



Next Hydrogen Solutions Inc.
(previously BioHEP Technologies Ltd.)

Management's Discussion and Analysis

For the years ended
December 31, 2021 and 2020

Dated April 1, 2022

Management's Discussion and Analysis for the years ended December 31, 2021 and 2020

General Information

The following is Next Hydrogen Corporation's management discussion and analysis dated April 1, 2022 ("MD&A"), which provides a comparative overview of the Company's performance for the year ended December 31, 2021 with the corresponding year ended December 30, 2020, and it reviews the Company's financial position as at December 31, 2021. Throughout this MD&A, the term "Company" or "Next Hydrogen" shall mean Next Hydrogen Solutions Inc. and all of its wholly-owned subsidiaries. This discussion should be read in conjunction with the Company's audited consolidated financial statements and accompanying notes as at and for the years ended December 31, 2021 and 2020 ("consolidated financial statements").

The consolidated financial statements of the Company and extracts from these consolidated financial statements contained in this MD&A were prepared in accordance with International Financial Reporting Standards ("IFRS") reporting, as issued by the International Accounting Standards Board ("IASB"). The Company's presentation currency is the Canadian dollar. All financial information presented has been rounded to the nearest dollar, except per share amounts and where otherwise indicated. The Company's consolidated financial statements for the year ended December 31, 2021 were approved by its Board of Directors on April 1, 2022. Readers are cautioned that certain information included herein is forward-looking and based upon assumptions and anticipated results that are subject to uncertainties. Should one or more of these uncertainties materialize or should the underlying assumption prove incorrect, actual results may vary significantly from those expected. See "Forward Looking Statements" and "Risks and Uncertainties".

Unless otherwise indicated, the information in this report is dated as of April 1, 2022. Additional information relating to the Company is available on SEDAR at www.sedar.com.

Reverse Takeover of BioHEP

On June 24, 2021, the Company acquired all of the common shares of BioHEP Technologies Ltd. ("BioHEP") by way of a three-cornered amalgamation between Next Hydrogen Corporation and a wholly-owned subsidiary of BioHEP ("FinCo"), forming a subsidiary of BioHEP (the "RTO"). Pursuant to the amalgamation, all of the outstanding common shares of Next Hydrogen Corporation and the wholly-owned subsidiary were canceled and the holders received an equal amount of common shares of BioHEP. Prior to the RTO, BioHEP spun-out all assets and liabilities less \$500,000 in working capital, consolidated its common shares on the basis of one post-consolidation share for every 13.3 pre-consolidation shares, and changed its name to "Next Hydrogen Solutions Inc."

In connection with the RTO, FinCo completed a non-brokered private placement of subscription receipts for gross proceeds of \$27,000,000 and a brokered private placement of subscription receipts for gross proceeds of \$28,545,000. Each subscription receipt was sold at a price of \$10 and was exchanged for one common share of the Company upon completion of the RTO.

The common shares of the Company started trading on the TSX Venture Exchange on June 30, 2021 under the symbol "NXH".

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Operational Highlights

Management is proud to highlight a number of recent milestones that demonstrate significant progress over the past year:

