

**HYDROGRAPH CLEAN POWER INC.**  
**Management Discussion and Analysis**  
**For the year ended September 30, 2021**

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**DISCLAIMER FOR FORWARD-LOOKING INFORMATION**

Certain statements in this report are forward-looking statements, which reflect our management's expectations regarding our future growth, results of operations, performance and business prospects and opportunities. Forward-looking statements consist of statements that are not purely historical, including any statements regarding beliefs, plans, expectations or intentions regarding the future. Such statements are subject to risks and uncertainties that may cause actual results, performance or developments to differ materially from those contained in the statements. No assurance can be given that any of the events anticipated by the forward-looking statements will occur or, if they do occur, what benefits we will obtain from them. These forward-looking statements reflect management's current views and are based on certain assumptions and speak only as of September 30, 2021. These assumptions, which include, management's current expectations, estimates and assumptions about the global economic environment may prove to be incorrect. A number of risks and uncertainties could cause our actual results to differ materially from those expressed or implied by the forward-looking statements, including: (1) a downturn in general economic conditions, (2) inability to locate and identify potential business acquisitions, (3) potential negative financial impact from regulatory investigations, claims, lawsuits and other legal proceedings and challenges, and (4) other factors beyond our control. There is a significant risk that such forward-looking statements will not prove to be accurate. Investors are cautioned not to place undue reliance on these forward-looking statements. Unless otherwise required by applicable securities laws, the Issuer disclaims any obligation to update any forward-looking statements, whether as a result of new events, circumstances and information, future events or results or otherwise. Additional information about these and other assumptions, risks and uncertainties are set out in the section entitled "Risk Factors" below.

**1.1 – Date and Basis of Discussion & Analysis**

This management discussion and analysis ("MD&A") is dated as of January 28, 2022 and should be read in conjunction with the audited consolidated financial statements of HydroGraph Clean Power Inc. for the year ended September 30, 2021 ("Financial Statements"). The Financial Statements are prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and the International Financial Reporting Interpretations Committee ("IFRIC"). Unless expressly stated otherwise, all financial information is presented in United States dollars.

**1.2 – Overall Performance**

**Functional Currency**

The functional currency is the United States Dollar ("USD"). All references to currency are USD unless otherwise noted.

**Nature of Business**

HydroGraph Clean Power Inc. (the "Company" or "HydroGraph") was incorporated under the Laws of the Province of British Columbia on September 26, 2017 as Carbon-2D Graphene Enterprises Inc. On July 4, 2017, the Company altered its name to Carbon-2D Graphene Inc. On March 3, 2021, the Company changed its name to HydroGraph Clean Power Inc. The address of the Company's corporate office, principal place of business is 430-580 Hornby Street, Vancouver, British Columbia, Canada, and Company's registered and records office address is 704-595 Howe Street, Vancouver, British Columbia, Canada. As of September 30, 2021, the Company's principal business activity was the exploitation of patented technology to produce graphene, hydrogen, syngas, methane and other products and business opportunities.

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**1.2 – Overall Performance (continued)**

**Nature of Business (continued)**

At September 30, 2021, the Company had not yet achieved profitable operations, had accumulated a deficit of \$1,905,425 (2020 – \$396,434) and had working capital deficiency of \$242,028 (2020 – \$104,305), consisting primarily of cash less accrued liabilities, which may not be sufficient to sustain operations over the next twelve months, and the Company expects to incur further development costs and operating losses in the development of its business, all of which casts substantial doubt about the Company's ability to continue as a going concern. However, it is expected that these funds are sufficient to complete its business as discussed in "Financing" below. The Company's ability to continue as a going concern is dependent upon its ability to generate future profitable operations and to identify, evaluate and negotiate potential business acquisitions or participation agreements.

**Description of Business**

The Company is engaged in developing and commercializing processes to manufacture Hydrogen and high-quality Graphene in bulk, and to create customized Graphene solutions for specific applications using detonation of hydrocarbon gases. The proprietary detonation method used by the Company to produce Graphene was discovered by Kansas State University ("KSU") and patented in 2016. Acetylene and Oxygen in specific ratios are pumped into a chamber and detonated with a spark from electrodes to create quality Graphene in gram amounts. The detonated Graphene is synthetic Graphene produced via the KSU method (bottom-up approach), as opposed to conventional exfoliation of naturally occurring Graphite (top-down approach) to produce Graphene.

It was subsequently discovered that syngas could be produced from the same process. Methane and Oxygen are mixed in specific ratios in a pre-mix device and then pumped into a natural gas internal combustion engine and detonated by sparks from a sparkplug to produce syngas. Through a secondary process called membrane separation, pure Hydrogen is extracted. The KSU methods to produce Hydrogen and Graphene are similar, starting with different feedstocks, albeit both hydrocarbon gases, yet ending up with completely different end products. The Company has received an exclusive worldwide license from KSU to commercialize their patented detonation process to produce Hydrogen gas and Graphene (See the "License Agreement").

Major competitors in the Hydrogen space are using Steam Reforming. Major competitors in the Graphene space are using Liquid Phase Exfoliation (LPE). Both these methods are endothermic processes and require an external heat source to be introduced for chemical reactions to occur. The Company uses an exothermic process which releases heat as a byproduct and uses only the latent potential energy within the reactants themselves.

The Company's process uses less energy, since an external furnace or oven is not required for the reactants to react. The Company's unique and patented detonation/combustion process has the following characteristics and benefits:

- Energy Efficient- No external heat needs to be applied for chemical reactions to occur, it uses the latent potential energy within the feedstock hydrocarbon gases to create reactions in milliseconds, thereby using minimal and targeted energy. The process is exothermic, and most competitive processes are endothermic, thereby reducing the required resources.
- Digital Controls – All valves, flow meters, sensors, etc. are digitally controlled, attached to a control panel, then to a computer so that all processes can be precisely monitored and controlled, even remotely via the cloud.
- Centralized & Decentralized – Since the Company's hardware is simple and has a small footprint, it is very scalable to add multiple units for a centralized facility (with local software control), or for decentralized production with single or multiple small unit(s) (with remote software control).

