## OCEAN ENERGY SAVING GLOBAL SHIPPING

#### **PURPOSE | DIRECTION | SYSTEMIC INNOVATION**



## 

90% Of Everything - 2-3% GHG - 50% Decarbonation By 2050



## CLIMATE EMERGENCY THE GLOBAL SHIPPING INDUSTRY'S RESPONSE

**Big Players - Vested Interests Who Own The Narrative And Drive Industry Policy** 

## THEIR SOLUTION? THE SUBSTITUTION STRATEGY

Fuel accounts for ~70% OPEX - Just change fuel type - New fuel types; challenges - cost/availability/density/quality/infrastructure changes





## THE MAKE UP OF THE FLEET

70% Of The Global Fleet Is Small, Elderly +25yo < 25,000 dwt - Ideal For Replacement And Largely Ignored - Limited Access to R&D, Capital

**EMERGENCY RESPONSE - Covid VACCINE - Liberty Ships** 





## EMERGENCY RESPONSE LIBERTY SHIPS Between 1941-1945 18 US shipyards

built 2,710 Liberty ships – an average of 3 ships every 2 days

Standardised design

Straightforward manufacturing process



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#### Diane Gilpin, Founder/CEO

- Woman's Hour (BBC R4) Power List 2020
- Department for Transport Clean Maritime Council
- Green Shipping Expert Group - EU Waterborne Transport Platform/STEERER
- Advisory Board NorShipping, Norway



#### lan Haugh, CFO

40 years in financial and organisational management. Oversaw the turnaround and sale to Spanish renewables giant Gamesa of the B9 Energy group - the largest independent wind farm company in the UK



#### Rob & Tom Humphreys, Naval Architects

Owners of HYD, with a heritage which spans over 40 years, Rob and Tom developed the company from its racing yacht roots into one of the leading international design studios, in terms of both sail and power.



Jeff Zie, Non-Exec Director

Jeff has helped build and operate some of the world's most successful and disruptive digital businesses for MSFT, Sky and EA, and has founded a number of successful startups as well as an advising and consulting to Akzo Nobel, Sony and RAND Corporation.

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#### **SGS ADVISORY BOARD**

**Peter Hinchliffe,** Former Sec Gen International Chamber of Shipping

#### Prof Jingjing Xu, Pro Vice-Chancellor and Executive Dean, UWE Bristol:

Professor Xu is an internationally renowned expert on law and economics in the marine and maritime domain. Her publications inform the curriculum in her field and she is also an Adjunct or Visiting Professor at renowned universities in China, Sweden and Australia.

Jenifer Baxter, Chief Engineer IMechE: Responsible for engaging with government, industry and academia, ensuring that engineering is included in policy making, innovation and R&D.

Aoife O'Leary, Director, International Climate, EDF: After qualifying as a lawyer in Ireland, she has worked with and advised various NGOs on the environmental impacts of international shipping and aviation, EU environmental governance and UK community energy.

**Dr Dianne Dillon Ridgely:** Chair of the Millennium DPI conference at the UN.

## A COALITION OF THE WILLING



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## SYSTEM COMPONENTS FastShip | RE:Surge | Tradewind | FastRig



# FASTSHIPS

- Small ship up to 25,000dwt
- Concept tested 2012
- 50% wind/50% fuel
- Zero-fuel cost = wind + on-board hydrogen



# Circular -new build LiLo Reduce embedded emissions Improve resource use



## TODAY, SHIPPING DATA IS OPAGUE

#### **ZERO CARBON SHIPPING REQUIRES CLARITY**







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#### Retractable, automated, intelligent, affordable, ROBUST:

Save 20% fuel/GHGs
Circular build – underpins RE:Surge
LiLo – FastRigs leased to market – rapid uptake
Shovel Ready







#### **HOW WE MAKE MONEY**

#### THE SGS SOLUTION SUITE

FASTRIGS™ - Sells Licences To Use Or Rigs And O&M Support

FASTSHIPS<sup>™</sup> - Sells Ships And Owns And Operates Ships

**TRADEWIND™** - Licences The Use Of Digital Analytics And Data Tools

**RE:SURGE™** - Sells Licences For CE Ship Design

Each Solution Suite Will Sell Licenses To Leverage The Technology Or Sell the Technology Directly

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SGS

URSE

FASTRIEST

SGS Delivers Operational Support And Services To All Solution Areas



## WAYPOINTS





## CURRENT FUNDING STATUS Project Grebe: Shovel-ready Funding Requirement: £6m over 3 years Scottish Enterprise Seek & Solve Grant: £1.8M (in DD with SE) 'Seekers': Drax, GFG Alliance, IMechE: £1.14 in-kind

### Private Investment Balance Required: £3.2M Equity Available: 33.3%



## HARNESSING ABUNDANT FREE OCEAN ENERGY

- Systemic innovation Short term action is key
- Shovel-ready plan
- Vision + capability to use that to springboard to 0.5GT pa by 2050
- Zero emissions smart energy use for whole fleet