

# GAS FEST

20-21 Feb  
**2019**

Convento do Beato  
**Lisbon**

## Executive Summary



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Process and Documentation by:



[www.mattergroup.com](http://www.mattergroup.com)

# Participant List

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Mark Bell - [SGMF](#)  
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Peter van Buuren - [Hamina LNG Oy](#)  
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## Moderator

Dr Gabrielle Walker - [www.gabriellewalker.com](http://www.gabriellewalker.com)

## Facilitation Team, Matter Group

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# Background

Gas Fest 2019 set out to explore the role of different gases in decarbonising shipping and to identify concrete solutions and actions for how to get there. The International Maritime Organization (IMO) member states in April 2018 adopted a climate change strategy under which international shipping must reduce its greenhouse gas emissions by at least 50 percent by 2050 (compared to 2008 levels).

At Gas Fest 2019 gas and maritime stakeholders collaborated in ways that had the participants explore and identify solutions to reach the IMO's goals, as described in the next page.



# Objectives and Outcomes

## Objectives:

- Explore the driving forces and conditions influencing future marine fuel choices, including the broader impact of socio-political, regulatory and economic drivers
- Provide a nuanced view on the potential for different gases in the marine fuel mix towards 2050
- Cut through complexity to provide stakeholders with a clear view on the opportunities in gas fuel solutions, enabling the co-creation of long-term strategies and actionable insights.



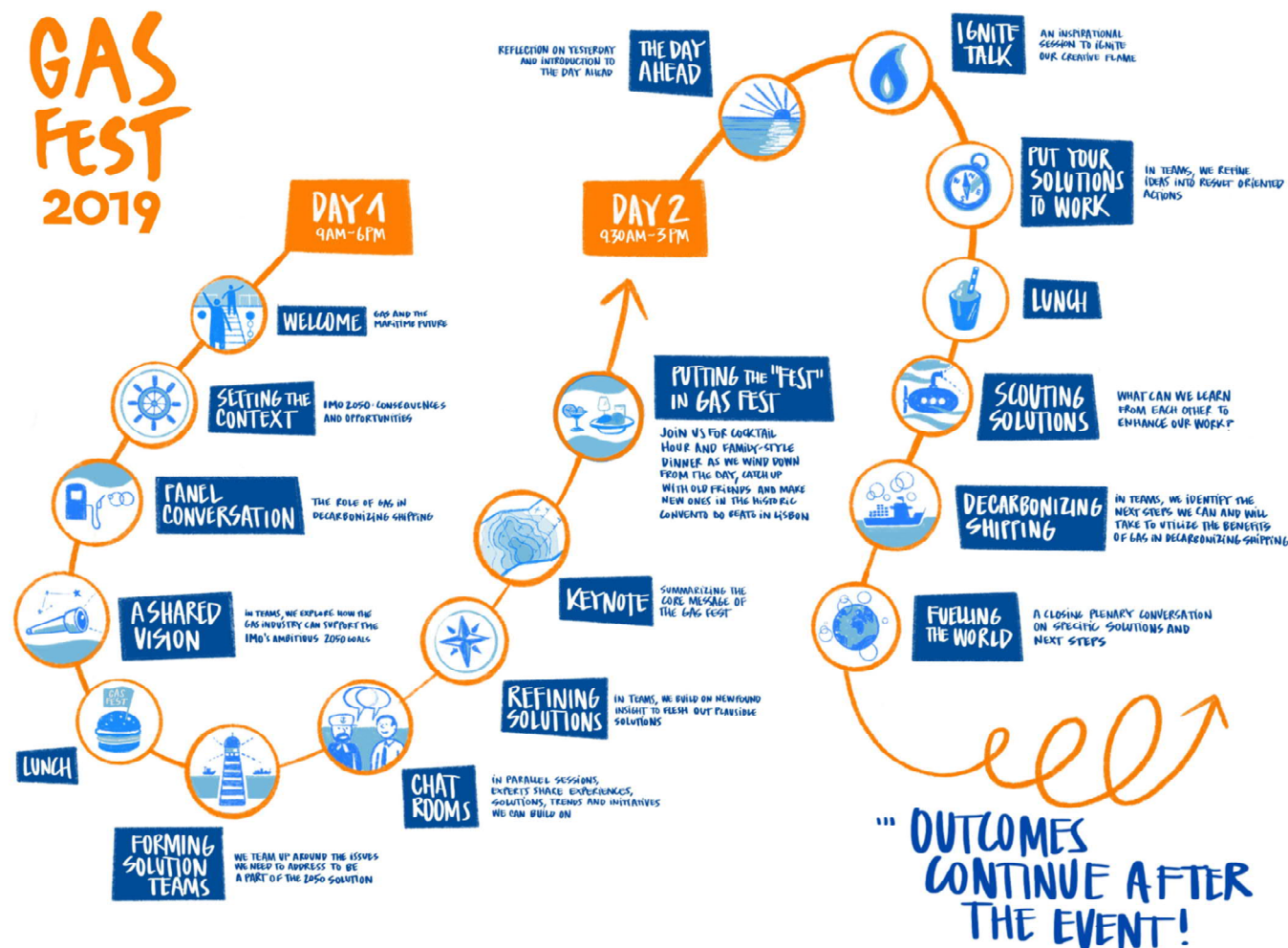
## Outcomes:

- A deeper understanding of the role different gases can play as marine fuels – across the short, medium and long-term.
- Specific ideas and initiatives for developing, promoting and utilising different gases as a part of the solution for decarbonising shipping
- A roadmap for stakeholders across the marine industry to accelerate the implementation of sustainable gas-fuel solutions globally.

# Our Journey

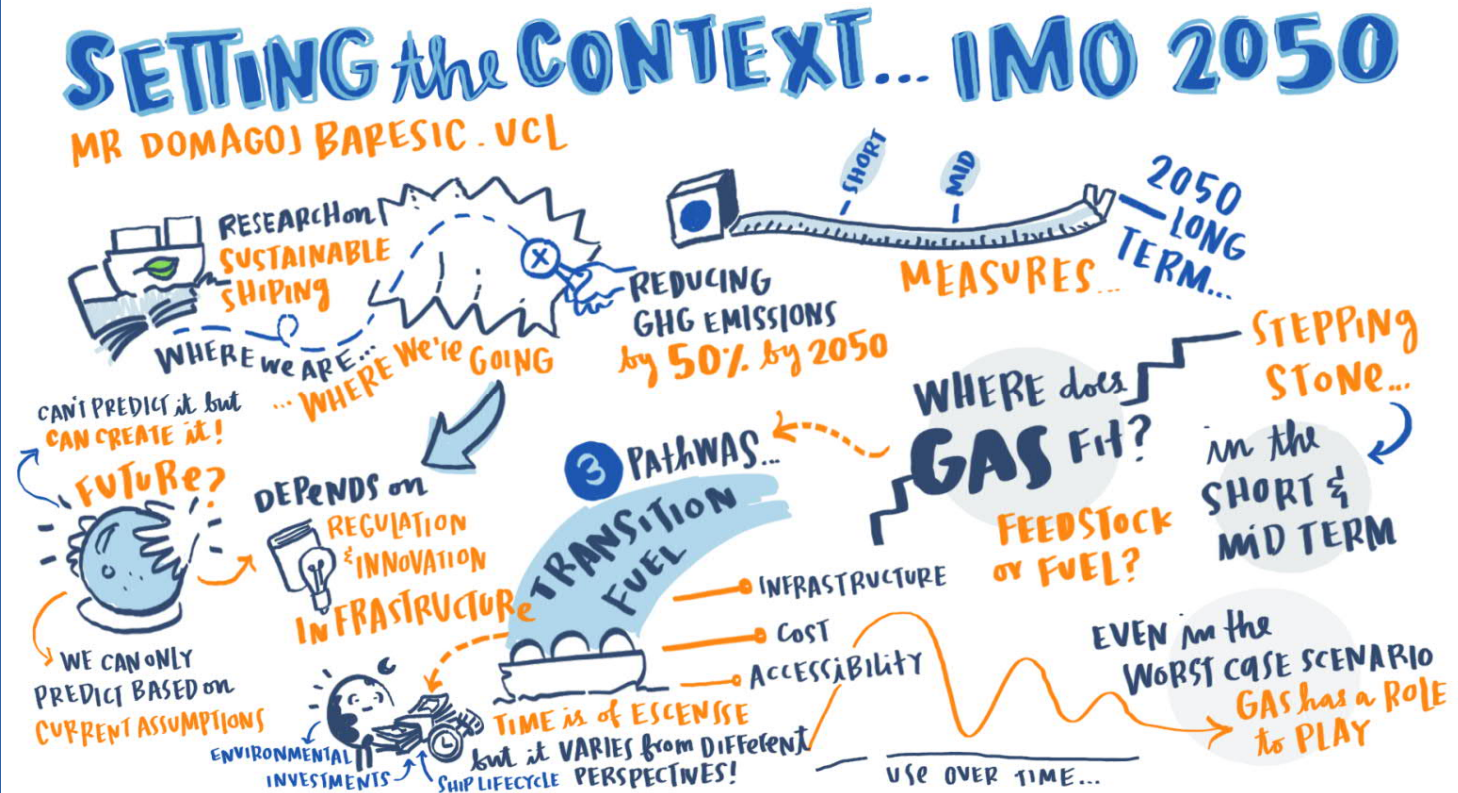
Participants from the marine fuel value chain, including energy companies, ship-builders, power plant owners, classification societies, equipment and technology providers as well as academic thought leaders met in Lisbon for Gas Fest 2019. The purpose was to collaborate to find ways to decarbonise the shipping industry. The key question addressed was the future role gas will play in contributing to reduce greenhouse gas emissions in shipping by 50 percent by 2050.

The participants created a shared future for the year 2030, determined the topics to would work on, engaged with experts to increase the knowledge base, and, ultimately, developed recommendations to move forward together.



