



World Hydrogen Congress

22 - 24 September 2020

Online Event

www.worldhydrogencongress.com



2.5 DAYS



90+ THOUGHT LEADERS



OVER 35 VIRTUAL SESSIONS

WORKING TOWARDS A ZERO EMISSION WORLD

Innovative and emerging strategies for the growth and sustainability of the hydrogen industry

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WELCOME TO THE WORLD HYDROGEN CONGRESS

The World Hydrogen Congress is the leading annual meeting place for senior executives working in the field of hydrogen production, transportation, distribution, storage, policy and end use applications.

The global energy markets are in transition led by the technological disruption of renewable energy power, digital technologies and the need to decarbonize the power generation, mobility and heat energy markets in the face of the rapidly evolving climate reality. Hydrogen is a rapidly growing solution to decarbonizing power generation, energy storage, cost efficient drivetrains and industrial heat markets.

The World Hydrogen Congress invites you to be part of an innovative platform of thought leaders, exchanges and debates between key hydrogen stakeholders, technology & science providers and world leading industry views in just 2 intense, information rich days.



“ Green Power Global organized a great event with knowledgeable speakers and frequent networking opportunities”

Mattan Shrager, Ecoplexus

WHAT IS THE WORLD HYDROGEN CONGRESS?

An in-depth, intense, unique meeting of the world's leading commercial hydrogen minds

Laser focused on increasing hydrogen production, reducing costs across the whole value chain & scaling up the whole hydrogen market

The whole value chain from policy & regulation, production, transportation & distribution and end users

Exposure to all market segments
Energy, mobility and industry

Innovative technology and solutions to meet the needs of the rapidly growing hydrogen market

Global case studies where you can meet the key stakeholders & learn best practice from early adopters

MEET THE WORLD HYDROGEN CONGRESS SPEAKERS



JORGO CHATZIMARKAKIS
Secretary General
Hydrogen Europe



STEPHAN HERBST
Technical General Manager
Toyota Motor Europe &
Representative Hydrogen Council



EVA HENNIG
Head of Department
Policy Issues
Thüga



DR ANITA SENGUPTA
Associate Professor of Astronautics,
University of Southern California &
Founder, Hydroplane Ltd



SOONIL JEON
Head Fuel Cell Engineering
Design Group
Hyundai Motor Group



KOOS OVERWATER
Vice President - New
Technologies
Technip FMC



TIMM KEHLER
Chairman
Zukunft Erdgas



ALICE VIEILLEFOSSE
Director of cabinet of the general
directorates of energy and climate
Ministry for the Ecological
and Inclusive Transition - France



CAROLINE HILLEGEER
EVP, Hydrogen Business Unit,
Chief Commercial Officer
Engie



TIMUR GUEL
Head of Energy
Technology Perspectives
IEA



ULF ERIKSEN
Vice President of
Hydrogen
Statkraft



JESSE SCHNEIDER
Executive Vice President,
Technology, Hydrogen & Fuel
Cells
Nikola Motor



STEINAR EIKAAS
Head of Low Carbon Solutions
EQUINOR



BENEDIKT UNGER
Decarbonisation Expert
AFRY



GILES DICKSON
Chief Executive
Officer
Wind Europe



NOE VAN HULST
Hydrogen Envoy
Ministry of Economic
Affairs and Climate Policy,
The Netherlands



KONSTANTIN ROMANOV
Head of Division & Executive
Secretary, Coordinating committee
on environmental protection and
energy efficiency, Gazprom



AXEL WIETFELD
Managing Director
Uniper Energy
Storage



HANS COENEN
Vice-president Corporate Strategy
& Business Development
Gasunie



MICHAEL LOSCH
Director General
Austrian Federal Ministry
for Sustainability



FRANK WOUTERS
Global Lead Green
Hydrogen
Worley



ROBERT MISZEN
Head of the Innovation & Research Unit
Eu Commission Directorate
General for Mobility and
Transport



PATRICE DOMENGE
Director of Engineering
and R&D
Swiss Mobility



TIM HARWOOD
Head of Programme
Management
Northern Gas Networks

MEET THE WORLD HYDROGEN CONGRESS SPEAKERS



ED SYSON
*Chief Safety &
Strategy Officer*
Cadent



CHRISTIAN PHO DUC
*Managing Director of
Smartenergy Projects*
SMARTENERGY



JAMES WATSON
Secretary General
Eurogas



GABRIELLE GAUTHEY
*Vice President - Carbon
Neutrality Businesses*
Total



LAURENT CARME
Chief Executive Officer
McPhy



ARNAUD BERTHET
*Chief Business
Development & Strategy
Officer*
Storengy



BENJAMIN GRUNFELD
*Partner, Energy, Sustainability,
and Infrastructure*
Guidehouse



