

World Hydrogen & Ammonia Shipping Forum

3 - 4 NOVEMBER 2020 GLOBAL ONLINE ACCESS

## **EVALUATING AND IMPLEMENTING THE MARINE FUELS OF THE FUTURE**





IN PARTNERSHIP WITH







## World Hydrogen & Ammonia Shipping Forum

As customers formalise their sustainability strategies and governments and ports ramp up environmental regulations in line with 2050 targets, Shipping stakeholders must act now to take a leading position in the zero emission maritime economy of the future.

The Forum's focus on hydrogen and ammonia will allow you to have **meaningful**, **in-depth discussions** on the economics, supply and technology issues specific to these fuels

Covering a broad range of vessel segments including cargo ships, container ships, ferries, cruise ships, superyachts, offshore support vessels and tugboats

You will benefit from views of the key stakeholders throughout the entire supply chain, including banks, government, regulators, energy companies, technology providers, ports and shipowners.

## WHY THIS IS

## A MUST-ATTEND EVENT

- Get reliable data for your business case with expert views on the future trajectories for fuel pricing and global supply trends
- Assess which zero emission fuel technologies will be the winners and why, looking at: fuel cells, hydrogen and ammonia powered ICEs, LOHC, solid state hydrogen and hybrid solutions
- Learn from the most successful models for designing and financing hydrogen powered ships and infrastructure
- Hear about plans for the further curtailment of shipping emissions from the IMO, the UK and Norwegian governments and the European Commission, and what you need to do to future proof your business



## THE WORLD'S LEADING EXPERT SPEAKERS



#### **ROGER STREVENS** Vice President, Global Sustainability Wallenius Wilhelmsen



ROBERT MISSEN Head of Innovation & Research **Directorate-General for** Mobility & Transport, European Commission



POUL WOODALL Director, Environment & Sustainability DFDS



CHRISTIAN PHO DUC Managing Director H2 Projects **SMARTENERGY** 



MADADH MACLAINE Secretary General Zero Emissions Ship **Technology Association** 



MIRELA ATANASIU Head of Unit Operations and Communications Fuel Cells and Hydrogen Joint Undertaking



SVEINUNG OFTEDAL Specialist Director, Department for Marine Management and **Pollution Control** Norwegian Ministry of Climate and Environment



IVAN ØSTVIK Project Manager Hydrogen Norled



**TONY FOSTER** CEO Marine Capital

MORNA CANNON Head of Maritime Technology and Clean Growth Department for Transport, UK



JAN EGBERTSEN Innovation Manager Port of Amsterdam





LORENZO POLLICARDO Technical & Environmental **Director Supervacht Builders** Association (SyBASS)



Director Clean Cargo

ANGIE FARRAG-THIBAULT



LUDOVIC LAFFINEUR Policy Manager - Maritime, Aviation and Ports Hydrogen Europe



NATACHA STAMATIOU Research Analyst **Environment Defense Fund** 



JOE DOLESCHAL-BIDNEL Senior Trade & Investment Manager The Government of Western Australia



LARS ROBERT PEDERSEN Deputy Secretary General **BIMCO** 

Fluxys

LEANDER HANEGREEFS Innovation Projects Developer





MARK BAMFORD Director **Credit Suisse** 





**DR GILLIAN REYNOLDS** Chair, Marine Fuels and Emissions **IMAREST** 



KLAAS VISSER Associate Professor Marine Engineering Delft University of Technology



BERT VAN DER TOORN Managing Director Energy Sector ING



JOEP GORGELS Managing Director **ABN** Amro



**ROB STEVENS** Ammonia Energy & Shipping Fuel, Climate Neutral Solutions Yara



3

## THE WORLD'S LEADING EXPERT SPEAKERS



DR IGOR SAUPERL Project Coordinator HyMethShip

HANS VAN CLEEF

ABN Amro

Senior Energy Economist



ANDERS VALLAND Research Manager, Maritime Energy Systems SINTEF Ocean

CALUM MACDONALD

Point and Sandwick Power

Project Manager



HANS VRIJENHOEF Board Member Ammonia Energy Association

PRASANNA COLLURU

Future Proof Shipping

Director of Corporate Strategy



#### PROF. ROBERT STEINBERGER-WILCKENS

Professor in Fuel Cells and Hydrogen Research University of Birmingham



#### CRISTIANO FRANCESE Hydrogen Shipping Course Leader



JUAN CAMILO GÓMEZ TRILLOS Research Associate DLR Institute of Networked



MARIE HUBATOVA Manager, International Climate Environment Defense Fund



RICHARD WESTGARTH Maritime Research and Innovation UK (MarRI-UK)



