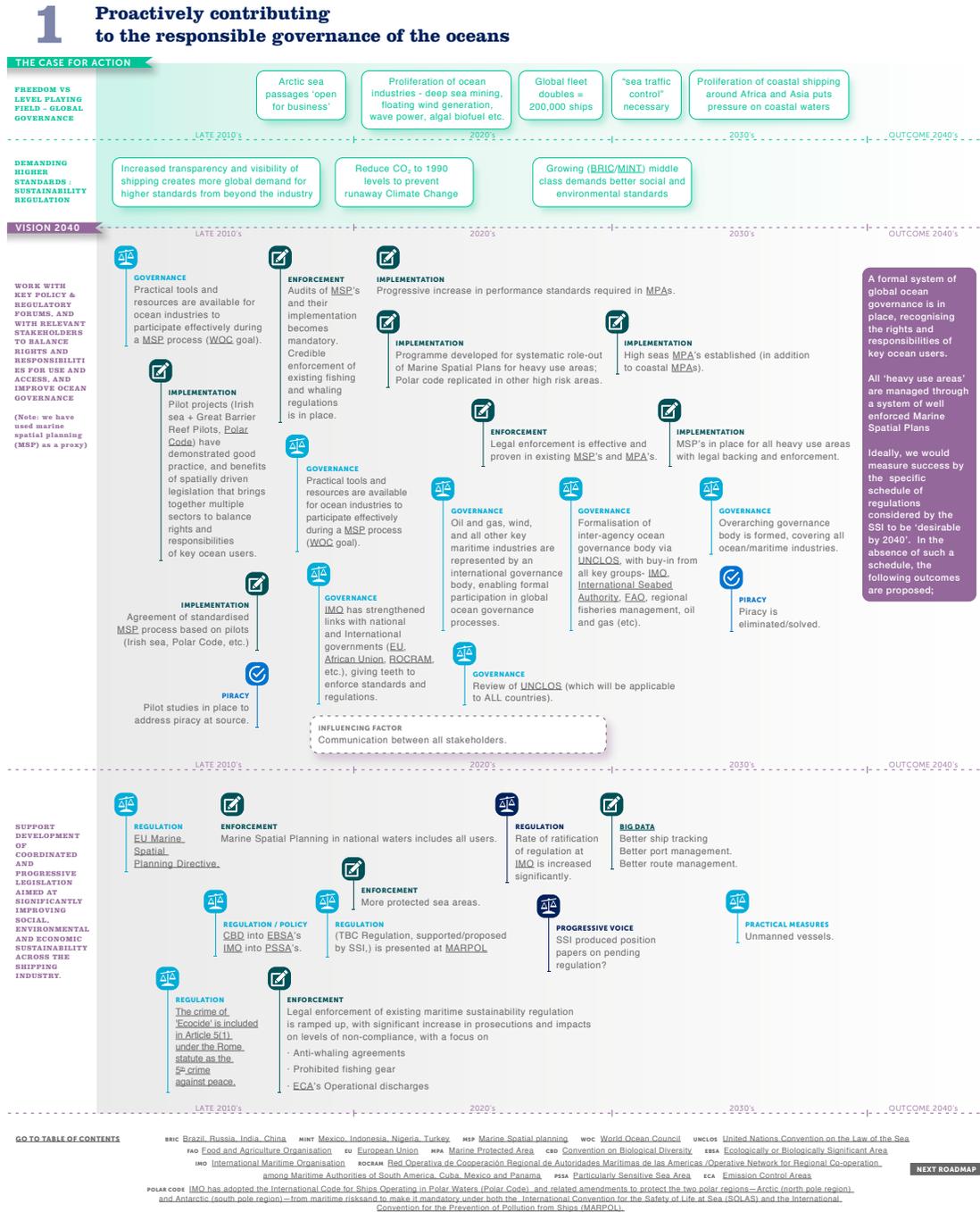


SSI members and stakeholder consultation in London 2015



Please note
This is a sample page from the Roadmap.

To view the complete current live Roadmap
please visit our website: www.ssi2040.org



Leading by Example: Our Shared Commitments

The Roadmap provides a clear illustration of the macro environment for delivering a sustainable shipping industry by 2040. However, it is also important that our members lead by example by tangibly embracing sustainable business practices. Fundamentally, they must demonstrate to the wider industry the practicalities and benefits of sustainability, and set a benchmark for industry leadership.

SSI members recognise this, and believe that being more transparent, and having consensus and consistency around some of the core elements of sustainable business practices is essential in achieving wider industry-buy in, as well as being a critical platform for building further credibility for the work that the SSI does, and in acting as a catalyst for long-term and progressive change.

In October 2014, SSI members therefore agreed to sign up to a set of four Shared Commitments that are linked to our Vision 2040, and create a clear benchmark for sustainable practices as well as providing greater collective transparency and accountability for driving improvement.

By signing up to the commitments, each member agrees to:

- 1. Publicly report on sustainability.**
- 2. Have a sustainability strategy that links to its core business.**
- 3. Set clear reduction targets for environmental issues that are most material to their activities.**
- 4. Deliver a positive impact on people and society.**

Each of the four Shared Commitments comprise a number of different sub-elements with a set of options to reflect the different sectors within the SSI's membership; clearly the sustainability requirements for a ship owner will be different compared to a bank, charterer or technology company. As well as providing an added level of depth, these differing options provides our diverse membership with the ability to sign-up to and implement the aspects that are most relevant to their organisation.

