

MONACO HYDROGEN FORUM DRIVING THE GREEN

H2 REVOLUTION

POST-EVENT REPORT

27–28 November 2023 Monte-Carlo, Principality of Monaco

Monaco Hydrogen Alliance

monacoh2.org



Letter From The President

As President of the Monaco Hydrogen Alliance, I wanted to express my heartfelt gratitude to all the participants of Second Edition of the Monaco Hydrogen Forum, held on 27–28 November 2023.

We at the Alliance are proud that a record 31 countries were represented at the two-day gathering, along with the participation of over 240 senior officials and CEO's from across the European Union and the Nordic countries to African, Mediterranean and Middle Eastern states, amongst others.



John Rossant President Monaco Hydrogen Alliance

We believe that the Principality of Monaco, with its long tradition in motorsports and maritime transportation combined with H.S.H. Prince Albert II's extraordinary commitment to fighting climate change, is more than ever the ideal venue for global leaders of the hydrogen revolution to meet, to exchange ideas — and to look at ways to evaluate, promote and scale new technologies to propel the transition to green hydrogen across the entire value chain of mobility and transportation.

The Monaco Hydrogen Alliance is excited to begin preparations of several new initiatives in 2024, including the MH2Accelerate program to help start-ups in the H2 mobility space scale, , the third edition of the Monaco Prize for Innovation in Renewable Hydrogen and Transportation, as well as smaller high-level geographical gatherings across Europe, the Middle East and North America. We will also be announcing shortly the 2024 edition of the Monaco Hydrogen Forum – and hope to continue our commitment to a cleaner and more sustainable world.

We were delighted to see so many of you at the Second Edition of the Monaco Hydrogen Forum!

With my warmest regards,,



About the 2023 Monaco Hydrogen Forum



Our Program theme and key focus

The Monaco Hydrogen Forum, under the High Patronage of HSH Prince Albert II, brought together key public and private hydrogen operators, transportation & mobility leaders and policymakers to help accelerate the use of green hydrogen in mobility. This year's theme was **Driving the Green** H2 Revolution: Innovation, Investment and Infrastructure.

Through two days of keynotes, high-level panel conversations and deep-dive workshops, the gathering explored what Innovation, Investment and Infrastructure are needed to ensure Green Hydrogen plays a key role in decarbonizing sea, air, and land mobility.

Innovation Day - 27 November 2023

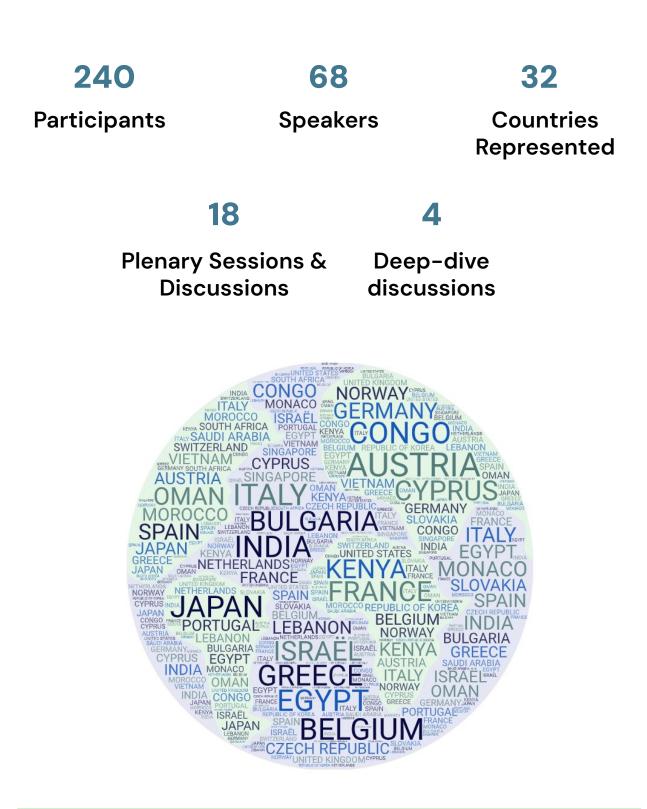
The first day of the Monaco Hydrogen Forum focused on scaling innovation: the need to incentivise more rapid deployment of new hydrogen technologies for the mobility ecosystem;

Infrastructure and Investment Day – 28 November 2023

The second day of the Monaco Hydrogen Forum was dedicated to addressing ways to boost investments in renewable hydrogen; and **building infrastructure**, to ensure the integration of renewable hydrogen within global energy systems and transportation.