ERIK SCHUMACHER Programme Officer National Organisation Hydrogen and Fuel Cell Technology



SJAAK KLAP Principal Environmental Advisor SGMF

**Energy Systems** 



RANDALL KRANTZ Senior Advisor Global Maritime Forum

### **EVENT TAKEWAYS**

**1. New insights** into future regulatory and market incentives for the decarbonisation of Shipping

2. A thorough assessment of the economic viability of hydrogen and ammonia as marine fuels **3. Financing options** for your alternative marine fuel initiatives

**4.** New contacts to help you move forward in your plans to future proof your business **5.** A rounded perspective on the benefits and risks of the available hydrogen storage and propulsion technologies

Market developments and regulatory incentives	
09.00cer Welcome to the inaugural World Hydrogen & Ammonia Shipping Forum	MADADH MACLAINE, Secretary General, Zero Emissions Ship Technology Association
09.15CET The European Commission's plans to drive zero emissions shipping by 2050	<b>ROBERT MISSEN</b> , Head of Innovation & Research,
<ul> <li>Upcoming research initiatives and funding coming out of DG Move and the opportunities for industry participation</li> <li>Future incentives and regulations that are under consideration at the European Commission</li> <li>What else needs to be done in order to achieve zero emissions shipping by 2050, from the European perspective?</li> </ul>	Directorate-General for Mobility & Transport, European Commission
09.40CET Shipowner Keynote: The drivers for moving to zero emissions shipping and the underpinnings of viable options for the deep-sea segment	ROGER STREVENS, Vice President, Global Sustainabili Wallenius Wilhelmsen
<ul> <li>What are the policy signals telling us about zero emissions as an industry?</li> <li>The role of emissions reduction in future proofing our business</li> <li>Our investigations into the use of ammonia fuel as a main energy carrier</li> <li>Timeframes and drivers for zero emission vessels entering the global fleet</li> </ul>	
10.00CET Questions and Discussion	
10.15CET Networking Lounge	
10.40 <sub>CET</sub> The Hydrogen Is Coming!	CHRISTIAN PHO DUC, Managing Director H2 Projects
An update from the leading green hydrogen production project developer on how global H2 production is scaling up and will be able to meet the demand for a clean new fuel from the maritime shipping sector • Understand the latest learnings from their project pipeline on how they intend to reduce production costs, as the hydrogen	SMARTENERGY

GLOBAL EXPERTS - DAY 1	Tuesday 3 <sup>rd</sup> November 2020		
	ALL TIMINGS ARE CENTRAL EUROPEAN TIME (CET)		
<ul> <li>11.00<sub>CET</sub> Shipowner Panel: The potential for hydrogen and ammonia for powering our fleets: drivers, risks and strategies</li> <li>What roles do we predict for hydrogen and ammonia in the different shipping segments?</li> <li>Financial, safety and other risks that stand in the way of investment in zero emission fuels</li> <li>What do we need to see from governments, regulators and ports to move forward toward a low or zero emission future?</li> <li>Will the market drive us faster than the regulations? What pressure are we seeing from our customers, shareholders and other stakeholders?</li> <li>Will zero emission fleets become a key competitive advantage by 2030?</li> </ul>	Moderator: MADADH MACLAINE, Secretary General, Zero Emissions Ship Technology Association Speakers: POUL WOODALL, Director, Environment & Sustainability, DFDS PRASANNA COLLURU, Director of Corporate Strategy, Future Proof Shipping		
<ul> <li>11.50<sub>CET</sub> Keynote - How Norway and the IMO are shaping the future of green shipping</li> <li>Norway's 2019 Action Plan for Green Shipping: what the industry and supply chain needs to do to prepare for upcoming changes</li> <li>Foreseeable roles for hydrogen and ammonia fuels in shipping routes through Norwegian waters by 2030 and 2050</li> <li>The Green Shipping Programme private-public partnership and its plans for the development of hydrogen powered ships</li> <li>The IMO's GreenVoyage-2050 supporting developing countries in implementing the IMO GHG strategy</li> </ul>	SVEINUNG OFTEDAL, Specialist Director, Norwegian Ministry of Climate and Environment and Chair of the IMO Working Group on GHG		
<ul> <li>12.10<sub>CET</sub> The UK's Maritime 2050 strategy: paving the way for zero emissions shipping</li> <li>The main aims of the Maritime 2050 Strategy</li> <li>Hydrogen's role in the future of the UK's Maritime industry</li> <li>R&amp;D funding initiatives available to support the Strategy</li> <li>New regulations under consideration to incentivise the decarbonisation of Shipping</li> <li>Plans for fostering collaboration throughout the Maritime and Energy supply chains</li> </ul>	<b>MORNA CANNON</b> , Head of Maritime Technology and Clean Growth, <b>Department for Transport, UK</b>		
12.30CET Q&A with last session's speakers			
<ul> <li>12.50<sub>CET</sub> Interactive Panel: The evolution of incentives and regulations for GHG emission reduction in shipping</li> <li>Customer expectations: will zero emissions shipping become a key differentiator in future shipping markets and how will this drive marine fuel trends?</li> <li>Port authorities' special levies, rules and incentives: what role will they play in making alternative fuels more attractive than fossil fuels?</li> <li>IMO, European and national regulations and incentives for the reduction of emissions in Shipping: what are the future policy signals and how must the industry prepare for them?</li> </ul>	LARS ROBERT PEDERSEN, Deputy Secretary General, BIMCO Speakers: MIRELA ATANASIU, Head of Unit Operations and Communications, Fuel Cells and Hydrogen Joint Undertaking		

