Financing Sustainable Shipping

sustainable shipping initiative

ABN·AMRO

MAERSK LINE

WÄRTSILÄ

AkzoNobel
Tomorrow's Answers Today

forum for the future

With Knowledge Partners

holman fenwick willan hfw

UNEP Finance Initiative
Innovative financing for sustainability

Deloitte.

UCL

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The challenge we chose is financing retrofit of cost-effective, proven technologies

Fuel, carbon and cost savings opportunity

DNV: 40% of predicted carbon emission in 2030 could be avoided with cost-effective technology

Barriers to retrofit

Information: performance, owner rates of return through hire rates

Market-based: split incentive between time charterers and owners

Trends: shortening time charters, high fuel price, sulphur regulations

Inflexible finance options: main routes are cash or mortgage extension – less available after financial crisis

Innovation opportunity

Work together → understand the problem → create solutions

Future carbon savings

This *could* reduce sector emissions by 1% or more

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The goal for Save As You Sail

The shipping industry has tools for **informed, transparent negotiations, guarantee savings and third party financing** to enable large-scale uptake of innovation, technology, design and operational efficiencies in the short-term time charter market

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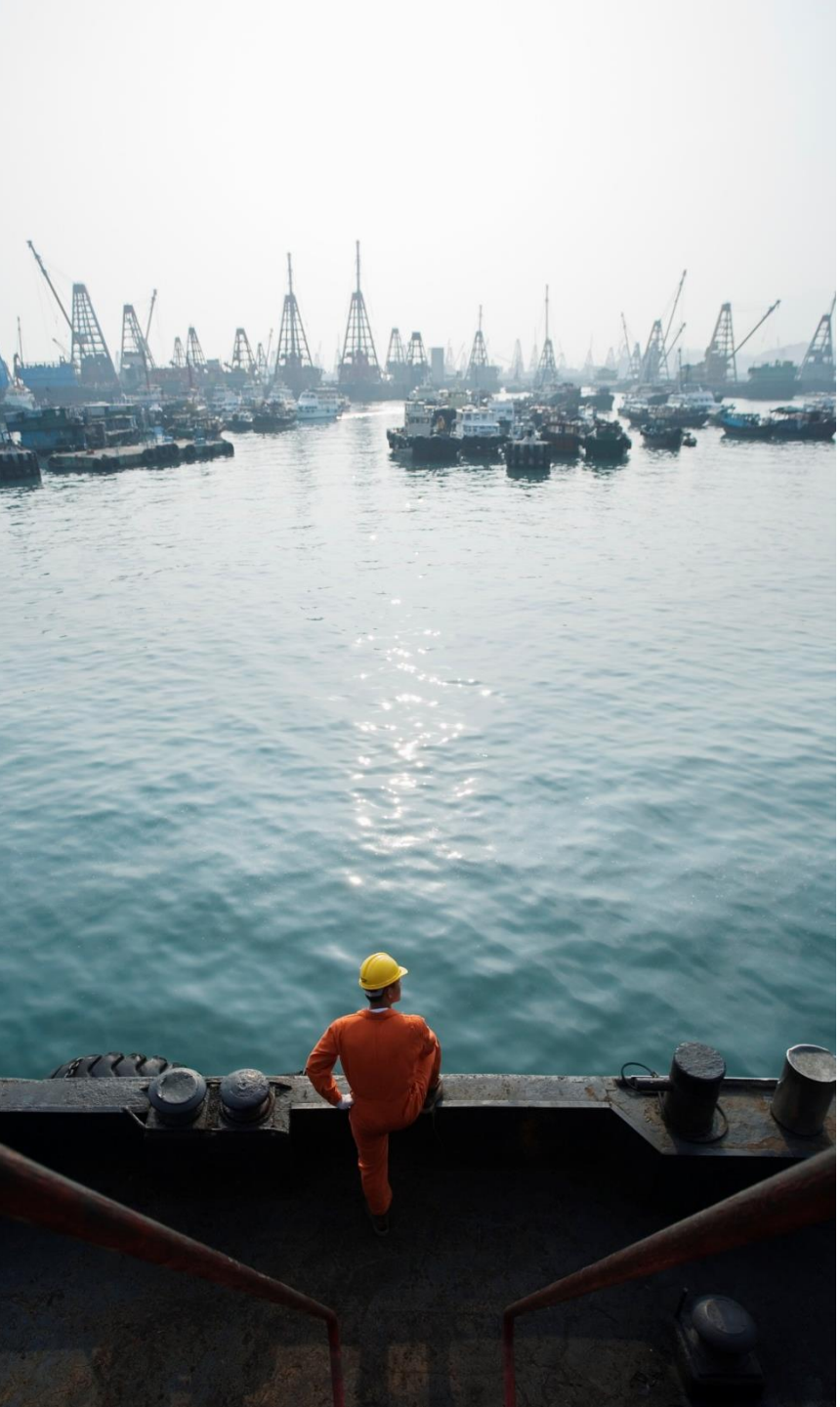