- Next Hydrogen entered into an agreement with Hyundai Motor Company and Kia Corporation to jointly develop an alkaline water electrolysis system and its related stack for the purpose of generating green hydrogen economically and to explore new business opportunities and technological applications.
- The Company was selected by Black & Veatch, a global engineering, procurement, consulting and construction company, to participate in their IgniteX Climate Tech Accelerator program. Next Hydrogen's unique hydrogen technology expertise and Black & Veatch's vast customer network and engineering leadership will offer an integrated hydrogen solution to clients worldwide.
- The Company acquired the assets of CleanFuel Systems Inc., a hydrogen system integration and service company focused on delivering energy solutions through system design, component integration and development, and engineering solutions. This acquisition helped expand the scope of after-market service support and positions the company to be a turn-key solution provider to its customers.
- Next Hydrogen joined a coalition of 40 partners that will work together to become one of at least four regional clean hydrogen hubs designated through the US federal Clean Hydrogen Hubs program included in the federal 2021 bipartisan Infrastructure Investment and Jobs Act to advance a vision that enables a long-term sustainable clean hydrogen industry in the US Northeast.
- The Company opened a new 27,000 square foot facility in Mississauga, Ontario that will provide capacity for product assembly, testing, product development and engineering, and leadership functions across the Company.
- Next Hydrogen successfully completed \$61.5M in gross equity financings over the past year, which is expected to fully fund the Company to commercialization.
- The Company has seen significant growth in its employee and contractor base, which has expanded from 13 to 47 during 2021, and recently complemented its technology and product development leadership with the hire of three exceptional VP's, who have fulfilled its end-to-end capabilities from product development to manufacturing and aftermarket support.
- Next Hydrogen added four independent members to its Board of Directors from Prologis, Ballard Power Systems, Google, and Exchange Income Fund.
- The Company successfully listed its shares on the TSX Venture Exchange under the symbol "NXH" and cross listed on the OTCQB under the symbol "NXHSF".

Business Overview

Founded in 2007, Next Hydrogen's innovative water electrolysis technology, with patented cell architecture, is designed to efficiently convert intermittent renewable electric power sources into clean hydrogen at infrastructure scale. The Company was co-founded by Dr. Jim Hinatsu (COO) and Dr. Michael Stemp (CTO) who are experts in water electrolysis. They previously led research & development and intellectual property development for Stuart Energy (acquired by Hydrogenics in 2004) and Hydrogenics (acquired by Cummins in 2019).

While some of the world's brightest minds with strong capital resources have been focused on improving cell materials and components, improvements to the cell design architecture have garnered very little attention and as a consequence the design has not changed in decades. Next Hydrogen's team, with a combined experience of over 100 years in water electrolysis, has dedicated more than a decade to revolutionizing the design architecture of the electrolyzer to optimize it for renewable energy integration. To date, it has been awarded 39 patents (more pending) across multiple jurisdictions. The break-through innovation in cell design architecture enables unprecedented operational flexibility to capture the entire output of intermittent renewable energy using significantly smaller or fewer units than a traditional electrolyzer solution. Next Hydrogen believes its unique design enables high current density operations, a superior dynamic response and inherent scalability, representing a strong technological advantage to reduce the cost of green hydrogen generation and decarbonize industrial processes, the transportation industry, and energy markets at scale.

The advanced electrolyzer module design uses a new and fundamentally different approach to fluid flows in water electrolyzers. Fluid flows are maintained separately in each half-cell chamber or "slice" of the electrolyzer module, whereas conventional designs collect all the fluid flows in internal manifolds of the electrolyzer module, which are separated from the gas in external gas-liquid separators. Next Hydrogen's design can therefore handle much higher fluid flow rates, and much higher gas generation rates, which in turn enables our products to make more hydrogen economically, whenever low-cost electricity is available. The key enabling design features are incorporation of gas-liquid separators inside the electrolyzer module, and fluid flow passages that connect each gas production half-cell chamber directly to the gas-liquid separators.

Next Hydrogen's product is a large-scale hydrogen generator, which makes hydrogen at the user's site from common plant utilities - water and electricity. The hydrogen generator system uses water electrolysis to generate high-purity hydrogen on demand. The key component in the system is an innovative, patented electrolyzer module, which is combined with balance of plant equipment including power, controls, gas purification, closed-loop cooling and water treatment. The process typically works by first converting AC electricity to DC electricity, which powers the electrolyzer module. Inside the electrolyzer module, water is converted by the DC electricity to hydrogen and oxygen gases. Hydrogen typically is the product gas, and it is cleaned and sent to the user's process and/or hydrogen storage. The system is automatically controlled and operates with minimal oversight. It is packaged in sea containers for ease of shipping and installation and outdoor installation frees up valuable indoor floor space.