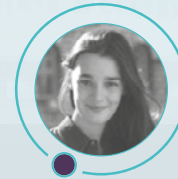
MATTHEW HARWOOD
*Global Vice President of Strategy,
Risk and Sustainability*
McDermott



ERIC SEBELLIN
*Marketing and Strategy
Director, Hydrogen Energy*
Air Liquide



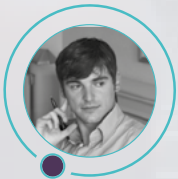
BERT VAN DER TOORN
*Global Lead Mid / Downstream
Oil & Gas. Biofuels & Hydrogen*
ING Bank



NATACHA STAMATIOU
Research Analyst
Environmental Defence
Fund



EVE TAMME
Senior Advisor
Global CCS
institute



DRIES ACKE
*Director, Energy Systems
Programme*
European Climate
Foundation



RUDOLF ZAUNER
Head of Hydrogen
Verbund



WALBURGA HEMETSBERGER
Chief Executive Officer
Solar Power Europe



YANN ARDOUIN
*Product Management, Business
Excellence and Quality Director*
Howden



THIERRY TROUVÉ
*Chief Executive
Officer*
GRTgaz



MARIE GODARD PITHON
Deputy Director, Hydrogen
Vicat



CHRIS JACKSON
Founder & CEO
Protium



GERT VAN HECKE
Head of sales
Van Hool



JEAN-MARC LEROY
*Senior Vice President,
Infrastructure*
Engie



STÅLE AAKENES
Chief Economist
Gassnova



RENE SCHUTTE
Program Manager
Hydrogen
Gasunie



MARTIN TENGLER
Senior Associate
Bloomberg NEF

MEET THE WORLD HYDROGEN CONGRESS SPEAKERS



THOMAS HILLIG
Managing Director
THERGY



CORY SHUMAKER
Development Specialist
California Hydrogen
Business Council



ULRIK STRIDBAEK
Vice President, Head
of Regulatory Affairs
Ørsted



THIERRY LEPERCQ
Founder Soladvent
& Author "Hydrogen is the
new Oil"



DR TUDOR CONSTANTINESCU
Principal Advisor – DG for Energy
EC Commission



FERNANDO DE SISTERNES
Energy Specialist & lead on the
Energy Storage Partnership
Program
The World Bank



STEFAN REICHELSTEIN
Director
Mannheim Institute for
Sustainable Energy Studies



CHARLES-HENRI ROBERT
Executive Director - Climate
Change & Energy
CEFIC (European Chemical
Industry Council)



YVES VERCAMMEN
Director Transformation
Projects,
Fluxys



KEITH WHIRISKEY
Deputy Director
Bellona



CHRISTA SYS
BNP Paribas Fortis Chair on
Transport, Logistics and Ports
University of Antwerp



TOM CUNNINGTON
Head of Business
Development
Transport for London



SYLVIE PERRIN
Partner
De Gaulle Fleurance &
Associés



CARSTEN ROTHBALLER
Coordinator Sustainable Resources,
Climate & Resilience
European Secretariat
ICLEI



JOHN MASSEY
Managing Director
Grey Cells Energy Ltd.



**JEAN-PASCAL
PHAM-BA**
Chief Executive Officer
Scale



**PEDRO GUEDES
DE CAMPOS**
Financial Engineering
Officer
FCH Europe



**REAR ADMIRAL (RET)
KLAAS VISSER**
Associate Professor – Marine
Engineering
TU Delft



SABINE AUGUSTIN
Head of Strategy
Open Grid Europe



VALÉRIE CAZABAN
Chief Financial
Officer
H2V Product



TOMASZ PELC
President
Nexus Consultants & Polish
Hydrogen Cluster



PHILIPPE BOUCLY
President
Afhypac



DR. ALENA FARGÈRE
Principal
Swen Capital Partners



MARC OLIVER BETTZÜGE
Head of the Chair of Energy
Economics - Department of
Economics
University of Cologne