What the SSI has achieved

Members of the financing work stream have worked together to develop **Save As You Sail (SAYS)** – a robust financing package that will enable both owners and charterers to benefit from efficiency upgrades with transparent understanding of expected savings, and new financing facilities to fund upfront costs.

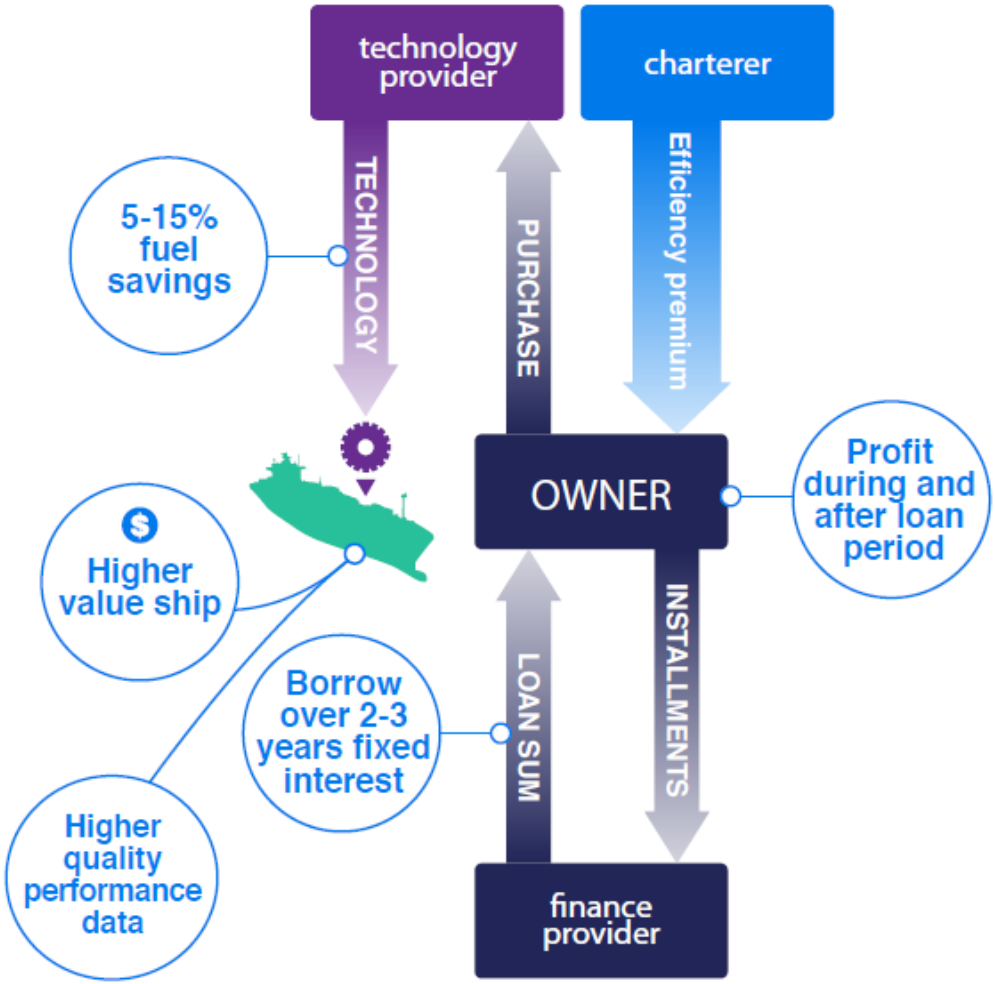
Save As You Sail explained

How SAYS works

- Time charterers save fuel costs and pays a proportion (e.g. 50%) of the expected savings to the owner as an 'efficiency premium fee'
- Owner has fixed-rate loan available for 80% of the cost of the retrofit. Owner's loan instalments are lower than the efficiency fee

Benefits of SAYS

- third party retrofit financing for owners in the short-term time charter market
- successive charters possible during financing period