Next Hydrogen is at the early commercialization stage and has demonstrated that the development of the final product with expected functionality is possible. The Company initially demonstrated its prototype with Atomic Energy Canada Limited ("AECL"). At the time, AECL publicly stated "the team successfully demonstrated the continuous operation of the cell with the required quality of hydrogen stream from the electrolyzer in a liquid phase catalytic exchange system." Following this, the Company sold a NH-60 test and evaluation electrolyzer system to Canadian Tire. Canadian Tire subsequently purchased two NH-300 electrolyzer systems (First Article). These systems will produce hydrogen to power fuel cell forklifts at Canadian Tire's distribution centres.

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Next Hydrogen intends to dedicate a significant portion of its recent capital raise to product development and commercialization. As such, its current product line is undergoing new performance upgrades to factor in latest innovations, which is to be followed by commissioning of the units and further improvements as needed. These iterations and refinements are a normal course of a product development journey and will be necessary to comprehensively prove out the five-times scale-up from NH-60, unique design features, lifetime performance, and to ensure a competitive and robust product offering for mass volume production. Looking further ahead and as part of the product development roadmap, management intends to pursue further scale-up of this design from the current size range for large scale green hydrogen production.

Results of Operations

Financial Highlights

	3 months ended Dec 31 2021	3 months ended Dec 31 2020	12 months ended Dec 31 2021	12 months ended Dec 31 2020	12 months ended Dec 31 2019
Revenue	\$ 41,069	-	177,589	1,775	\$ 58,442
Direct Costs	24,667	-	82,239	-	29,545
Gross margin	16,402	-	95,350	1,775	28,897
Expenses					
Research and development	2,118,297	212,279	6,176,621	1,914,983	1,290,537
General and administrative	1,537,235	618,270	4,668,486	1,629,131	908,835
Marketing and sales	208,528	75,801	1,419,591	139,833	66,511
Provisions	565,619	756,717	4,305,530	1,249,195	154,923
Loss from operations	(4,413,277)	(1,663,067)	(16,474,878)	(4,931,367)	(2,391,909)
Finance costs, net	26,994	173,025	265,950	762,608	207,921
Depreciation and amortization	124,386	10,128	278,753	40,513	51,582
Change in fair value of deferred share units	-	793,994	-	1,116,128	-
Transaction costs <i>(see below)</i>	40	-	7,988,065	-	-
Net loss and comprehensive loss	\$ (4,564,697)	(2,640,214)	(25,007,646)	(6,850,616)	\$ (2,651,412)
Loss per share - basic	\$ (0.20)	(0.21)	(1.28)	(0.77)	\$ (0.62)
Loss per share - diluted	\$ (0.20)	(0.21)	(1.28)	(0.77)	\$ (0.62)
Loss from operations	\$ (4,413,277)	(1,663,067)	(16,474,878)	(4,931,367)	\$ (2,391,909)
Share-based compensation	914,811	59,299	2,616,423	71,196	-
Provisions ⁽¹⁾	565,619	756,717	4,305,530	1,249,195	154,923
Adjusted EBITDA⁽²⁾	\$ (2,932,847)	(847,051)	(9,552,925)	(3,610,976)	\$ (2,236,986)

(1) Provisions have been added back as they are non-cash and non-recurring in these periods.

(2) Refer to "Non-IFRS Financial Measures".

Change in fair value of deferred share units ("DSUs") pertains to the revaluation of DSUs that were issued in exchange for cash compensation to various employees and consultants during 2020. DSUs were issued at \$0.29-\$0.60 and revalued at year-end at \$2, which reflects the fair value of these units as at December 31, 2021.

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Transaction costs incurred during the year ended December 31, 2021 predominantly reflect costs incurred by the Company as part of the process of listing its shares on the TSX Venture Exchange. The majority of this cost was non-cash in nature. The cash portion of this expense amounted to \$364,627.