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**Description of Business** (continued)

- Quality Controlled Products – Since the Company’s feedstocks are of consistent quality and since its process is precisely digitally controlled, the Company’s Graphene products have both high quality and consistency at a competitive price point.

License Agreement with Kansas State University Research Foundation

Overview: Effective July 15, 2021, the Company entered into a license agreement with KSURF (the “License Agreement”). Under the terms of the License Agreement, the Company obtained a worldwide exclusive license to utilize and exploit, including the right to sublicense the detonation technology subject to a reservation by Kansas State University for research and education purposes and US Government statutory reservations. The Company continues to do development work at Kansas State University under a Memorandum of Agreement dated June 1, 2021.

**HYDROGEN BUSINESS**

Hydrogen is a colourless gas, and its atomic symbol is H (the hydrogen molecule is H<sub>2</sub>). It is lighter than air and when used in fuel cells does not produce any emissions other than water. Hydrogen fuel cells are expected to play a major role in the move to the green economy.

**Detonation Production Method**

The Company’s Hydrogen production method involves the mixing of Methane (Natural Gas) with Oxygen in specific proportions in a pre-mix chamber. The mixture is then pumped into a detonation chamber where it is detonated by a spark plug. The product of the detonation reaction is syngas, which is extracted from the detonation chamber and pumped through a membrane separator that separates the syngas into its component gases, Hydrogen and Carbon Monoxide. These components are pumped into holding tanks. This produces approximately 80% Hydrogen and 20% Carbon Monoxide. For the Company’s prototype production module, a methane engine will be used for detonation with the engine cylinders being the detonation chamber and the engine exhaust system used to pump the syngas into the membrane separator. For the Company’s planned large-scale production facility, a series of Methane engines will be used.

The premix chamber used for production of Hydrogen is covered by U.S. Provisional Patent Application 63/161,625. See License Agreement on page 20.

**Conventional Hydrogen Production**

The two most common methods, which have been around for decades with little change, for producing Hydrogen are:

- 1) Electrolysis: Separates Hydrogen from Water H<sub>2</sub>O using an Electric Current.

Electrolysis involves passing an electric current from an anode to a cathode in order to break water down into its molecular components Hydrogen and Oxygen. While it is a relatively simple process, it is time consuming and requires significant electrical power to produce relatively small quantities.

Electrolysis – The process is defined as follows:

- Electrolysis of water is the process of using electricity to decompose water into oxygen and hydrogen gas.
- Electrolysis of *pure* water requires excess energy in the form of overpotential to overcome various activation barriers. Without the excess energy, the electrolysis of *pure* water occurs very slowly or not at all.
- Currently the electrolytic process is rarely used in industrial applications since hydrogen can currently be produced more affordably from fossil fuels.

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**Description of Business** (continued)

- 2) Steam Methane Reforming: Separates Carbon from Hydrogen in Methane (CH<sub>4</sub>) using High-Temperature Steam.

Steam Methane Reforming produces much higher quantities but requires the reaction of methane and steam to occur (at temperatures up to 1100°C) with relatively high fuel costs. It is the principal commercial method of Hydrogen production.

Steam Methane Reforming Process Defined – Steps detailed as follows:

- 1<sup>st</sup> Stage Hi Temp Steam: H<sub>2</sub>O (700-1100°C) reacts with Methane CH<sub>4</sub>:
  - Endothermic Reaction: That Yields Syngas
  - Chemical Reaction: CH<sub>4</sub> + H<sub>2</sub>O → CO + 3 H<sub>2</sub>
- 2<sup>nd</sup> Stage Water Gas Shift Reaction:
  - Exothermic Reaction: Performed at about 360°C
  - Chemical Reaction: CO + H<sub>2</sub>O → CO<sub>2</sub> + H<sub>2</sub>

Both of these methods are endothermic and require large energy inputs to create hydrogen. The Company's method is exothermic and does not rely on external heat or energy sources to produce hydrogen.

**Differences in Production Methods**

The key differences between the Company's production method and conventional Hydrogen production methods are as follows:

Method	Energy Source	Feedstock	Scale
Detonation	Exothermic	Methane & O <sub>2</sub>	Small to large scale.
Electrolysis	Endothermic	Water & Electricity	Primarily small but scalable
Steam Reforming	Endothermic	Methane and Water Steam	Large Scale

The following table shows the difference in cost between the Company and its competitors. In this case the Steam Reforming method (Grey H<sub>2</sub>) and Electrolysis (Green H<sub>2</sub>):

Method	Type of H <sub>2</sub>	Feedstock	Price Per Kg Range USD	Centralized or Decentralized
Hydrograph Clean Power Inc.	Blue	Methane and O <sub>2</sub>	\$1.12 to \$1.529 <sup>(1)</sup>	Both
Steam Reforming	Grey or Blue	Methane and Water	\$1.25 to \$2.50 <sup>(2)</sup>	Centralized
Electrolysis	Green	Water and Electricity	\$5.00 to \$6.00 <sup>(3)</sup>	Centralized

Notes:

- (1) Company estimate.
- (2) Source: Bloomberg.
- (3) Source: U.S. Department of Energy.

Because of its scalability, the Company's production method is capable of being done on a small-scale basis at the location of a fuel retailer or can be scaled for industrial production. It can be either centralized or decentralized, while Steam Reforming is a complex industrial process and is overly centralized. Electrolysis is currently too expensive and uses too much power to ever be cost effective.