For example, options across the four Shared Commitments include:

- *Making policies and data on social and environmental issues publically available*
- *Implementing a clear governance structure for sustainability that links its management back to the core business*
- *Using ratings schemes to guide decision making and procurement*
- *Adopting at least one new technology or innovation that promotes sustainability*
- *Having a publically available set of environmental targets*
- *Setting beyond compliance GHG reduction targets*
- *Implementing sustainability training programmes*
- *Ensuring staff satisfaction surveys are in place*

These are just some of the elements of the four Shared Commitments; members are also making strides in identifying risks to sustainability as well as integrating sustainability considerations into their innovation and business development processes. Similarly, where ship recycling applies, our members are adopting high standards of working conditions. There are also areas where further improvements are required. This includes implementing fully robust sustainability strategies that have SMART objectives as well as publishing verified sustainability reports. We are optimistic that these

will evolve, as will environmental measures, such as biofouling and ballast water management plans). The latter are likely to progress further as regulations develop.

While our members continue to work towards fulfilling the initial elements of the four Shared Commitments, we have also developed a more ambitious set of targets, which members should look to achieve over the course of the next three years.

This includes:

- *Having a powerful set of sustainability goals (social, environmental and economic)*
- *Having an integrated report that combines sustainability with annual reporting*
- *Integrating sustainability into the strategy, mission and vision of the organisation*
- *Making sustainability a part of leadership KPIs*
- *Implementing absolute carbon reduction targets*
- *Implementing net positive social impact goals across the business*
- *Collaborating with other companies to address social issues in communities and beyond.*

Such joint pledges are an industry first. As well as setting an example to the rest of the industry, these Shared Commitments will also form part of the criteria for joining the SSI, and are designed to encourage uptake by providing greater clarity on some of the organisation's goals. Naturally some of our members will be further along in these journeys than others, but by making solid, incremental steps to instigate change and share our results, we hope to inspire other companies within the wider industry to follow suit and realise the commercial benefits for themselves.

Our members are continuing to work towards fulfilling these and progress has been promising.

Members are also making strides in identifying risks to sustainability as well as integrating sustainability considerations into their innovation and business development processes. Similarly, where ship recycling applies, our members are adopting high standards of working conditions. There are also areas where we acknowledge that improvements are required. This includes implementing fully robust sustainability strategies that have SMART objectives as well as publishing verified sustainability reports. We are optimistic that these will evolve, as will environmental measures (i.e. biofouling and ballast water management plans). The latter are likely to progress further as regulations develop.

Such joint pledges are an industry first. By delivering against these shared commitments on an ongoing basis, sustainability will continue to become an increasing contributor to business strategy as well as a key barometer for decision-making, driving innovation, as well as progressive and more profitable change.



Crew members provide sailors and naval academy cadets with a briefing about controls on the bridge. Photo courtesy of ABS © Joe Evangelista.

Interim goals: 2013–2015

Over the past two years, the SSI's members have focused their work towards achieving the following four goals:

Industry:



Seafarer from Myanmar. © Cargill and the Sailor's Society.



Stena Germanica – the world's first methanol-powered ferry. © Stena Line.

1.

Improving the sustainability of ship recycling including resolving environmental and labour concerns.

2.

Improving working conditions and environment for seafarers and boosting the overall attractiveness of maritime careers.

3.

Increasing the trial and uptake of proven and viable clean technologies, that improve operational efficiencies, reducing fuel burn and associated emissions.

4.

Supporting an industry culture that is more informed about key sustainability drivers and how to harness them.

A report on our progress towards addressing each of these objectives follows in the next pages. We are proud of the significant developments that have been made. However these are all ambitious goals, some of which are focused

in and around contentious areas within the industry, which require on-going debate and commitment over time from many parties beyond our membership. Our members remain committed to pioneering these challenges to drive

further positive change, and have developed action plans to continue the progress we have made.

I. Sustainable ship recycling

The process of ship recycling is a highly complex and contentious issue, with increasing importance being placed on sustainability. With the advent of new international regulation, there is general consensus across the industry that health, safety and environmental standards applied to ship recycling need to be improved. With many stakeholders, including legislators with differing opinions on the right solution, SSI – through our working group – has focused on showing leadership in setting the agenda for debate, and facilitating discussion in order to accelerate safe, environmentally and socially responsible ship recycling.

In line with the initial work streams of the SSI, our members have focused on the very material issue of closed loop ship recycling with respect for human rights. In working towards this goal, in Q1 2015, the SSI organised and facilitated a roundtable briefing and discussion with key stakeholders involved in the ship recycling process, including ship owners, cash buyers, ship yards, class societies and NGOs for an ‘off the record’ preliminary discussion. The aim of the meeting was to:

1. *Share knowledge and expertise and debate the key issues and challenges;*
2. *Identify the most material and positive forces within the landscape of ship recycling;*
3. *Look at alternative ways and methods that can be experimented with by our members.*

The key ‘win’ from the meeting was that stakeholders with historically divergent views spent significant time seeking a consensual way forward, understanding the differing opinions and looking for common ground in order to drive change, which everyone agreed needs to happen; but in the right way.

The ship recycling debate will continue to run as a key focus of sustainability within the shipping industry, and based on the success of this roundtable, SSI will facilitate a further event in Q1 2016 to drive further engagement and progress with the key stakeholders.



The IMO’s Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC), (which has been internationally agreed, but not yet ratified sufficiently to enter into force globally) is one of the guidelines, amongst several available in the area, which should be used to continue the dialogue with Ship Recycling Facilities (SRFs) and work jointly towards safe, environmentally and socially responsible ship recycling.

By 2018, the SSI seeks to establish a cost-efficient way for SSI members to support selected SRFs in achieving minimum safe, environmentally and socially responsible requirements, amongst others, based on HKC, in ship recycling. And, in doing so, promote the use of such facilities by 2018, building towards a closed loop materials management system in the longer term.

While the ultimate outcome is for all SRFs to become safe, environmentally sound and socially responsible (including yards using beaching if they can be certified by an independent class society to be HKC compliant), it is necessary and important to focus resources on specific regions and SRFs as pilot schemes. Therefore, the working group members believe it would be practical and feasible to concentrate on a small number of SRFs. For example, we will be working with Alang in India in recognition of the efforts and improvements they have made in improving their sustainability already.