The Forum in Numbers:





Session Key Takeaways:

One third of greenhouse gas emissions come from the transportation sector, and hydrogen is a solution for the future of the Gouvernement Princier, which is actively seeking to identify innovative technologies and start-ups [...] For the maritime sector and the yachting society, we are remaining attentive to hydrogen solutions"

- Ms. Céline Caron-Dagioni, Minister of Public Works, the Environment and Urban Development, Principality of Monaco

Transportation and Hydrogen

The transport sector is expected to use a lot of hydrogen in the future. But it is not equally distributed across sectors – there is greater focus on aviation and shipping. Developments should come gradually, and infrastructure needs to follow.

When we launched the Alliance three years ago, we understood the role hydrogen would play in the mobility sector and in ensuring we meet the carbon reduction targets, mandated by the Paris Climate Accord. But we did not expect the revolution to accelerate so rapidly. Ladies and gentlemen, the hydrogen revolution is truly happening, and it is happening now."

- Timothy Gribaudi, Founding Partner, Monaco Hydrogen Alliance & Managing Director, CoMotion

 There is a tremendous opportunity for a new green economy around the Mediterranean, Europe and North Africa

A long-term realistic vision needs to be supported at the very high level of all stakeholders, politicians, big companies, to create and capture the potential of prosperity and security that those technologies can bring.

I was asked to give an update on NEOM: NEOM is real. And that's what I love with NEOM. It sounds sometimes a bit crazy, and I can tell you sometimes it is crazy. But the most exciting thing is really, we start constructing."

- Roland Kaeppner, Executive Director - Hydrogen & Green Fuels, ENOWA - NEOM, Saudi Arabia

• There are still barriers to overcome

Lowering production costs, incentivizing the development of transportive structures, common standards and safety for transporting and storing green hydrogen will help achieve its full potential.

Whether we call them accelerators, hubs, innovation districts or otherwise, we know clusters work. They have been found to increase innovation levels, efficiency, productivity – in which participating companies can compete nationally and globally, also achieving finance. Innovation is a deeply human and creative enterprise, but sometimes it can be a lonely enterprise. Clusters are your peers, they are your best opportunities for advancing innovation."

- Elise Zoli, Partner, Renewable Energy and Infrastructure, Wilson and Sonsini, United States

The ideal outcome and how to getting there

Investments are needed to be done today, even with high costs, to see a decrease in production costs. At this rate, hydrogen will grow four times by the end of the decade.



Moving the World with Green Hydrogen – State of Play Presentation:

We set the scene with a state of play presentation developed in partnership with Roland Berger, Knowledge Partners of the 2023 Monaco Hydrogen Forum. The aim of this opening session was to assess the real state of play of announced mega-projects around the world – and what is needed in terms of capital and planning to see them realized.



Roland Berger is the only management consultancy of European heritage with a strong international footprint. Driven by values of entrepreneurship, excellence and empathy, Roland Berger offers a unique combination of an analytical approach and an empathic attitude. lts cross-competence teams from across industries provide the world with a new sustainable paradigm that takes the entire value cycle into account.

Key messages:

- No green hydrogen, no net zero
- 1. Strong policy momentum, unparalleled growth in project announcements

But let us keep things real

2. Developers face difficulties in securing long-term offtake and increasing costs

3. Many MoUs, few contracts

- Strong demand outlook, but binding offtake needed to secure FID
- 4. Willingness to pay is key
- •• Price premiums driven by compliance and voluntary demand
- E-fuels for aviation and shipping are the next big thing
- 5. Upcoming regulation drives market demand
- 6. A trillion EUR opportunity, but how to gain more certainty?
- A list of topics to watch out for in 2024



Innovation at the Center

Partners, members and key contributors to the Monaco Hydrogen Alliance brought their innovative technologies and projects to Monaco.



HevenDrones announced and showcased the next evolution of hydrogen-powered drone technology offering superior performance.



Hydrogen Refuelling Solutions (HRS) showcased one of their turnkey hydrogen dispensing stations. HRS supplies compression, storage, cooling, and hydrogen dispensing modules.