# Setting the Context

Dr Domagoj Baresic, **University College of London**, is a doctoral researcher in the Energy Institute. He shared several scenarios about the role of natural gas in the maritime energy transition. His final comments stated that it is tough to definitively assess the role of gas in the 2050 world, but there will certainly be changing regulations, developments in renewable energies, and zero emission ships.



# Ship at Sea

To develop a shared vision and the solution topics to work with for the rest of Gas Fest, the group jumped into a playful and serious exercise.

With hands behind their backs, each person was tasked to tear a sheet of paper into the shape of a ship. Surprisingly, some of them looked like ships!

Next, each person wrote down the one topic they felt should be addressed at Gas Fest 2019 to support the decarbonization of shipping.

Afterwards, as each person presented their thoughts, 8 clusters or topics emerged.

- Building Trust
- Drive Change
- Regulation
- Mindset Change
- Infrastructure
- Finance
- Technology
- Keeping Options Open



# Panel Conversation

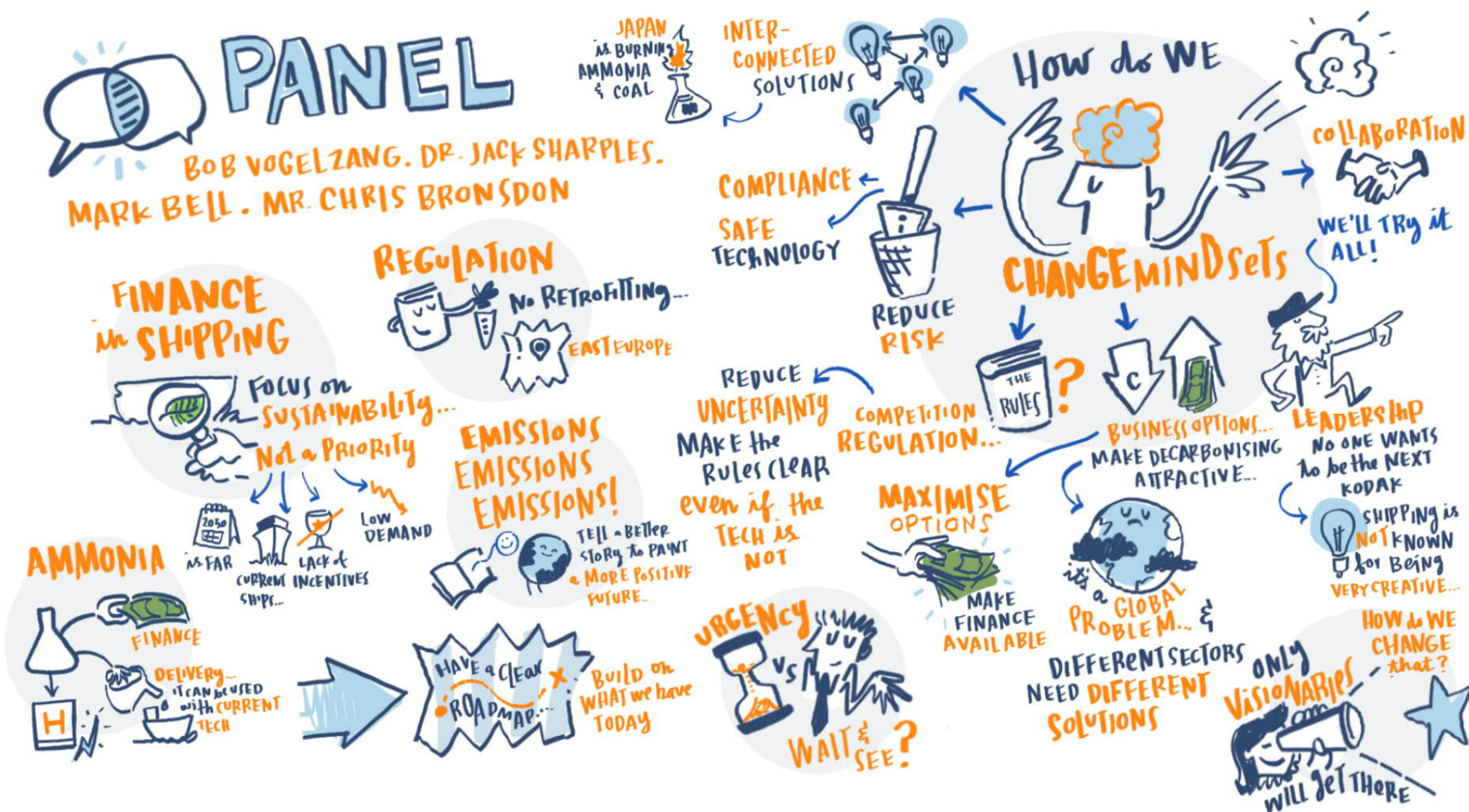
Bob Vogelzang, **ABN Amro**, Jack Sharples, **Oxford Institute for Energy Studies**, Mark Bell, **Society for Gas as Marine Fuel (SGMF)**, Chris Bronsdon, **Eneus Energy** had a conversation on how the marine industry can remain attractive to investors whilst fulfilling decarbonization requirements post 2020.

The conclusion was that there will always be business reasons to not make the changes that are necessary to reduce emissions. What is needed now is to change the mindsets of different stakeholders and for the people in this room to collaborate and further share the ideas and solutions that come out of the Gas Fest.



*“No one wants to be the next Kodak. There are dangers in not jumping on new opportunities”*

# Panel Conversation



# What We Need To Do

Jumping to the future – 2030 – different teams imagined the thank-you speech that they would present in response to winning the IMO's 2030 Decarbonisation Award for the industry's contribution to decarbonising shipping.

This exercise was used to identify a shared 2030 vision. The elements of the vision included:

- What the future looks like and what changed since 2019
- The big ideas that made decarbonisation happen
- Who did what



UNDERSTAND MARITIME SOLUTIONS SEGMENT  
by SEGMENT  
ROADMAP  
ACHIEVABLE with EXISTING INFRASTRUCTURE  
LCA leads to CARBON INTENSITY LABELLING  
COLLABORATION beyond the MARITIME INDUSTRY  
DOMINANCE of STEWARDSHIP MINDSET across the VALUE CHAIN  
GLOBAL CARBON PRICING CREDIT SYSTEM  
DROP IN CARBON NEUTRAL FUEL  
LEVERAGE SIZE of FUEL SUPPLIERS to GET FINANCIAL SOLUTIONS  
COP21-TYPE PROCESS for FUEL SUPPLIERS  
LXG FUELS  
NEW SHIP ORDERS for LOW-CARBON SOLUTIONS



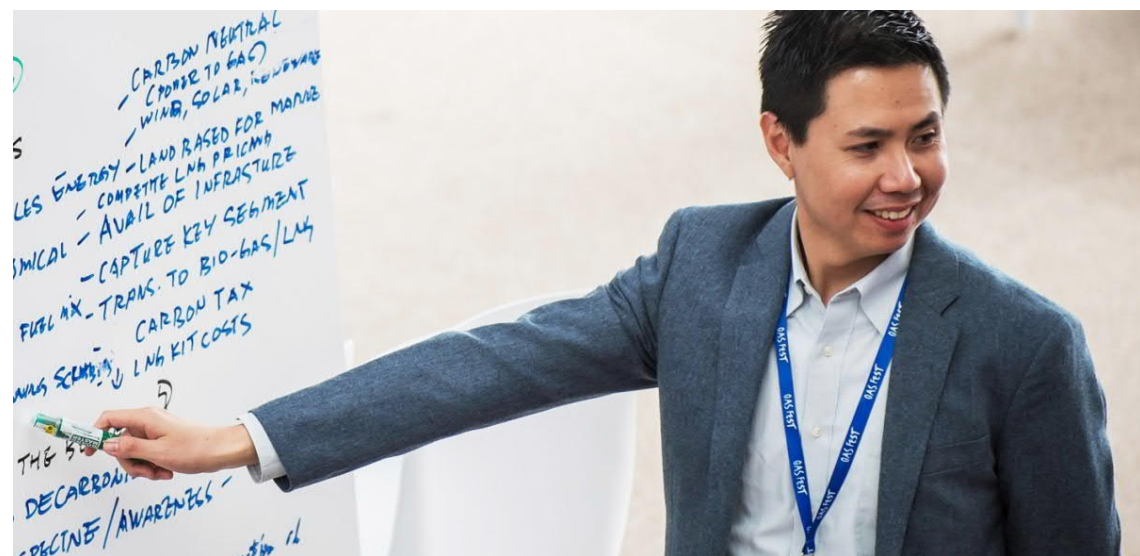
CLARITY on the PATHWAY  
DEEPER LEVELS of COLLABORATION  
COMMERCIALY VIABLE SOLUTIONS using CARROT and STICK  
NUANCED PRICING COVER  
REGIONALISED FUEL PRODUCTION-OPTIMISED  
more PUBLIC PRESSURE  
FINANCE of DIRTY FUELS DRIES UP  
CERTAIN, CLEAR & CONSISTENT REGULATION  
BIG INFRASTRUCTURE DEVELOPMENT  
CERTAINTY overtakes RISK  
CARBON NEUTRALITY in FUEL PROD  
UNIVERSAL PRICING INDEX for MARINE FUELS  
END CONSUMER STEWARDSHIP willing to PAY the BILL  
CARBON INTENSITY LABEL - "CLEAN TRADE"  
MARINE INDUSTRY OUTSIDE the BUBBLE



GLOBAL MARINE INDUSTRY INVESTED in INFRASTRUCTURE  
SHIP OWNERS INVENTED, EMBRACED SOLUTIONS & AGREE with EACH OTHER  
REGULATORS ENFORCED 2025 CARBON CAP  
SHIP MAKERS CONVERGED to OPTIMAL SOLUTION  
CHARTERS AGREED to PAY the PRICE  
INSURERS EMBRACED the SOLUTIONS & LOWERED PREMIUMS  
CLASS SOCIETIES ACCELERATED PROGRESS to SOLUTION  
BANKS LOWERED COST of LENDING to CLEAN SOLUTIONS  
SHIPYARDS BROKE their COPY MACHINE & WELCOMED INNOVATION  
NATIONAL GOVTS ESTABLISHED REGIONAL CARBON PRICING  
FINAL CONSUMERS EMBRACED SOLUTIONS & PAID CHARGE  
COMMS EXPERTS HELPED CHANGE & SPREAD the NARRATIVE  
NGOs PARTNERED with BIZ-ALLIES for CHANGE  
IMO BANNED OPEN LOOP SCRUBBERS  
OUR CHILDREN MOVED on the DINO SAUR GENERATION  
FUEL INDUSTRY DEVELOPED ZERO CARBON FUEL