In February 2015, members from the SSI visited four SRFs at Alang; Leela, Priya Blue, RL Kalthia and Shree Ram. They have been identified to be among the more sustainable SRFs, which are working towards compliance with the HKC.

Some ship owners are waiting for their results before deciding the next steps to take, but the Alang SRFs appear to be genuinely interested and open to driving forward with improvements and willing to share information. Critically, some of the facilities highlighted the need for assistance and recommendations on how to improve their practices rather than financial support. To date this has not been forthcoming from any of the NGOs and consultants.

Clearly this is an area where the SSI will play a pivotal role in bridging this gap; providing knowledge and information to speed up the adoption of sustainable ship recycling in line with the Hong Kong Convention, as well as encouraging transparency and bringing key stakeholders together to engage, find common ground and deliver progressive and sustainable solutions.



II. Social sustainability: making seafaring more attractive

As a key part of our Vision 2040, we want people to see shipping as an industry of opportunity for those that work within it, where they can thrive and develop a rewarding and successful career.

To that end, the SSI's Social Sustainability working group discussed how to make seafaring more attractive, by looking at how to increase the overall quality of life for mariners, and how to attract seafarers to the industry, and importantly, retain their services.



Panel discussion on the attractiveness of seafaring as an attractive maritime career in a digital age. From the left: Anna Simpson (Futures Centre), Peter Wong (IMC), Dr. Kate Pike (Southampton Solent University), Dr. Franck Violette (American Bureau of Shipping).



Ship's crew relaxes by participating in a basketball tourney during a recent ship docking in China. © The China Navigation Co. Pte. Ltd.

The SSI is working towards producing a 'Seafarers On-board Charter' and to strive to go beyond the Maritime Labour Convention (MLC) 2006 which established minimum working and living standards for seafarers. Widely known as the 'seafarers' bill of rights,' the MLC outlines seafarers' entitlement to decent conditions of work within the key aspects of their working and living environment. This includes minimum age, employment agreements, hours of work or rest, payment of wages, paid annual leave, repatriation at the end of a contract, onboard medical care, the use of licensed private recruitment and placement services, accommodation, food and catering, health, safety and accident prevention and seafarers' complaints handling.

As responsible members of the maritime community, SSI members believe that seafarers deserve good liveable standards while at sea. In line with this, SSI members agreed to strive to, and encourage the maritime industry to:

- *Go beyond the basic compliance requirements of MLC 2006 in providing liveable standards on board ships.*
- *Hold regular inspections of common spaces to ensure health, safety and hygiene.*
- *Go beyond the "basics" with Indoor Environmental Quality Factors (IEQF) standards.*
- *Handle any crew matters or concerns promptly.*
- *Ensure crews have access to information about available shore facilities and shore leave wherever practicable in port and at anchor.*
- *Assist in providing internet connectivity to seafarers.*
- *To provide food suitable to, and prepared according to the cultural, national and dietary needs of seafarers.*

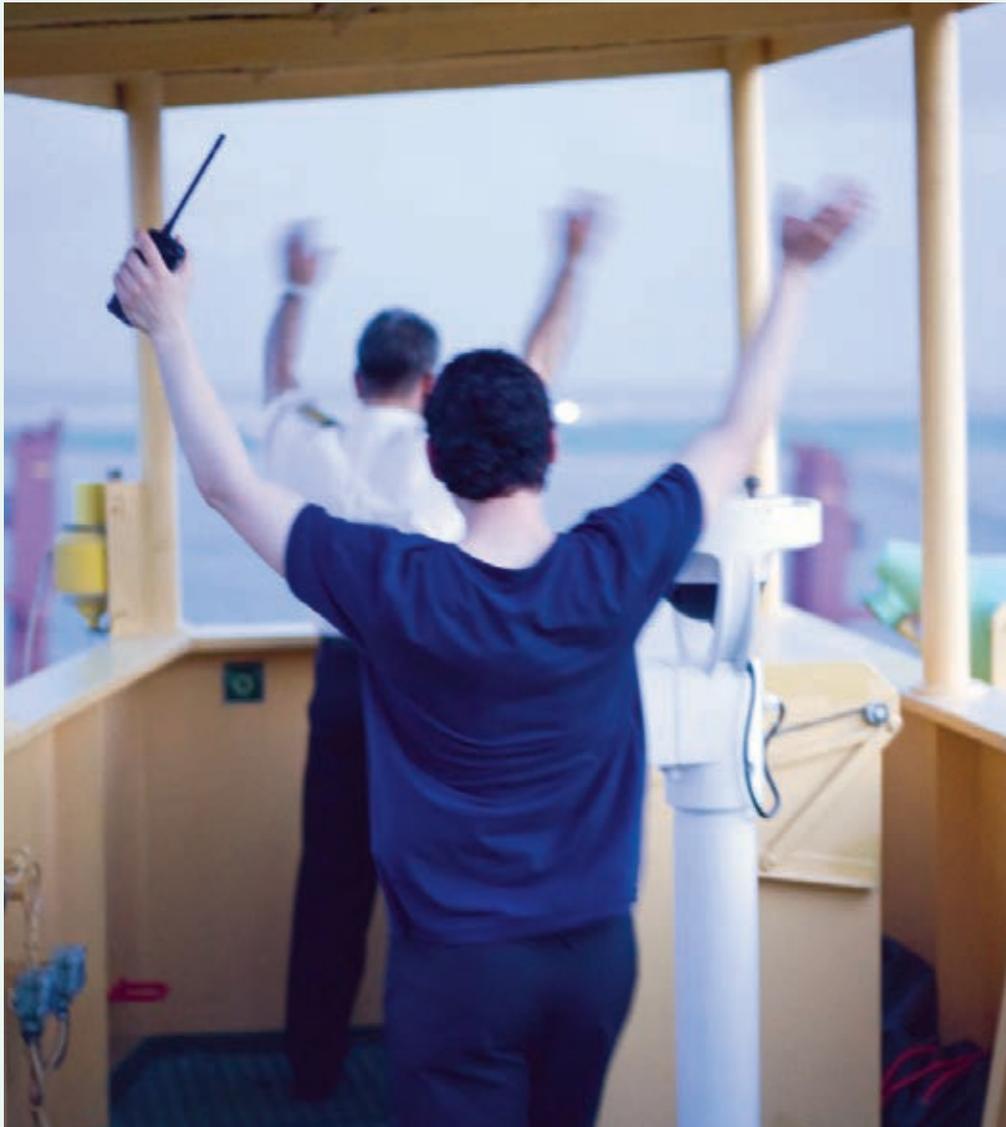
A survey was also undertaken to find out more about the quality of life for seafarers. Initial results of the survey have found that much can be done to enhance the living conditions on board modern ships. Seafarers can often experience stress at sea, both in their day-to-day work in, sometimes harsh environments, as well as the emotional challenges of being away for long periods of time from their families. They therefore require suitable, on-board living spaces for relaxation and