Floating Hydrogen Ports was introduced publicly for the first time – showcasing the potential application of a floating island technology to generate and deliver green hydrogen across the value chain, enabling sustainable life at sea.



Extreme H – the first off-road hydrogen championship was presented by Extreme E, explaining that innovation in sports will develop commercial opportunities for hydrogen vehicles.



Strategy & Sector-Specific Deep-Dives

Parallel, participative workshops and roundtable discussions were held by members of the Alliance as well as leading companies in the renewable energies and hydrogen.





The Monaco Prize for Innovation in Renewable Hydrogen & Transportation



The Forum saw the second edition of the Monaco Prize for Innovation in Renewable Hydrogen and Transportation in which nine finalist companies pitched their cutting-edge solutions to a distinguished panel of international judges.

Six counties were present during the finals, including France, with H3 Dynamics, HSL Technologies and NepTech, Sweden's H2Carrier AS and TECO 2030, H2FLY from Germany, Destinus from Switzerland, the United States' Raven SR, and Switzerland with SoHHytec.

The Prize's Jury Members:



Virginie Haché-Vincenot Head of Energy, Finance & Innovation, Mission for Energy Transition, Monaco



Emanuele Lauro President, Monaco Chamber of Shipping; Chairman & CEO, Scorpio Holdings Limited, Monaco



David Morant Advisory Board Member, Monaco Hydrogen Alliance, United Kindgom



Dr. Yasmeen Najm Innovation Manager, Green Hydrogen and Renewable Fuels, ENOWA, Saudi Arabia



Raphaël Schoentgen CEO, Hydrogen Advisors, France



Elise Zoli Partner, Renewable Energy and Infrastructure, Wilson and Sonsini, United States



Meet the Winners of the Monaco Prize:

H2FLY, the Stuttgart-based developer of hydrogen-electric powertrains, and subsidiary of American eVTOL OEM Joby, won the Monaco Prize for Innovation in Renewable Hydrogen and Transportation.

Three other companies were formally recognised:

- 1. SoHHytec from Switzerland, provider of renewable systems for onsite production of solar Fuel and Power, was awarded the **Best Emerging** Technology Solution.
- 2. HSL Technologies (HySiLabs), a French company developing innovative systems to transport and store hydrogen, was recognised as the Solution with the Most-Disruptive Potential.
- 3. H3 Dynamics, also from France, was awarded the Best Cross-Sector Applicability Solution for its distributed hydrogen electric propulsion pod technology.



The Monaco Hydrogen Forum was the occasion to award the second Monaco Prize for Innovation in Renewable Hydrogen and Transportation. Launched in partnership with Strategic Partner ENOWA in the Spring of 2022, the global competition assessed 55 solutions from 15 countries.



Media Coverage



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energy news





INNOVATION 24



Monaco Hebdo <u>La chambre</u> monégasque du shipping renouvelle son soutien au Monaco Hydrogen Forum

Hydrogen Today <u>Monaco: A Top of the</u> <u>Range Hydrogen Forum</u>

Monaco Ecoart <u>The 2023 Monaco</u> <u>Hydrogen Forum marked a significant</u> <u>milestone to foster green hydrogen &</u> <u>innovation</u>

Monaco Life <u>Hydrogen-fuelled drones</u> among exciting innovations presented at Monaco Hydrogen Forum

Benzinga France <u>Heven Drones dévoile</u> sa série révolutionnaire H2D2OO au <u>Monaco Hydrogen Forum, s'appuyant</u> sur le succès de la plateforme H1OO

Energy News <u>HevenDrones Introduces</u> <u>H2D200 Series at Monaco Hydrogen</u> <u>Forum</u>

Hydrogen Fuel News <u>Hydrogen</u> powered drones keep getting better and better thanks to Heven Drones

Extreme E <u>Extreme E becomes official</u> <u>member of the Monaco Hydrogen</u> <u>Alliance</u>

Green Racing News Extreme E: New Monaco Hydrogen Alliance Member Planet Outlook India <u>Punjab Aims To</u> Increase Renewable Energy Share In <u>Power Generation</u>

Industries.ma <u>Forum de Monaco : une</u> <u>délégation du Cluster Green H2 au</u> <u>cœur des débats sur l'hydrogène vert</u>

Monaco Tribune <u>À Monaco, 31 pays ont</u> discuté d'un plan mondial pour un transport respectueux de <u>l'environnement</u>