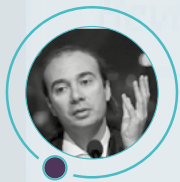
MEET THE WORLD HYDROGEN CONGRESS SPEAKERS



COSMA PANZACCHI
*Executive Vice President -
Business Unit Hydrogen*
Snam



OLIVIER MENUET
*Senior Vice
President Energy*
SNCF Group



EMANUELE TAIBI
*Power Sector Transformation
Strategies*
IRENA



**SØREN BJERREGAARD
PEDERSEN**
CEO
Hydrogen Valley



DAN SADLER
Low Carbon Solutions
Equinor



TORBEN BRABO
*Chief Executive
Officer*
Energinet



YURIY MELNIKOV
Senior Analyst - Power & Utilities
SKOLKOVO Energy Centre, Moscow
School of Management, Russia



CRISTIANO FRANCESE
*Lecturer - Sustainable Energy
and Multi-Sector Strategies
for Sustainability*



JOOST SANDBERG
New Business Manager
Nouryon



KAJSA KAIRENTO
*Strategy & Business
Development Advisor*
Vattenfall



DAVID GILL
Director of Stakeholder Relations
Northern Gas Networks



GEERT DE COCK
Electricity & Energy Manager
Transport & Environment



MARK FREED
*Head of Market
Development*
AngloAmerican



HANS-JOACHIM POLK
*Member of the
Executive Board*
VNG

THE KEY CHALLENGES IN THE MARKET



Regulatory developments & standards

Some regulations currently limit the development of a clean hydrogen industry so the event will tackle what it will take to achieve the 2050 long term climate change strategy with hydrogen, which barriers to hydrogen deployment need to be removed and which incentives need to be put in place.



Hydrogen demand & global economics

Whilst hydrogen supply is often discussed, demand is less so. We will be analysing how big the hydrogen market really can be and what will drive world demand growth and how it might be priced. Understanding the global hydrogen economics is key are well in terms of where the tipping point is for investment flows into different regions.



Production

Producing hydrogen from low-carbon energy is currently quite costly. We will be discussing what it will take for the declining of costs of renewables and the scaling up of hydrogen production. Also how refuelling equipment and electrolyzers could all benefit from mass manufacturing to bring costs down.



Hydrogen in the gas grid

Decarbonising the gas grid and maritime transportation are the next frontiers of energy transition. Whilst there are many projects around the world (some of which we will be showcasing) that are examining the possibility of using existing natural gas infrastructure to deliver hydrogen to end users, to what extent are existing pipes suitable for hydrogen? What regulatory & technical hurdles need to be overcome?



Maritime transportation

With roughly 90% of the world's goods transported by sea there are steps for developing hydrogen-powered fuel cells for ship propulsion in order to reduce air pollutants and noise emissions. In the shipping industry diesel engines are used almost exclusively today and as in aviation, fuel cells are currently being tested as energy providers for the on-board power supply. However the use of hydrogen-powered fuel cells for ship propulsion is still at an early design or trial phase.



Blue hydrogen & CCUS

There has been a growing recognition of the importance of CCUS technologies in contributing towards energy and climate goals. However investment has fallen behind that of many other clean energy solutions. Policy support is critical for securing investing in CCUS. We will discuss the commercial viability of blue hydrogen and innovative technology alongside the range of policy options available.



Refuelling infrastructure

The development of hydrogen infrastructure is relatively slow and therefore holding back widespread adoption. Hydrogen prices for consumers depend on the number of refuelling stations and how often they are used. WHC discusses the need for investment, planning and coordination between industry stakeholders, debating the obstacles that need to be overcome.



Encouraging investment in the hydrogen economy

If the industry can scale up hydrogen in a co-ordinated way then this will encourage further investment in the hydrogen market. Business models are changing to enable a long term focus on energy transition but what will it take to lock in investors? The industry needs a better understanding of the political & insurance risk that impacts finance decisions alongside putting a project together.



Mobility

Making hydrogen fuelled transport a global reality has a huge amount of momentum at the moment, with steps in place to expand hydrogen in transport through fleets & freight. However the need to confirm the technical and commercial readiness of vehicles, fuelling stations and hydrogen production techniques is still paramount. We will address this and other issues alongside interviews with leading OEMs. Planes, trains, buses, trucks, cars & ports are all on the table!