<b>13.50</b> <sub>CET</sub> Expert Presentation: The economics of hydrogen compared to fossil fuels, now and in the future	HANS VAN CLEEF, Senior Energy Economist, ABN Amro
<ul> <li>Recent trends in diesel and LNG marine fuel markets and pricing</li> <li>Hydrogen fuel demand, supply and pricing around the world: the current situation</li> <li>Considering the 20 - 30-year life of a ship, how will the prices of fossil fuels and hydrogen evolve over this time period?</li> <li>The IMO's GreenVoyage-2050 supporting developing countries in implementing the IMO GHG strategy</li> </ul>	
Developing the zero-emissions marine fuel supply chain	

<ul> <li>14.15CET Keynote: Scaling up hydrogen and building a viable supply chain for marine fuel</li> <li>An overview of the major projects underway to realise the supply and infrastructure requirements of Europe's Maritime industry</li> <li>The challenges we face in scaling up hydrogen as a major marine fuel</li> <li>What is required to build the infrastructure needed to support zero emission shipping in Europe?</li> </ul>	LUDOVIC LAFFINEUR, Policy Manager – Maritime, Aviation and Ports, Hydrogen Europe
--	--

<ul> <li>14.40<sub>CET</sub> Case study: Building the hydrogen hub of the future</li> <li>The funding structure for the hydrogen hub</li> <li>Working across the supply chain with industrial partners, utilities, technology partners and government to make the project happen</li> <li>The technology and design decisions we have made for the electrolysis, storage and bunkering infrastructure</li> <li>Hydrogen fuel capacities we expect to be able to offer to ship owners once the hub is operational</li> <li>Plans for future developments at the Port of Amsterdam</li> </ul>	JAN EGBERTSEN, Innovation Manager, Port of Amsterdam
---	---

### 15.00<sub>CET</sub> Q&A with last session's speakers

15.30 <sub>CET</sub> Panel: The availability of hydrogen for maritime fuel: the current situation and future market scenarios	Defense Fund
<ul> <li>The green hydrogen fuel life cycle</li> <li>Research and development of hydrogen marine fuel production, storage and bunkering facilities throughout the major global shipping routes</li> <li>The amount of renewable energy required to produce green hydrogen and the projected available volumes for 2030 and 2050</li> <li>Future scenarios: how much hydrogen might we require as an industry by 2030 and 2050?</li> <li>What role is the international transport of green hydrogen likely to play in our future energy economy?</li> </ul>	Speakers: LEANDER HANEGREEFS, Innovation Projects Developer Fluxys CALUM MACDONALD, Project Manager, Point and Sandwick Power CRISTIANO FRANCESE, Hydrogen Shipping Course Leader