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**Description of Business** (continued)

The following table shows the major competitors in the Hydrogen Industry:

<b>HYDROGEN</b>	<b>SYMBOL</b>	<b>PRODUCTION METHOD</b>
<b>Clean Power Capital Corp.</b>	CSE.MOVE	Steam Reforming - Decentralized

<b>NEL ASA</b>	OSE.NEL	Electrolysis - Centralized
<b>H2Pro</b>	Private	Electrolysis - Centralized
<b>BayoTech</b>	Private	Steam Reforming - Decentralized
<b>Xebec Absorption Inc.</b>	TSX.XBC	Purification System Steam Reformers

**Component Optimization**

In order to make the Company's Hydrogen production method commercialized it will be necessary to optimize certain components to be used. The size of the premix chamber needs to be optimized for scale of production and compatibility with the operating speed of other components. The Methane engine used may need optimization to handle the fuel rich mixture used. When operating at low revolutions per minute. Analog controls need to be digitized.

The optimization of components is part of the development activities to be carried out by Kansas State University under the Memorandum of Agreement the costs are included in the use of available funds under technology development activities at Kansas State University.

**Small Footprint Prototype Module**

The Company intends to design and build a small footprint prototype module with estimated costs as follows:

a) Natural Gas Generator:	CAD \$30,000
b) Hospital Grade O2 Generator	CAD \$ 9,000
c) 40 foot Shipping Container	CAD \$ 5,000
d) Tanks and compressors and other components	CAD \$ 6,000
e) Engine(s)	CAD \$ 8,000
f) Engineering and Design	<u>CAD \$20,000</u>

**Total: CAD \$78,000**

The construction of the module is expected to commence in October of 2021 and be completed in March of 2022.

**Hydrogen Production Facility**

The Company's longer-term plan is to build a large-scale Hydrogen production facility in Western Canada.

The Company intends to complete engineering and design for the new facility at an estimated cost of \$262,500 over the next twelve (12) months.

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**Description of Business (continued)**

**GRAPHENE BUSINESS**

**About Graphene**

Graphene is an allotrope of carbon essentially the same substance as graphite but with a different atomic structure. It is two-dimensional meaning that each sheet of Graphene is only one atom thick, but its bond makes it as strong as some of the world's hardest metal alloys while remaining light weight and flexible. Its tensile strength is 200 times that of steel. This mix of properties has piqued the interest of scientists from a wide range of fields leading to research for using Graphene for next generation electronics, composites, new coatings on industrial instruments and tools, and biomedical technologies. Graphene is a semiconductor, its properties include large charge carrying capacity, and high thermal conductivity. Graphene conducts heat and electricity very efficiently along its plane. Its impermeability and tensile strength make it suitable for nano mechanical operations.

**Conventional Graphene Product Production**

The main method used to produce bulk Graphene from graphite is to exfoliate Graphene layers off graphite. This requires heating and toxic solvents in a multistep process.

*Chemical Vapour Depositions (CVD)*

This process produces Graphene monolayers by depositing gaseous reactants onto a substrate. It works by combining gases at ambient temperature in a reactor chamber, which when coming into contact with a heated substrate in the container reacts to create a film on the substrate's surface. The waste gases are then pumped from the chamber. Temperature of the substrate and pressure are vital. Lower pressure helps prevent unwanted reactions and provides more uniform thickness of coating on the substrate. Ultra-high vacuum produces the best results. The gaseous by-products are very toxic. The process requires extreme heat, and it is difficult to separate the Graphene from the substrate (accomplished with solvents) without changing the quality of the Graphene produced. While like our method CVD is a bottom-up approach using hydrocarbon gases, it is an endothermic process requiring large energy inputs and a multi-step process, unlike our method, which is exothermic, and a single step process.

*Liquid Phase Exfoliation (LPE)*

LPE is the principal method of producing Graphene in large quantities. The method uses ultrasound and solvents to exfoliate Graphene from Graphite. Studies have shown that the process tends to produce fine Graphite rather than Graphene with no producer producing more than 50% Graphene. The solvents used are toxic.

The LPE method, used by most of the Company's competitors, was cited in an article published in PubMed Central stated the following:

*"Sonication assisted LPE has been widely used to prepare graphene but suffers from high energy-intensive consumption and low efficiency. Thus, it is not feasible for the scalable production of high-quality few-layer graphene."*

The following are just some of the solvents that are used in the LPE process according to an article in Pub Chem, National Library of Medicine:

*"High-intensity ultrasound energy was exploited to transform graphite to graphene in the solvents of dimethyl sulfoxide (DMSO), N,N-dimethyl formamide (DMF), and perchloric acid (PA)."*

DMSO is non-toxic, both DMF and PA are toxic. The single step detonation method used by the Company to produce Graphene uses minimal energy and no solvents.

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**Description of Business (continued)**

**Detonation Process**

The Company's technology synthesizes Graphene from gases. The Company starts with its feedstocks of acetylene and oxygen, mixed in precise ratios into the detonation chamber. A single spark from electrodes within the chamber detonates the gaseous mixture, only using the energy within the gases, to flash to a very high temperature for milliseconds. This precisely controlled detonation produces gram amounts of graphene in a single step process. It is highly pure (up 99.8% carbon content) few layer graphene of highly consistent quality. No solvents are used in our process. Utilizing this system, the chamber can be evacuated in seconds and the following detonation initiated.

