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Sustainable Marine Fuel Confidence Index

SMF FEST

15-16 NOVEMBER
VALENCIA, SPAIN 2023



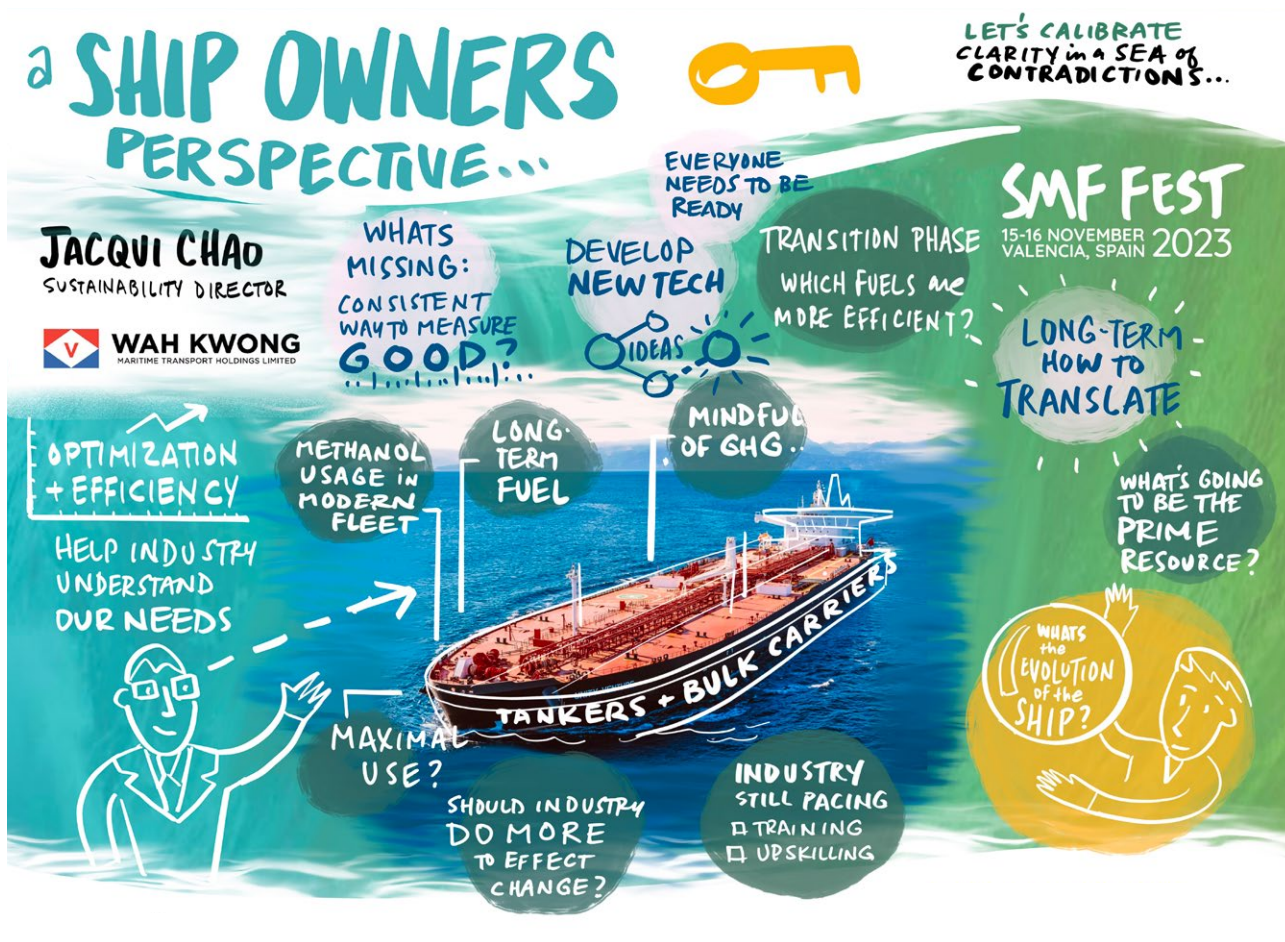
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The launch of the first Sustainable Marine Fuel Confidence Index