Innovation 24 <u>Monaco Hydrogen Forum</u> <u>établit un plan d'action mondial pour</u> <u>un transport respectueux de</u> <u>l'environnement</u>

Oman Hydrogen Centre <u>Monaco</u> <u>Hydrogen Forum-2023</u>

Hydrogen Today <u>Monaco Forum: the</u> final gathering around hydrogen before <u>COP28</u>

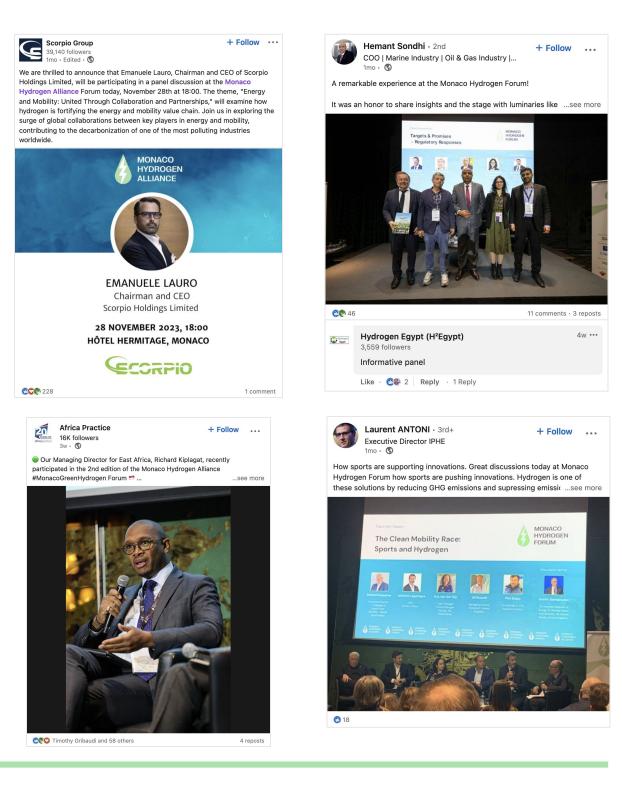
France Hydrogene <u>Les drones d'Heven</u> font forte impression à Monaco

Energy News <u>HevenDrones Introduces</u> <u>H2D200 Series at Monaco Hydrogen</u> <u>Forum</u>

Press Agence Extreme E devient membre officiel de l'Alliance Hydrogène de Monaco



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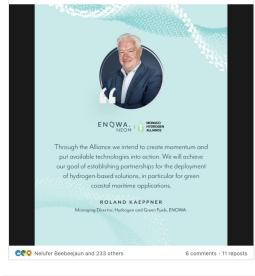
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As John Rossant, President of the Monaco Hydrogen Alliance said, "The age of Hydrogen is upon us." We couldn't agree more, and that's why we're a strategic partner of the Monaco Hydrogen Alliance.

This year's theme of the annual Monaco Hydrogen Forum, which will happen on Nov 27th-28th, 'Driving the Green H2 Revolution: Innovation, Investment and Infrastructure', reflects #ENOWA's commitment to green hydrogen solutions. We're cultivating an ecosystem of advanced applications and technologies to drive innovation across the hydrogen value chain.

Last year's forum was an invaluable place for ENOWA to strengthen relationships internationally. Roland Kaeppner, Managing Director of Hydrogen and Green Fuels judged the first-ever Monaco Hydrogen Prize for Innovation in renewable hydrogen and transportation. The winning innovation, Genevos, offers plug-andplay and scalable hydrogen power modules, paving the way for zero-emission vessels in the maritime sector.





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Francesco Bellusci, Managing Director of Scorpio Ship Management, will be participating on a panel at the Monaco Hydrogen Alliance Forum today, November 27th at 17:20. The discussion, titled "Decarbonising and Innovating in Maritime Mobility: From Infrastructure to H2 Ships," will delve into critical aspects such as hydrogen accessibility for maritime mobility, fuel cell technologies, operations and applications, envisioning the ship of the future, and strategies to bring port infrastructure into the hydrogen age. Do not miss this opportunity to gain valuable insights into the forefront of sustainable maritime solutions and hydrogen-powered maritime innovation!