The Company believes its detonation technology to produce Graphene is a disruptive technology as it provides high quality Graphene at a low cost. Graphene is a material that when added in reasonably small percentage quantities, can greatly increase the strength of composite materials as diverse as carbon fiber and concrete. To date the use of Graphene for such applications has been limited, because the cost of good quality Graphene from conventional production was prohibitive. The Company believes its licensed technology has the ability to revolutionize the use of Graphene for strengthening materials due to the reduction in cost. In addition, the production method will permit the location of Graphene production facilities at manufacturers' premises without the prohibitive costs of establishing a conventional, large-scale, centralized Graphene production facility. This eliminates transportation of graphene, which is very light but high in volume. Utilizing cloud based digital controls the Company can remotely manage production as a de-centralized process. Since Graphene is so light and the relative volume for shipping is so high, for bulk industrial needs, only an onsite-decentralized process will work, and the Company's method is capable of this without enormous capital expenditures.

The Company's lower production cost also makes it attractive for using Graphene for nanotechnology uses such as medical sensors and Graphene ink for Inkjet like printing of simple electronic circuits.

*Scientific Analysis of LPE Graphene Products:*

In a peer reviewed scientific paper published in "Advanced Materials," (13 September 2018, Volume 30, Issue 44) entitled, "The Worldwide Graphene Flake Production," scientists analyzed the products of the top 60 LPE producers in the world. Their findings proved that these bulk LPE Graphene producers had quality issues with their products. The following points are excerpts from the paper:

- Definition of Graphene – The paper states that true Graphene is ten layers or less. If greater than ten layers it is not Graphene.
- LPE Graphene Producer Layer Analysis – The paper states that the majority of companies are producing less than 10% Graphene content and no company is currently producing above 50% Graphene content.
- Low Carbon Content – Half the LPE producers had less than 90% carbon content with high levels of impurities, whereas pure Graphene should be approaching 100% carbon content.
- Conclusions of the Paper - It is clear that the majority of the companies are producing fine graphite instead of Graphene. We stress at the naked eye it is not possible to detect these differences, because we are dealing with a Nanomaterial. Only through nanotechnology tools and the well-defined protocols established in this study, could they determine the quantity and quality of the Graphene produced.
- Comment from the Paper - It is worrisome that producers are labeling black powders as Graphene and selling for top dollar, while in reality they contain mostly fine graphite.

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**Description of Business** (continued)

*Scientific Analysis of the Company's Synthetic Detonated Graphene (SDG) Graphene Products:*

The Warsaw University of Technology analyzed the Company's SDG products, and the products have done well in their tests. The following test results come from that institute:

- Colour: Grey-black Purity: 99.8%
- Carbon Content: 99.7%
- Average Flake Thickness: 1-3 nm
- Average Flakes' Range: 1-3 microns
- Number of Graphene Layers: 1-5 layers
- Density: 130 kg/m<sup>3</sup>

The scientists that did the testing commented as follows:

*"This new detonated Graphene is of high quality and purity, non-oxidized, free of defects and are highly organized raw Graphene flakes. These flakes of Graphene have a maximum of five Graphene layers."*

*SDG Products Competitive Advantage Conclusions*

When the Company's SDG products are scientifically analyzed they do well. On the other hand, LPE products, when scientifically analyzed, do not fare well. Correlating and coordinating the comparative findings from above, this is what results:

- Graphene Layers – SDG products 1-5 layers qualifies as few layer Graphene (100% Graphene content). Versus LPE products only 10% to 50% of samples are even qualified as Graphene (10 or fewer layers).
- Carbon Content – SDG products have 99.7% carbon content. Versus LPE products where 50% of the producers have less than 90% carbon content.
- Inconsistent Products - SDG products proved consistent in quality and functionality in batch-by-batch comparisons. Versus inconsistent results in the testing done on LPE Graphene.

*Differences in Selling Price*

The following table shows the difference in price between the Company and the only competitor producing SDG product.

<b>Supplier</b>	<b>Layer Count</b>	<b>Carbon Purity</b>	<b>Flake Thickness</b>	<b>Price Retail USD</b>
Hydrograph Clean Power Inc.	1 to 5	>99%	1 to 3mm	\$5 to \$50/gram depending on product and quality
Cambridge Nano	3 to 13	>99%	1 to 3mm	\$120/gram*

\* Source is the Cambridge Nanosystems Website.

*Cambridge Nanosystems*

Cambridge Nanosystems (CN) utilizes Plasma technology to produce Synthetic Graphene. Plasma Synthetic Graphene produced by CN uses Natural Gas in a bottom-up approach to create a high-quality product. Unlike the HydroGraph, Cambridge Nanosystems uses an external heat source, in their case a microwave plasma unit, to cause the reactants to react and produce graphene. Therefore, they use an endothermic reaction, and we use detonation to create an exothermic reaction. Both methods produce impressive quality graphene.



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**Description of Business** (continued)

The following table shows the major competitors in the Graphene Industry:

GRAPHENE	TICKER	METHOD OF PRODUCTION	FEEDSTOCK
Cambridge Nanosystems	N/A	Plasma Synthetic Graphene	Natural Gas
Zen Graphene Solutions	CVE:ZEN	LPE-Centralized	Graphite
NanoXplore Inc.	TSXV: GRA.V	LPE-Centralized	Graphite
Versaren PLC	LON: VRS	LPE-Centralized	Graphite
Directa Plus PLC	LON:DCTA	Plasma Expansion	Graphite
Talga Group Ltd.	ASX:TLG	LPE-Centralized	Graphite

The Company has not independently verified the lower cost or green status of its products.