The Sustainable Marine Fuel Fest (SMF Fest), which took place on 15-16 November in Valencia, was a unique event. It was the first edition of SMF Fest, a 'by industry, for industry' gathering of stakeholders from across the marine fuel value chain. Formerly known as Gas Fest, the event has now evolved and broadened in scope to consider all fuels that will support shipping on its decarbonisation pathway.

The event also marked the launch of an industry first, 'moment in time' Sustainable Marine Fuel Confidence Index. Using a framework developed by SMF Fest industry partners, which was then stress-tested at SMF Fest, the inaugural index was populated by all event participants. It will be used as a baseline from which to chart and compare changes in industry confidence in shipping's energy transition, according to four key criteria (Technology, Infrastructure, Commercial and Environmental Credentials) and using five deep sea vessel segments: container-ships, dry cargo, gas carriers, passenger vessels and tankers. These criteria / vessel segments were considered in relation to the use of 12 marine fuels (including grey/ blue/ green variants).



Visuals: Art of awakening

Why do we need the SMF Confidence Index?

There's no shortage of reports, analysis, and opinion from industry stakeholders such as associations, organisations, alliances, companies, consultants and NGOs on the rate of progress on shipping's decarbonisation. However, the vast majority of reporting is focussed on the industry's potential readiness to meet future milestones and timelines, aligned, for example, with International Maritime Organization (IMO) targets which were recalibrated in its revised greenhouse gas strategy delivered at MEPC 80 in July, or the raft of new EU legislation

which supports the ambitions of the 'Fit for 55' basket of measures. Other decarbonisation progress 'benchmarks' include the IMO's Energy Efficiency eXisting ship Index (EEXI), Energy Efficiency Design Index (EEDI) and Carbon Intensity Indicator (CII).

SMF industry partners were clear from the outset that the SMF Confidence Index should not be a projection, or a forecast, of how likely it is that shipping and allied industries will meet any such decarbonisation timelines or future vessel performance indicators.

The intention is that the Index provides a here and now 'snapshot' of how confident stakeholders along the shipping and marine fuel supply chains are that the key components needed for the energy transition, such as technology and infrastructure, are already in place. As the Index is revisited and updated in the coming years, confidence levels would be expected to change as technology, infrastructure, and the alternative fuels market matures. However, the Index will never be an industry wish list or an expectation; it will always be a pragmatic, realistic assessment of the availability and accessibility of the required tools for decarbonisation at a given moment in time.

SMF Fest – an incubator for building the SMF Confidence Index

SMF Fest is not a hierarchical, formal conference with delegates and speakers. It is an interactive forum where participants discuss and engage on the key issues related to shipping's decarbonisation and where the format is based on a mix of small discussion groups, team exercises, fishbowl style discussions, and collaborative decision-making.

The aims of SMF Fest 2023 were to:

- Collaborate on targets to improve the entire marine fuel sector
- Calibrate an individual organisation's direction vis a vis the other organisations
- Align on views about the different fuels
- Understand the rationale for investment in different fuels
- Challenge policy makers
- Represent a unified view to the rest of the maritime as well as non-maritime world

SMF Fest industry partners also highlighted the importance of an actionable outcome from the event, so that the useful and diverse ideas and perspectives voiced by the group didn't just remain within the group, but could be taken forward to inform a wider, interested audience.

The collaborative approach to industry challenges taken by SMF Fest meant it was an ideal forum – or incubator - to generate the SMF Confidence Index, which offers a meaningful, tangible takeaway from the event and also provides a cornerstone for future SMF Fests and other industry discussions. It is also intended to become an important barometer of 'here and now' confidence in shipping's decarbonisation that will be valuable and relevant to all industry stakeholders.