<ul> <li>16.10<sub>CET</sub> Keynote: The role that green ammonia can have in the future as a fuel and as a fuel reserve.</li> <li>Viable pathways for reducing the amount of carbon dioxide produced during the ammonia manufacturing process.</li> <li>Applications of ammonia as a zero-carbon marine fuel: potential for direct use in an ICE or fuel cell.</li> <li>Developing the green ammonia supply chain to decarbonise shipping.</li> <li>Existing ammonia port storage and bunkering facilities around the world.</li> <li>Guidance on the technical safety and environmental risks of storing, transporting and using ammonia as a marine fuel.</li> <li>Ammonia as an energy carrier. overcoming the chemical difficulties with extracting hydrogen from ammonia.</li> <li>Lining up stakeholders along the entire supply chain: what needs to be done to make green ammonia a viable alternative fuel?</li> </ul>	PROFESSOR BILL DAVID, Fellow of the Royal Society & Professor of Chemistry, University of Oxford
--	---

	JOE DOLESCHAL-RIDNEL, Senior Trade & Investment Manager, The Government of Western Australia
--	---

## Financing the transition to zero emission fuels

<ul> <li>16.55<sub>CET</sub> Panel: Financing the transition to hydrogen and ammonia as major maritime fuels</li> <li>Credit products available of the decarbonisation of shipping and its supply chain</li> <li>Commercial and development banks' criteria for financing hydrogen and clean shipping projects</li> <li>Government funding routes and PPPs</li> <li>The potential of PPAs in underpinning the development of the onshore infrastructure</li> </ul>	Moderator: MARK BAMFORD, Director, Credit Suisse Speakers: JOEP GORGELS, Managing Director, ABN Amro Bank BERT VAN DER TOORN, Managing Director Energy Sector, ING HANS VRIJENHOEF, Board Member, Ammonia Energy Association TONY FOSTER, CEO, Marine Capital
--	---

The ammonia, hydrogen and alternative fuel bunkering projects that will be funded by the DfT/MarRI-UK innovation fund Expected timeframes and outcomes for each of the projects and how they fit into the UK's Maritime 2050 roadmap How industry can get involved in the MarRI-UK innovation programmes to take proven research forward to proof of concept <b>9.20</b> CET Case study: Norled's car ferry Hydra: world's first LH2 driven vessel Developing and building world's first LH2 driven vessel Utilising IMO's alternative design approach in liaison with the Norwegian Maritime Authority to ensure a safe design and operation Applying lessons learned to develop hydrogen powered high speed passenger vessels The need to develop the LH2 supply chain in order to support planned maritime projects	IVAN ØSTVIK, Project Manager Hydrogen, Norled
Developing and building world's first LH2 driven vessel Utilising IMO's alternative design approach in liaison with the Norwegian Maritime Authority to ensure a safe design and operation Applying lessons learned to develop hydrogen powered high speed passenger vessels	
Utilising IMO's alternative design approach in liaison with the Norwegian Maritime Authority to ensure a safe design and operation Applying lessons learned to develop hydrogen powered high speed passenger vessels	on
9.40 <sub>CET</sub> Q&A with last session's speakers	
D.10CET Break	
D.40cer Case study: H2Ships: design concepts and data from our hydrogen ship and refuelling roject	PROF. ROBERT STEINBERGER-WILCKENS, Profess in Fuel Cells and Hydrogen Research, University of Birmingham
2SHIPS will demonstrate the technical and economic feasibility of hydrogen bunkering and propulsion for shipping and will identif e conditions for successful market entry for the technology. How the project has been funded and structured among the 13 partners The design concepts and predicted energy efficiency of the hydrogen powered port vessel Initial data from the testing of our hydrogen refuelling system for open sea operation Plans for the implementation of an H2SHIPS pilot on the River Seine in 2022	
<b>1.20</b> <sub>CET</sub> Case study bundle: The e4Ships cluster: piloting fuel cells and alternative fuels for inland nd sea going vessels	ERIK SCHUMACHER, Programme Officer, National Organisation Hydrogen and Fuel Cell Technology, Germany
The e4Ships cluster project structure, partnership model and funding arrangements Technologies being tested through the projects, results from our demonstrators and our development of market ready low carbo vessels Learnings from the projects that will be transferred to the IMO to feed into new regulations	

