

## Hydrogen Heavy Duty Vehicle Industry Group Partners to Standardize Hydrogen Refueling, Bringing Hydrogen Closer to Wide Scale Adoption

Oct. 8, 2021 – Phoenix, AZ: The Hydrogen Heavy Duty Vehicle Industry Group – comprised of hydrogen industry leaders [Air Liquide](#), [Hyundai](#), [Nel Hydrogen](#), [Nikola Corporation](#), [Shell](#) and [Toyota](#), has signed agreements with [Tatsuno Corporation](#) and [Transfer Oil S.p.A.](#) to industrialize globally-standard 70 MPa hydrogen heavy-duty vehicle high-flow (H70HF) fueling hardware components.

The Industry Group was formed in February 2019 with the goal of addressing hydrogen fueling hardware challenges of achieving the fueling speeds that are needed for heavy-duty applications today. Other goals include testing and evaluating the hardware’s performance and standardizing the connector design to ensure adoptability throughout the world. This builds upon the collaboration of the hydrogen industry that achieved a global standard fueling interface for light-duty fuel cell electric vehicles.

Tatsuno, an international hydrogen fuel equipment provider founded in 1911, is designing and developing vehicle receptacle and dispenser nozzle and breakaway components, whereas Transfer Oil, considered one of the most valued manufacturers of reinforced thermoplastic hoses in the industry, is leading the design and development of a hydrogen dispenser fueling hose. The fueling hardware is anticipated to support average hydrogen fueling rates of 10kg/min which is in line with the [US Department of Energy’s Technical Targets for Hydrogen-Fueled Long-Haul Tractor-Trailer Trucks](#). Testing is planned at an independent test facility and scheduled to commence in Q4 2021, with preliminary performance and safety results available in Q1 2022.

“This innovative fueling technology will be an essential part of our hydrogen infrastructure development strategy, making hydrogen available to Nikola heavy-duty FCEV customers and the industry at large,” said Nikola President, Energy and Commercial Pablo Koziner.

“Together with other industry players, Nikola is pushing the development and introduction of the new H70HF standard. The development of this hardware is an integral part to enable projected fueling times competitive to diesel fueling times,” stated Christian Appel, Nikola Global Chief Engineer Tre FCEV and Propulsion Engineering.

“This effort is a prime example of industry competitors working together towards a common goal of decarbonization. Toyota is proud to be a member of this group and of the vision we share for a future where diesel trucks are replaced with zero emission hydrogen fuel cell electric technology,” said Justin Ward, Group Manager of Toyota’s Fuel Cell Development Department.

“On March 23, Air Liquide announced its ambitious ESG objectives to ACT for a sustainable future. In full support of the 2015 Paris agreement, our commitments address the urgency of climate change and the energy transition, targeting carbon neutrality by 2050. The plan includes an acceleration in hydrogen development, something Air Liquide has been involved in for some time. Over the past 50 years, Air Liquide has developed a unique expertise, mastering the entire supply chain, from production and storage to distribution. As such, Air Liquide is contributing to the widespread use of hydrogen as a clean energy carrier for a wide range of applications such as industrial usages and clean mobility,” said Andrew Garnett, Vice President, Hydrogen.

Hyundai Motor Company announced its carbon neutral commitment to reduce its carbon emissions 75 percent below the 2019 level by 2040, and to achieve carbon neutrality in its products and global operations by 2045. The company’s integrated strategy to achieve carbon neutrality rests on the following three pillars: clean mobility, next-generation, and green energy. By 2030, the company aims to secure 30 percent of its global vehicle shares with ZEVs, and by 2040, it expects BEVs and FCEVs to account for 80% of its total fleet sales.

The vision for Hyundai Motor Group is that by 2040 hydrogen energy will be used not only for transportation but will also be applied to wider areas of industries and sectors. Hyundai Motor Group aims to make hydrogen energy available to 'Everyone, Everything and Everywhere'. They plan to proactively respond to climate change through hydrogen solutions, starting with the commercial vehicle sector, which emits larger amounts of CO2 and requires longer drive ranges compared with the passenger vehicle sector. Hyundai Motor Group will launch all-new commercial vehicles such as buses and heavy-duty trucks for the global market as fuel cell electric vehicles and battery electric vehicles. By 2028, they expect to become the first global automaker to apply its fuel cell system to all commercial vehicle models.