SMF Confidence Index – the methodology

The core SMF Fest 2023 industry partners reflect a broad cross-section of stakeholders that are interested in, and responsible for, the delivery of shipping's energy transition. They include technology providers (Wärtsilä, GTT), an industry association (The Society for Gas as a Marine

Fuel), a class society (Bureau Veritas), a physical marine fuel supplier/trader (Peninsula) and a shipowner (Hapag-Lloyd). The industry partners agreed that the SMF Confidence Index should focus on deep sea shipping with reference to the containership, dry cargo, gas carrier, passenger vessel and tanker segments. The current readiness of these segments for a raft of new alternative fuels was assessed against four categories:

Technology

- can the fuel be made and burned?

Infrastructure

- is the fuel available and can you get it to your ship when you need it?

Commercial

- is someone (i.e., a shipowner or a cargo owner) willing to pay for it?

Environmental Credentials

- does it contribute to reducing our overall emissions footprint?

By taking a snapshot of where each segment is today in relation to each category, any gaps or bottlenecks that are currently acting as a brake on progress can be easily identified.

The confidence descriptors applied to each vessel segment/category were as follows: Not at all confident; a little confident; quite confident; and very confident.

If SMF Fest participants opted for a 'not at all confident' descriptor there was the opportunity to comment on the change(s) that would be needed to catalyse confidence in any of the four categories.

The following organisations contributed to building the SMF Confidence Index:

Anthony Veder, Avenir LNG, Baleària, Bureau Veritas, COSCO SHIPPING Lines (Spain) S.A., France Gaz Maritime, Fundación Valenciaport, Gasum, Glander International Bunkering, GTT, Hapag-Lloyd AG, HYEX Safety AS (representing ZESTAs), Lookout Maritime, LP Brussels, Naturgy, Oceanbird, OCI Fuels B.V., Peninsula, SEA-LNG, Society for Gas as a Marine Fuel, ship.energy, Sphera, Trafigura Maritime Logistics PTE Ltd, Turn2X, UMAS, Vertis Environmental Finance, VPI Logistica, S.A., VT Group, Wah Kwong Maritime Transport, Wärtsilä Marine and Zero North.

Establishing a common understanding

On Day One of the event, following a guided tour of the Port of Valencia which highlighted some of the port's recent and projected sustainability initiatives as well as plans for a new terminal, all SMF Fest participants gathered for a preliminary discussion about the parameters and aims of the Confidence Index.

There was agreement on the marine fuels that should be included in the Index, which were: Hydrogen (grey, blue, green), Ammonia (grey, blue, green), Methanol (grey, blue, green), LNG – bio-methane, LNG – e-methane, and biodiesel. Fossil-based LNG was not included as it was considered to be a 'mature' marine fuel from a commercial, operational and supply infrastructure perspective. There was consensus that the bar should be set high for a confidence vote in the specific categories in the Index but also agreement that there should be a wild card 'no-

ticeboard' which could, for example, feature technologies, such as onboard carbon capture, or human elements, such as skills and training, as well as perhaps more subjective factors, such as public acceptability. While these may not yet pass the stress test for inclusion in the Index, they sit beside it as a useful 'gloss' on the categories and could potentially be considered as candidates in future iterations of the Index.

Other subjects which were mentioned as wild cards included wind power, onshore power, nuclear energy, and battery propulsion. Factors which are currently perceived as presenting a challenge to shipping's decarbonisation, such as methane slip, were also listed as wild cards.

Participants also agreed that some factors – regulation being a prime example – did not warrant inclusion as a standalone category as the ramifications of regulation/legislation would naturally be considered across each of the agreed categories.

There was also agreement that confidence ratings should be applied to the 'here and now' of the global shipping decarbonisation landscape. Although recently approved EU environmental regulations have added a rather Eurocentric complexion to discussions about the industry's energy transition, the majority of participants wanted the opportunity to assess its progress thus far from a global perspective.