# Chat Rooms

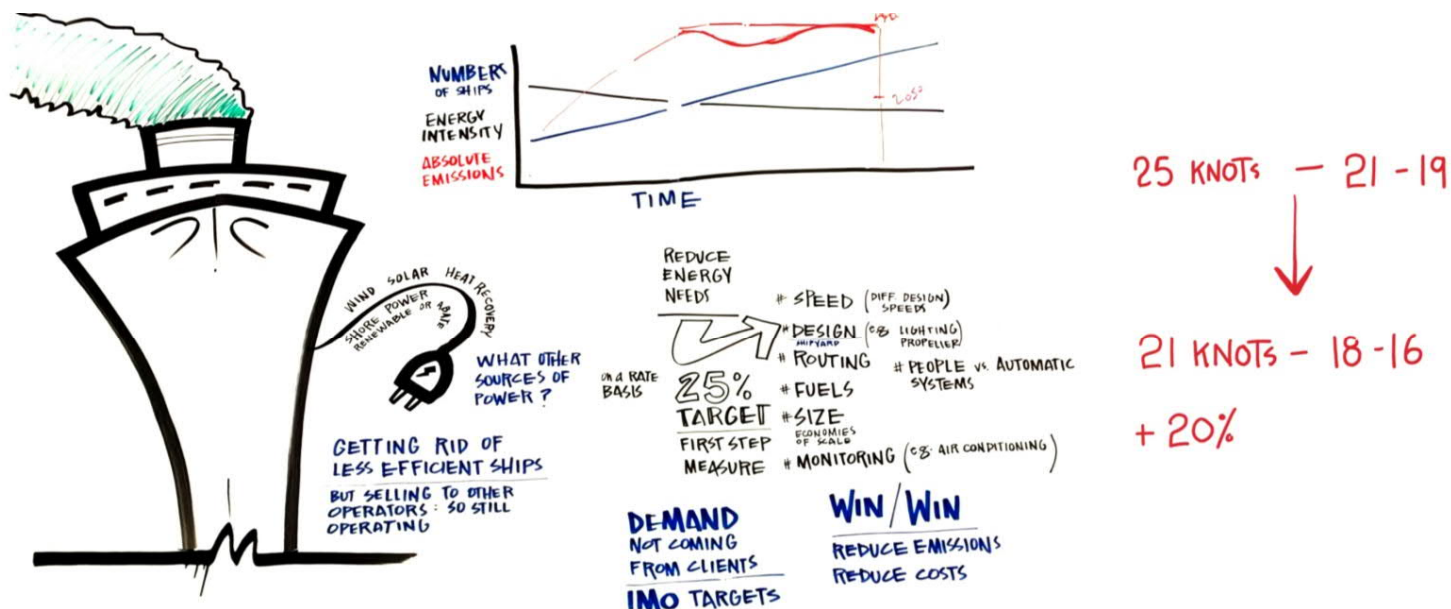


# Chat Rooms

Carnival has a target to increase efficiency of their ships by 25 percent. They are making progress by holistically improving savings in many areas. Additionally, reducing the average speed of a vessel by a few knots has a substantial impact on the amount of fuel used over the journey. Vessel design, routing, and the size of vessels also impact sustainability.

## Reducing Energy Needs of Vessels: Taking a Holistic Approach

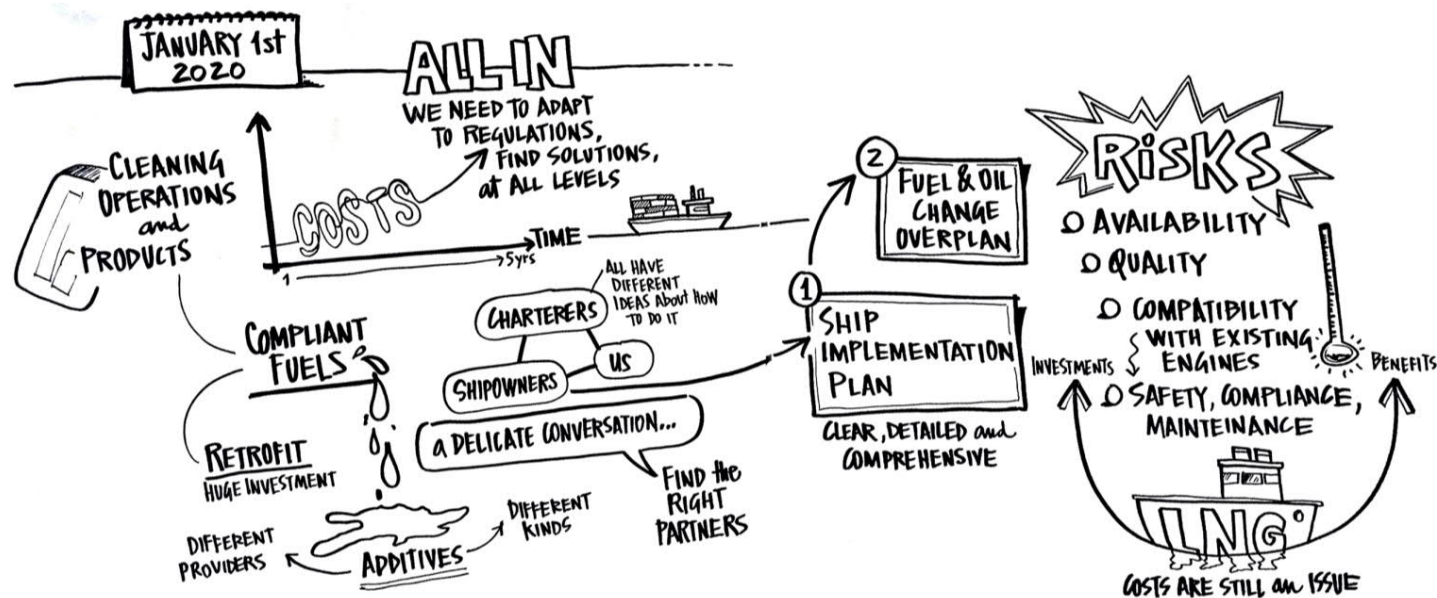
with Tom Strang, Senior VP, Maritime Affairs, Carnival Corporation & plc.



# Chat Rooms

It's difficult to comply with the 2020 Sulphur cap with a diverse fleet. It requires deep cooperation between owners and the charterers. Hapag-Lloyd has decided not to use scrubbers, but rather to use compliant fuels. Currently they are using fuel additives to help clean tanks. Currently, compliant fuels are a risk because there are no specifications. This will require the fuel industry to become cleaner, too.

## Preparations and Planning for IMO 2020 Sulphur Cap with Felix Leggewie, Chief Operating Officer, Schulte Group



# Chat Rooms

Shell understands the cost of building a supply chain infrastructure for a new fuel. Since LNG can use the existing infrastructure, Shell is investing in it. There are big strides to be made using biofuels (10% methanol). Methane is expensive, not the production of it, but the liquefaction of it. There are many ways to make methane, but having enough gasification capability is the challenge. Currently, it works best when it is produced and consumed in the same place.

## The Role for LNG as a Ship Fuel to 2050 and Beyond with Arjan Stavast, Head, Business Development Europe, Marine LNG, Shell

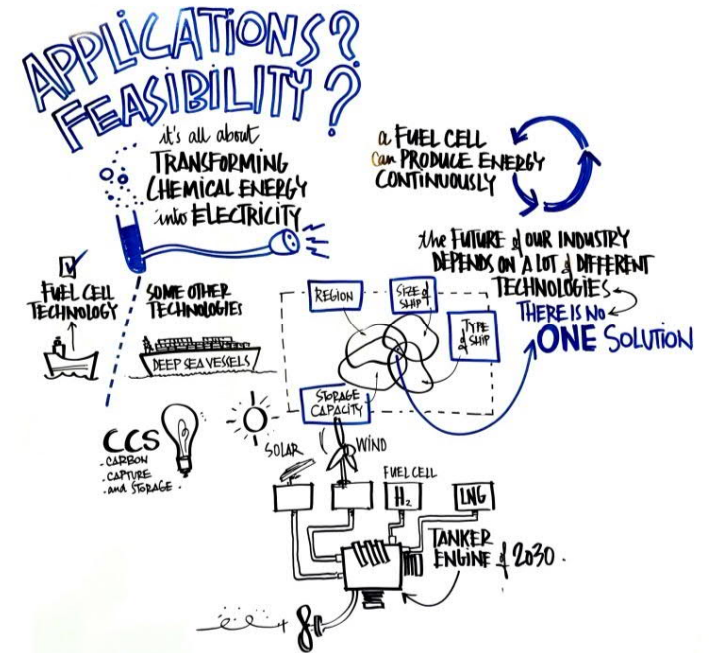
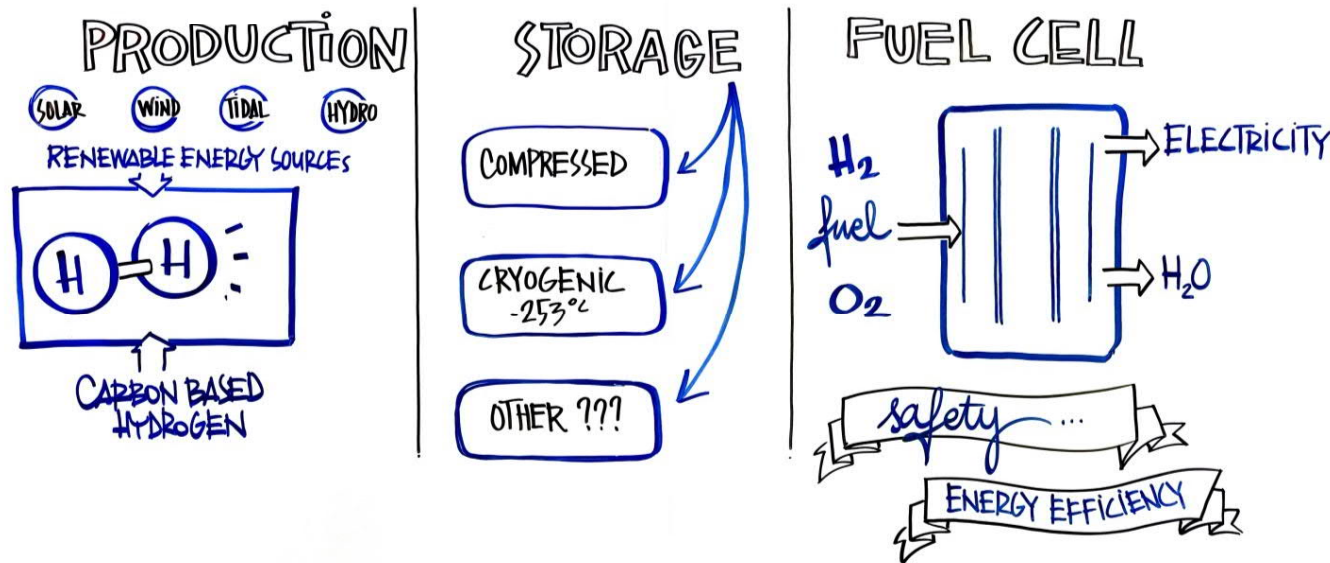