recovery, with access to positive support and the means of social distraction. In addition, a proper work schedule and adequate shore leave when in port were also highlighted in the survey.

In early 2015, the SSI signed an MOU (Memorandum of Understanding) with Southampton Solent University to conduct research – 'The shipping awareness project' – to examine the causes contributing to the low public profile of the shipping industry. The initial summary of the results shows that respondents could identify the cruise sector, military ships and fictional ships but were unable to identify container ships and oil tankers. In addition, there is a lack of understanding of how much shipping contributes to the local and global economy; awareness of the negative aspects of shipping; job opportunities at sea and on-shore. The final report of phase one of the research was presented to members in Southampton in October 2015.

A critical aspect of the Charter is how it can be successfully implemented and monitored on a widespread basis.

Throughout the first half of 2016, the SSI will initiate engagement with industry stakeholders to ascertain how the Charter could potentially be implemented in rating schemes, where ship owners and operators are recognised for the progressive approach they take to crew welfare. We will also have discussions with organisations such as the Sailors' Society to discuss collaboration opportunities in co-promoting and campaigning for the principles of the charter, and the necessity for ship owners to implement standards that go beyond the regulatory obligations of the Maritime Labour Convention (MLC).



A sailor's family reunion.

I had just settled in on an inbound ship when a young sailor shyly asked about a certain ship that he thought might be in port. I checked the daily schedule and saw that the ship he was asking about had sailed that afternoon and we would pass them in the channel sometime in the next hour. He looked so disappointed I had to ask if he had a friend on board that he wanted to see. He told me his father was on board and it had been quite a while since he had seen him – both being on different vacation schedules. We made contact with the other ship and arranged for them to talk on portable radios for a bit. When the ship passed I picked up my camera in time to record the family reunion. Such as it was.

Image credit: © Louis Vest.



The Captain. Portrait of Swedish captain Greta Hjelte of the tanker Tosca.
Image credit: © Louis Vest.



Mate at chart table.
Image credit: © Louis Vest.

III. Facilitating a step change in technology

Despite being the most environmentally efficient form of transport, shipping is a large and growing source of greenhouse gas emissions that is causing climate change. Emissions from the total global shipping industry amount to around one billion tonnes a year, accounting for 2–3%¹ of the world's total greenhouse gas (GHG) emissions and 4%² of the EU's total emissions. Without action, these emissions are expected to more than double by 2050. This is not compatible with the internationally agreed goal of keeping global warming below 2°C, which requires worldwide emissions to be at least halved from 1990 levels by 2050³.



Maersk Line's Triple E eco-ship. © Maersk Line A/S.

The SSI acknowledges the findings of the Intergovernmental Panel on Climate Change (IPCC) that global warming is unequivocal and is 'very likely' due to human activity. In order to avoid the dangerous consequences of climate change, temperature increases will probably need to be limited to about two degrees Celsius above pre-industrial levels.

The SSI also acknowledges the findings of the IMO 3rd Greenhouse Gas Study (GHG) 2014 which shows that future business as usual scenarios show an increase in shipping emissions of 250% by 2050. Improvement is urgently needed in emissions reductions as shipping transport is expected to increase steadily in line with global economic growth. It is encouraging to see that international discussions are still underway for further operational and technical measures for improving the energy efficiency of existing ships, but more needs to be done.

Critically, there are viable and proven clean technologies available right now that can have a significant impact on increasing operational efficiencies, and reducing emissions and associated fuel costs; another proof point of the commercial value of sustainability. However, while shipping may not be associated with speed in embracing new innovations, the industry has been hit hard by the global recession, low freight rates and over capacity, which has led to real liquidity challenges. In short, many owners and operators do not have the capital to invest, which has stifled the uptake of clean technologies.

By identifying and understanding this, the SSI is tackling the challenge head on by taking practical steps and integrating our Finance work stream into the Step Change in Technology working group.

With a focus on increasing access to mutually-viable financing for retrofitting vessels with efficient technologies, the working group is continuously promoting our innovative [Save as You Sail](#) finance model. This has good prospects for uptake in the near future, and we are further improving this by working in

partnership with complementary organisations such as the Carbon War Room who has also developed a retro-fit financing model with PwC, University College London Energy Institute and a consortium of other stakeholders. Our work together is focused on the shared belief that re-thinking financial models that can be used entirely or in part, will reduce emissions whilst improving ships' performance and profitability.

In 2015, in Singapore, the SSI held a transparent, closed technology sharing roundtable to discuss future technological advances and investments in shipbuilding and the subsequent effects on the shipping industry. The agenda was set by members who contributed openly to discussions delivering significant learnings, which will be further developed and reported on in due course, with another roundtable due to be instigated.