Industry

Nearly 70 million tonnes of hydrogen is used today, notably in oil refining and chemical production. This hydrogen is currently produced from fossil fuels, with significant associated CO2 emissions. Hydrogen is also used in several industrial processes. However hydrogen use in refineries has increased in recent years for several different reasons from the strict regulations that require low sulphur in diesel to the increased consumption of low quality 'heavy' crude oil.

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IN ASSOCIATION WITH



09.00_{CET} Chair's welcome address

CHRISTIAN PHO DUC, Managing Director,
Smartenergy Projects

09.05_{CET} Pre-recorded: Post mortem update on regional hydrogen roadmaps: Is developing a sustainable European hydrogen market really achievable in light of the EU hydrogen strategy? How does this compare to the global picture?

- Enabling hydrogen to be a systemic solution to achieving a renewable world for energy (power & heat), mobility & industry
- Opportunities and challenges facing ultra-low carbon (green/blue) hydrogen to replacing grey hydrogen across the value chain
- What regulatory, financial and market developments need to happen for cost to come down and the infrastructure required for bulk production to scale up?

JORGO CHATZIMARKAKIS, Secretary General,
Hydrogen Europe

09.25_{CET} Pre-recorded: Beyond the hype: future hydrogen supply/demand scenarios

- How big can the hydrogen market really be?
- What will drive world demand growth of hydrogen and how will it be priced?
- An update on the short term global supply dynamics
- What are the medium term trends that are shaping the market?

STEFAN REICHELSTEIN, Director, Mannheim
Institute for Sustainable Energy Studies

09.45_{CET} Pre-recorded: From today to net zero carbon point: understanding the next steps towards achieving the European Commission's 2050 long term climate change strategy with hydrogen

- How much will this cost & where will investment come from?
- What policy & public perception barriers need to be overcome?
- Sector coupling and creating a united energy framework for electricity and gas

Moderator: FRANK WOUTERS, Global Lead Green
Hydrogen, Worley

DR TUDOR CONSTANTINESCU, Principal Advisor – DG
for Energy, EC Commission

NOE VAN HULST, Hydrogen Envoy, Ministry of
Economic Affairs and Climate Policy, The Netherlands

MICHAEL LOSCH, Director General, Energy and Mining,
Austrian Federal Ministry for Sustainability and Tourism

ALICE VIEILLEFOSSE, Director of Cabinet of the
General Directorate of Energy & Climate, Ministry for
the Ecological and Inclusive Transition

10.20_{CET} Morning break

10.40_{CET} Live + Q&A: An Investors Perspective why to bet on Hydrogen for Renewable Power Plants

- What is the motivation to make the Hydrogen “extension” ahead of parity
- What main choices to be made for on-grid and off-grid renewable power plants?
- What to avoid - lessons learned from previous technology transitions

CHRISTIAN PHO DUC, Managing Director of Smartenergy Projects, **SMARTENERGY**

11.00_{CET} Live + Q&A: Driving the global hydrogen economy & scaling up: creating infrastructure, policy framework, affordable technologies and investment

- What will it take to encourage and grow demand for green/blue hydrogen?
- Business models – how to invest in future infrastructure for energy, mobility and industry
- With hydrogen technologies reaching maturity how does the industry move from R&D to market activation?
- What is the cost base and when will it break even?

Moderator : **JAMES WATSON**, Secretary General, **Eurogas**

LAURENT CARME, Chief Executive Officer, **McPhy**
EVA HENNIG, Head of Department Policy Issues, **Thüga**
SOONIL JEON, Head of Fuel Cell Engineering Design Group, **Hyundai Motor Group**
JEAN-MARC LEROY, Senior Vice President, Infrastructure, **Engie**

11.40_{CET} Pre-recorded: Fireside chat: Financing Panel - Encouraging investment in the hydrogen economy: what business models will enable a long term focus on energy transition? Locking in investors

- What are the opportunities and constraints for the value chain and policy markers?
- What political & insurance risk impacts finance decisions?
- How do we step up to truly large scale projects commensurate with climate change targets quickly?
- Shifting from short term to long term investment models

Moderator : **PEDRO GUEDES DE CAMPOS**, Financial Engineering Officer, **FCH Europe**