Building the Index

On Day 2, SMF Fest participants began the intensive process of 'voting' in the Confidence Index. They were split into 10 groups, the composition of which reflected as far as possible a range of different stakeholders. Each group had to agree on a collective confidence vote for each fuel in relation to each category/vessel segment.

In tandem, and as part of the journey map of SMF Fest, participants also took part in 12 break-



Visuals: Art of awakening

out sessions across the day which addressed some of the key challenges of shipping's decarbonisation, looked at some of the solutions, and engaged with some of the difficult questions thrown up by recent IMO/EU regulation. Participants in each Confidence Index Group were allocated to different Session Groups so that they encountered a mix of discussion points and opinions. The aim was that these focus groups could provide some (although by no means a comprehensive) context for group decisions about the Confidence Index

The 12 sessions were hosted by:

- Jacqui Chao, Sustainability Director, Wah Kwong
- Niclas Dahl, Managing Director, Oceanbird
- Olav Roald Hansen, Founder & CEO HYEX Safety AS
- Chris Thorne, Director of Strategy & Operations, UMAS
- Dr Oliver Schuller, Director, Sustainability Consulting, Sphera
- Andrew Redfern, Head of Sales, ZeroNorth Bunker
- John Boufis, Technical & Marine Executive, Trafigura
- Maria Angeles Lopez, Decarbonisation Manager, Peninsula
- Mark Watts, Co-Founder, LP Brussels
- Arne Maibohm, Director, Hapag-Lloyd
- Youenn Guillerm, ETS Specialist and Business Development – Shipping, Vertis Environmental Finance
- Martin Crawford-Brunt, CEO, Lookout Maritime

Session topics covered shipowners' decarbonisation strategies, digitalisation, wind propulsion, EU regulation, with a focus on FuelEU Maritime and the EU Emissions Trading System, the safety regulatory landscape, the role of lifecycle assessments in shipping's decarbonisation journey, the IMO's 2023 revised greenhouse gas strategy, perspectives from a commodity trader and a physical bunker supplier, and de-risking decarbonisation-related decisions.

The discussions in the groups were engaging, thoughtful, and in some instances refreshingly honest and frank. Shipping's decarbonisation is clearly front and centre in the conversations that all the companies and organisations represented in the room are having. There are currently gaps in knowledge and understanding about fuels, technology and regulation, but stakeholders are asking the right questions and pressing for answers. The participants at SMF Fest were certainly not sitting on the fence in terms of shipping's energy transition but they are needing more focused information and guidance and many of them called for more clarity on some of the terminology and definitions used in relation to the industry's decarbonisation.

As one participant noted, and reflecting the opinions of others in the room, 'Until today I didn't realise that lifecycle accounting and well to wake were not the same.'

Stress-testing the SMF Confidence Index

With Confidence Index votes submitted, SMF Fest participants came together to reflect on their experiences of building the first such Index. One participant's comment summed up a significant body of opinion in the room: 'It's very easy to look forward to what is expected to happen, but it's quite difficult to focus on the here and now.' This viewpoint both validated the premise that there is a need for a 'moment in time' assessment of shipping's decarbonisation

progress and supported the ambition that the Index can fill an information/perception gap that currently exists within the sector. In short, it is not reinventing the wheel.

The importance of 'wild card' factors

There was wide agreement that the inclusion of the wildcard was useful. It was described as 'an opportunity for flexibility and spontaneity', and was also deemed necessary, 'because otherwise you are going to be prescriptive about the what the future might hold.' Another viewpoint was that 'the wildcard concept is incredibly important in public policy making and driving forward public investment decisions. It provides for the catastrophic event that we don't foresee.'

In the first discussion at SMF Fest, nuclear energy had been mentioned as a potential wildcard and this remained the view after the Index-building exercise. It was seen as one of the most important wildcards that would have to be played at some point in the future.