To support the bigger picture of driving a low-carbon industry, the SSI is collaborating with the University College London Energy Institute on a thought leadership project. The research follows on from Smith et al. (2015), a paper presented at the IMO's Marine Environmental Protection Committee meeting (MEPC 68) in May 2015 as a first framing of the concept of a target for shipping. It shows that the scale of CO2 emissions cuts required to meet a 2-degree target is far greater than the shipping industry. The agenda was set by members to highlight the common theories and drivers as well as exploring some of the solutions that could potentially reduce CO2 emissions and global warming. Through this, stakeholders will be better informed to identify their approaches towards mitigating this huge risk to the industry and the wider macro environment.



Dolphins at play. © Louis Vest.

- 1 Third IMO GHG Study 2014, International Maritime Organisation 2015.
- 2 Brussels, 28.6.2013, COM(2013) 479 final.
- 3 IPCC WGIII AR5 Summary for Policymakers.

Leading a more informed industry

The SSI's members truly believe that 'knowledge is power' for tackling sustainability barriers as well as identifying new opportunities for growth. Over the last two years, the SSI has successfully positioned itself as a leading voice on key issues, from reinforcing overall awareness of the role of sustainability, to sharing new collective insights on a range of specific topics.

To support this, the SSI also commissioned Forum for the Future to write two external reports, as well as internally developing a paper that examined the impact of shipping on charterers' supply chains. Through its engagement, the SSI is encouraging the industry to think differently in terms of how they plan for success as well as driving progress towards identifying tangible approaches and solutions to accelerating positive change.

Changing perceptions: industry reports

SSI's customer communications working group launched the thought paper "[Driving Transformation through the Value Chain. How customers are raising the bar for the entire shipping industry](#)" discussing the role of how customers are driving sustainability in shipping. The paper highlights examples of members' individual initiatives to provide inspiration to other charterers about potential adjustments they can make. SSI members including Maersk, Cargill and AkzoNobel also provided further context

to this by participating in an industry panel discussion at the 4th Capital Link Shipping & Offshore CSR Forum in London in 2014 during which organisations could ask further questions about how members are making improvements to their shipping operations. Based on the success of the 2014 event, the SSI was invited back for the 2015 Capital Link Forum, where Alastair Fischbacher chaired a further panel discussion on the same issues.

The Blue Skies and emerging trends working group published its first "[Signals of Change](#)" report. The research examines the potential impact of emerging signals of change on the future of sustainable shipping. These are important ideas, innovations and events that might suggest a new trajectory that could shape the future operating landscape. Released in March 2015, the SSI reported that ocean governance, leadership requirements and manufacturing developments may have profound long-term impacts on shipping supply chains. As shipping is faced with many near-term, immediate challenges, the report aims to encourage organisations to take a more macro-view to its strategic planning so that the early identification of emerging trends can stimulate innovation and growth as well as mitigating risk in its early stages.

The Blue Skies working group also reported on developments related to the megatrends identified in the Case For Action (2011), as it committed to in SSI's first progress report, The Case for More Action (2013). The report entitled "[Changing Context - Global Trends 2012 to 2015: How global trends have](#)

[progressed and moving towards our vision for shipping in 2040](#)" examines the seven global trends that are shaping progress towards the 2040 vision in light of increased scrutiny of shipping, rising investment in alternative energy sources, and rapid climate change. We believe that this is important for collectively understanding, and responding to, the dynamics that will impact upon progress.

The SSI will continue to monitor such trends

to see how they develop and to highlight where solutions might be required in order to progress towards our Vision for a truly sustainable industry by 2040. Contribution from the industry as well as the wider business community is also encouraged to collate a fully comprehensive perspective. Participants can submit their observations, and subscribe to receive regular updates from the contributions of their peers through the future of shipping topic hub.



Arctic intersection © Patrick Kelley, US Coast Guard.

Topic Hub: The future of shipping



Watermelon photo. © Louis Vest.

The Future of Shipping topic hub is an interactive online platform for stakeholders from the shipping industry and strategists in related fields to identify opportunities to move towards a sustainable future. By breaking the content of discussions down into real-time, manageable and crowdsourced chunks, the portal aims to collate perspectives from a broader range of stakeholders that the SSI can reach directly.

Through the topic hub people from within the shipping industry, or those who work in broader sectors but have an interest in these issues, are invited to share 'signals of change' that are already happening, highlighting areas that might be ready for change and how future trends may develop and identify starting points for collaborative action.

By registering as a user for free, members of the online community can:

- *Share resources.*
- *Contribute opinion pieces.*
- *Read and comment on articles.*

Amplifying a collective voice / amplifying impact

Over the last two years the SSI has steadily built its profile as well as directly communicating with stakeholders throughout, and adjacent to, the industry, successfully positioning the organisation as a leading voice on sustainability and thought leader within the shipping industry. Building our

reputation has been important for ensuring that we have the credibility to gain support and the influence to drive change.

Through engaging with the international shipping trade, sustainability and business media, we are extending our learnings and insights more broadly to our industry peers as well as helping to educate broader audiences about the role that shipping can, and is, playing in shaping a sustainable global economic, social and environmental future.

Since 2013, our members have attended an increasing number of industry events that have been closely aligned with the four overarching interim goals. These have served as an opportunity for members to share and develop insights as well as to challenge and develop thinking in a transparent and open way, building further trust in the SSI brand. The SSI's members have also represented the shipping industry at forums on sustainable transport including presenting perspectives to the UN Global Compact.

Our efforts are being rewarded as the SSI is frequently approached to contribute to a range of relevant initiatives and our members look forward to progressing opportunities as we move forward.