DRIES ACKE, Director, Energy Systems Programme, **European Climate Foundation**
BERT VAN DER TOORN, Global Lead Mid / Downstream Oil & Gas, Biofuels & Hydrogen, **ING Bank**
FERNANDO DE SISTERNES, Energy Specialist & lead on the Energy Storage Partnership Program, **The World Bank**
DR. ALENA FARGÈRE, Principal, **Swen Capital**

12.20_{CET} Live + Q&A: Scaling up & timescale! The right technology, at the right time at the right scale: the grey to blue & green to green transition

- The international Trading of renewables option – what are the timescales for at scale green hydrogen
- What technologies are in the market / on the horizon to allow green hydrogen to organically develop alongside blue?
- Challenges to developing the supply chain – the importance of mega scale, large and small projects
- Regulation & encouraging investment.
- Storage - how to articulate the differences between gas storage and battery market to policy maker

BENJAMIN GRUNFELD, Partner, Energy, Sustainability, and Infrastructure, **Guidehouse**

Questions led by: **CHRISTIAN PHO DUC**, Managing Director of Smartenergy Projects, **SMARTENERGY**

12.40_{CET} Lunch break

13.10_{CET} Live + Q&A: Achieving low cost hydrogen production & conversion: what needs to happen to outperform fossil fuels?

- Given grid constraints means a lot of renewable capacity won't find a place on the grid, how can hydrogen opportunities support renewable deployment?
- Can renewables produce enough green hydrogen to meet our needs in the short term, and might hydrogen boost commitment to renewables? What about the rate of deployment?
- Flexible energy working alongside intermittent energy - Hydrogen power plants working alongside renewable deployment?
- Overcoming infrastructure constraints for true scale (1000s TWh?)
- Scaling the global supply chain for electrolysis – making green hydrogen economically viable
- Traceability: guarantees of origin – where are we?

Moderator : GILES DICKSON, Chief Executive Officer, Wind Europe

ULF ERIKSEN, Vice President, Hydrogen, **Statkraft**
WALBURGA HEMETSBERGER, Chief Executive Officer, **SolarPowerEurope**

HANS-JOACHIM POLK, Member of the Executive Board, **VNG**

GABRIELLE GAUTHEY, Vice President - Carbon Neutrality Businesses, **Total**

ULRIK STRIDBAEK, Vice President, Head of Regulatory Affairs, **Ørsted**

14.00_{CET} Live + Q&A: From isolated grey hydrogen to bulk available blue and green: decarbonising global gas markets: How can gas markets meet the demand in a low carbon economy?

- Working together to create an 'at scale' hydrogen market for the short medium and long term
- Developing and/or converting your assets for hydrogen use
- End User technology readiness levels - available vs affordable technologies

Moderator : MARC OLIVER BETTZÜGE, Head of the Chair of Energy Economics, Department of Economics, **University of Cologne**

HANS COENEN, Vice-president Corporate Strategy & Business Development, **Gasunie**

AXEL WIETFELD, Managing Director, **Uniper Energy Storage**

COSMA PANZACCHI, Executive Vice President - Business Unit Hydrogen, **Snam**

MATTHEW HARWOOD, Global Vice President of Strategy, Risk and Sustainability, **McDermott**

14.40_{CET} Live + Q&A: Complementarity or head to head? A rainbow of hydrogen – looking at the benefits, obstacles and costs

- **Green:** Global trading, removing constraints, timescales for renewable availability, timescale for scalability end to end?
- **Blue:** Enabling scale and infrastructure - benefits of SMR and methane pyrolysis

Moderator : TIMM KEHLER, Chairman, **Zukunft Erdgas**

KONSTANTIN ROMANOV, Head of Division & Executive Secretary, Coordinating committee on environmental protection and energy efficiency, **Gazprom**

ERIC SEBELLIN, Marketing and Strategy Director, Hydrogen Energy, **Air Liquide**

KOOS OVERWATER, Vice President – New Technologies, **TechnipFMC**

15.15_{CET} Pre-recorded: Decarbonisation of the gas grid – the next frontier of energy transition

- What are the opportunities & constraints to converting to 100% ultra-low hydrogen in Europe's gas grids?
- What regulatory & technical hurdles need to be overcome?
- To what extent are existing pipes suitable for hydrogen? The gas quality debate
- Making the right decisions to encourage investments

Moderator : TORBEN BRABO, Chief Executive Officer, **Energinet**

SABINE AUGUSTIN, Head of Strategy, **Open Grid Europe**

THIERRY TROUVE, Chief Executive Officer, **GRTgaz**

KEITH WHIRISKEY, Deputy Director, **Bellona**

YVES VERCAMMEN, Director Transformation Projects, **Fluxys**

ED SYSON, Chief Safety & Strategy Officer, **Cadent**

15.55_{CET} Afternoon break

16.15_{CET} Pre-recorded: Maritime transportation: What is the future pathway to the hydrogen-powered ship?