'Acceptability' was also mentioned in the initial discussion, and participants remained resolute that this should be taken forward as a wildcard. Although public perception was seen as falling under this umbrella heading, there was little clarity on what the full scope of reference in terms of 'acceptability' might look like. Indeed, some participants thought that issue of public perception was sufficiently strong to stand on its own as a wild card. 'Perceptions do mature, and public perception is going to, which is why we marked it down as a wild card. It's a fluid thing that can move back and forth depending on events,' explained one participant.

There was consensus that the four categories in the Index worked well although it was suggested that there could be a more detailed definition of what each category means in the next iteration.

There was some surprise that the confidence ratings did not differ significantly between the vessel segments. From a fuel confidence perspective there were some marked similarities, but the general view was that this was a reflection of the fact that the majority of the fuels are still at the early stage of production/availability as marine energy sources, certainly in their blue/green iterations. Furthermore, given the different business models of the vessel segments, their individual fuel confidence trajectories are anticipated to evolve and may change over time.

Some participants did flag that the Index didn't take account of trading routes which could impact on fuel choices. Perhaps, it was suggested, looking at the differences between liner and tramp trades would be useful parameter - looking at the operation of the ship more than the type.

Although the financial burden of upcoming EU regulation was discussed in the SMF Fest group sessions, the availability of finance for retrofits and newbuilds was not part of the conversation. When asked why, some participants said that their focus had been on the here and now, and finance is more of a future issue. It was noted that: 'Capacity in the yards for newbuilds and conversions, and the engines we need, that's probably a bigger problem than finance. If everything is right, then costs will be covered.'

Above all, participants said that working on the first Index had shown that (yet again) cross-industry collaboration and adopting a joined-up approach is imperative if shipping is to achieve the decarbonisation 'end game'.

In the group discussions, the question had been asked about maritime's progress in the decarbonisation 'race' versus other industries, and the final discussion returned to this. Looking to next year's SMF Fest, it was suggested that the perspectives of other transport sectors, such as aviation, should be sought. As one participant commented: 'Aviation has one fixed thing, sustainable aviation fuels (SAF) – the mythical beast that will solve all their problems. How have they arrived at that and how have they developed public policy confidence in that – even though that may not last.'

Sustainable Marine Fuel Confidence Index - Overview

Marine Fuel Options	NOT AT ALL	A LITTLE	QUITE	VERY	Current Confidence
	CONFIDENT	CONFIDENT	CONFIDENT	CONFIDENT	
LNG-BIO METHANE					78.5%
BIODIESEL					62.7%
LNG-E METHANE					60.7%
METHANOL-GREEN					53.5%
HYDROGEN-GREEN					42.7%
AMMONIA-GREEN					42.5%
AMMONIA - BLUE					42.0%
METHANOL-GREY					42.0%
METHANOL-BLUE					41.2%
HYDROGEN-BLUE					34.5%
HYDROGEN-GREY					33.2%
AMMONIA - GREY					31.7%

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The results of the SMF Confidence Index very much speak for themselves and given the 'here and now' approach of the Index the caution expressed over those fuels that are not yet mature in terms of technology, infrastructure and commercial development – ammonia, methanol, hydrogen – is not unexpected. A significant takeaway is that despite the vessel order decisions taken by some key shipping companies over the course of 2023 – and the media attention given to those decisions – confidence levels in methanol-fuelled shipping remain very measured.

The contributors to this Index also provided reasons for their low to no confidence values which should offer a roadmap for the industry on those areas to be worked on in order to accelerate the uptake of (and confidence in) the green fuels. This data is being fleshed out and will be made available in a few months' time.

The first SMF Fest Confidence Index is being made available for wider industry use and comment. It will be sent out to SMF Fest participants for a mid-term review next May and the second Index will be built at SMF Fest 2024, when comparisons to the baseline will be made, adding to the usefulness of the data.