**Graphene Business Model**

The Company plans to derive revenues by selling Graphene and partnering with companies in vertical markets that are integrating Graphene into composites and other products. Most of these companies in vertical markets already have distribution and expertise in markets and applications, which the Company does not have, but the Company does have the high quality, inexpensive Graphene that vertical applications need to succeed. Together with its partners the Company intends to functionalize its Graphene for specific applications. With some of its partners the Company plans to offer a unique Graphene as a Service (GaaS) capability. The Company intends to proceed with its partners, having them sell to the end user (the Company intends to have limited direct sales operations and will sell mainly through established third-party channels):

- Royalty/Licensing Arrangement with Partners Using GaaS – With some of its strategic partners, who need tonnage amounts of Graphene, the Company plans to negotiate a royalty arrangement of gross sales of finished products. Such strategic partners will be using the Company’s GaaS decentralized capabilities to produce Graphene at their facilities, while the KSU detonation process will be remotely controlled by the Company’s personnel. This will be done under license, and there will be annual royalty minimums to protect partners’ vertical application exclusivity. The Company has entered into an MOA with Bazalt Holdings dated March 17, 2020 for the establishment of this type of facility. Bazalt Holdings intends to produce Basalt/Graphene composite rebar for concrete. This product is stronger than metal rebar and is not subject to rusting or expansion and contraction with temperature changes.
- Royalty/Licensing Arrangement with Partners Buying from the Company – Some of its partners will be purchasing their Graphene directly from the Company, as they may not need large but still significant amounts of Graphene. Such partners will be granted exclusive or non-exclusive territories and/or vertical markets. With such non-strategic partners, they will not be producing onsite, but the Company intends to still negotiate a royalty on gross sales of finished products.
- Wholesale Arrangements with Vertical Application Providers – The Company will produce and sell its Graphene to Vertical Application Providers (VAPs), who in turn will integrate its Graphene into their Graphene based products. It will be a simple supplier/customer relationship that the Company will engage in with VAPs. The Company will produce and wholesale its Graphene directly to VAPs. In some cases, the Company will have to functionalize its Graphene for specific applications, in other cases it will sell it as a commodity.

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**Description of Business** (continued)

At this point the Company does not have any royalty licensing arrangements with partners or wholesale arrangements with Vertical Arrangement providers in place.

The Company has entered into a nonbinding memorandum of understanding with Bazalt (the "MOU"). The MOU contemplates that Bazalt will utilize the Company's product to be produced under a GaaS arrangement at their plant in Poland for use in their Bazalt rebar product. The MOU contemplates that a final agreement with Bazalt would include the following terms:

- a) A royalty payment to the Company of 1.5% of the gross selling price of Bazalt products incorporating the Company's Graphene.
- b) Bazalt to have exclusivity for basalt fiber products.
- c) In order to maintain the exclusivity for Basalt fiber products, Bazalt would pay a minimum royalty of \$4,000,000 per year or make a minimum investment in the Company of \$1,000,000 per year or a combination of royalty and investment totaling \$5,000,000 per year.
- d) Bazalt will pay for costs of installation of the plant in Poland.
- e) Bazalt would pay monitoring fees.

No formal agreement has been concluded with Bazalt to date or will be entered into until Bazalt obtains anticipated European Union funding which it expects to receive in the last quarter of 2021. The terms of an actual agreement may vary from those proposed in the MOU and entry into the final agreement cannot be assured.

At the present time, Bazalt has made no investment in the Company and is arm's length from the Company.

**Graphene Pilot Plant**

The Company intends to establish a pilot Graphene production facility. The facility will have a capacity to produce between 40kg to 120kg of Graphene per day depending on the number of hours of production. The expected costs to establish the facility are as follows:

- |  |                     |
|--|---------------------|
| a) First year lease payments:            | CAD\$125,000        |
| b) Leasehold Improvements and equipment: | CAD\$250,000        |
| c) Engineering and Design:               | CAD\$ 50,000        |
| d) Municipal health and safety approval: | <u>CAD\$ 10,000</u> |

**Total: CAD\$435,000**

The Company has entered into a Lease Agreement dated August 1, 2021 for a two-year renewable lease of a space in Manhattan, Kansas at a location near KSU to house its pilot Graphene production facility. The location consists of approximately 13,000 square feet of warehouse type space. Under the terms of the lease, the Company will pay rent and other charges totaling USD \$8407.32 per month., USD \$100,887.84 annually.

It is expected that when fully operational the facility will employ four (4) persons and have a payroll of \$50,000 USD.

Employees will be added as the pilot plant reaches completion. Estimated employee costs for the next 12 months will be \$275,000 USD.

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**Description of Business (continued)**

**Business Development**

During the three years ended September 30, 2021, the Company's activities have focused on funding, work at Kansas State University to develop processes to manufacture Hydrogen and quality Graphene, and to create customized Graphene solutions for specific applications.

As at September 30, 2021, the Company had expended a total of \$2,344,701 to develop its technology. The development work has resulted in the building of a prototype production line for graphene in a dedicated lab at KSU and confirmation that the technology with membrane separation is suitable for hydrogen production. The graphene prototype production line is capable of producing up to 5 kg of Graphene per day and is operated on an as needed basis. To date the Company has sold 6 kgs of Graphene products for revenues \$8,000 including 4 kgs to Bazalt and 2 kgs to Hawkeye (bio sensor company). These preliminary sales were made to supply the potential customers with sufficient quantity of the Company's product to test for their intended uses. There is no assurance the Company will receive additional orders from these customers may not occur. The customers are both arm's length to the Company.

**Financing**

During the three-month period ended December 31, 2020, the Company issued 3,940,575 shares for total proceeds of \$197,029.

During the three-month period ended March 31, 2021, the Company issued 4,115,717 shares for total proceeds of \$205,786 and 21,825,000 units for total proceeds of \$1,091,250. Each unit consisted of one share and one Penalty Warrant. Each 10 Penalty Warrants automatically converts into one common share with no further consideration if the Company has not completed a Liquidity Event by August 29, 2021.

The Company incurred share issue costs of \$39,000 related to these private placements. The share issue costs were the fair value associated with 1,492,750 broker warrants calculated using the Black Scholes pricing model.