Examples of SSI in the media

The collage consists of several overlapping media items:

- Top Left:** A website header for the Sustainable Shipping Initiative (SSI) with the text "Future performance depends on today's decisions" and logos for the London Shipping Law Centre and Maritime Business Forum.
- Top Center:** A screenshot of a news article titled "Sustainable Shipping Initiative wins Guardian Sustainable Business Award".
- Top Right:** A screenshot of a news article titled "Responsible Business: Companies' collective action shapes way forward".
- Middle Left:** A screenshot of a news article titled "Making Careers at Sea More Attractive" featuring a photo of Alastair Fischbacher.
- Middle Right:** A large screenshot of a news article titled "Passenger vessels lead on emissions" with a sub-headline "Alastair Fischbacher, chief executive of the Sustainable Shipping Initiative, examines how the ferry industry is leading the take-up of reducing technologies".
- Bottom Left:** A photograph of a man speaking at a podium during a presentation, with the text "On Course for Vision 2040" overlaid.
- Bottom Center:** A photograph of a large audience seated in a conference room.
- Bottom Right:** A screenshot of a news article titled "On Course for Vision 2040" with a circular diagram showing various industry stakeholders.
- Logos:** Various industry logos are scattered throughout, including DNV-GL, AFIRMARI, and the Sustainable Shipping Initiative logo.

SSI wins The Guardian Sustainable Business Award

‘SSI is an outstanding example of the mobilisation of an entire industry sector, shipping. There hasn’t been much pressure on this sector in the past, but they’ve helped shine a spotlight and bring together major players onto one platform. Several years ago, this kind of work was foreign territory. The work SSI is doing is absolutely pioneering.’



Members of the SSI team collecting the award.

The Guardian’s internationally prestigious awards programme is highly respected among sustainability opinion leaders, with a judging panel including some of the most influential thinkers from the world of sustainable business such as Cambridge University, University College London, Friends of the Earth, the International Institute for Environment and Development and The Rainforest Alliance. The awards recognise companies and organisations from all industries that combine innovation and effectiveness to make a positive impact through their corporate sustainability initiatives.

In April 2015, the SSI won the Guardian Sustainable Business award for ‘Consultancy of the Year’ in recognition of the real progress that has been made in pioneering sustainability within the shipping industry. In particular, the SSI and our members were commended for delivering multiple projects that have brought new innovation and insight to help the shipping industry accelerate progress towards a more robust, responsible and profitable future. It is a significant achievement and one that highlights the tangible developments that have been realised.

Several initiatives captured the judges’ attention including the SSI’s innovative ‘Save as you Sail’ financial model that demonstrates how charterers, owners and financiers can model return on investment and profits from more efficient vessels; three pilot projects on closed-loop materials management which collected data on more than 96% of all the materials used on two new vessels and a cruise ship cabin to test the feasibility and value of using a database system to track ship materials; and the analysis and recommendations conducted on ship rating schemes to draw a closer link for charterers and operators between vessel efficiency and commercial incentivisation.

The SSI was also recognised for its members’ agreement to sign up to a series of measurable shared commitments that set a baseline for industry sustainability practices, as well as its ‘Case for Action’ report series that set out a clear agenda for change and the co-development of a Roadmap to plot the steps required over the coming decades to achieve this.

On receiving the award, Alastair Fischbacher, Chief Executive of the SSI said:

“With responsibility for transporting 90% of the world’s goods, shipping is integral to the sustainability of the global economy as well as touching the lives of communities where we operate and the lives of those who choose the maritime industry as a career. Improving the performance of how we operate environmentally, socially and economically is a win-win for everyone involved.”

“We are delighted to receive this award as it recognises the progress our members are making collectively and practically. The collaborative nature of the SSI sees members working together in the spirit that, although they have their own individual initiatives, sharing best practices and learnings between members can promote broader and swifter changes as well as sharing some of the risks. Although we are not a consultancy in its truest sense, we do aspire to be a sounding board for interested parties on key shipping sustainability issues as well as actively sharing the experiences of our members with the wider industry to help drive change and the award shows our progress towards this.”

Testimonials from members

“

The China Navigation Company (CNCo) has been a part of the global shipping industry for over 140 years. Our long term commitment is to be a leading provider of sustainable shipping solutions and our customers' partner of choice. By being a member of the SSI, we are able to work with other industry leaders to contribute to a sustainable shipping industry value chain, especially in our key markets in the Asia Pacific region. In particular, CNCo is part of the working group tasked with creating a model for the sustainable building and disposal of ships. CNCo has been a member of the SSI since its formation in 2011. We are proud to be a part of this sustainability initiative for the past four years.

— **The China Navigation Company**

“

When we joined the SSI, we thought we would just work with other members on improving energy efficiency or adopting renewable energy in shipping. However the activities we have carried out within SSI covers not only technology in shipping, but also a wide range of social and environmental issues in sustainability. It is critical that, both individually and as a collective, we show leadership in sustainability and take on the responsibility of showing a positive future vision of the industry and leading by example.

It is challenging, but also interesting and productive to consider the various problems that are different from the usual day-to-day work. We hope to continue to contribute to driving forward in delivering a more sustainable future, bringing benefits to both the industry and our company.

— **Namura Shipbuilding**

“

The SSI initiative is an excellent opportunity for Wärtsilä to contribute towards ensuring that shipping remains in the future as the most sustainable way of transporting goods over long distances. Providing sustainable solutions is the cornerstone of Wärtsilä's commitment to the shipping industry. The main benefit for Wärtsilä has been to engage and work closely with other leading shipping companies and organisations; driving discussions and debate and finding tangible solutions to facilitate progressive and sustainable change. It is this collaborative approach that has been not only rewarding, but is also the best and most proactive way of realising our ambitious goals.