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Renewable Hydrogen and Transportation - H2FLY 🏆 🎉

Also a big congratulations to the 2023 Hydrogen Pioneers:

- Best Emerging Technology Solution: SoHHytec

- Most-Disruptive Potential: HSL Technologies (HySiLabs)

- Best Cross-Sector Applicability Solution: H3 Dynamics





Dr. Saurabh Tembhurne · 2nd + Follow ... CEO and Founder at SoHHytec | Scientist -... 1mo · 🔇

#Thrilling NEWS !! - BEST EMERGING TECHNOLOGY SOLUTION AWARD by Monaco Hydrogen Alliance





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We partnered with the Monaco Hydrogen Alliance as their main strategic partner for the second edition of their #MonacoHydrogenForum. The event brought together thought leaders, innovators, and industry pioneers committed to shaping a sustainable future through hydrogen technologies.

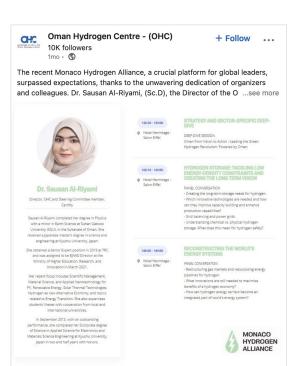
During the forum, Managing Director of Hydrogen & Green Fuels Roland Kaeppner and Manager of Tech and Innovation Dr. Yasmeen Najm, both participated in dedicated sessions where they shared progress in NEOM and plans for the future of green hydrogen mobility. They also lent their expertise to judging the prestigious Monaco Prize where H2FLY was awarded for their innovative and commercial approach to sustainable air travel by developing the first qualified hydrogen-electric powertrain for aviation.

At ENOWA, our goal is to drive meaningful change through collaboration. Follow us for the latest updates and progress as our partnership with #MonacoHydrogenAlliance continues.



🖒 Nelufer Beebeejaun and 70 others

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CC 54





IRESEN - Research Institute for Solar Energy an... + Follow ···· 41,062 followers 1mo ⋅ ♥

We are delighted to share that our colleague, Lina HERMOUCHE, was an integral part of the Moroccan delegation, alongside members, Mohammed Yahya ZNIBER Cluster GreenH2, Tarik Hamane Masen Nour Eddine FETIAN ONEE – Branche Electricité Jean-Luc Chabaudie Capgemini Engineering at the 2nd edition of the #Monaco_Hydrogen_Forum, organized by Monaco Hydrogen Alliance.

the #Monaco_Hydrogen_Forum, organized by Monaco Hydrogen Alliance. This forum convened leaders, startups, investors, policymakers, and decisionmakers committed to advancing renewable hydrogen in the global energy

transition, with a special focus on mobility and transport.

Key Topics Discussed:

ℜ Building Collaborative Infrastructures: Integration of renewable hydrogen into global energy systems.
𝒞 Fostering Rapid Innovation: Deployment of cutting-edge hydrogen

Fostering Rapid Innovation: Deployment of cutting-edge hydr technologies.

Stimulating Investment: Support for renewable hydrogen investment.

The Monaco Hydrogen Alliance, a non-profit organization established in 2021, played a pivotal role in supporting the growth of renewable hydrogen in mobility and transport.

and transport. The insights and collaborations forged during this forum will continue to drive positive change in the renewable energy landscape.

#IRESEN #MonacoHydrogenForum #RenewableEnergy #HydrogenRevolution #SustainableFuture #CleanEnergyLeadership



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Michel DELPON · 3rd+

#France2030

#Clubvisionhydrogene

#Monacohydrogenalliance

Under the patronage of His Serene Highness Prince Albert II of Monaco, I have the honour of participating in the next Monaco Hydrogen Alliance Forum dedicated to renewable hydrogen technologies for the decarbonisation of land, air and sea mobility, as well as in buildings and housing. A huge challenge!