During the three-month period ended June 30, 2021, 4,250,000 warrants were exercised for total proceeds of \$212,500.

During the three-month period ended June 30, 2021, the Company received \$6,505,000 CAD in exchange for 26,020,000 subscription receipts. The subscription receipts are recorded in the Financial Statements as \$5,141,123 USD at September 30, 2021. The subscription receipts will be converted to units at a price of \$0.20 per unit. Each unit is comprised of one common share and common share purchase warrant. Each warrant will entitle the holder thereof to purchase one common share at a price of \$0.60 per common share. The warrants expire two years from date of issuance. The shares and warrants will be issued upon listing of the Company's shares on a Canadian stock exchange.

During the three-month period ended September 30, 2021, the Company issued 3,525,000 units for total proceeds of \$705,000. Each unit is comprised of one common share and common share purchase warrant. Each warrant will entitle the holder thereof to purchase one common share at a price of \$0.60 per common share. The warrants expire two years from date of issuance. On August 29, 2021, the Company issued 2,182,500 on the conversion of the penalty warrants.

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**1.3 – Selected Annual Information – NA**

**1.4 – Results of Operations**

Operations during the year ended September 30, 2021, were primarily related to exploitation of patented technology to produce graphene, hydrogen, syngas, methane and other products and business opportunities as described above. There were no investor relations arrangements entered during the year ended September 30, 2021. There were no legal proceedings, contingent liabilities, and defaults under debt or other contractual obligations, breach of any laws or special resolutions during the year ended September 30, 2021.

During the year ended September 30, 2021, the Company had a net loss of \$1,508,991 (2020 – \$140,148). This was comprised of revenues of \$7,980 (2020 – \$nil), less operating expenses of \$1,516,971 (2020 – \$152,976), and other income of \$nil (2020 – \$12,829). Operating expenses consisted of consulting fees of \$338,523 (2020 – \$89,113), stock-based compensation of \$292,000 (2020 – \$nil), research of \$235,943 (2020 – \$nil), travel and promotion \$162,684 (2020 – \$15,937), license maintenance fees of \$150,363 (2020 – \$10,000), professional fees of \$239,974 (2020 – \$3,594), office and miscellaneous of \$58,966 (2020 – \$3,134), rent and occupancy of \$55,774 (2020 – \$nil), filing fees of \$5,876 (2020 – \$nil), exchange fees of \$4,000 (2020 – \$nil), transfer agent fees of \$1,337 (2020 – \$nil), foreign exchange gain of \$59,864 (2020 – \$nil), lease accretion costs of \$4,920 (2020 – \$2,062), finance costs of \$2,184 (2020 – \$nil), and depreciation of \$24,291 (2020 – \$29,136). Stock-based compensation related to incentive options and warrants issued to management and consultants in 2021. Consulting fees were higher in 2021 due to increased capital raising activities. Professional fees were higher in 2021 related to the preparation of prospectus documents. Travel and promotion were higher in 2021 related to website development and branding exercises. Research related to external product testing in 2021. Rent was higher in 2021 due to the office premises lease expiring and converting to a month-to-month obligation, and no longer being subject to IFRS 16. Foreign exchange gain in 2021 was related to the effect of the US dollar on the subscription receipts issued during the period. The remaining costs were generally consistent with the prior period.

During the three-month period ended September 30, 2021, the Company had a net loss of \$795,704 (2020 – \$22,016). This was comprised of operating expenses of \$795,704 (2020 – \$34,845) less other income of \$nil (2020 – \$12,829). Operating expenses consisted consulting fees of \$122,766 (2020 – \$16,035), research of \$181,843 (2020 – \$nil), travel and promotion \$107,067 (2020 – \$4,141), license maintenance fees of \$142,862 (2020 – \$2,500), professional fees of \$117,811 (2020 – \$3,594), office and miscellaneous of \$49,406 (2020 – \$991), rent and occupancy of \$43,055 (2020 – \$nil), filing fees of \$5,876 (2020 – \$nil), exchange fees of \$4,000 (2020 – \$nil), transfer agent fees of \$1,337 (2020 – \$nil), foreign exchange loss of \$2,107 (2020 – \$nil), lease accretion costs of \$4,751 (2020 – \$300), finance costs of \$571 (2020 – \$nil), and depreciation of \$12,152 (2020 – \$7,284). Consulting fees were higher in 2021 due to increased capital raising activities. Professional fees were higher in 2021 related to the preparation of prospectus documents. Travel and promotion were higher in 2021 related to website development and branding exercises. Research related to external product testing in 2021. Rent was higher in 2021 due to the office premises lease expiring and converting to a month-to-month obligation, and no longer being subject to IFRS 16. Foreign exchange loss in 2021 was related to the effect of the US dollar on the subscription receipts issued during the period. The remaining costs were generally consistent with the prior period.

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**1.5 – Summary of Quarterly Results (Unaudited)**

