DiagnaMed and EIREX Collaborate to Develop and Commercialize Novel Modular Technology Producing Hydrogen from Water

Advancing hydrogen for medical and industrial uses

TORONTO, Nov. 14, 2024 -- DiagnaMed Holdings Corp. (“DiagnaMed” or the “Company”) (CSE: DMED) (OTCQB: DGNMF), a life sciences company focused on molecular hydrogen and AI diagnostics, is pleased to announce it has entered into a collaboration agreement with EIREX, a hydrogen technology company, for the development and commercialization of EIREX’s novel modular carbon-free technology that extracts hydrogen from water and overcomes the challenges currently faced by producing hydrogen via electrolysis.

Hydrogen produced by electrolysis has an industry target to reach a cost of $2 per kilogram by 2030. The EIREX hydrogen technology aims to surpass this by demonstrating a baseline production level on its commercial pilot prototype, targeting a cost of $0.25 per kilogram and $0.10 per kilogram for commercial units. EIREX has developed a prototype and is currently prepared to produce its commercial pilot prototype. A showcase of their research work can be found here.

Challenges	Electrolysis	EIREX
Cost	50 kWh/kg at 60% efficiency	1.4 kWh/kg at 10% efficiency
Water	High-purity water	Any water including sea-water
Components	Precious metal catalysts	All components are from the shell
Scaling Up	Small scale	Scalable
Transport and Storage	Required	On-site On-demand
NET Energy	Negative	Positive
Energy as a Service (EaaS)	Not Suitable	Ideal

Table #1: EIREX technology vs Electrolysis in generating hydrogen

Hydrogen is well-known for its industrial use as a pollution-free fuel. The global hydrogen generation market size was estimated at USD 170.14 billion in 2023 and is expected to grow at a compound annual growth rate (CAGR) of 9.3% from 2024 to 2030[1].

Although hydrogen use is growing, the current production method and cost limits its full potential for broader adoption of on-site-on-demand hydrogen in industrial plants, hospitals and medical centers, and for treating various unmet medical needs. Worldwide hydrogen production is almost exclusively (96%) derived from fossil fuels, with water electrolysis accounting for a residual share (4%)[2]. Hydrogen produced from water electrolysis using renewable electricity costs approximately USD $4 per kilogram[3]. There is a significant unmet need for an efficient and low-cost hydrogen-producing technology, and EIREX’s technology aims to fill this gap.

The collaboration between DiagnaMed and EIREX will focus on advancing the development of the commercial pilot prototype. DiagnaMed will also seek to establish partnerships with life sciences companies, hospitals and medical centers that would benefit from having its own source of hydrogen for not only operational purposes and energy backup, but also for medical treatments. Molecular hydrogen has been clinically demonstrated to provide antioxidant, anti-inflammatory and neuroprotective effects. It can potentially aid in managing chronic diseases by diminishing oxidative stress and the associated inflammatory pathways. The cellular bioavailability of molecular hydrogen is high[4] and has the potential for antiaging, neurodegenerative disorders (i.e. Parkinson’s and Alzheimer’s disease), mental health conditions (i.e. Depression)[4], diabetes, cancer, rheumatoid arthritis, inflammatory muscular disorders, transplantation, and diseases of the eye, pancreas, liver, lung, kidney, intestinal and skin[5].

Fabio Chianelli, CEO of DiagnaMed, commented: “We are excited to evolve our business in developing novel methods of producing hydrogen for industrial use and medical applications for treating a variety of diseases and disorders. DiagnaMed aims to be a leader in providing molecular hydrogen. Our collaboration with EIREX will provide a foundation for reaching this

goal."

About EIREX

EIREX is a pioneering company at the forefront of clean energy innovation, specializing in sustainable hydrogen production. By harnessing proprietary cavitation technology, EIREX is redefining industry standards with a cost-effective, efficient, and environmentally friendly approach to hydrogen extraction from water. Dedicated to transforming hydrogen production, EIREX focuses on sustainability and operational efficiency to deliver accessible green hydrogen as a practical energy solution for a low-carbon future. With this breakthrough technology, EIREX is positioned to lead the transition toward a cleaner and more sustainable energy landscape. Visit Eirex.ca.