Revenue

As Next Hydrogen is in the early stage of commercialization, historical revenues pertain to service revenue and part sales, which are ancillary to its core operations. The Company recorded \$177,589 in revenue during the year ended December 31, 2021, all of which was service revenue acquired as part of the Company's acquisition of CleanFuel Systems Inc. ("CFS") on April 1, 2021.

As of December 31, 2021, the Company had \$3,027,941 in deferred revenue, of which \$2,704,792 is expected to be earned over the next twelve months.

Operating Expenses

	3 months ended Dec 31 2021	3 months ended Dec 31 2020	12 months ended Dec 31 2021	12 months ended Dec 31 2020
Research and development	2,118,297	212,279	6,176,621	1,914,983
General and administrative	1,537,235	618,270	4,668,486	1,629,131
Marketing and sales	208,528	75,801	1,419,591	139,833
Provisions	565,619	756,717	4,305,530	1,249,195
	\$ 4,429,679	1,663,067	\$ 16,570,228	4,933,142

Research and development expenses increased by \$1,906,018 or 897.9% for the three month period and \$4,261,638 or 222.5% for the year ended December 31, 2021, compared to the same periods in 2020, as the Company had access to additional capital and could accelerate development work on various projects. The Company is currently focused on implementing product upgrades to its current product line, commencing work on the next generation units, and building out its test infrastructure.

General and administrative expenses increased by \$918,965 or 148.6% for the three month period and \$3,039,355 or 186.6% for the year ended December 31, 2021, compared to the same periods in 2020, as the Company significantly increased its management team, systems, and processes in anticipation of commercialization, including the implementation of a new ERP system that will allow for significantly improved controls, automation and scale. The Company's costs also increased to support improved corporate governance, controls and reporting required of a publicly traded company.

Marketing and sales expenses increased by \$132,727 or 175.1% for the three month period and \$1,279,758 or 915.2% for the year ended December 31, 2021, compared to the same periods in 2020, as the Company significantly increased the size of its business development, sales and marketing team during the year in order to build a robust sales pipeline for 2023.

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A provision expense of \$3,560,595 was recorded during the second quarter due to expected and probable future product development costs and upgrades exceeding expected revenue associated with three contracts already in place. Provisions exist when the expected cost of a contract exceeds the associated revenue and are typical in early-stage companies that are still in the development phase and have low manufacturing volumes. During the third quarter, an additional provision of \$179,316 was recorded to account for additional cost overruns expected on the NH300. The provision of \$565,619 in the fourth quarter mainly reflects changes in long-term estimates as a result of continued expected supply chain disruption.

Overall costs increased during the year, as the Company had improved access to capital and could accelerate on its development strategy. During the year, Next Hydrogen's headcount increased from 13 to 47 employees and contractors. However, cost increases are not expected to be as significant into 2022, as the Company now has the bulk of the infrastructure required to ensure operational execution and success.

Summary of Quarterly Results

The following table sets out quarterly financial information for the Company's eight most recently completed quarters:

(in thousands)	Q4'21	Q3'21	Q2'21	Q1'21	Q4'20	Q3'20	Q2'20	Q1'20
Revenue	\$ 41	77	59	-	-	-	-	\$ 2
Loss from operations	(4,413)	(3,697)	(6,484)	(1,881)	(1,663)	(932)	(917)	(1,419)
Comprehensive Loss	(4,565)	(3,824)	(14,407)	(2,213)	(2,640)	(1,554)	(1,106)	(1,550)
Loss per share - Basic	\$ (0.20)	(0.17)	(0.85)	(0.14)	(0.21)	(0.16)	(0.15)	\$ (0.25)
Loss per share - Diluted	\$ (0.20)	(0.17)	(0.85)	(0.14)	(0.21)	(0.16)	(0.15)	\$ (0.25)

Given the nascent nature of the industry and the large ticket size for unit order sales, the sale of Next Hydrogen's electrolyzers could result in significant fluctuations in revenues over the first few years of operations, until the Company builds a robust sales pipeline. In addition, as the Company's access to capital has improved in recent quarters, cost increases are expected to continue over the next few years as the Company continues to develop its team and processes and invest in further product development.