As at	30-Sep-21	30-Jun-21	31-Mar-21	31-Dec-20	30-Sep-20	30-Jun-20	31-Mar-20	31-Dec-19
	\$	\$	\$	\$	\$	\$	\$	\$
Current Assets	5,460,831	5,553,927	937,645	153,191	48,221	48,492	51,787	40,975
Right-of use Asset	345,289	-	-	4,856	12,140	19,424	26,708	33,992
Fixed Assets	123,124	-	-	-	-	-	-	-
License	2,344,701	2,192,670	1,592,670	1,550,170	1,167,670	1,167,670	1,167,670	1,136,860
<b>Total Assets</b>	<b>8,273,945</b>	<b>7,746,597</b>	<b>2,530,315</b>	<b>1,708,217</b>	<b>1,228,031</b>	<b>1,235,586</b>	<b>1,246,165</b>	<b>1,211,827</b>
Current Liabilities	5,702,859	5,384,200	186,078	181,442	152,526	308,805	301,300	445,913
CEBA Loan	19,423	18,852	18,298	17,761	17,239	-	-	-
Lease Liability	298,823	-	-	-	-	-	-	-
Shareholders' Equity	4,158,265	3,453,265	2,962,765	2,010,729	1,454,700	1,301,200	1,301,200	1,067,800
Deficit	(1,905,425)	(1,109,720)	(636,826)	(501,715)	(396,434)	(374,419)	(356,335)	(301,886)
<b>Total Liabilities and Shareholders' Equity</b>	<b>8,273,945</b>	<b>7,746,597</b>	<b>2,530,315</b>	<b>1,708,217</b>	<b>1,228,031</b>	<b>1,235,586</b>	<b>1,246,165</b>	<b>1,211,827</b>
<b>Quarters ended</b>	<b>30-Sep-21</b>	<b>30-Jun-21</b>	<b>31-Mar-21</b>	<b>31-Dec-20</b>	<b>30-Sep-20</b>	<b>30-Jun-20</b>	<b>31-Mar-20</b>	<b>31-Dec-19</b>
Revenue	-	7,980	-	-	-	-	-	-
Operating Expenses	765,704	480,875	135,110	105,281	22,016	18,083	54,450	45,599
Loss and Comprehensive Loss for Year	765,704	472,895	135,110	105,281	22,016	18,083	54,450	45,599
Basic and diluted loss per share	(0.02)	(0.01)	(0.00)*	(0.00)*	(0.00)*	(0.00)*	(0.00)*	(0.00)*
Weighted average number of common shares outstanding	83,687,513	83,687,513	66,025,043	54,731,792	53,261,339	50,427,100	46,517,210	45,627,100

\* Denotes a loss of less than \$0.01 per share.

As described in the description of business above, the Company entered into a technology license letter of intent with Kansas State University in 2017. During the quarters ended September 30, 2021, the Company continued to invest the majority of capital raised into development of the KSU technology license. The Company raised equity in the quarters ended December 31, 2020, March 31, 2021 and June 30, 2021 as detailed above, resulting in an increase in the cash balance.

During the quarter ended June 30, 2021, the Company received \$6,505,000 CAD subscription receipts to which will convert to units at a price of \$0.20 USD per unit, as described in 1.2 Financing above.

The right-of-use asset relates to the leased office premises. The lease terminated on February 28, 2021 and became a month-to-month obligation.

Current liabilities are comprised primarily of accrued liabilities. Management has accrued fees in order to have more cash available for the KSU license development. During the quarter ended September 30, 2019, there was a success fee of \$300,000 due to KSU, which was paid in full during the quarter ended September 30, 2020. The Company received a CEBA loan from the Canadian government provide pandemic support to assist in defraying non-deferrable costs.

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**1.5 – Summary of Quarterly Results (Unaudited) (continued)**

Operating expenses increased during the final three quarters primarily related to capital raising activities, preparation of the prospectus and advertising costs. Operating expenses were generally consistent over the prior six quarters.

**1.6 – Liquidity and Capital Resources**

The Company is developing its licensed technology and new business opportunities and therefore has incurred losses and negative cash flows from operations. The Company's sole source of funding has been the issuance of common shares for cash, through private placement. The Company's ability to raise cash depends on various capital market conditions. There is no assurance that the Company will be able to obtain any additional financing on terms acceptable to the Company. The quantity of funds to be raised and the terms of any equity financing that may be undertaken will be negotiated by management as opportunities to raise funds arise. Actual funding requirements may vary from those planned due to a number of factors, including developing new business opportunities.

There can be no certainty that the Company's existing cash balances or that the proceeds from the issuance of its common shares will provide sufficient funds for all of the Company's cash requirements. Should the need arise, the Company may pursue other financing options or rely on joint venture partners to supply some of funds required to develop any opportunities. There is no assurance that the Company will be successful in obtaining the funds it may require to sustain operations or that the terms of any financing obtained will be acceptable.

The Company's business premises are currently located at #430-580 Hornby Street, Vancouver, British Columbia. As at September 30, 2021, the Company had cash and cash equivalents on hand of \$276,809 (2020 – \$47,727).

During the year ended September 30, 2021, cash used in operating activities was \$921,251 (2020 – \$387,837), cash used in investing activities was \$1,302,441 (2020 – \$33,711), cash provided by financing activities was \$7,539,892 (2020 – \$386,258). The increase in cash used in operating activities is primarily related to the increase in operating loss less increased accounts payable. The increase in operating loss is described in 1.4 Results of Operations above. The cash used in investing activities in 2021 is primarily related to Phase 3 development costs and Phase 2 success fees. The cash provided by financing activities is primarily related to proceeds received from subscription receipts as described above and subscriptions for private placements to fund operations and development of the licensed technology.

Shareholder's equity as at September 30, 2021, was \$2,252,840 (2020 – \$1,058,266). The Company will need to raise additional capital to maintain technology development activities and operations at the current level. Although the Company has been successful in the past in raising the necessary funding to continue operations, there can be no certainty it will be able to do so in the future.

**1.7 – Off Balance Sheet Arrangements**

As at September 30, 2021, there were no off-balance sheet arrangements to which the Company was committed.