— **Wärtsilä**

“

Cargill's ocean transportation business has participated in the Sustainable Shipping Initiative since the early years of its foundation. We have seen the work evolve into focusing on more tangible deliverables and results, and are happy to participate in the regular reporting on progress being made. The shipping industry has a key role to play in moving global sustainability forward, as it has a positive impact on society and the environment and is beneficial for long-term business and economic growth. Within Cargill's ocean transportation business we have focused on making a strategic community impact wherever we operate, mitigating our environmental impact and also operating our business to the highest ethical standards. We look forward to collaborating with the SSI and continuing to work together to improve our environmental and societal footprint within the larger shipping industry.

— **Cargill Ocean Transportation**

“

Gearbulk is committed to the protection of the environment, preventing pollution and creating enduring value while providing industry leading and innovative ocean transport services.

Gearbulk aims to become an industry leader in creating enduring value by taking responsibility for the future of the shipping industry through the choices we make today.

Gearbulk is one of the founding members of SSI, where it participates with like-minded companies and other stakeholders to address some of the shipping industry's biggest challenges.

The participation within SSI helps Gearbulk accelerate improvements in its sustainable practices by exchanging information that benefits both itself and the wider industry.

— **Gearbulk**



Biennial meeting of the SSI members and stakeholder consultation in London 2015.

What's next for the industry and the SSI?

Inspired by the SSI's progress to date, where does shipping and the SSI go next in order to form the sound basis for a sustainable industry?

The challenge for the SSI is to try to look far enough ahead to see where shipping is going and how SSI can respond and communicate such changes to the industry, as well as focusing on the short and medium term actions that need to be delivered and reinforced within the shipping industry. But what are the changes and the obstacles? And how does the SSI track its own path and reinforce the work we are doing?

Over the next few years, the SSI will monitor all the Vision 2040 areas. We will also actively progress the working groups on ship recycling, social sustainability and technology, pioneering new developments, bringing stakeholders together and facilitating debate to drive change as quickly as possible.

Senior sponsors at the biennial CEOs meeting critiqued, analysed and set clear challenges for the next phase to 2018. The progress and feedback from CEOs will be further assessed and decisions made at the future members' meetings.

Ultimately, shipping is constantly evolving and the SSI is passionate about helping the industry to proactively prepare, adapt and embrace opportunities that emerge so that it thrives sustainably in the face of change.



Join us!

Building a stronger business through collaboration

The increased complexity of global markets, stringent environmental regulations, and the rise of public accountability has led companies to re-evaluate how they operate and grow their bottom lines. Today, successful businesses recognise that growing their organisations in a socially, economically and environmentally conscious – a more sustainable – way can positively impact the bottom line.

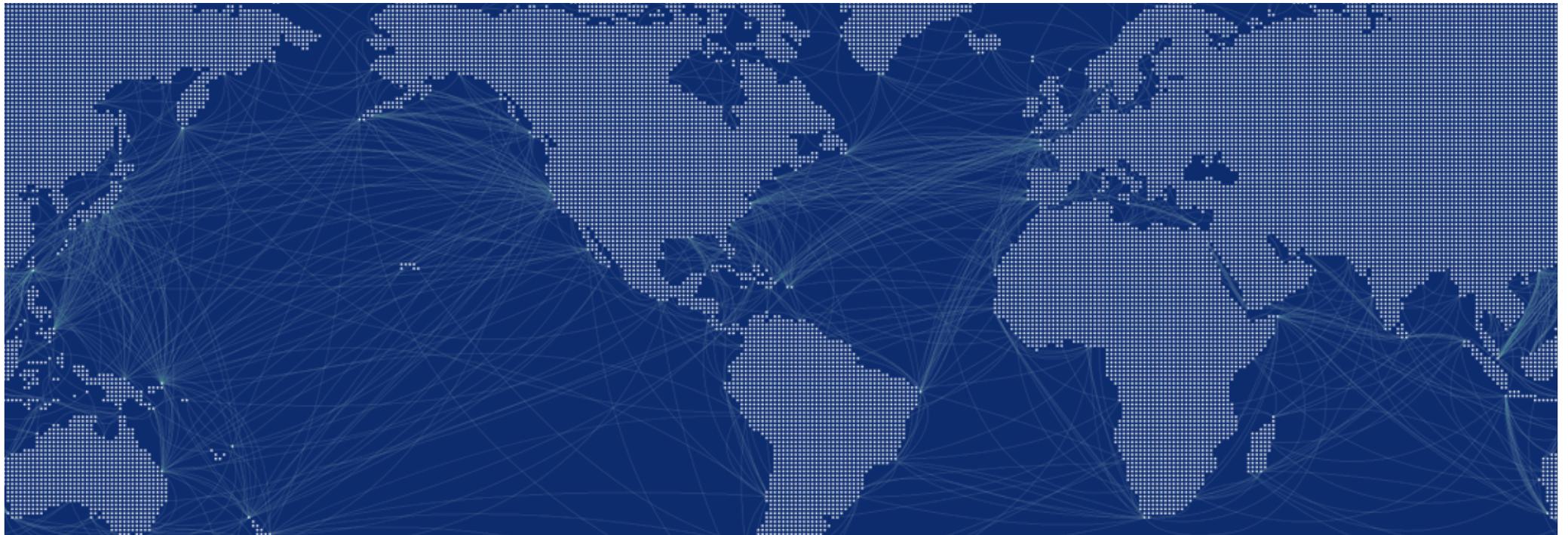
SSI's members represent sectors from across the shipping industry. These include ship owners, builders, charterers, engineers, service providers, technology companies, banks, insurers and classification societies. Our members

are united by recognising that sustainable behaviours are intrinsic to long-term business growth and profitability. Through participation in the SSI, companies are able to candidly exchange information and mutually explore and trial new initiatives. As you will have read in this report, our members have been driving the progression of more efficient technologies, evaluating the value of ship ratings schemes, testing new systems for recording ship materials as well as developing a new model to increase access to finance. More broadly we aim to actively shape the future direction of the shipping industry and its response to the sustainability challenges ahead.