Liquidity and Capital Resources

	2021	2020	2019
Cash	\$ 39,197,357	1,092,067	\$ 254,783
Working capital ⁽¹⁾	41,234,520	2,536,473	1,201,114
Total assets	48,056,994	3,822,520	2,586,299
Debt ⁽²⁾	424,271	5,259,891	2,511,875
Shareholders' equity (deficit)	\$ 37,792,686	(6,710,671)	\$ (2,717,992)

⁽¹⁾ Working capital is defined as current assets minus current liabilities, excluding deferred revenue, provisions, deferred share unit liability and loan payable

⁽²⁾ Debt includes both current and long-term portions of bank indebtedness, long-term debt and loan payable. Finance lease liability has been excluded as it pertains to the company's head office and assembly facility lease.

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Cash, working capital and total assets increased significantly during the year ended December 31, 2021, as the Company was able to secure new financing that has allowed it to accelerate on its development strategy. On January 21, 2021, the Company secured \$6 million as part of a private placement and on April 19, 2021 secured a further \$55.5 million as part of its RTO financing. Following the second financing, the Company repaid \$5.1M in debt.

Positive cashflows are not expected over the next few years as the Company continues to focus on product development and commercializing new product lines while building out the necessary infrastructure to commercialize its business. Management believes there is sufficient working capital to fund its operations over the next twelve months.

As part of the RTO and related financing, the Company represented that \$24,570,000 of net proceeds would be spent over the following 12 months with the balance of \$25,975,000 to be spent in future periods. A comparison of the expected purposes of these funds, as disclosed in the Company's filing statement, versus actual spend to date is as follows:

	(12 months) Expected	(6 months) Actual
Fees and expenses payable in connection with the RTO	\$ 500,000	\$ 364,627
Research and development / Capital expenditures	13,000,000	4,367,802
Repayment of shareholder loan	5,070,000	5,105,256
General and administrative	4,000,000	2,304,980
Working capital	2,000,000	1,769,781
Unallocated funds	<u>\$ 24,570,000</u>	<u>\$ 13,912,446</u>

The following table sets out the Company's contractual obligations with respect to debt:

(in thousands)	Total	1 Year	2 Years	3 Years	4 Years	5 Years	After 5 Years
Bank indebtedness	\$ 60	-	60	-	-	-	\$ -
Finance lease liability	1,875	55	72	91	114	172	1,371
Long-term debt	<u>\$ 301</u>	<u>137</u>	<u>79</u>	<u>63</u>	<u>22</u>	<u>-</u>	<u>\$ -</u>

During the quarter, the Company entered into a lease for its new head office and assembly facility. The lease expires on August 31, 2026 with an option to extend for an additional five years.

As of April 1, 2022, the Company had 22,888,436 common shares and 3,273,293 stock options outstanding. The Company does not have any off-balance sheet financing in place.

Transactions with Related Parties

During the period up to RTO, the Company paid \$1,025,045 (2020 - \$1,855,792) for research and product development work to Carlsun Energy Solutions Inc., which is owned by an individual that was director of the Company prior to RTO. Following RTO, the company ceased to be a related party. These transactions were in the normal course of operations and were measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

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Non-IFRS Financial Measures

This MD&A includes the following financial measures that do not have any standardized meaning under IFRS and may not be comparable to similar measures employed by other companies:

"EBITDA" is calculated as net income before interest, taxes, depreciation and amortization.