PDFs of detailed data supporting the SMF Confidence Index can be downloaded from the [SMF website](#) or via buttons below

SMF CI - Fuels measured against key criteria

SMF CI - Fuels measured against vessel segments

Contact Information

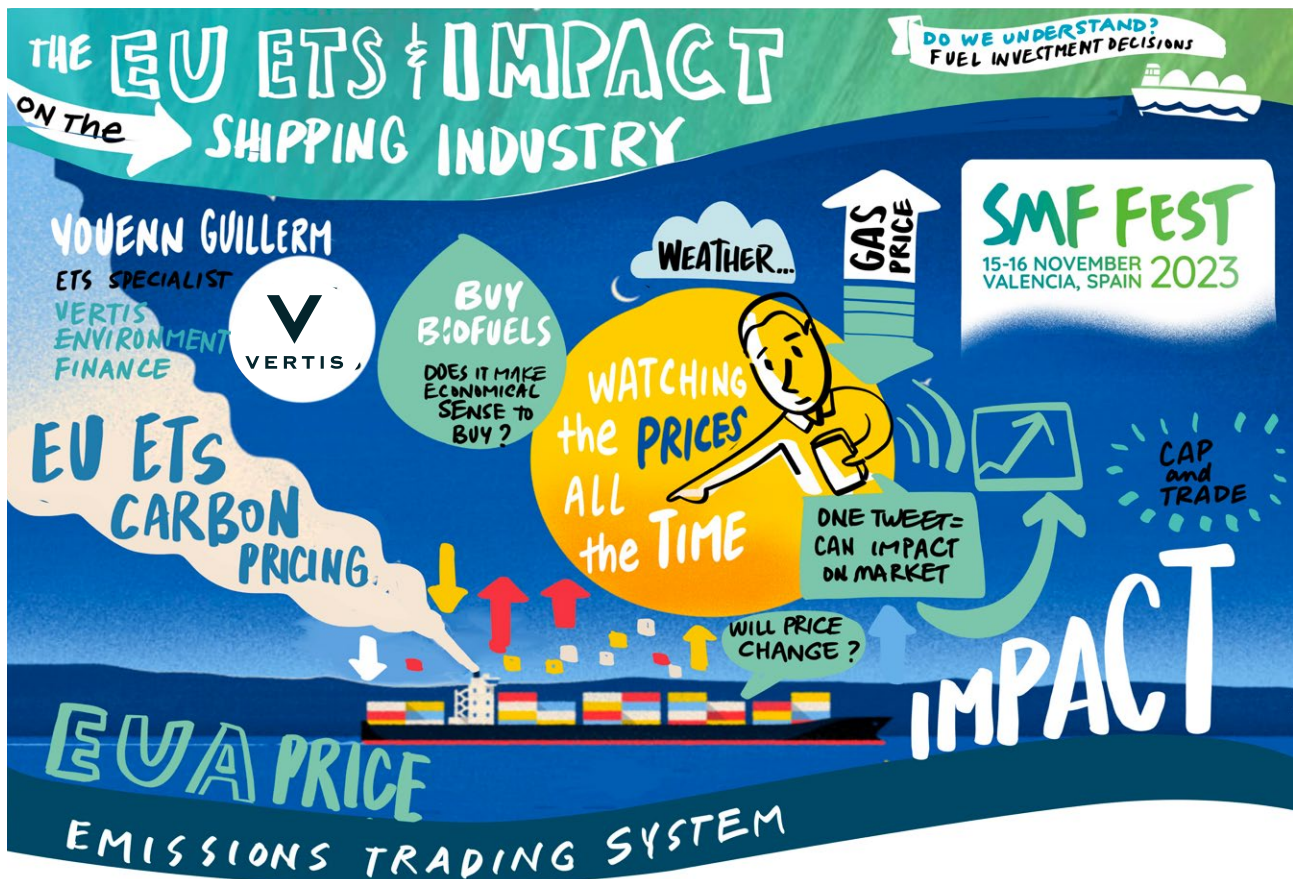
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