It is a long journey, but progress is being made. Being honoured with the Guardian Sustainable Business Award is an example of this and recognises the real achievements to date of the SSI and its members,

Together we are creating positive, tangible and long-lasting change in the industry. It is critical that this work and endeavour continues, and by working collectively, we can achieve more, in less time.

If you would like to find out more, please contact the SSI:
info@ssi2040.org



Fact bank

Glossary of shipping terms

1. Shipping moves the world: 90% of global trade is moved by shipping.
2. Ships operate 24 hours a day, seven days a week.
3. 'If shipping stopped for three months, so would modern life as we know it.' [Source: http://www.clarksons.net/archive/research/freestuff/Martin%20Stopford%20How%20shipping%20has%20changed%20the%20world%20\(paper\).pdf](http://www.clarksons.net/archive/research/freestuff/Martin%20Stopford%20How%20shipping%20has%20changed%20the%20world%20(paper).pdf).
4. The ocean is the most dangerous workplace on the planet. [Source: Rose George – http://www.theguardian.com/world/2015/jan/10/shipping-disasters-we-never-hear-about](http://www.theguardian.com/world/2015/jan/10/shipping-disasters-we-never-hear-about).
5. Shipping in the 21st century is the safest and most environmentally benign form of commercial transport. Commitment to

safety has long pervaded virtually all deep sea shipping operations and shipping was amongst the very first industries to adopt widely implemented international safety standards. (IMO).

6. There are over 50,000 merchant ships trading internationally, transporting every kind of cargo. The world fleet is registered in over 150 nations, and manned by over a million seafarers of virtually every nationality. (International Chamber of Shipping).
7. The United Nations Conference on Trade and Development (UNCTAD) estimates that the operation of merchant ships contributes about US\$380 billion in freight rates within the global economy, equivalent to about 5% of total world trade. (ICS).
8. Shipping is the most fuel efficient and low-carbon form of commercial transport. (ICS).
9. However, the shipping industry is so big that if you added shipping to the list of the world's most polluting countries, it would come in sixth place. (RG).
10. A container ship travels the equivalent of three-quarters of the way to the moon and

back in one year during its regular travel across the oceans. (RG).

11. In spite of their large size, most container ships are crewed with just between 13–24 crew members. There are an estimated [466,000 officers and 721,000 ratings](#) (able-bodied seamen) currently serving on internationally trading merchant ships. (ICS).
12. A large container ship engine has [roughly 1,000 times more power](#) than the average family car. However, [big container ships only travel at 23 knots](#) (or 26.5 miles per hour) at peak, and just 17 knots in heavy weather conditions. <http://easyfreight.co.nz/blog/surprising-facts-worldwide-shipping-industry/>.
13. A quarter of a mile long, and taller than London's Olympic stadium and can carry 864 million bananas, the Maersk 'Triple-E' container ship is one of the biggest vessels in the world. 'Triple E' stands for Energy efficiency, Environmental performance and Economies of scale. The Triple-E holds up to 18,000 containers and is manned by 22 crew members (it is possible to operate with a crew of 13). Vessels in this series emit 50% less CO2 (carbon dioxide) per container moved than the current average on the Asia-Europe route. (Maersk).

14.

In January 2014, the size of the world fleet reached a total of 1.69 billion deadweight tonnage (dwt) following a 4.1 per cent growth in 2013. Bulk carriers accounted for 42.9 per cent of the total tonnage, followed by oil tankers (28.5 per cent) and container ships (12.8 per cent). (UNCTAD).

15.

The largest fleets by flag of registration in 2014 are those of Panama, followed by Liberia, the Marshall Islands, Hong Kong (China) and Singapore. Together, these top five registries account for 56.5 per cent of the world tonnage. (UNCTAD).

16.

In January 2014, the average dwt of the world fleet was below 10 years old, following its continued rejuvenation over the last years. A younger fleet is not only good news for lowering operating costs, but it also allows ship owners to comply with more stringent safety and security regulations and lower CO2 emissions. (UNCTAD).

17.

Ships registered in developed countries remain slightly younger than those registered in developing countries, although the age difference continues to narrow. For all country groups and vessel types, the average age per dwt is lower than that per ship, given that newer ships tend to be larger. Container ships and oil tankers

have the lowest average age, while general cargo ships continue to be the oldest. (UNCTAD).

18.

The shipping industry is a relatively small contributor to the total volume of atmospheric emissions compared to road vehicles and public utilities, such as power stations. Atmospheric pollution from ships has reduced in the last decade mainly due to significant improvements in engine efficiency. Improved hull design and the use of ships with larger cargo carrying capacities have also led to a reduction in emissions and an increase in fuel efficiency. (IMO).

19.

As a result of technological developments and associated industry initiatives, a modern container ship is using only a quarter of the energy per cargo unit than another container ship did in the 1970s, although the former may well dwarf the latter in size and carrying capacity. (IMO).

20.

A modern very large crude oil tanker (VLCC) for example, is able to transport the same amount of cargo twice the distance as of 20 years ago using the same amount of energy. (IMO).

21.

Shipping transfers approximately 3 to 5 billion tonnes of ballast water internationally each year. (Lloyd's Register).

22.

According to the International Transport Workers Federation women make up only an estimated 2% of the world's maritime workforce. Women seafarers work mainly in the cruise and ferries sector.

23.

Around two-thirds of ship crews in the world have no means of communication while they are on the open sea. Only about one in ten will have freely available Internet. (RG, CHECK).

24.

Shipping is extremely cost efficient, for example: a television that might retail for \$700 costs about \$10 to ship. A vacuum cleaner retailing for \$150 costs about \$1 to ship via cargo ship. (CDS).

25.

Without shipping, half the world would freeze and the other half will starve because grains would not be distributed from the points of origin to the points of consumption. (Efthymios Mitropoulos, former Secretary General of the IMO. 2014).