- Could fuel cells really become a main form of power?
- What infrastructure & safety development needs to happen to support widespread use?
- What technologies are out there to reduce Co2 and who pays for it?
- Ammonia – can this become the fuel of choice for maritime?

Moderator : **PATRICE DOMENGE**, Director of Engineering and R&D, **Alca-Torda Application REAR ADMIRAL (RET) KLAAS VISSER**, Associate Professor – Marine Engineering, **TU Delft**
ROBERT MISSEN, Head of the Innovation & Research Unit, **European Commission Directorate General for Mobility and Transport**
NATACHA STAMATIOU, Research Analyst, **Environmental Defense Fund**
CHRISTA SYS BNP Paribas Fortis Chair on Transport, Logistics and Ports **University of Antwerp**

16.55_{CET} Pre-recorded: Let's talk scale - blue hydrogen & CCS

- Innovative technology to capture co2: the costs behind blue hydrogen and strategies for reducing energy consumption
- Ensuring the commercial viability of blue hydrogen – who will invest?
- What are the opportunities and limitations of hydrogen storage? Salt caverns & depleted gas fields
- CCUS and hydrogen technology developed in regional industrial clusters

Moderator : **MARC OLIVER BETTZÜGE**, Head of the Chair of Energy Economics, Department of Economics, **University of Cologne**
EVE TAMME, Senior Advisor **Global CCS institute**
STÅLE AAKENES, Chief Economist, **Gassnova**
ARNAUD BERTHET, Chief Business Development & Strategy Officer, **Storengy**
DAN SADLER, Low Carbon Solutions, **Equinor**

17.30_{CET} Chair's round up of the day

16.15_{CET} Pre-recorded: Hydrogen - From Grey Refinery Commodity to Blue Energy Carrier

KOOS OVERWATER, Vice President – New Technologies, **TechnipFMC**

16.40_{CET} Live + Q&A: Italy Hydrogen Roll Out Strategy

- Policies, incentives and regulatory environment
- Building new production & distribution facilities for mobility markets
- Hydrogen fuel cells & port equipment opportunities
- Partnerships & creative financing schemes

COSMA PANZACCHI, Executive Vice President - Business Unit Hydrogen, **Snam**
Q&A facilitated by: **CARSTEN ROTHBALLER**, Coordinator Sustainable Resources, Climate & Resilience European Secretariat, **ICLEI**

PRE-RECORDED, ON DEMAND CONTENT AVAILABLE DURING DAY 1

Keynote Address: Portugal's Green Hydrogen Strategy

- Renewables Strategy & Industrial Production of Hydrogen

JOÃO GALAMBA, Secretary of State for Energy & Deputy Minister, **Portugal**

IRENA Green Hydrogen Forecast

EMANUELE TAIBI, Power Sector Transformation Strategies, **IRENA**

The Final Frontier: Hydrogen Powered Aviation & in Space

2 Rocket Engineers will discuss their thoughts and experience of how hydrogen has been used for decades to power space launches and the future prospects for hydrogen powered aviation with the Hydrogen community, rather than looking for some commercial exposure.

- History and Advantages of Hydrogen Mobility in Space Launches
- Future of Hydrogen in Space
- Technology Transition hydrogen fuelcells for Aviation
- What are the challenges to achieve Hydrogen Powered Aviation?

DR ANITA SENGUPTA, Associate Professor of Astronautics, University of Southern California & Founder, **Hydroplane Ltd**
JEAN-CHRISTOPHE HENOUX, Vice President- Future Programmes, **Ariane Group**

09.00_{CET} Chair's welcome address

MARTIN TENGLER, Senior Associate, [Bloomberg NEF](#)

09.10_{CET} Pre-recorded + Q&A: IEA world hydrogen update: given the decarbonisation of energy what are the challenges and solutions for the growth of the hydrogen economy?