- transparent understanding of fuel cost savings for hire negotiations
- charterers lower overall costs through fuel cost savings and reduce risk through improved performance warranties
- technology performance guarantees provided offered to owners by some providers



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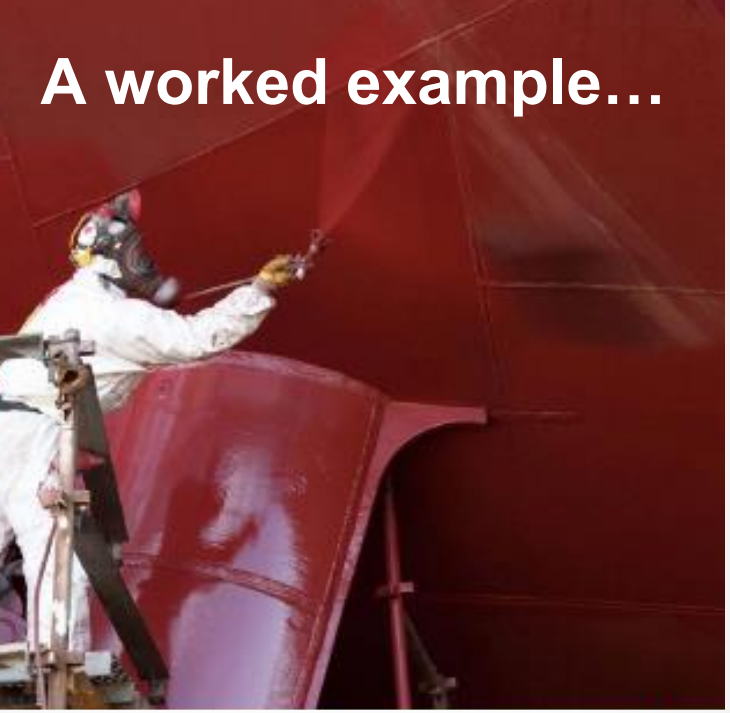
A worked example…



Worked example 2: Advanced fluoropolymer foul release coating, optimised propeller and propulsion efficiency optimiser fitted to a dry bulk vessel in dry dock

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Handymax Dry Bulker

Technologies

- Fitted in dry dock
- Cost: **$680k**
- Fuel consumption prior to retrofit: **28 tonnes / day**
- Fuel saving: **11.5%**
- Fuel price: **$611 / tonne**
- Fuel saved p.a.: **805 tonnes**