Sue Putallaz

Ravi Pandit Chairman & Co-Founder, Kpit

, Kpit

Co-Founder & CEO, MobyFly

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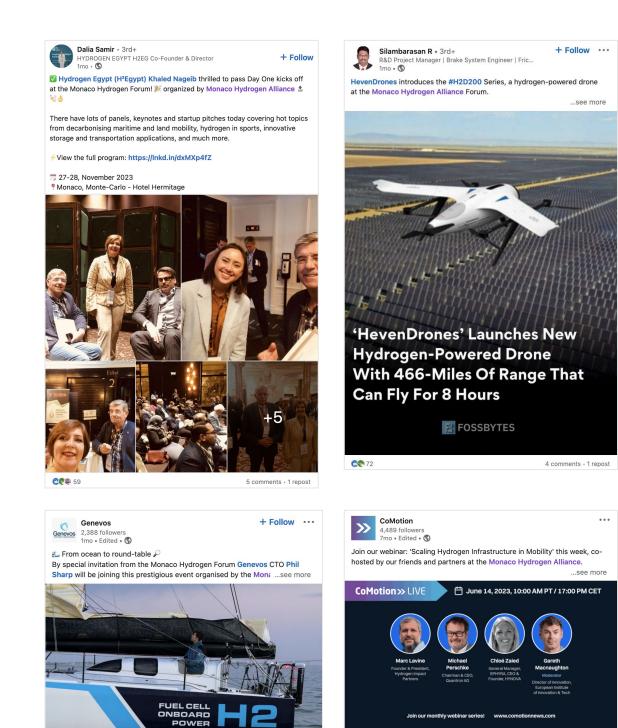
Vaitea Cowan

Co-Founder, Enapter









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with Phil Sharp and 3 others

CCO Timothy Gribaudi and 44 others

🖰 10

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Taras Wankewycz · 2nd Serial deeptech entrepreneur: Founder/CEO H3 Dynamics, Co-Founder ... 1mo • Edited • 🔇

A touch of pragmatism in a world of dreams, is what made H3 Dynamics a winner at this year's Monaco Hydrogen Alliance "renewable #hydrogen and transportation prize...what an incredible moment!

It was my first time here and I was very impressed, and grateful for the invitation to join. I also made many new friends. A big thanks to the organizers and sponsors, and congratulations to all the finalists



CC Timothy Gribaudi and 160 others Hamburg Aviation

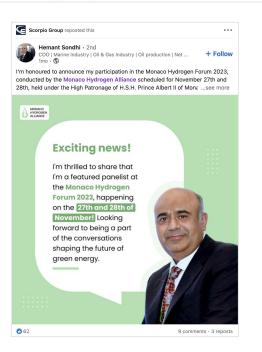
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10.799 fc Congratulations Taras Wankewycz, Tom Rathmes and the whole H3 Dynamics team on this deserved award!

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We were delighted to take part in the Monaco Hydrogen Alliance Forum.

This event, under the patronage of Prince Albert II of Monaco, aims to reverse the global warming curve and to promote #sustainable mobility #solutions for the common good.

As part of the 2nd edition, Jeremie Lagarrigue, our Managing Director, took part to the Clean Mobility Race: Sports & Hydrogen conference.

His speech was an opportunity to share his experience as a competitor, but also to highlight EODev's current projects in the sporting field, such as the US team's American Magic - Challenger, 37th America's Cup chase boat for the America's Cup, equipped with our REXH2® marinized solution.

He also pointed out that one of the major challenges in accelerating the #decarbonization of mobility lies in the development of infrastructures enabling access to more virtuous energy vectors such as #hydrogen.

#EODev #MonacoHydrogenAlliance #event #conference #sustainability #hydrogen #innovation #TimeToShift

Jeremie Lagarrigue Kostis Geropoulos Ali Russell Roland Kaeppner Eva van der Dijs Phil Sharp

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Sports and Hydrogen





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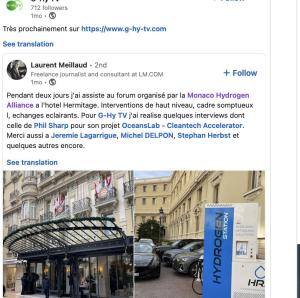


Monaco Hydrogen Alliance

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G-Hy TV

G-HUTV

Monaco Hydrogen Alliance, we interviewed Phil Sharp, the founder of Genevos and accomplished sailor. He shares insights into his project, OceansLab - Cleantech Accelerator

Find all our content at https://www.g-hy-tv.com.

Un bateau de course à l'hydrogène, c'est possible. Lors du forum organisé par la Monaco Hydrogen Alliance, nous avons rencontré le fondateur de Genevos, le navigateur Phil Sharp, Il nous parle de son projet OceansLab - Cleantech Accelerator

Retrouvez l'intégralité de nos contenus sur https://www.g-hy-tv.com





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We are excited to share that our CEO and Founder, Christopher Jackson, will be a featured speaker at the upcoming #MonacoHydrogenForum.