About DiagnaMed

DiagnaMed Holdings Corp. (CSE: DMED) (OTCQB: DGNMF) is a life sciences company focused on molecular hydrogen and AI diagnostics for brain health. DiagnaMed is exploring the medical use of hydrogen for brain health conditions, such as neurological and mental health disorders. In addition, the Company is commercializing BRAIN AGE® Brain Health AI Platform, a world-first consumer brain health and wellness AI solution that estimates brain age and provides a brain health score. Visit DiagnaMed.com.

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Certain statements in this news release are forward-looking statements, including with respect to future plans, and other matters. Forward-looking statements consist of statements that are not purely historical, including any statements regarding beliefs, plans, expectations or intentions regarding the future. Such information can generally be identified by the use of forwarding-looking wording such as "will", "may", "expect", "could", "can", "estimate", "anticipate", "intend", "believe", "projected", "aims", and "continue" or the negative thereof or similar variations. The reader is cautioned that assumptions used in the preparation of any forward-looking information may prove to be incorrect. Events or circumstances may cause actual results to differ materially from those predicted, as a result of numerous known and unknown risks, uncertainties, and other factors, many of which are beyond the control of the Company, including but not limited to, business, economic and capital market conditions, the ability to manage operating expenses, and dependence on key personnel. Such statements and information are based on numerous assumptions regarding present and future business strategies and the environment in which the Company will operate in the future, anticipated costs, and the ability to achieve goals. Factors that could cause the actual results to differ materially from those in forward-looking statements include, the continued availability of capital and financing, litigation, failure of counterparties to perform their contractual obligations, loss of key employees and consultants, and general economic, market or business conditions. Factors that could cause actual results to differ materially from those anticipated in these forward-looking statements are described under the caption "Risk Factors" in Company's management's discussion and analysis for the three and nine months ended June 30, 2024 ("MD&A"), dated August 22, 2024, which is available on the Company's profile at www.sedarplus.ca. Forward-looking statements contained in this news release are expressly qualified by this cautionary statement. The reader is cautioned not to place undue reliance on any forward-looking information. The forward -looking statements contained in this news release are made as of the date of this news release. Except as required by law, the Company disclaims any intention and assumes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

This news release does not constitute an offer to sell or the solicitation of an offer to buy, and shall not constitute an offer, solicitation or sale in any state, province, territory or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state, province, territory or jurisdiction.

Footnotes:

1. Grandviewresearch.com. Hydrogen Generation Market Size, Share & Trends Analysis Report By System (Merchant, Captive), By Technology (Steam Methane Reforming, Coal Gasification), By Application, By Source, By Region, And Segment Forecasts, 2024 - 2030. [(accessed on 30 October 2024)]. Available online: https://www.grandviewresearch.com/industry-analysis/hydrogen-generation-market.
2. G. Maggio, G. Squadrito, A. Nicita. Hydrogen and medical oxygen by renewable energy based electrolysis: A green and economically viable route. Applied Energy, Volume 306, Part A, 2022, 117993, ISSN 0306-2619, https://doi.org/10.1016/j.apenergy.2021.117993.
3. Abhimanyu Pal, Shubham Kakran, Ashish Kumar, Adel Ben Youssef, Upendra Pratap Singh, Arpit Sidhu. Powering squarely into the future: A strategic analysis of hydrogen energy in QUAD nations. International Journal of Hydrogen Energy, Volume 49, Part D, 2024, Pages 16-41, ISSN 0360-3199, https://doi.org/10.1016/j.ijhydene.2023.06.169.

4. Nicolson, GI., et al. 2016. Clinical Effects of Hydrogen Administration: From Animal and Human Diseases to Exercise Medicine. Int. J. Clin. Med. 7(1): 32-76. Doi:10.4236/ijcm.2016.71005.
5. Chung MH, Ro JY. The Medical Uses of Hydrogen. Food Suppl Biomater Health. 2021 Mar;1(1):e5. https://doi.org/10.52361/fsbh.2021.1.e5

A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/13ea5d2f-3bfe-4fc8-987a-728ffc6ea31d