[NextEnergy](#), a nonprofit technology accelerator based in Detroit, is the project manager and will oversee the successful completion of this initiative. NextEnergy specializes in developing and managing partnerships which deploy energy and mobility technologies in real-world scenarios to accelerate commercialization.

"NextEnergy is pleased to bring our energy, mobility and management expertise to this transformational project," said Jim Saber, NextEnergy CEO.

### **FORWARD LOOKING STATEMENTS**

Certain statements included in this press release that are not historical facts are forward-looking statements for purposes of the safe harbor provisions under the Private Securities Litigation Reform Act of 1995. Forward-looking statements generally are accompanied by words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "should," "would," "plan," "predict," "potential," "seem," "seek," "future," "outlook," and similar expressions that predict or indicate future events or trends or that are not statements of historical matters. These forward-looking statements include, but are not limited to, statements regarding the potential benefits of the strategic partnerships, including the ability to design hydrogen fueling hardware that achieves the suggested fueling rate; the benefits of standardizing the hydrogen fueling hardware design in an effort to ensure adoptability; the ability to meet the anticipated testing and preliminary performance and safety results timelines; the company's expectations regarding its business, business model and strategy; the company's expectations for its trucks and market acceptance of electric trucks, both BEV and FCEV; and market opportunity. These statements are based on various assumptions, whether or not identified in this press release, and on the current expectations of Nikola's management and are not predictions of actual performance. Forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from the forward-looking statements, including but not limited to, design and manufacturing changes and delays; failure to realize the anticipated benefits of the definitive agreements; general economic, financial, legal, regulatory, political and business conditions and changes in domestic and foreign markets; the potential effects of COVID-19; the outcome of legal, regulatory and judicial proceedings to which Nikola is, or may become a party; demand for and customer acceptance of Nikola's trucks; risks associated with development and testing of fuel cell power modules and hydrogen storage systems; risks related to the rollout of Nikola's business and the timing of expected business milestones; the effects of competition on Nikola's future business; the sources and availability of capital and future capital needs; risks associated with changes in accounting treatment or accounting standards; and the other risks detailed from time to time in Nikola's reports filed with the Securities and Exchange Commission, including its quarterly report on Form 10-Q for the quarter ended June 30, 2021 and other documents Nikola files with the SEC. If any of these risks materialize or our assumptions prove incorrect, actual results could differ materially from the results implied by these forward-looking statements. These forward-looking statements speak only as of the date hereof and Nikola specifically disclaims any obligation to update these forward-looking statements.

### **MEDIA CONTACTS**

For Air Liquide:

Marissa Olvera

[marissa.olvera@airliquide.com](mailto:marissa.olvera@airliquide.com)

713-657-0624

For Hyundai:

Jin Cha

[sjcar@hyundai.com](mailto:sjcar@hyundai.com)

82-2-3464-2128

For Nel:

Ida Marie Fjellheim

[idama@nelhydrogen.com](mailto:idama@nelhydrogen.com)

+47 90 50 92 91

For Nikola Corporation:

Nicole Rose

[nicole.rose@nikolamotor.com](mailto:nicole.rose@nikolamotor.com)

480-660-6893

Colleen Robar

[crobar@robarpr.com](mailto:crobar@robarpr.com)

313-207-5960

For Shell:

Natalie Gunnell

<https://www.shell.us/media/submit-an-inquiry.html>

832-337-4355

For Toyota:

Ed Hellwig

[edward.hellwig@toyota.com](mailto:edward.hellwig@toyota.com)

(469) 292-1165

For NextEnergy:

Jim Saber

[saberj@nextenergy.org](mailto:saberj@nextenergy.org)

248-840-0324

### **About Air Liquide**

In the past 50 years, Air Liquide has developed unique expertise enabling it to master the entire hydrogen supply chain, from production and storage to distribution and the development of applications for end users, thus contributing to the widespread use of hydrogen as a clean energy source, for mobility in particular. Air Liquide has designed and installed more than 120 stations around the world to date. Hydrogen is an alternative to meet the challenge of clean transportation and thus contributes to the improvement of air quality. Used in a fuel cell, hydrogen combines with oxygen in the air to produce electricity, emitting only water. It does not generate any pollution at the point of use: zero greenhouse gases, zero particles and zero noise. Hydrogen provides a concrete response to the challenges posed by sustainable mobility and local pollution in urban areas.