Owner's net cashflow during loan: $5.5k / mo

After loan repaid: **$20.5k / mo**

Cash contribution to upgrade: **$136k**

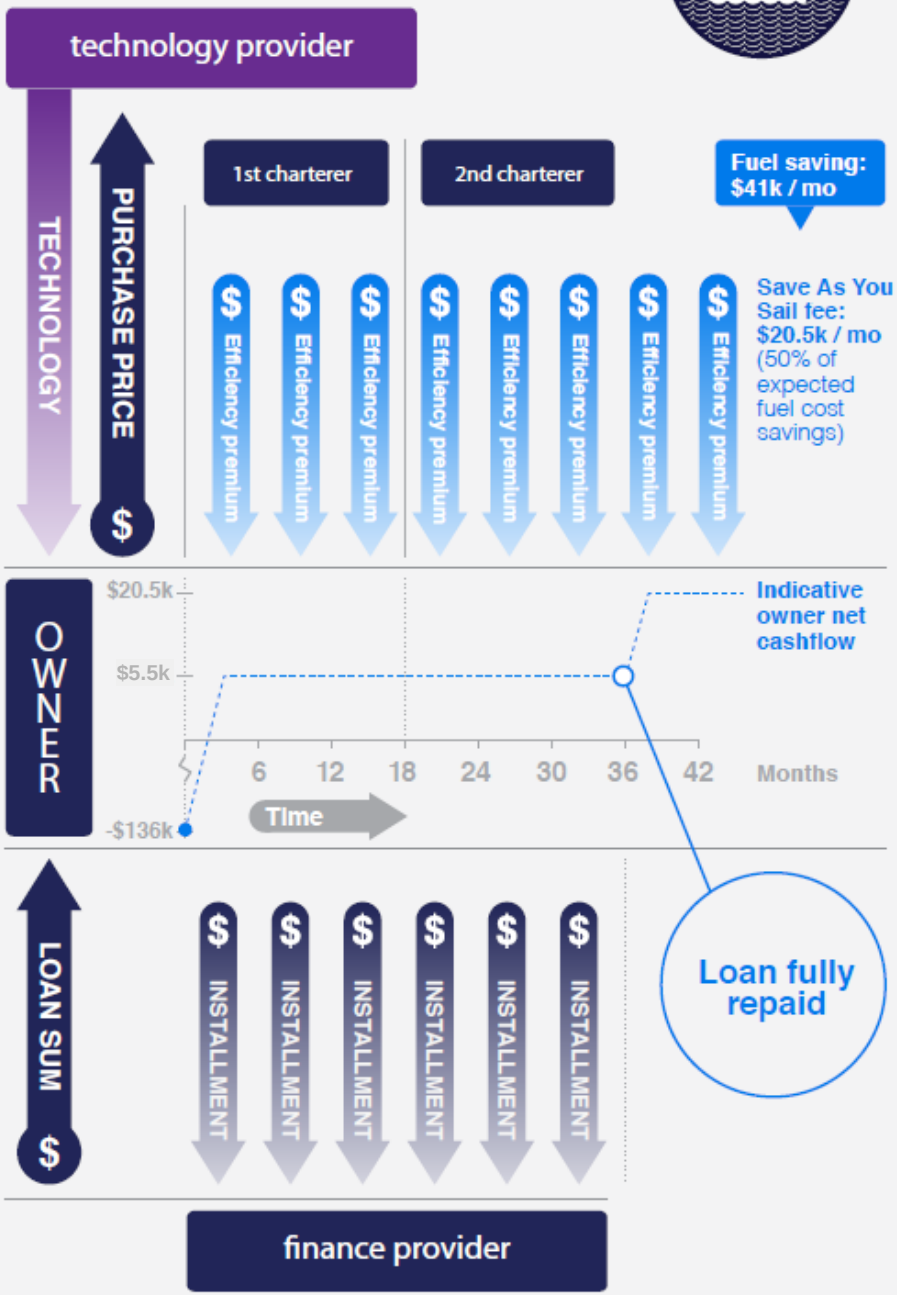
Owner's Net Present Value: **$713k**

Owner's Internal Rate of Return on cash investment: **66%**

Loan: **$544k**
Term: **36 months**
Interest rate: **5%**

Loan for 80% of upgrade costs

Installments: **$15k / mo**



Why is this important

Why retrofit the existing fleet?