# Chat Rooms

## Hydrogen & Fuel Cell Technology

with Kirsi Tikka, Executive Vice President and Senior Maritime Advisor, ABS

There are still big issues with hydrogen. It has safety issues, requires many fuel cells (which take up a lot of cargo space) to convert the chemical energy into electricity, and ultimately produces carbon, which means carbon capture processes are needed to reach carbon neutrality.



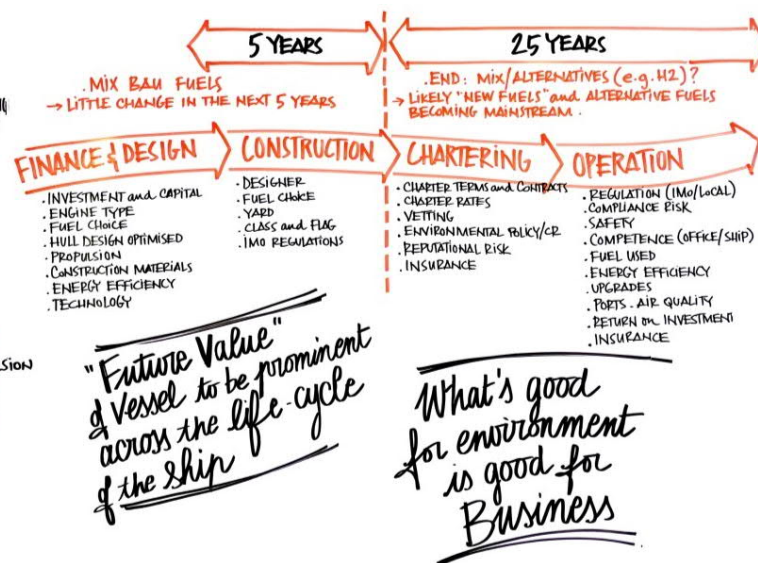
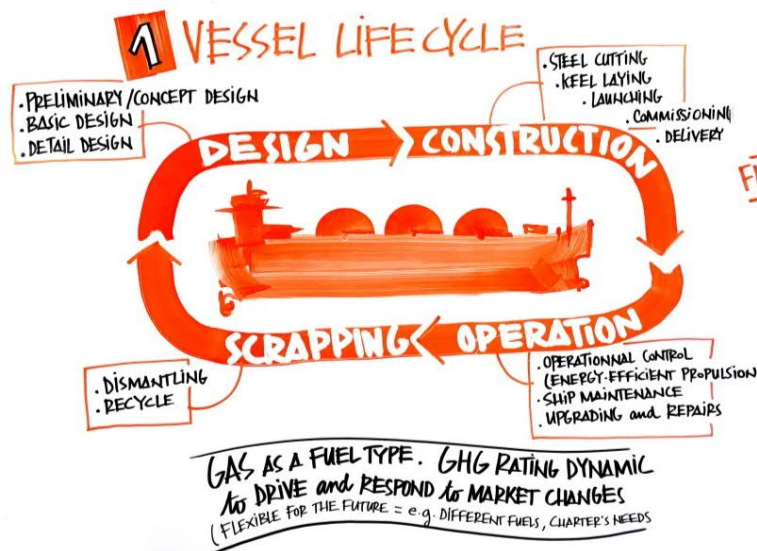
# Chat Rooms

Rating all ships within categories of type, size and trade has created an incentive for change. The A through G rating makes F and G-rated ships want to improve so they can be rated higher. It gives the ship operators a way to differentiate

themselves, offers them a qualified statement for their sustainability reports, it has an assurance and safety angle, and it allows banks and others to compare the risk rating for each ship year after year. Plus, it's linked to EEDI.

## Sustainability and the Environment: Shifting Trends in the Financing and Chartering of Shipping

with Martin Crawford-Brunt, CEO, RightShip

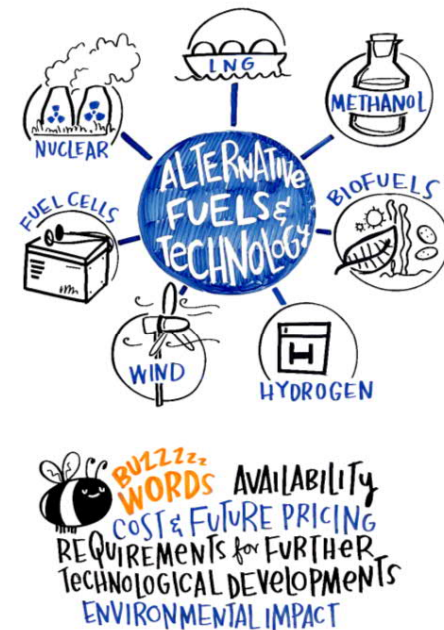
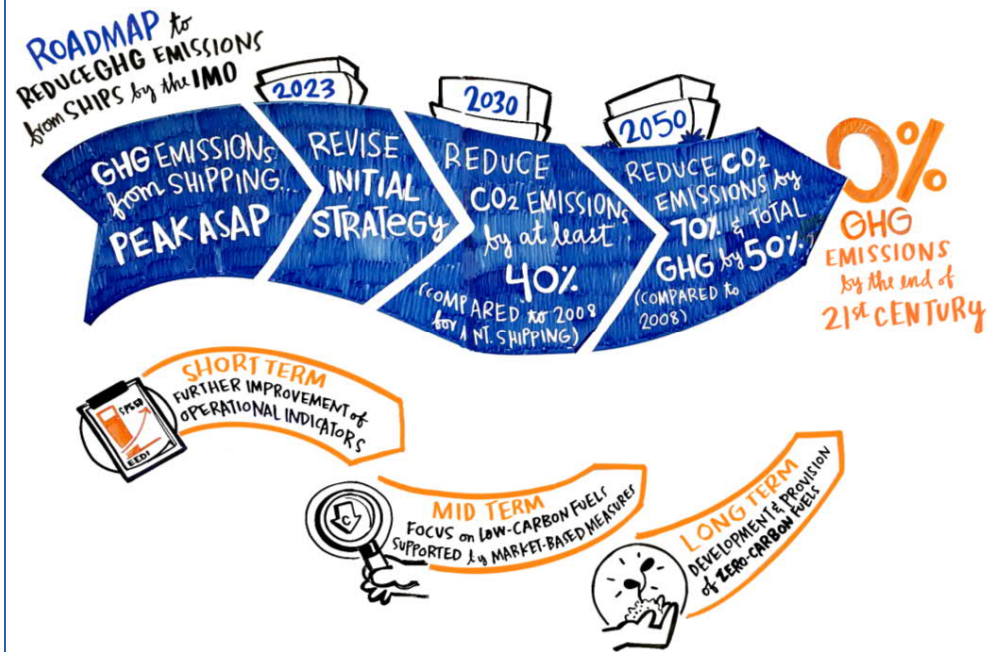


# Chat Rooms

Alternative fuels come at the expense of cargo capacity. It's challenging to use biofuels when large ships consume around 80 tonnes of fuel each day. Today, only LNG and biofuels are economical options, but they are still too dangerous to bring into a yard with the LNG in them. Additionally, workers' councils must forge agreements with their workers to have them work with such volatile substances.