## CONTENT RICH AGENDA - DAY 2

1	1.40 <sub>CET</sub> Case study: HyMethShip – on the way to zero emission shipping	DR IGOR SAUPERL, Project Coordinator, HyMethShip
cc m	e HyMethShip (Hydrogen-Methanol Ship Propulsion System Using On-board Pre-combustion Carbon Capture) represents a mpletely new approach for marine propulsion that can be based entirely on renewable energy. HyMethShip innovatively combines ethanol steam reforming and hydrogen separation in a membrane reactor with a CO2 capture system and a hydrogen-fuel mbustion engine in one integrated system. The project coordinator, Dr Sauperl, will talk you through:	
•	How the propulsion system works and why this configuration was chosen The life cycle and life cost assessment model for the project Setting up the hydrogen supply chain and closing the CO2 loop from the ship propulsion system Setup of the technology demonstrator and the first test results Insights into the ship design of a RoPax vessel adapted for the HyMethShip system	

12.00<sub>CET</sub> Q&A with last session's speakers

12.30CET Lunch Break

<b>13.40</b> <sub>CET</sub> Case study: Hydrogen fuel cell inland container cargo ship: the economic and technical models	Moderator: MADADH MACLAINE, Secretary General, Zero Emissions Ship Technology Association
<ul> <li>How we financially structured the zero-emission cargo ship project</li> <li>Working with partners across the supply chain to realise the design and development of the vessel</li> <li>Our data from madelling the efficiency and reliability of different propulsion systems and fuels</li> </ul>	Speaker: PRASANNA COLLURU, Director of Corporate Strategy, Eutore Dreef Shinping
<ul> <li>Our data from modelling the efficiency and reliability of different propulsion systems and fuels</li> <li>The design for the onboard systems and how they work</li> <li>Potential pathways for the large-scale commercialisation of the vessel</li> </ul>	Future Proof Shipping

14.00cer Case study: Ammonia Marine Fuel	<b>ROB STEVENS,</b> Ammonia Energy & Shipping Fuel, Climate Neutral Solutions, <b>Yara</b>
<ul> <li>Safe ammonia production, storage and logistics is proven at scale</li> <li>Green ammonia production is in planning and engineering stage</li> <li>Grey ammonia is a de-risked starting point</li> <li>Back to the Future: ammonia energy for food and fuel</li> </ul>	

#### ALL TIMINGS ARE CENTRAL EUROPEAN TIME (CET)

<ul> <li>14.20<sub>CET</sub> Case study: FreeCO2ast: Zero-Emission ROPAX vessel project utilising batteries and hydrogen fuel cells</li> <li>The challenge: to develop a solution that enables large vessels to sail with zero emissions over coastal stretches at high speed, with up to five times greater distance achieved without GHG emissions than other existing or planned vessels.</li> <li>Leveraging the expertise within the FreeCO2ast consortium</li> <li>How will the onboard system work and what were the technical challenges to overcome during the design phase?</li> <li>What energy efficiency and performance do we expect to achieve from our testing and modelling of the hybrid system?</li> <li>What will our project mean for other ship owners wishing to decarbonise their operations?</li> </ul>	Moderator: MADADH MACLAINE, Secretary General, Zero Emissions Ship Technology Association Speaker: ANDERS VALLAND, Research Manager, Maritime Energy Systems, SINTEF Ocean
<ul> <li>14.40<sub>CET</sub> Case study: Hyseas III: progress on the world's first sea-going hydrogen-powered RoPax ferry</li> <li>Our approach to the design of the vessel and the integration of components</li> <li>Addressing the economic challenges: hydrogen fuel production costs and availability outside of the Orkney Island area</li> <li>Results of the onshore trialling of the prototype under operational conditions: energy consumption and safety data</li> <li>Next steps required to reach deployment of the vessel</li> </ul>	Moderator: MADADH MACLAINE, Secretary General, Zero Emissions Ship Technology Association Speaker: JUAN CAMILO GÓMEZ TRILLOS, Research Associate, DLR Institute of Networked Energy
15.00cet Q&A with last session's speakers	

15.20CET Afternoon Break

<ul> <li>next steps across the supply chain</li> <li>Clean fuel production: scenarios for the scaling-up of blue and green hydrogen and ammonia</li> <li>The conversion of port infrastructure to allow for hydrogen and ammonia: what is possible?</li> <li>Retrofitting existing vessels to utilise zero emissions fuels: which engines are permissive to other fuels and what are the additional requirements for onboard facilities?</li> <li>Radical solutions for fast deployment of zero emissions fuels versus gradual developments</li> <li>Who will pay for these next crucial steps in the greening of shipping?</li> </ul>	INE, Secretary General, Zero Emissions Association ssociate Professor Marine Engineering,
--	---

17.15CET Chair's closing remarks
MADADH MACLAINE, Secretary General, Zero
Emissions Ship Technology Association

## 1. BUILD YOUR STRATEGY

Develop your business case, financial model and technical plans for becoming a leader in the decarbonisation of the Shipping industry, future proofing your business in preparation for the zero emissions economy.