### **About Hyundai**

Established in 1967, Hyundai Motor Company is present in over 200 countries with more than 120,000 employees dedicated to tackling real-world mobility challenges around the globe. Based on the brand vision 'Progress for Humanity,' Hyundai Motor is accelerating its transformation into a Smart Mobility Solution Provider. The company invests in advanced technologies such as robotics and Urban Air Mobility (UAM) to bring about revolutionary mobility solutions, while pursuing open innovation to introduce future mobility services. In pursuit of a sustainable future for the world, Hyundai will continue its efforts to introduce zero emission vehicles equipped with industry-leading hydrogen fuel cell and EV technologies.

### **About Nel**

Nel is a global, dedicated hydrogen company, delivering optimal solutions to produce, store, and distribute hydrogen from renewable energy. We serve industries, energy, and gas companies with leading hydrogen technology. Our roots date back to 1927, and since then, we have had a proud history of development and continuous improvement of hydrogen technologies. Today, our solutions cover the entire value chain: from hydrogen production technologies to hydrogen fueling stations, enabling industries to transition to green hydrogen, and providing fuel cell electric vehicles with the same fast fueling and long range as fossil-fueled vehicles – without the emissions.

### **About Nikola Corporation**

Nikola Corporation is globally transforming the transportation industry. As a designer and manufacturer of zero-emission battery-electric and hydrogen-electric vehicles, electric vehicle drivetrains, vehicle components, energy storage systems, and hydrogen station infrastructure, Nikola is driven to revolutionize the economic and environmental impact of commerce as we know it today. Founded in 2015, Nikola Corporation is headquartered in Phoenix, Arizona. For more information, visit [www.nikolamotor.com](http://www.nikolamotor.com) or Twitter [@nikolamotor](https://twitter.com/nikolamotor).

### **About Shell**

#### **Royal Dutch Shell**

Royal Dutch Shell plc is incorporated in England and Wales, has its headquarters in The Hague and is listed on the London, Amsterdam, and New York stock exchanges. Shell companies have operations in more than 70 countries and territories with businesses including oil and gas exploration and production; production and marketing of liquefied natural gas and gas to liquids; manufacturing, marketing and shipping of oil products and chemicals and renewable energy projects. For further information, visit [www.shell.com](http://www.shell.com).

### **About Toyota**

#### **Toyota Motor North America Research & Development**

Toyota Motor North America Research & Development (TMNA R&D) aims to redefine next-generation vehicles to more than simply a form of transportation. Since 2003, Toyota has been awarded more patents than any other automaker, including autonomous vehicle patents (more than 1,400). Centered in Ann Arbor, Michigan, Toyota TMNA R&D puts the brightest thinkers from across the globe together to focus on letting people live more safely and comfortably. Globally, Toyota spends approximately \$1 million per hour on R&D to ensure that Toyota rapidly and continuously develops cutting-edge, high-quality, and appealing vehicles.

### **About NextEnergy**

Founded in 2002 as 501(c)(3) nonprofit organization, NextEnergy works with innovators to accelerate smarter, cleaner, more accessible solutions for communities and cities. Since its inception, NextEnergy has worked with more than 400 companies, universities, federal agencies, and philanthropic organizations to drive more than \$1.5 billion in advanced energy and mobility technology investments. Based in the center of Detroit's growing innovation district with access to a microgrid, smart home, electric vehicle charging infrastructure and an alternative fuels platform, NextEnergy

demonstrates and pilots technologies in real-world environments to gather data and diverse user-experiences. This process helps quickly scale and deploy solutions by accelerating commercialization with a specific focus on smart mobility and smart grid.