## Fuel Suitability for Deep-Sea Ocean Shipping: Comparison & Economics

with Jörg Erdmann, Head of Sustainability, Hapag-Lloyd



# Chat Rooms Debrief

## CHAT ROOM DEBRIEF





our **SHARED**  
**VISION** is a GOOD  
STARTING POINT towards  
a **CLEAR PATHWAY**  
to **DECARBONISE**  
**SHIPPING**,

# Keynote

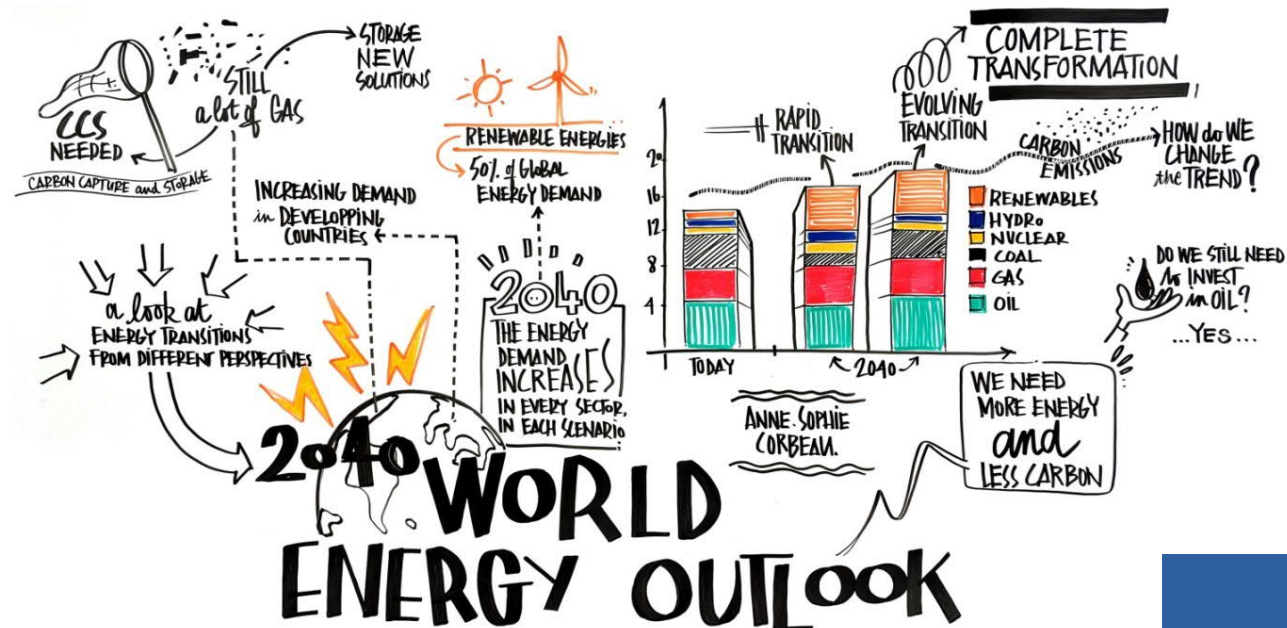
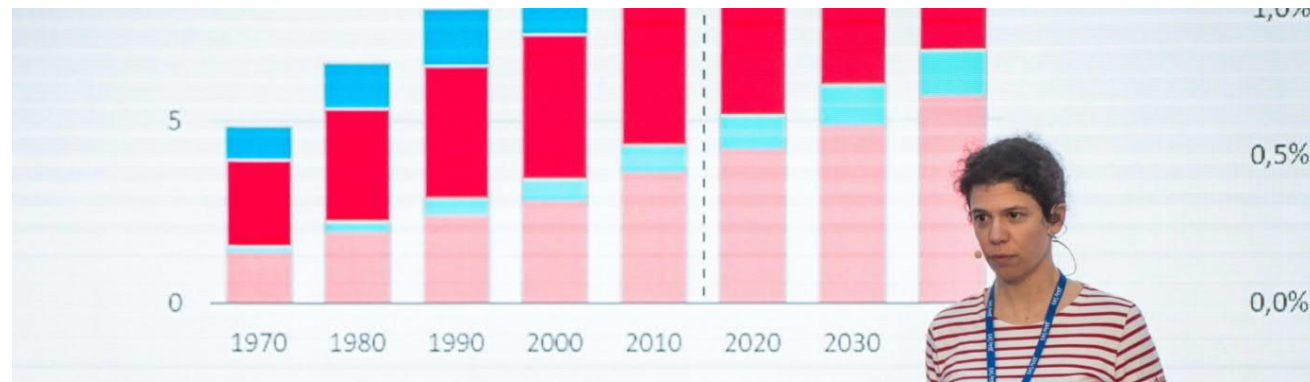
Anne-Sophie Corbeau, Head of Gas Analysis, BP, offered energy transition analyses from several different scenarios.

Her scenarios showed that by 2040 energy demand is set to increase in all scenarios compared to today. The energy mix, however, will likely be radically different. The changes in society, technology and policy in the world are accelerating as compared to the past.

Transportation accounts for 20 percent of total energy demand. That percentage, under the scenarios, is set to remain about the same.

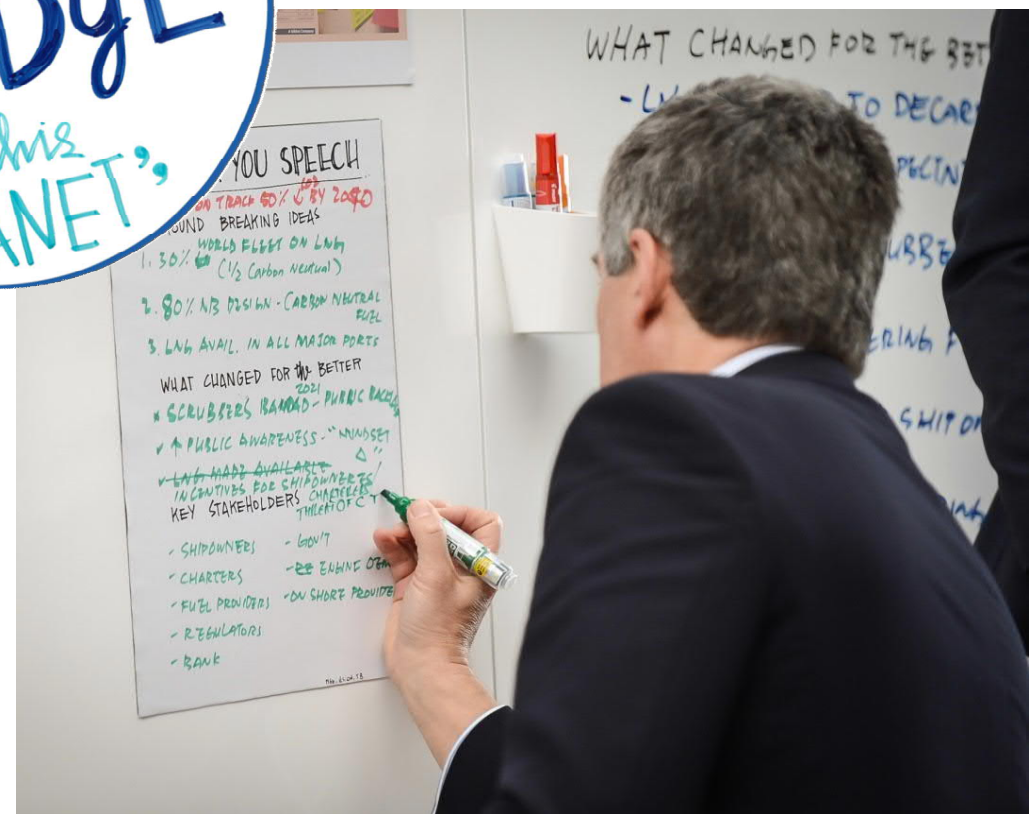
Carbon emissions, under BP's scenarios, are imagined to increase by around seven percent between now and 2040. Part of the reason could be the necessity for continued investment in oil to meet future energy demand. This therefore means that renewables will need to ramp up, especially wind, which must increase by 10 percent and solar, which needs to increase by five percent.

[BP Energy Outlook \(2018 edition\)](#)





we are ALL  
'ONLY a BRIDGE'  
on this PLANET'





If you can't have fun with the problem, you will never solve it



# Ignite Talk

Day 2 began with participants talking amongst themselves about their impressions from yesterday. Some of the comments included wanting to push LNG into the market to be cleaner and greener.

A need to break the pattern of waiting to see who will be the first mover and who is willing to taking the risk.

The need to tell a unified story.

Dr Walker reminded the group of what is at stake with climate change. Her presentation illuminated the urgency that is needed to meet the challenge, how the young people of the world are tired of inaction, and the very real risks businesses face today, like reputational risk, liability risk and more. She ended by asking what we are willing to do to fight for our future and the future of our planet.

## a CLIMATE for CHANGE

— GABRIELLE WALKER



# Solution Groups

The collaboration and creativity continued through the rest of day 2. The self-selected solution groups that started their work on day 1 continued on their path to uncover actionable insights to decarbonise shipping and find a role for gas in that future. Participants also had a chance to split out and visit the other groups for inspiration and to uncover potential synergies.

The results of each group's findings and action plan was presented in the final fishbowl and debated then agreed upon or challenged by Dr. Walker & the other groups.

These results are summarised on the following pages and includes the names\* of the participants who commit to working together to further the agreed action plan.

\***Team leads** are mentioned in bold at the top of the list of names.



# 1. Building Trust

It is up to us to establish as a fact that LNG is the solution for most ships. This group imagined doing this through presenting the facts, speaking about the impact on greenhouse gases, and telling the story about how LNG is a better solution for air pollution and air quality. What is needed, is one unified, fact-based story.

The group was challenged to consider how best to earn the trust of others. Dr. Walker reminded the group that LNG is NOT a carbon-free solution, it is the most viable solution today.