- **Ship age**: around 65-70% of ships are over 5 year old, and anecdotal evidence is that some that are younger are already being retrofitted to improve efficiency, for example to be more efficient at slower speeds. Without being retrofitted, these vessels may become uneconomic to operate as charterers factor in fuel costs to the hire rates they are prepared to pay. This could lead to the fleet being laid up and eventually scrapped at a younger age than the historic trend

- **Cost effectiveness:** DNV's analysis of fuel saving options concludes that 40% of carbon emissions projected in 2030 (if the fleet stays with current technologies and operating practices) could be saved with options that are cost effective today if they are fitted to existing and new ships between 2010 and 2030

- In 2009 the International Maritime Organization stated that: A **significant potential for reduction of GHG through technical and operational measures** has been identified. Together, if implemented, these measures could increase efficiency and reduce the emissions rate by 25% to 75% below the current levels. Many of these measures appear to be cost-effective

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Sources:

http://unctad.org/en/Docs/rmt2011ch2_en.pdf
http://www.dnv.com/binaries/Pathways_to_low_carbon_shipping_tcm4-420472_tcm4-428628.pdf

Why is this important

Why focus on short term time charter?

- **It's a prevalent type of charter:** Of the bulk ships on the charter market, over 50% of the dry bulk and 10% of wet bulk ships are under time charter and that c. 70% of these are chartered for less than 24 months. Containerships level of TC % is not known, but of those on TC over 80% less than 24 months

- This duration is important as under longer charters the charterer is incentivized to invest in upgrading the vessels knowing that they will save costs on fuel that can more than recoup the investment outlay before the end of the charter. This charter-led investment model has been used by Maersk Line on its long term chartered in fleet

Why is this important

Why new financial innovations?

Making new, competitive capital markets for retrofit available to the industry

Lack of flexible, suitable finance is holding back retrofitting. In a 2013 report on shipping financing Moody's highlighted lack of finance as a major barrier to vessel fuel saving upgrades.

Without SAYS and other approaches, such as that of the NGO Carbon War Room, making third party financing available to this industry, the options to pay the upfront costs are limited to using company cash reserves or an extension from the vessel's mortgage provider. These are not open to all ship owners or vessels due to financial circumstances and are not provided in a competitive market that drives the costs of finance down.

Doing so using a package of simple changes that work for all parties

- The innovation in Save As You Sail is to package up several elements that make it easier to upgrade the existing fleet. Each one alone is based on standard existing practices these are:
  - a standard loan package but specifically for retrofitting
  - financial cash flow modeling tools to increase transparency between owners and charterers and enable calculations and sensitivity analysis,
  - performance guarantees to reduce risks from savings not being realized due to underperformance of the technology
  - legal guidance on contractual terms needed
- Brought together, this forms an innovative attractive package that increases information availability, reduces risks and enables savings to be shared removing potential split incentives.

Methodology

The work stream SSI Members took a collaborative approach building partnerships and working with expert Knowledge Partners. Once the problem had been defined, we worked with University College London to analyse the shipping market in more detail to guide us to create a solution that is both scalable and widely applicable to the industry.

Using this and the knowledge and experience of the diverse companies involved in a series of workshops, we developed the SAYS package. We tested the concept with owners, charterers, brokers and NGOs beyond this group to refine it further by systematically identifying risks and opportunities and creating solutions that made the upgrade option beneficial for all parties.

More focused work with Deloitte and Holman Fenwick Willan has produced a robust excel cash flow modeling tool and identified the contractual arrangements required.

We are now promoting the opportunity to pilot SAYS and are in discussions with owners and charterers to do this. We have also released the resources publically in an 'open source' so that finance and technology providers, owners and charterers can use it as a basis for future upgrade financing at a greater scale.

Define and explore the challenge → Workshops to identify solutions → Refine with experts → Promote → Pilot → 'Open source' SAYS

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Why this approach (1)

Shipping is a complex market with many operating and chartering arrangements, long term and short term cycles and long lead times for new vessels. We knew from collective experience that new ways of financing, if kept simple, could unlock large scale efficiency improvements and that many technologies were commercially viable but not widely used. But with this complex picture there was not one obvious problem and solution to increase fuel efficiency through financing.