"Adjusted EBITDA" adjusts EBITDA for share-based compensation, change in fair value of deferred share units, unrealized gain (loss) on foreign exchange, transaction costs and other unusual and non-recurring items.

Management believes that these financial measures are useful for investors and other readers, when used in conjunction with other IFRS financial measures, as they are measures used internally by management to evaluate performance. However, these financial measures are intended to provide additional information and should not be considered in isolation or as a substitute for measures of financial performance prepared in accordance with IFRS.

Changes in Accounting Policies

On January 1, 2021, the Company changed its method of depreciation and amortization for equipment and patents from a declining balance basis to a straight-line basis over the estimated useful lives of the assets. The full description of this accounting change can be found in the Company's consolidated financial statements.

Forward-Looking Statements

Certain sections of this MD&A may contain "forward-looking statements" within the meaning of applicable securities legislation. All statements, other than statements of historical fact, made by the Company that address activities, events or developments that the Company expects or anticipates will or may occur in the future are forward-looking statements, including, but not limited to, statements preceded by, followed by or that include words such as "may", "will", "would", "could", "should", "believes", "estimates", "projects", "potential", "expects", "plans", "intends", "anticipates", "targeted", "continues", "forecasts", "designed", "goal", or the negative of those words or other similar or comparable words. Forward-looking statements may relate to the Company's future financial conditions, results of operations, plans, objectives, performance or business developments. Forward-looking statements are necessarily based upon a number of estimates and assumptions that, while considered reasonable by the Company as of the date of such statements, are inherently subject to significant business, economic and competitive uncertainties and contingencies. Known and unknown factors could cause actual results to differ materially from those projected in the forward-looking statements.

There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Forward-looking statements are provided for the purpose of providing information about management's expectations and plans relating to the future. All of the forward-looking statements made in this MD&A are qualified by these cautionary statements and those made in our other filings with applicable securities regulators in Canada. The Company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, or to explain any material difference between subsequent actual events and such forward-looking statements, except to the extent required by applicable law.

Critical Accounting Estimates

The preparation of consolidated financial statements in accordance with IFRS requires management to make judgments that affect the application of accounting policies and the interpretation of accounting standards, and to make estimates and assumptions which affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of revenues and expenses. Management makes estimates based on specific facts or circumstances as well as past experiences. Management periodically reviews its estimates and underlying assumptions and as adjustments become necessary, they are reported in profit and loss in the period in which they become known. Due to the inherent uncertainty involved with making such estimates, actual results could differ from those reported.

A detailed description of the Company's critical accounting estimates can be found in the consolidated financial statements.

Risks and Uncertainties

Any investment in the securities of the Company is speculative due to the nature of its business and stage of development. There are a number of risk factors that could materially affect the Company's future operating results and could cause actual events to differ materially from those described in the forward-looking statements related to the Company. In addition to the usual risks associated with an investment in a business, investors should carefully consider the following risk factors and the risk factors set out in the Company's Filing Statement. If any of the noted risks actually occur, the business may be harmed and the financial condition and results of operations may suffer significantly. In that event, the trading price of the common shares could decline, and shareholders may lose all or part of their investment. Additional risks and uncertainties not presently known to us or that we currently consider immaterial also may impair our business and operations.

Capital Requirements

Next Hydrogen plans to focus on research and development while building out the necessary infrastructure to commercialize its business and will use its working capital to carry out such initiatives. However, the development of new hydrogen technologies may require substantial additional financing. Further expansion of Next Hydrogen's business may be dependent upon its ability to obtain financing through equity or debt, and there can be no assurance that it will be able to obtain adequate financing in the future or that the terms of such financing will be favourable. Failure to obtain such additional financing could result in the delay or indefinite postponement of further development of the Company's planned initiatives.