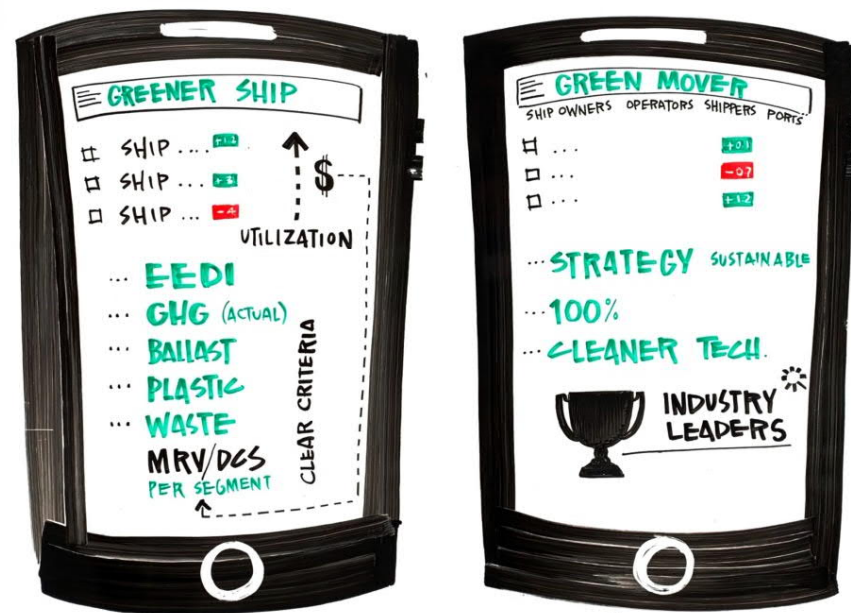
- **Stephen Cadden - SEALNG Ltd.**
- Alexander Panagopulos - Forward Ships
- Gunnar Helmen - Gasum
- Jan Kvaalsvold - DNV GL
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- Marieke Knook - Royal Dutch Shell plc
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- Rolf Stiefel - WinGD
- Sothiraj Jayaraj - Eaglestar Marine Holdings (L) Pte Ltd
- Stavros Niotis - ABS
- Tatiana Fayzullina - Elevate LNG
- Timo Koponen - Wärtsilä Corporation



## 2. Drive Change

The maritime fuel story must be told in an open, clear and transparent way. What is needed is to become better at telling the story of those builders and stakeholders who are doing the right thing, those who are investing in green technology and defining what a 'green' vessel is. The statements would be validated by an NGO with real-time checks using data and transparency. Dr. Walker asked, who is the right messenger to partner with to avoid green-washing attacks? In many ways, RightShip, a participating organisation, is already doing this.

- **Gianpaolo Benedetti - SGMF**
- Alexander Panagopulos - Forward Ships
- Barry Compagnoni - Port Canaveral
- Carlos Guerrero - Bureau Veritas Marine & Offshore
- Francois-Xavier Van Houtte - Fluxys
- Frank Hartevelde - Wärtsilä Corporation
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REAL-TIME  
CHECKING

OPEN  
to the  
PUBLIC

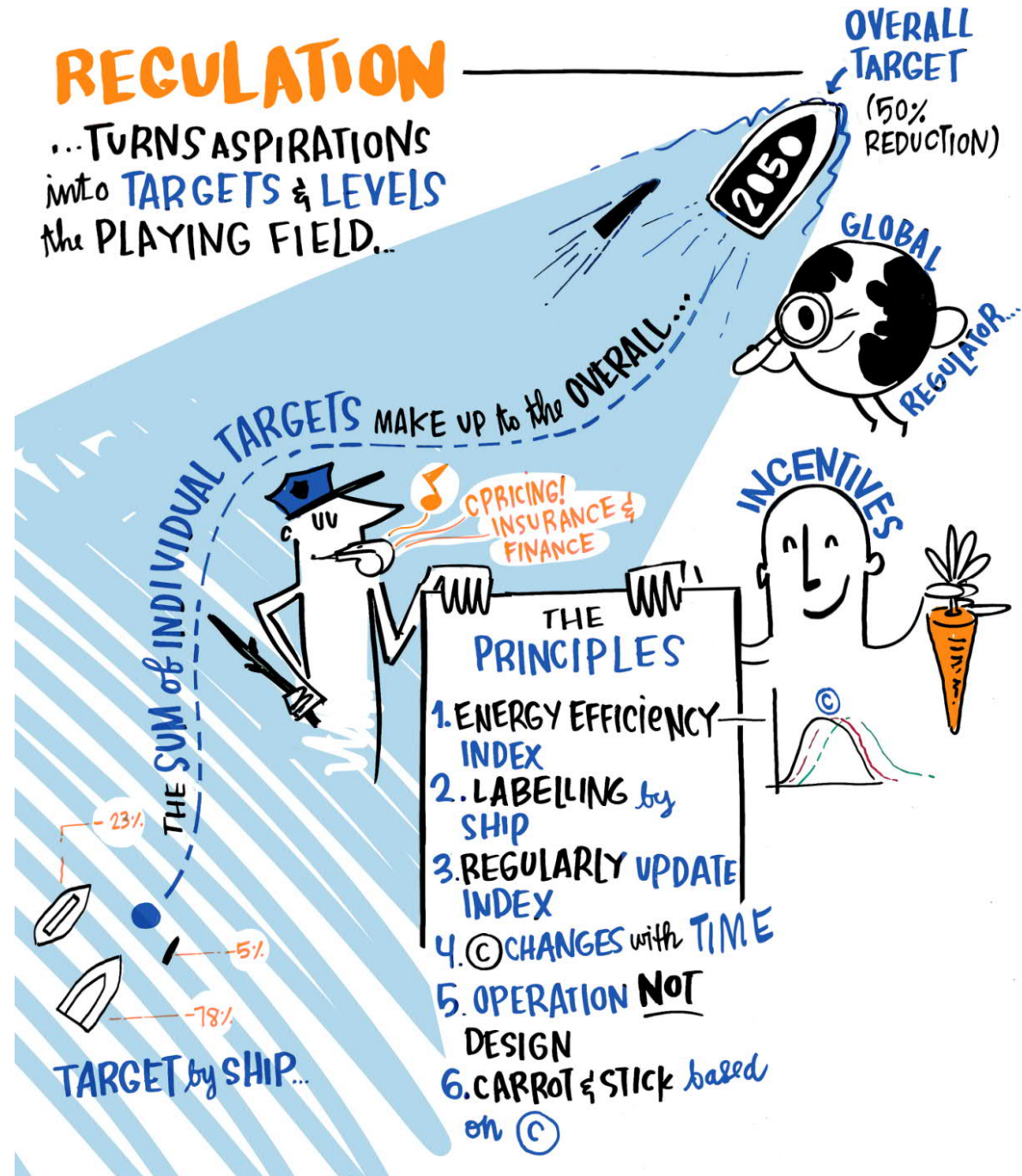
and  
VALIDATED  
BY NGOS OR SIMILAR

--- TRANSPARENCY ---

# 3. Regulation

We have a lot of regulation, it is time for good regulation, especially based on data. We suggest turning aspirations into targets and making this data broadly available, updated regularly, in a way that shows changes over time. We imagine sharing an energy-efficiency index that is labeled by ship.

- David Haynes - SGMF
- Julien Bec - GTT
- Nicolai H. Olsen - Cryo Shipping AS
- Panos Koutsourakis - Bureau Veritas
- Rolf Stiefel - WinGD
- Tobias Koenig - Lexington LNG Limited



## 4. Mindset Change

The Lisbon Maritime Agreement was created: *Accelerating the climate agenda in the maritime industry: an invitation to collaborate, act and succeed.*

This is an effort to accelerate change, by combining all the actions already mentioned by this group. The audience would be just about everyone involved in the marine ecosystem, from regulators, to suppliers, industries, the public, and especially the youth. Telling a compelling story about what has been progressing in the maritime industry. Dr. Walker inserted that one way to change mind-set is to collaborate with all the stakeholders to develop the messaging.

## MINDSET CHANGE



## 4. Mindset Change, cont.

- **Mark Bell - SGMF**
- Alexander Panagopulos - Forward Ships
- Anna Garcia - WinGD
- Barry Compagnoni - Port Canaveral
- David Davenport-Jones - ABS
- Felix Arnold Leggewie - Bernhard Schulte GmbH & Co. KG
- Francois-Xavier Van Houtte - Fluxys
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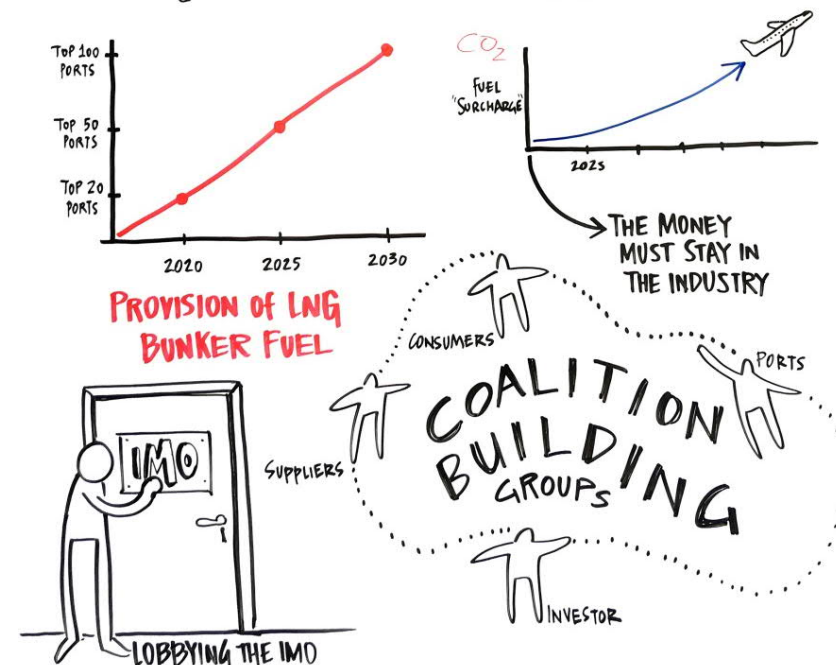
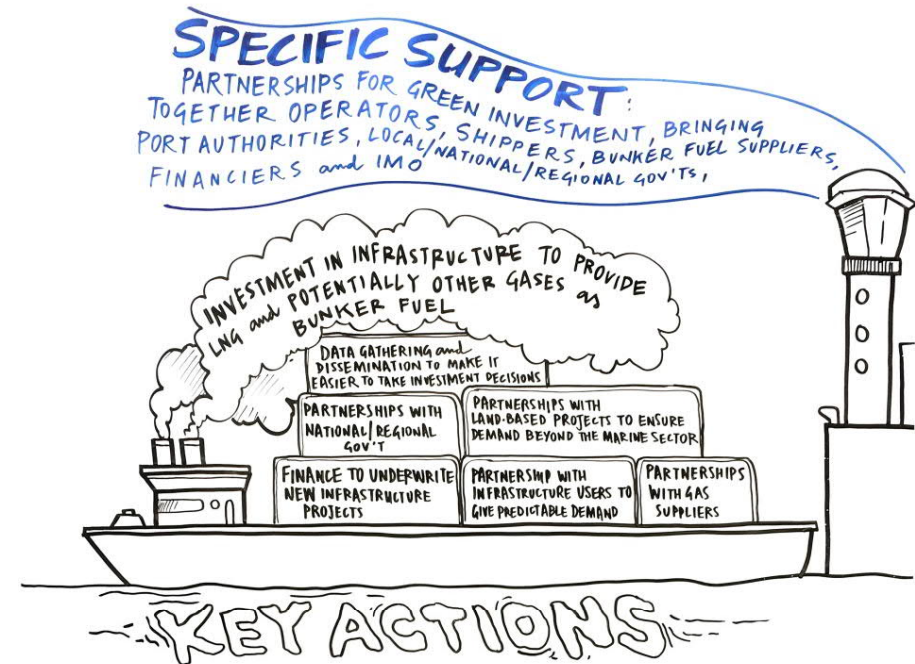
# 5. Infrastructure