Chris will participate in a panel on the event's second day, focusing on strategies to enhance the bankability of investments in the dynamic and competitive hydrogen sector.

Taking place on 27-28 November 2023 in Monte-Carlo, Monaco, this year's forum is themed 'Driving the Green H2 Revolution: Innovation, Investment and Infrastructure'.

This prestigious event draws top figures from the private sector, including industry founders and investors, as well as influential policymakers and political figures. Their collective goal is to advance renewable hydrogen, particularly in mobility and transportation.

The Monaco Hydrogen Alliance, established in 2021 as a non-profit, plays a vital role in promoting renewable hydrogen in these sectors, with a special focus on regions like the Mediterranean and the Middle East. #renewablehydrogen #transportation #innovation #investment #infrastructure



Monaco Hydrogen Forum "Moving the World with Green Hydrogen" monacoh2.org · 2 min read

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Lors de notre venue au Monaco Hydrogen Forum nous avons pu interviewer Michel DELPON ancien député et ambassadeur pour l'hydrogène au sein de France 2030 qui a répondu aux questions de Laurent Meillaud.

Retrouvez l'intégralité de nos contenus sur https://www.g-hy-tv.com

Monaco Hydrogen Alliance Emmanuel Macron #hydrogen #hydrogène #transitionénergétique #ghytv #france2030

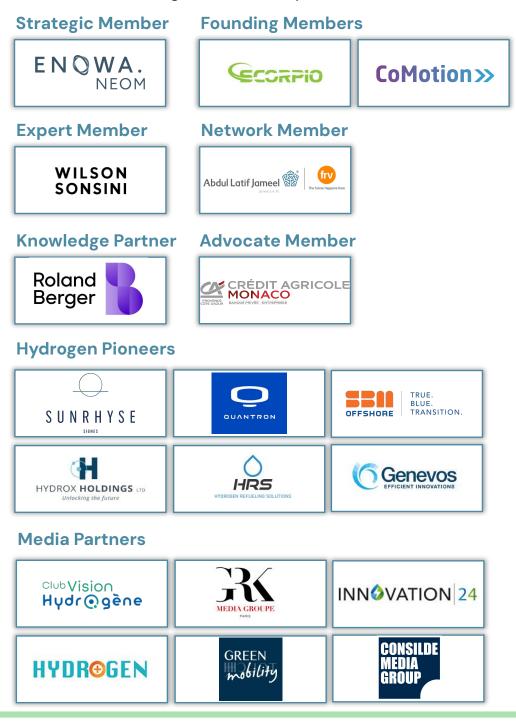
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Special Thanks to our 2023 Partners

Our Members & Partners are fundamental to our work and success. They support us in promoting innovation, guide our strategy and development and inspire our mission to decarbonize the transportation sectors and transition towards a greener economy.





And a special thanks to our Gala Dinner co-hosts

A special mention and an expression of gratitude to the Monaco Chamber of Shipping for having co-hosted and sponsored the Gala Dinner of the Monaco Hydrogen Forum for its attending VIPs, Speakers and Participants - for the second year running.

A big thank you to Mr. Emanuele Lauro, President of the Monaco Chamber of Shipping; and Chairman & CEO of Scorpio Holdings Limited - our Strategic Member, for his continuous support.







About the Monaco Hydrogen Alliance

The world's only platform exclusively dedicated to renewable hydrogen and mobility

The Monaco Hydrogen Alliance is a not-for-profit Association under Monegasque law to promote the use of renewable hydrogen in land, air, and maritime transportation. Alliance members include key public and private hydrogen operators, as well as transportation & mobility industrial leaders and policy makers coming from all over the world.

Building on Monaco's leadership in Energy Transition

The Principality of Monaco's leadership in Energy Transition and in the fight against climate change – as well as its preeminent global position in the world of motor sports, global shipping and energy trading – make it an ideal host for a new and important global conversation on Hydrogen and Mobility.

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#MonacoHydrogenForum #hydrogenmobility

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MONACO HYDROGEN FORUM DRIVING THE GREEN H2 REVOLUTION

Any other questions?

Contact us on <u>info@monacoh2.org</u> to receive more information on our membership options, upcoming events and engagements.

For any additional information, visit the Monaco Hydrogen Alliance Website: <u>https://monacoh2.org</u>

Thank you!

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