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Operations

Next Hydrogen is subject to risks relating to the industry in which it operates, which include risks relating to the continuing development of the industry and risks relating to regulation. With respect to the continuing development of the renewable energy industry, Next Hydrogen is subject to the risk that their technology is relatively new and as a result, assumptions and estimates regarding the performance of their technology will be made without the benefit of a meaningful operating history and any operating history that does exist may not be maintained in the future. The projects undertaken by Next Hydrogen are generally capital intensive, require significant time to develop, are technically complex and are physically large. As a result, Next Hydrogen is subject to risks relating to completion of the projects, cost overruns, the availability of financing for such projects, and the ability to complete projects in geographically challenging locations. With respect to regulation, the industries in which Next Hydrogen operates are heavily regulated. As a result, Next Hydrogen is subject to risks relating to compliance with comprehensive regulations in multiple jurisdictions, and the risk that laws and regulatory requirements can change in a manner adverse to Next Hydrogen.

Development of the Clean Power

Next Hydrogen operates in a new and rapidly evolving industry and accordingly is subject to risks relating to the development of that industry generally, and the technology underlying that industry. Accordingly, the business and future prospects of Next Hydrogen may be difficult to evaluate. Next Hydrogen cannot accurately predict the extent to which demand for products and services developed by Next Hydrogen will develop and/or increase, if at all. The success of Next Hydrogen also will depend on traditional business factors such as the ability to develop or market new products and the ability to properly execute corporate strategies. In addition, the regulation of issuers using such technologies or operating in such markets may undergo substantial change and the ultimate regulatory treatment of such technologies and markets is uncertain, which could affect the viability and expansion of such technologies and markets. In addition, because such technologies and markets may operate across many national boundaries, it is possible that they will be subject to widespread and inconsistent regulation. Any adverse developments that affect any of such technologies or markets could impact Next Hydrogen, thereby negatively impacting the value of Next Hydrogen's investments and/or the ability of Next Hydrogen to pay dividends or distributions.

Commercialization

Next Hydrogen cannot guarantee that Next Hydrogen will be able to develop commercially viable electrolyzer products on the timetable Next Hydrogen anticipates, or at all. Selling its electrolyzer products on a commercially viable basis requires technological advances to improve the durability, reliability and performance of these products, and to develop commercial volume manufacturing processes for these products. It also depends upon Next Hydrogen's ability to reduce the costs of these products, since they are currently more expensive than products based on existing technologies and/or powered by fossil fuels, such as steam methane reformation. Next Hydrogen may not be able to sufficiently reduce the cost of these products without reducing their performance, reliability and durability, which would adversely affect the willingness of consumers to buy its products. Next Hydrogen cannot guarantee that Next Hydrogen will be able to internally develop the technology necessary to sell its electrolyzer products on a commercially viable basis or that Next Hydrogen will be able to acquire or license the required technology from third parties.

In addition, before Next Hydrogen releases any products to market, Next Hydrogen subjects it to numerous field tests. These field tests may encounter problems and delays for a number of reasons, many of which are beyond Next Hydrogen's control. If these field tests reveal technical defects or reveal that its products do not meet performance goals, Next Hydrogen's anticipated timeline for selling its products on a commercially viable basis could be delayed, and potential purchasers may decline to purchase its products.

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Market Demand

Next Hydrogen's products represent emerging markets, and Next Hydrogen does not know whether end-users will want to use them in commercial volumes. In such emerging markets, demand and market acceptance for recently introduced products and services are subject to a high level of uncertainty and risk. The development of a mass market for Next Hydrogen's electrolyzers may be affected by many factors, some of which are beyond Next Hydrogen's control, including the emergence of newer, more competitive technologies and products, the cost of fuels used by Next Hydrogen's products, regulatory requirements, consumer perceptions of the safety of its products and related fuels, and end-user reluctance to buy a new product.

If a mass market fails to develop, or develops more slowly than Next Hydrogen anticipates, Next Hydrogen may never achieve profitability. In addition, Next Hydrogen cannot guarantee that Next Hydrogen will continue to develop, manufacture or market its products if sales levels do not support the continuation of the product.