What is needed are partnerships for green investments that bring together operators, shippers, bunker fuel suppliers, and port authorities. Two pathways were recommended:

1. Encourage investment in bunkering around the world. Work with advocacy groups to own this. This would require recruiting coalition partners to go to the port authorities
2. Follow the Norwegian model: have a mixture of tax and subsidy. A fuel surcharge that would be selectively applied as a small percentage of fuel (2-3% in 2020) but with a clear pathway to ratcheting that percentage up over time to 5 percent by 2027.

- **Steve Esau - SEALNG Ltd. (TBC)**
- Alexander Panagopulos - Forward Ships
- Anne-Sophie Corbeau - BP
- Daniel Villa Ramos - Scale Gas (Enagás Group)
- Gunnar Helmen - Gasum
- Jan Kvaalsvold - DNV GL
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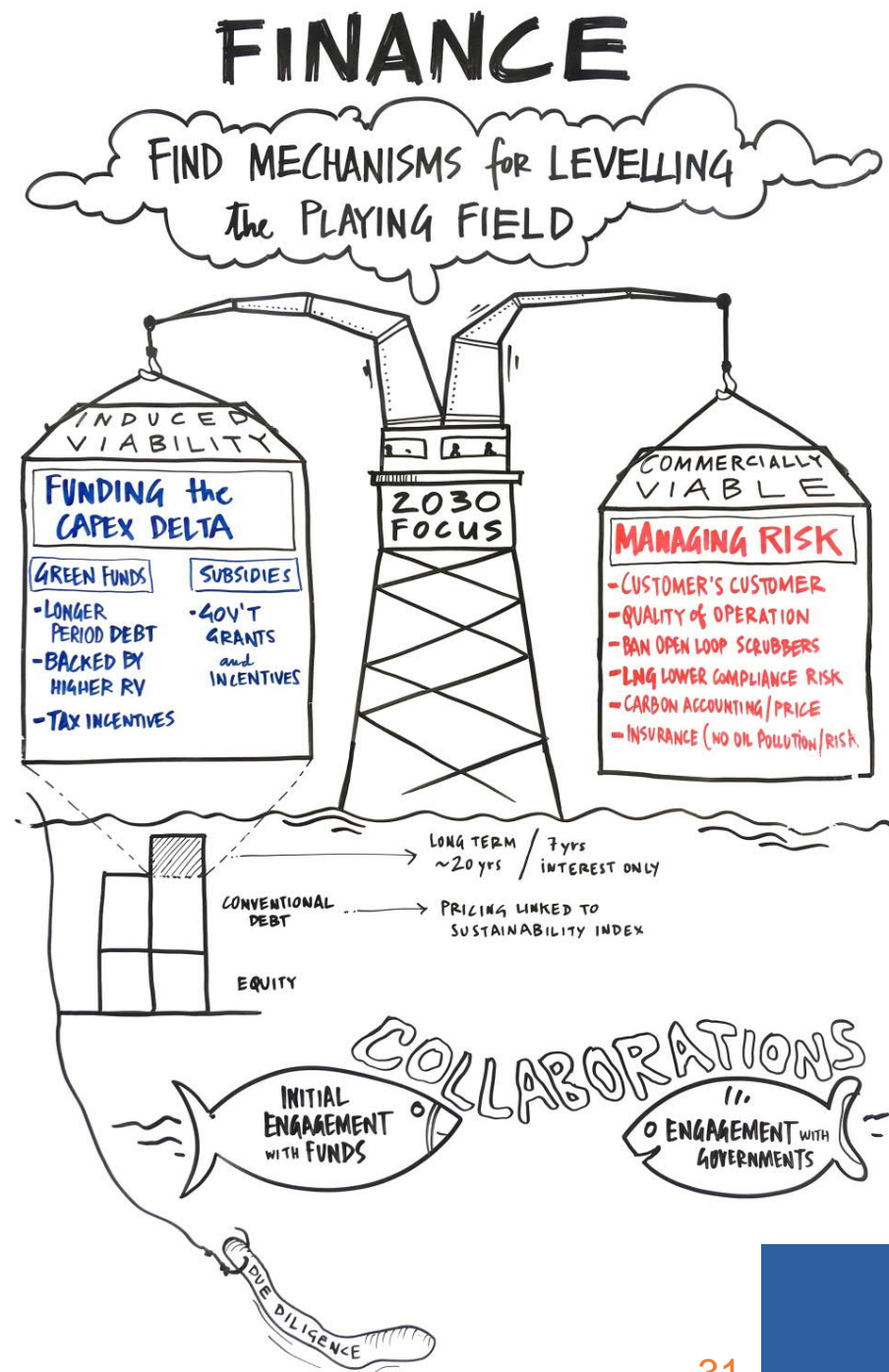
## INFRASTRUCTURE



# 6. Finance

The challenge today is how to incentivise the right decisions. Currently investing in LNG requires a premium payment. This group suggested working with green funds to establish a fund to help the commercial viability of ship owners. There is work to be done, including to better understanding how these funds work, to better define what shipping means by 'green,' and to understand how and when governments might subsidise some of the costs for green ships. Why would governments spend trillions to rescue the financial sector, but not the same to rescue the planet?

- **Simon Davies - Bank of Tokyo-Mitsubishi UFJ Group (MUFG)**
- Alexander Panagopulos - Forward Ships
- Clement Sim - Shell
- Felix Arnold Leggewie - Bernhard Schulte GmbH & Co. KG
- Francois-Xavier Van Houtte - Fluxys
- John Hatley - Wärtsilä Corporation
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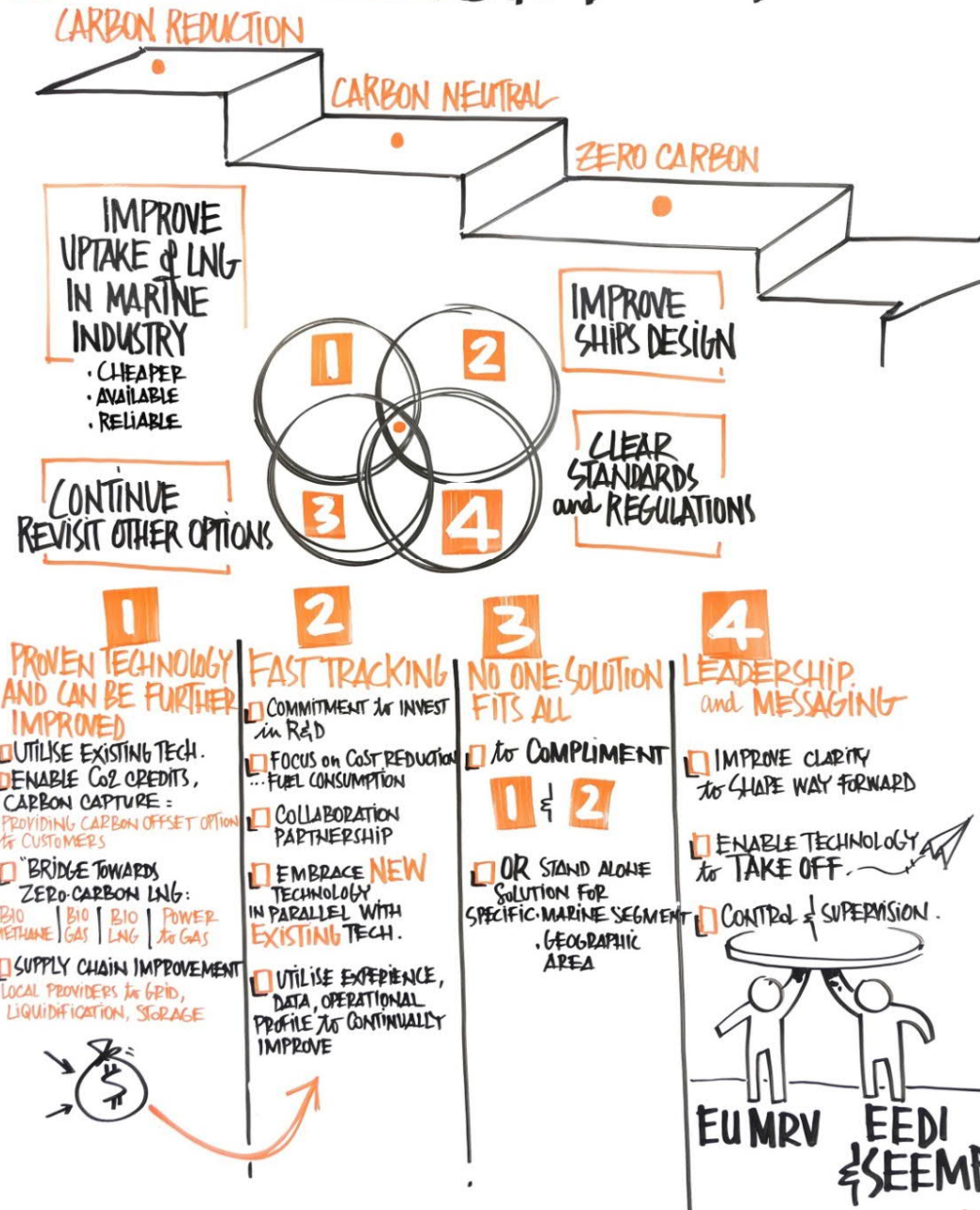


# 7. Technology

There must be a step-change in the way the maritime fuel industry reduces carbon to get to zero carbon. This group suggested a research development fund for greenhouse gas reduction. This would be a mandatory \$1-2.00/tonne of fuel to be put into a fund. Since fuel prices have been more variable than this in the past, this should not be a deal breaker. This fund gets the industry aligned toward solutions and shows the rest of the world how seriously it takes this issue.