The problem of ‘split incentives’ is often quoted in trade media and anecdotally as the reason why fuel efficiency improvements were being held back. This resonated with the work stream but we knew that we needed to understand more about it. By collaborating together and external knowledge partners, we were able to understand this more fully and understand that split incentives are one part of the problem alongside lack of flexible finance, market information barriers and others. In this fuller knowledge, we designed SAYS to address the part of the market that is most at risk of being held back by split incentives and affected by the other barriers too – the short term time charter market. In short term charters the charterer has little incentive to invest in fuel savings as the pay back period is likely to be longer than their charter, but they would benefit from lower fuel costs, hence the split incentive. SAYS is flexible and simple enough to be beneficial to other types of charter too but this wasn’t the focus of our work to date.

Another important reason for working in this sub-sector was that other initiatives including the Carbon War Room and PwC were tackling other parts of the market. We complimented each other’s approaches and have shared understanding with each other regularly to help each other progress.

Why this approach (2)

The workstream members identified potential barriers to the uptake of SAYS from their collective positions as technology providers, banks, charterers, owners, accountants, academics, NGOs and legal advisors. With this we have identified the right set of tools and products to enable upgrade financing for the existing fleet owners and new build, uniquely working for the short term time charter market, and on many different technologies.

We are now working with several owners to further develop SAYS in pilots with their fleet and have released financial and legal guidance in an open source format. This open source approach is in keeping with the ethos of the SSI to work together as an industry to enable everyone to benefit from innovations and leadership. From the outset we have developed SAYS to work for the whole of the shipping industry not just large companies, knowing that it is often smaller fleet owners and those based in emerging markets that can benefit most from more flexible financial solutions.

The findings

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The detail

The market is shaped to need retrofit of the time charter fleet

- 80% of ships under time charter are chartered for less than 24 months
- 70% of the world fleet is over 5 years old

There are cost savings and profits for fleet owners by increasing their fleet's efficiency

- 40% of fuel costs and carbon emissions projected by DNV in 2030 could be avoided by using operating techniques and fitting technologies that are already cost effective. (This is at a fuel price of $500USD/tonne, the price now is over $600/tonne)[1]
- Bunker prices are high and sulphur regulations and global demand will push up prices
- More efficient ships fetch a premium - preliminary findings by Forum for the Future and UCL show that a vessel that is has a 10% higher technical efficiency has on average a 5% higher charter rate[1]
- UCL's research also shows that efficient ships tend to resell for higher prices
- To many companies an efficient fleet is a qualifier for the quality of their business
- Regression analysis by UCL demonstrates that there is a positive relationship between fuel consumption and charter rate and that some vessel classes average 50% of the avoided fuel costs gained by the charterers being incorporated into a higher charter rate they pay to owners[2]

Financing is a barrier

- Moody's concluded that capital constraint is a key restriction on vessel upgrades by owners

[1] http://www.dnv.com/binaries/Pathways_to_low_carbon_shipping_tcm4-420472_tcm4-428628.pdf

[2] The method used controlled for market volatility, vessel size and age. Translating this technical efficiency into daily fuel consumption does not always result in a similar extent of difference in fuel consumption, e.g. due to differences in main engine (installed power). This suggests that in some cases charterers are making decisions or remunerating also on factors other than technical efficiency or daily fuel consumption.

[3] Reference in press

[4] Moody's Investors Service 2013

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What we have learnt

Bring the right expertise together: a cross-sector team has made us more effective as a team and allowed us to draw on a wealth of knowledge and experience. Meetings and workshops have been constructive, fruitful, always with a positive atmosphere.

Small - medium ship owners will benefit most from SAYS: smaller owners often don't have finance readily available for retrofit, making it a more risky undertaking. The SSI Members recognised that to realise their vision SAYS and other solutions need to work for the whole of the market not just large companies.

Total value is important: fuel efficient ships not only save fuel costs, raise higher charter rates, but also resale for higher prices and are seen my many shipping companies as a qualifier for business

Split incentives are complex and not yet fully understood: the prevalence and impact of split incentives needs further focus and research. The research uncovered other factors that could be as or more important in some situations.

The shipping industry is varied in how it shows leadership: some owners have been cautious about being involved in a pilot, others see themselves as innovative and want to be at the forefront of how the industry works.

The proof of success will be uptake: we set out to develop something that the market could respond to commercially based on the messages and findings on barriers. So if there is uptake we know that it can be scaled. If uptake is limited then we will need to keep innovating and trying new ideas.