Warranty Claims and Product Performance

There is a risk that Next Hydrogen's warranty accrual estimates are not sufficient and Next Hydrogen may recognize additional expenses, including those related to litigation, as a result of warranty claims in excess of its current expectations. Such warranty claims may necessitate changes to its products or manufacturing processes up to and including a product recall, all of which could hurt the reputation of Next Hydrogen and its products, and may have an adverse impact on its financial performance and/or on future sales. While Next Hydrogen attempts to mitigate these risks through product development, quality assurance and customer support and service processes, there can be no assurance that these processes are adequate. Even in the absence of any warranty claims, a product deficiency such as a design or manufacturing defect could be identified, necessitating a product recall or other corrective measures, which could hurt Next Hydrogen's reputation and the reputation of its products and may have an adverse impact on its financial performance and/or future sales.

New products may have different performance characteristics from previous products. In addition, Next Hydrogen has limited field experience with existing commercial products from which to make its warranty accrual estimates.

Intellectual property

Failure to protect Next Hydrogen's existing intellectual property rights may result in the loss of its exclusivity regarding, or right to use, its technologies. If Next Hydrogen does not adequately ensure its freedom to use certain technology, Next Hydrogen may have to pay others for rights to use their intellectual property, pay damages for infringement or misappropriation, or be enjoined from using such intellectual property. Next Hydrogen relies on patent, trade secret, trademark and copyright laws to protect its intellectual property. Some of its intellectual property is not covered by any patent or patent application, and the patents to which Next Hydrogen currently has rights expire between July 2028 and October 2034. Next Hydrogen's present or future-issued patents may not protect its technological leadership, and its patent portfolio may not continue to grow at the same rate as it has in the past. Moreover, Next Hydrogen's patent position is subject to complex factual and legal issues that may give rise to uncertainty as to the validity, scope and enforceability of a particular patent. Accordingly, there is no assurance that: (i) any of the patents owned by Next Hydrogen will not be invalidated, circumvented, challenged, rendered unenforceable or licensed to others; or (ii) any of its pending or future patent applications will be issued with the breadth of claim coverage sought by Next Hydrogen, if issued at all. In addition, effective patent, trade secret, trademark and copyright protection may be unavailable, limited or not applied for in certain countries.

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Next Hydrogen also seeks to protect its proprietary intellectual property, including intellectual property that may not be patented or patentable, in part by confidentiality agreements and, if applicable, inventors' rights agreements with its strategic partners and employees. Next Hydrogen can provide no assurance that these agreements will not be breached, that Next Hydrogen will have adequate remedies for any breach, or that such persons or institutions will not assert rights to intellectual property arising out of these relationships.

Next Hydrogen may become subject to lawsuits in which it is alleged that Next Hydrogen has infringed the intellectual property rights of others or commence lawsuits against others who Next Hydrogen believes are infringing upon its rights. Next Hydrogen's involvement in intellectual property litigation could result in significant expense to Next Hydrogen, adversely affecting the development of sales of the challenged product or intellectual property and diverting the efforts of its technical and management personnel, whether or not such litigation is resolved in its favour.

Competitive Industry Environment

The renewable energy industry is highly competitive in all of its phases, both domestically and internationally. The Company's ability to develop hydrogen technology is based on its ability to secure talented personnel and secure supply of goods necessary to build electrolyzers, of which there is a limited supply. The Company may also encounter competition from other renewable energy companies in its efforts to hire experienced engineering and development professionals. Competition could adversely affect the Company's ability to attract necessary funding or acquire prospects for strategic partnerships in the future. Competition for services and equipment could result in delays if such services or equipment cannot be obtained in a timely manner due to inadequate availability, and could also cause scheduling difficulties and cost increases due to the need to coordinate the availability of services or equipment, any of which could materially increase project development or construction costs and result in project delays.