- **Mathias Jansson - Wärtsilä Corporation**
- Alexander Panagopulos - Forward Ships
- Anne-Sophie Corbeau - BP
- Clement Sim - Shell
- David Davenport-Jones - ABS
- Gunnar Helmen - Gasum
- Hans Fagerberg - Gas and Heat S.p.A.
- Jan Kvaalsvold – DNV GL
- Jorge Fernandes - Portline Ocean Management
- Mark Long - Forward Ships
- Nicolai H. Olsen - Cryo Shipping AS
- Panos Koutsourakis - Bureau Veritas
- Sothiraj Jayaraj - Eaglestar Marine Holdings (L) Pte Ltd
- Stavros Niotis - ABS

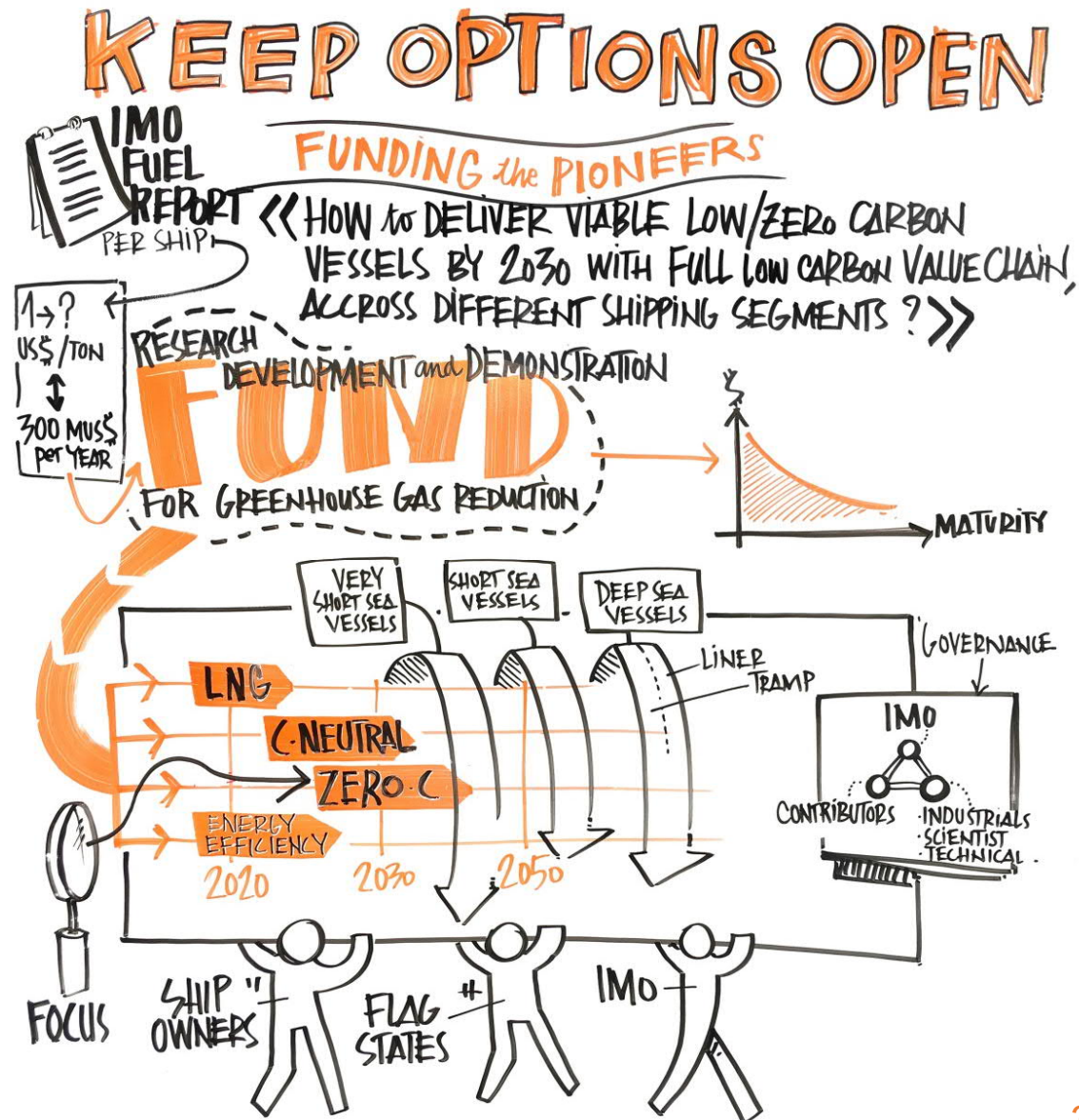
## TECHNOLOGY... STEP CHANGE



# 8. Keeping Options Open

Find ways to fund and highlight those stakeholders that are already taking risks and investing to making climate progress. Establish a research development and demonstration fund to test the use of a variety of fuels on the variety of ships used today. Each solution may be different. Focus on the entire value chain in shipping to get to the 2030 targets.

- **Tom Strang** - Carnival Corporation
- Mathias Jansson - Wärtsilä Corporation
- Clement Sim - Shell
- David Davenport-Jones - ABS
- Frank Harteveld - Wärtsilä Corporation
- Jan Kvaalsvold - DNV GL
- Juha Kytölä - Wärtsilä Corporation
- Mark Bell - SGMF
- Martin Wold – DNV GL
- Nicolai H. Olsen - Cryo Shipping AS
- Sothiraj Jayaraj - Eaglestar Marine Holdings (L) Pte Ltd
- Stavros Niotis - ABS
- Stephen Cadden - SEA\LNG Ltd.
- Tatiana Fayzullina - Elevate LNG





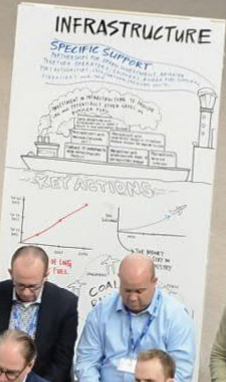
## MINDSET CHANGE



## COLLABORATION



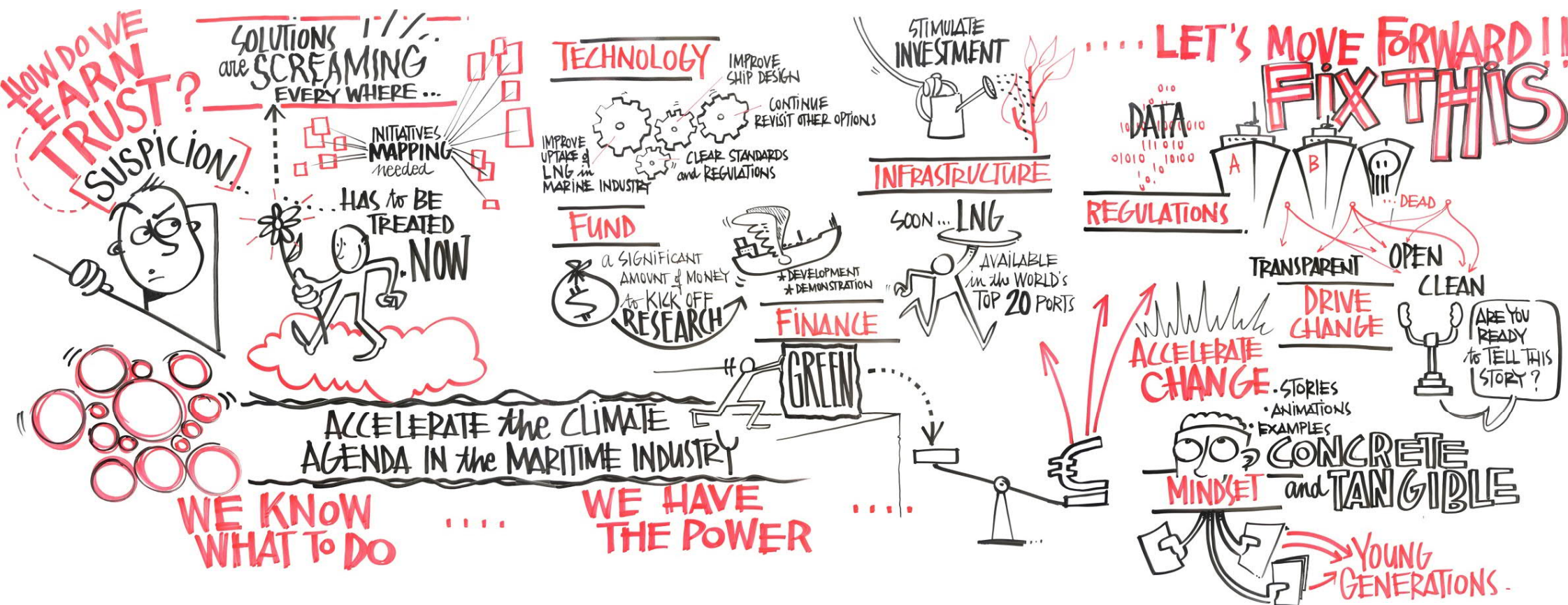
## INFRASTRUCTURE



## FINANCE



# Fishbowl Conversation



# Collaborate - Act - Succeed



# GAS FEST

20-21 Feb  
**2019**

Convento do Beato  
**Lisbon**



**Shell**  
**LNG**



# GAS FEST 2019