## 2. GAIN INSIGHT & INTELLIGENCE

In just two days, you will receive expert updates on:

- Which onboard and infrastructure technologies are most suited to your fleet?
- Plans for future regulatory and financial pressure from the European Commission, Norway, the UK, the IMO and port authorities
- The economics and future pricing of hydrogen marine fuel
- Financing options available for pilot projects and scaling up
- How to overcome the fuel supply issues in your areas of operations
- Why you need to offer zero emission shipping to remain competitive

## 3. INTERACTIVE FORMAT - QUESTIONS ANSWERED



The World Hydrogen & Ammonia Shipping Forum will bring you expert presentations and concrete case studies from the first hydrogen pilot projects, followed on by the opportunity to discuss the in-depth issues in panel discussions and Q&As with a representative mix of leaders from across the entire Maritime and Energy supply chain.

## WHAT YOU WILL TAKE AWAY FROM THIS EVENT?

New insights into future regulatory and market incentives for the decarbonisation of Shipping

A thorough assessment of the **economic viability of hydrogen** and ammonia as marine fuels

 $\bigcirc$ 

Financing options for your alternative marine fuel initiatives

New contacts to help you move forward in your plans to future proof your business

A rounded perspective on the benefits and risks of the available hydrogen storage and propulsion technologies

## SPONSORSHIP OPPORTUNITIES



# World Hydrogen & Ammonia Shipping Forum

Ship owners are feeling the pressure now to offer zero emissions shipping to their customers and are now scouting for solutions to remain competitive.

**Join us** as a sponsor at the World Hydrogen and Ammonia Shipping Forum and position yourself as a leader in the decarbonisation of the shipping supply chain.

Whether you are targeting shipowners, energy companies, ports or all of the above, you will find the right decision makers at the right time at this ground breaking inaugural event.

## Get Involved! PLEASE CONTACT:



Oliver Sawyer Head of Sponsorship oliver.sawyer@greenpowerglobal.com +44 (0)203 355 4208

## WHAT SPONSORSHIP OPPORTUNITIES DO WE OFFER?

## THOUGHT LEADERSHIP

Join one of our strategic or technical panels to demonstrate your hard-won expertise in the Maritime and Energy sectors. Becoming a Green Power speaker opens up new doors in conversations, being promoted alongside buy-side senior managers in our speaker faculty throughout our extensive campaign. Share insights and commentary across your networks and ours, detailing your knowledge and future predictions.



## BRANDING

Wrap your brand around this pioneering alternative fuel conference by becoming a major partner at this critical time in the scaling up of the industry. Be the brand that comes top of mind as key decisions makers draw up their plans for moving their fleets toward clean, green marine fuels



## PRIVATE NETWORKING VIRTUAL ROOMS

Invite your key clients and prospects to the World Hydrogen and Ammonia Shipping Forum and reach them screen to screen in an environment designed for business.

## SECURE YOUR PLACE

## **OPTION 1**

○ Gain full access to the World Hydrogen & Ammonia Shipping Forum

Gain full year subscription to World Hydrogen Leaders Platform

> \$999.99 USD

includes full access to World Hydrogen Leaders Platform

## **OPTION 2**

Gain full access to the World Hydrogen & Ammonia Shipping Forum

#### \$399.99 USD

includes all recordings/presentations for the live conference and access to networking lounge.