Success requires thinking beyond the project goal: our goal was to have at least one pilot but we needed to consider the stages of learning from the pilot and scaling to a widely marketed offer to make the pilot contribute to the vision

Bringing this to the foreground has stimulated industry activity: we've noticed more interest in retrofit and financing since we began this work, mainly due to our presence in the press.

Member & stakeholder stories

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Member quotes and stories

"Our motivation in the short term is to see if we can trigger change. Later on, it may be a business opportunity for us. But we need a change of mentality and more of a long-term partnership between owners and charterers."

Gust Biesbroeck, Head of Transportation, ABN Amro

"Maersk Line's focus on energy efficiency and carbon performance is key to maintaining competitiveness in a volatile shipping market. For this reason we apply the same systematic approach to energy efficiency and retrofit investment on our owned and chartered fleet. But one company cannot do it alone. We are keen to see the development of industry-wide, market-based solutions that create greater supply and demand of energy efficient vessels."

Signe Bruun Jensen, Global Advisor, Maersk Line Environment & CSR

"Gaining charterers support for technology that can improve efficiency is critical in reducing emissions from shipping. This new finance mechanism should significantly increase the uptake of these technologies, improving vessel efficiency and reducing costs and emissions for the shipping industry"

John Willsher, Intersleek Market Manager, International Paint Ltd

Stakeholder quotes

"The existing global fleet faces a two tier threat and this gap will to grow as new build ships continually improve. But the retrofit solutions are out and in demand from charterers who face high bunker prices. We're confident that the Save As You Sail scheme will appeal immediately to ship owners as it makes finance available and solves the problem of 'split incentives' with time charterers. It's a win-win proposition for owners."

George Cambanis, Global Shipping and Ports lead, Deloitte

"It is becoming apparent that environmental regulation and the drive towards more fuel-efficient tonnage are increasingly important issues in the shipping industry today. If the SAYS model goes on to be widely adopted within the industry and provides a workable solution to bridge the financing gap for eco-friendly retrofit, this will be a very significant and positive development in our view. As such, we at HFW are delighted to be assisting with the drafting of the documents that will provide the legal frame-work for the model."

Jonathan Webb, Partner, Holman Fenwick Willan LLP

"Save As You Sail has huge potential to cut the emissions of shipping in profitable ways. Clearly, this is important for the industry; The Carbon War Room and other NGOs are also looking at this issue from complementary perspectives. The organisations behind SAYS are hugely credible, and we are serious about making this work for owners and charterers. This is a significant new opportunity to show leadership and increase all fleets, value and I urge owners to get in touch with our team through ssi2040.org"

Jonathon Porritt, Founder Director, Forum for the Future

What’s next?

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Remaining opportunities

1. Scale up the offer of retrofit financing with more financial institutions having specific offers and expertise located across the globe in developed and emerging markets
2. Develop new consortiums of technology providers and finance providers to offer complete SAYS packages
3. Develop joint common performance guarantees that cover technologies from multiple technology providers
4. Use a variation of SAYS to help the demonstration of earlier stage, unproven technologies and to enable more retrofit in other markets to compliment other financing models

If SAYS was used on 30% of all time chartered ships…

…these ships could save 20% each, reducing the amount of fuel used in shipping, saving $2 billion a year and 10 million tonnes of carbon dioxide

There is no information available on the proportion of the world fleet that is owner-occupied, and therefore we can not derive how much is on charter and time charter. This makes it difficult to quantify the savings potential of SAYS. However, if we assume that 50% is owner-operated and 50% chartered out, we can calculate the following scenario of carbon reductions through the direct use of SAYS by 2030.