- What will it take to have enough renewable power/energy at source?
- Can hydrogen and fuel cell technologies really support climate change and energy security goals?
- Accelerating the development and deployment of hydrogen and fuel cell technologies
- Overcoming risks related to investment in infrastructure

TIMUR GUEL, Head of Energy Technology Perspectives, [IEA](#)

09.40_{CET} Live + Q&A: Global hydrogen economics: where is the tipping point for investment flows into different regions?

- Where is the highest value add?
- Which countries and energies will become swing producers and what challenges do they face?
- Segmentation, size, market share & leading players
- Timescales for real ramp up of global trading for hydrogen

BENEDIKT UNGER, Decarbonisation Expert, [AFRY](#)
Q&A facilitated by: MARTIN TENGLER, Senior Associate, [Bloomberg NEF](#)

10.05_{CET} Live + Q&A: Equinor: Innovative strategies for offering markets a carbon neutral pathway using natural gas

- Blue hydrogen – the essential transition to a true hydrogen economy – unlocking green hydrogen as a link between power, industry and mobility
- Opportunities & barriers for converting natural gas into hydrogen
- What technologies are the most cost efficient?
- Applying large scale hydrogen solutions to clean flexible power production, industry and heat

STEINAR EIKAAAS, Head of Low Carbon Solutions, [Equinor](#)
Q&A facilitated by: MARTIN TENGLER, Senior Associate, [Bloomberg NEF](#)

10.25_{CET} Live + Q&A: Exploring the role of hydrogen as a link between the power, industry and mobility sectors

- What incentives are required to delivery hydrogen at scale to end users – how do we develop business models
- Where are the opportunities in energy flexibility, availability, security?
- What obstacles stand in the way of improved efficiency and cost-effectiveness in the energy transition?
- Why are hydrogen powered electric vehicles part of the future?

CAROLINE HILLEGEER, EVP, Hydrogen Business Unit, Chief Commercial Officer, [Engie](#)

10.45_{CET} Morning coffee break

11.10_{CET} Pre-recorded + Q&A: Hyundai: Spearheading global hydrogen mobility

- Strategies for putting the vision of strengthening your business operations across the hydrogen ecosystems into reality
- Developing a global mobility infrastructure network
- Aligning regulation
- Mobility technology – Hyundai's vision

SOONIL JEON, Head of Fuel Cell Engineering Design Group, **Hyundai Motor Group**

11.35_{CET} Live + Q&A: Hydrogen Council Keynote - Making hydrogen part of our fuel solution of the future

- The Hydrogen Council
- What needs to happen for hydrogen fuel cell vehicles to become cheaper than gasoline-powered cars?
- Hurdles to getting the whole value chain & stakeholders to work together
- Where can further cost reductions be taken?

STEPHAN HERBST, Technical General Manager, **Toyota Motor Europe**, Senior Representative, **Hydrogen Council**

11.55_{CET} Live + Q&A: Spotlight on: cars, trucks, buses & trains: exploring technology, high costs, a lack of infrastructure and the complexity of storing hydrogen

- Action plan for achieving energy and CO2 objectives
- Strategies for increasing deployment: volumes and cost
- What needs to happen for costs to be competitive with battery & gasoline cars?
- How can production scale up if infrastructure isn't in place?
- Which hydrogen/low carbon technologies are on the radar?
- Capex, partnerships and business models

Moderator: CHRIS JACKSON, Founder & CEO, **Protium**

TOM CUNNINGTON, Head of Bus Business Development, **Transport for London**

OLIVIER MENUET, Senior Vice President Energy, **SNCF Group**

JESSE SCHNEIDER, Executive Vice President, Technology, Hydrogen & Fuel Cells, **Nikola Motor**

GERT VAN HECKE, Head of Sales, **Van Hool**

YANN ARDOUIN, Product Management, Business Excellence and Quality Director, **Howden**

12.40_{CET} Pre-recorded + Q&A: Nikola Motor: Vertical Integration: Parallel Development of both the 40T Fuel Cell Trucks and HD Hydrogen Infrastructure

- What barriers must be overcome for a coast to coast hydrogen fueling network to be a reality?
- Are renewable sources reliable enough?
- Can innovative technologies from other industries be shared?