### **UPCOMING HYDROGEN TRAINING COURSES**

### **HYDROGEN POLICY**

Approaches - Tools - Outlook

19<sup>th</sup> • 20<sup>th</sup> November 2020 2 Days Course - 3 Hours per day

#### This course will provide participants with

- An in-depth understanding of hydrogen policy -
- The most effective approaches in defining it
- The terms of effective policy tools that can be put in place to support the development of a hydrogen economy.
- Effective approaches to hydrogen policy build on understanding key criteria that determine its effectiveness
- A look at the tools to design and implement effective hydrogen policies.
- A variety of hydrogen policies that have been published recently to allow participants to gain first-hand understanding on how they are evolving worldwide,
- How hydrogen policy could be in the future with analysis of the geopolitical effects of such policies

Cost per delegate:

£499

### DECARBONISING SHIPPING

Strategies - Pathways - Business Models

9<sup>th</sup> • 10<sup>th</sup> • 11<sup>th</sup> December 2020 3 Days Course - 3 Hours per day

This course will provide participants with

- A clear understanding of the key issues around decarbonisation of the maritime shipping sector
- Strategies that shipping companies can put in place to achieve decarbonisation
- Possible scenarios for shipping decarbonisation in the future and the outlook of different alternative fuels
- Insights to face future challenges in the shipping industry
- Effective strategies for decarbonisation in this industry

Cost per delegate:

- £599

### Book both of the above courses for just £999 - saving you £99!

Looking to send more than one delegate or interested in running this course as an in-house training?

Contact us via jonathan.hull@greenpowerglobal.com

to discuss our multiple booking discounts and in-house training programme.



Why have **over 600 Energy Executives** joined the World Hydrogen Leaders platform in the past 4 months?

**1** To access indepth **online Hydrogen Conferences** see the side listing for past and upcoming conferences that you can access. In total **over 200 separate presentations**, **panels and interviews** are accessible.

2 We create new hydrogen experts through the **18 hour Hydrogen "Zero to Hero" Online training course**, now in its 4th edition we have had over 120 graduates to date who have enriched their careers by attending the live workshops.

**3** We have run and developed another **7 hydrogen online training courses** including Hydrogen & China, Hydrogen Policy, Wind & Hydrogen, Green Hydrogen, Geopolitics of Hydrogen. These are all scheduled to be run in 2020 and Q1 2021. All members can attend at reduced rates.

**4** We recently held the **World Hydrogen Congress** digitally and had **1300 attendees** listen to **85 of the World's leading hydrogen authorities.** We are now working on the World Hydrogen Congress – Live to take place in a hybrid format in September 2021 to take place in the Vienna Congress Centre and have secured 16 sponsors and are planning the agenda of around 200+ senior speakers. All members can attend at reduced rates.

**5** We have developed **2 Hydrogen Reports (Hydrogen Policy and Hydrogen Shipping)** and members access the **quarterly reports** going forwards. We will shortly be releasing the China Hydrogen Vehicle Index to track the impact of that key growing market.

**6** We now provide a much anticipated **weekly analysis of the hydrogen news** - *This Week in Hydrogen* - to our members

## PAST AND UPCOMING CONFERENCES

MAY 2020	JUNE 2020
HYDROGEN	HYDROGEN ROLL OUTS
POLICY	& CASE STUDIES
JULY 2020	AUGUST 2020
SOLAR + HYDROGEN	FINANCE & INVESTMENT
SEPTEMBER 2020	SEPTEMBER 2020
HYDROGEN REGULATION,	AUSTRALIAN
SAFETY & STANDARDS	HYDROGEN
OCTOBER 2020	OCTOBER 2020
LARGE SCALE	GERMAN HYDROGEN
ELECTROLYSIS	SCALE-UP
NOVEMBER 2020	NOVEMBER 2020
CANADIAN HYDROGEN	HYDROGEN & AMMONIA
CANADIAN HYDROGEN	HYDROGEN & AMMONIA
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING	HYDROGEN & AMMONIA SHIPPING FORUM
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING THE GAS GRID	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021 STORAGE ABOVE & UNDERGROUND
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING THE GAS GRID FEBRUARY 2021	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021 STORAGE ABOVE & UNDERGROUND MARCH 2021
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING THE GAS GRID	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021 STORAGE ABOVE & UNDERGROUND
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING THE GAS GRID FEBRUARY 2021 WIND +	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021 STORAGE ABOVE & UNDERGROUND MARCH 2021 FUEL
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING THE GAS GRID FEBRUARY 2021 WIND +	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021 STORAGE ABOVE & UNDERGROUND MARCH 2021 FUEL
CANADIAN HYDROGEN SCALE-UP DECEMBER 2020 DECARBONISING THE GAS GRID FEBRUARY 2021 WIND + HYDROGEN	HYDROGEN & AMMONIA SHIPPING FORUM JANUARY 2021 STORAGE ABOVE & UNDERGROUND MARCH 2021 FUEL CELLS