Beyond SAYS…

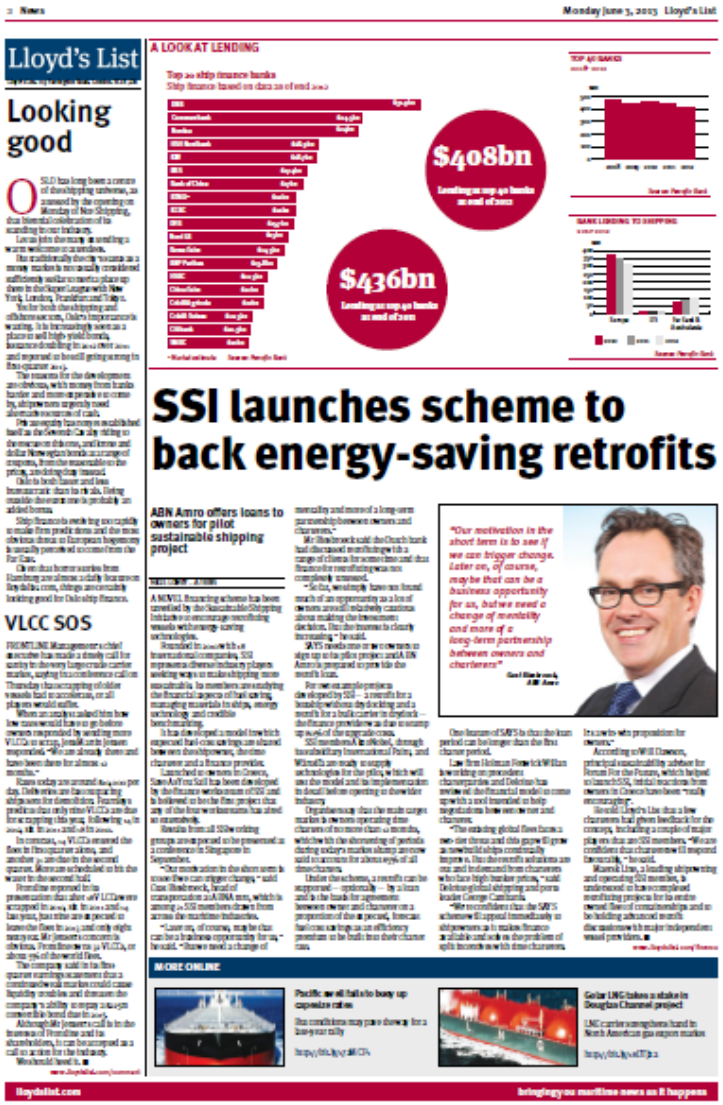
Other models are being developed and are available for voyage and owner-operated vessels and long term time charters, including by the Carbon War Room NGO with PwC. SAYS can also be adapted to be used in other sectors and for new build vessels. Together by the use of other models and by collectively raising awareness we hope that we can at least realize the **40%** reductions that DNV analysis showed are already cost effective by 2030, or over 1% of total global carbon emissions.

What’s next?

We are now working with several owners to further develop SAYS in pilots with their fleet and have released financial and legal guidance in an open source format to enable others to use the concept in commercial practice, with the expectation being that it will be widely used.

Be involved in the pilot

1. Higher value ship, attracting higher charter and resale rates
2. Retrofit loan from ABN AMRO
3. Higher quality performance data to use in marketing
4. Increased income during and after the loan period
5. Support from 21 SSI members, Deloitte and HFW
6. Dedicated SSI communications support to showcase your leadership with articles and presentations targeting top-tier channels



Lloyd's List

Looking good

VLCC SOS

A LOOK AT LENDING

$408bn

$436bn

SSI launches scheme to back energy-saving retrofits

ABN Amro offers loans to owners for pilot sustainable shipping project

"Our motivation in the short term is to see if we can trigger change. Later on, of course, maybe that can be a business opportunity for us, but we need a change of mentality and more of a long-term partnership between owners and charterers"

MORE ONLINE

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Resources for you

- A summary document that sets out SAYS in more details and includes two worked examples
- An excel model
- Contractual guidance summary
- Contacts with ABN AMRO to discuss financing options*
- Contacts with AkzoNobel and Wärtsilä to discuss technology options*

*SAYS can be used with other finance and technology providers

To access the resources visit www.ssi2040.org
To express interest in using SAYS contact ssi@forumforthefuture.org

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