JESSE SCHNEIDER, Executive Vice President, Technology, Hydrogen & Fuel Cells, **Nikola Motor**

13.00_{CET} Lunch Break

13.25_{CET} Chair's welcome back

CHARLES-HENRI ROBERT, Executive Director for Climate Change & Energy, **CEFIC**

13.30_{CET} Pre-recorded + Q&A: The H21 project - A large scale conversion of the gas network to hydrogen

- Project update: applying large-scale hydrogen solutions for clean flexible power production
- Starting local, growing national?
- Safety concerns, challenges for customer acceptance & the cost of appliances

TIM HARWOOD, Head of Programme Management, **Northern Gas Networks**
DAVID GILL, Director of Stakeholder Relations, **Northern Gas Networks**

13.55_{CET} Live + Q&A: Case studies for sectorial integration with green hydrogen in Austria: From ideas to early business cases

- Technical & commercial opportunities for sectorial integration
- What makes sense – and what does not?
- Developing additional revenue streams both up and downstream
- Challenges behind bringing down the cost of producing green hydrogen

RUDOLF ZAUNER, Head of Hydrogen, **Verbund**
Q&A facilitated by: CARSTEN ROTHBALLER, Coordinator Sustainable Resources, Climate & Resilience European Secretariat, **ICLEI**

14.20_{CET} Pre-recorded + Q&A: AngloAmerican: how the world's largest diversified mining company is driving the hydrogen revolution

- Strategies for making commitments to reducing co2 footprints
- Developments in hydrogen from a market & operational view point
- Growth in technologies in fuel cells & electrolysis
- Investing in the whole supply chain

MARK FREED, Head of Market Development, **AngloAmerican**

14.45_{CET} Live + Q&A: Industry & refineries: switching from grey to blue/green hydrogen – exploring CO2 reduction, fuel switching and costs

- Given the huge growing demand for hydrogen in industry and feedstock, what regulatory and market incentives are needed to lower costs and get to scale quicker?
- Hydrogen initiatives across the sector: substitution of fossil fuels
- Cost curves for reducing costs whilst raising production
- Technologies, capex & opex challenges
- Increasing process efficiency and continuous technical improvement

Moderator: CHARLES-HENRI ROBERT, Executive Director for Climate Change & Energy, **CEFIC**

MARK FREED, Head of Market Development, **AngloAmerican**

MARIE GODARD PITHON, Deputy Director, Hydrogen, **Vicat**

KAJSA KAIRENTO, Strategy & Business Development Advisor, **Vattenfall**

JOOST SANDBERG, New Business Manager, **Nouryon**

15.30_{CET} Afternoon break

15.50_{CET} Chair's welcome back

CHARLES-HENRI ROBERT, Executive Director for Climate Change & Energy, **CEFIC**

15.55_{CET} Pre-recorded + Q&A: Head to Head Debate: Hydrogen for Cars?

2 Different Viewpoints on the emerging market of hydrogen for cars. Is this a blind alley, should resources be focused on harder to decarbonise or high asset utilisation sectors like shipping, aviation, forklifts and delivery vehicles and leave emission free personal cars to Musk?

CORY SHUMAKER, Development Specialist, **California Hydrogen Business Council**
GEERT DE COCK, Electricity & Energy Manager, **Transport & Environment**

16.20_{CET} Pre-recorded + Q&A: Case study: the hydrogen revolution in The Netherlands

- Lessons learned from Project HyStock & the Island of Ameland
- Challenges behind scaling up gas to power technology
- Encouraging system integration

RENE SCHUTTE, Program Manager Hydrogen, **Gasunie**
Q&A facilitated by: **CARSTEN ROTHBALLER**, Coordinator Sustainable Resources, Climate & Resilience European Secretariat, **ICLEI**

16.45_{CET} Pre-recorded + Q&A: France: exploring the potential for an economically-sustainable hydrogen industry

- Update on current hydrogen projects: what are the hurdles to putting together a commercially viable project?
- Attracting commercial investors & making transactions bankable
- De-risking the project: legal, safety and environmental risks

Moderator: **SYLVIE PERRIN**, Partner, **De Gaulle Fleurance & Associes**

PHILIPPE BOUCLY, President, **Afhypac**
THIERRY LEPERCQ, Founder, **Soladvent**
VALÉRIE CAZABAN, Chief Financial Officer, **H2V Product**
JEAN-PASCAL PHAM-BA, Chief Executive Officer, **Scale**

17.15_{CET} Chairman's closing remarks

Thursday 24th September 2020

09.00_{CET} - 12.00_{CET} - One to One Meetings and Themed Roundtables



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