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**1.8 – Transactions with Related Parties**

The Company had the following balances and transactions with executive officers or companies controlled by these officers for the year ended September 30, 2021:

Transactions:	September 30, 2021	September 30, 2020
Salaries to Harold Davidson	\$ 34,800	\$ nil
Fees to Harold Davidson	\$ 27,000	\$ 12,000
Fees to H. Barry Hemsworth	\$ 12,000	\$ 12,000
Fees to Kjirstin Breure	\$ 47,360	\$ nil
Fees to Ranjith Divigalpitiya	\$ 34,322	\$ nil
Fees to Amteck Financial Corp. <sup>(2)</sup>	\$ 16,000	\$ nil
Fees to OnBase DB Systems Inc. <sup>(1)</sup>	\$ 3,524	\$ 34,858
Rent to Capricorn Investments Ltd. <sup>(3)</sup>	\$ 20,508	\$ nil
Legal fees to O'Neill Law LLP <sup>(4)</sup>	\$ 84,556	\$ nil
Stock-based compensation to Steven O'Neill	\$ 31,200	\$ nil
Stock-based compensation to Kjirstin Breure	\$ 17,515	\$ nil
Stock-based compensation to Harold Davidson	\$ 93,269	\$ nil
Stock-based compensation to H. Barry Hemsworth	\$ 48,577	\$ nil
Stock-based compensation to David K. Ryan	\$ 19,431	\$ nil
Stock-based compensation to Logan Anderson	\$ 9,715	\$ nil
Stock-based compensation to Ranjith Divigalpitiya	\$ 9,715	\$ nil
Stock-based compensation to David Williams	\$ 19,431	\$ nil
Stock-based compensation to David Morris	\$ 29,147	\$ nil
<b>Balances:</b>	<b>September 30, 2021</b>	<b>September 30, 2020</b>
Accounts Payable: Harold Davidson	\$ 7,893	\$ 36,000
Accounts Payable: Kjirstin Breure	\$ 1,768	\$ nil
Accounts Payable: SP2 Consulting Inc. <sup>(5)</sup>	\$ 10,421	\$ nil
Accounts Payable: H. Barry Hemsworth	\$ nil	\$ 57,402
Accounts Payable: Amteck Financial Corp.	\$ 16,800	\$ nil
Accounts Payable: Steven O'Neill	NA	\$ 5,444

(1) Harold Davidson and H. Barry Hemsworth are directors of OnBase DB Systems Inc.

(2) Amteck Financial Corp. is a company controlled by Logan Anderson

(3) Capricorn Investments Ltd. is a company controlled by H. Barry Hemsworth

(4) Steven O'Neill is a partner in O'Neill Law LLP

(5) SP2 Consulting Inc. is a company controlled by Ranjith Divigalpitiya

**1.9 – Proposed Transactions**

On July 15, 2021, the Company executed the License Agreement with Kansas State University Research Foundation ("KSURF"). The principal terms of the License Agreement are as follows:

- (i) the Company has license to technology developed including Hydrogen and Graphene detonation technology and certain applications of Graphene technology (the "Technology"),
- (ii) the Company will re-imburse KSURF \$111,694 third party patent related expenditures within 60 days,
- (iii) The Company will pay an initiation fee of \$25,000 within 60 days,
- (iv) The Company will pay annual maintenance fees of:
  - i. \$10,000 per active patent application for calendar years 2022 to 2024
  - ii. \$25,000 per active patent application for calendar years 2025
  - iii. \$35,000 per active patent application for calendar years 2026
  - iv. \$50,000 per active patent application for calendar years 2027 and subsequent years
- (v) the Company will pay a royalty of 4% of net sales by the Company or its affiliates (reduced to 3.5% if royalties are paid to third parties to achieve sales),
- (vi) the Company will pay 20% of any non-royalty payments received by the Company from sub-licensed products.

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**1.9 – Proposed Transactions (continued)**

- (vii) the Company may purchase the 4% running royalty on the hydrogen patent for \$16,000,000 in four increments, commencing in 2022, and
- (viii) the Company may purchase the 4% running royalty on all the other patents for \$12,000,000 in four increments, commencing in 2022.

**2.1 – Critical Accounting Estimates**

The Company has outlined the basis of its critical accounting estimates in Note 3 of the September 30, 2021 Financial Statements.

**2.2 – Changes in Accounting Policies – International Financial Reporting Standards (“IFRS”)**

**Change in Accounting Policies**

**Future Changes in Accounting Policies**

New accounting standards issued but not yet effective:

Certain new standards, interpretations and amendments to existing standards have been issued by the IASB that are mandatory for future accounting periods. Some updates that are not applicable or are not consequential to the Company may have been excluded from the list below.

The Company has initially assessed that there will be no material reporting changes as a result of adopting the new standards, however, there may be enhanced disclosure requirements.

**2.3 – Financial Instruments and Other Instruments**

The Company’s financial instruments include cash, accounts receivable, accounts payable and accrued liabilities, CEBA loan and lease liability. The risks associated with these financial instruments and the policies on how to mitigate these risks are set out below. Management manages and monitors these exposures to ensure appropriate measures are implemented on a timely and effective manner.

- (i) *Currency risk*  
The Company’s expenses are denominated in United States Dollars. The Company’s corporate office is based in Canada and current exposure to exchange rate fluctuations is minimal. At September 30, 2021, with other variables unchanged, a 1% movement in the US dollar against the Canadian dollar would have an estimated \$54,000 impact on the net loss and comprehensive loss.
- (ii) *Interest rate risk*  
The Company is exposed to interest rate risk on the variable rate of interest earned on bank deposits. The fair value interest rate risk on bank deposits is insignificant as the deposits are short-term. The Company has not entered into any derivative instruments to manage interest rate fluctuations.
- (iii) *Credit risk*  
Financial instruments that potentially subject the Company to concentrations of credit risks consist principally of cash and GST receivable. To minimize the credit risk on cash, the Company places the instrument with a financial institution.
- (iv) *Liquidity risk*  
In the management of liquidity risk, the Company maintains a balance between continuity of funding and development activity. Management closely monitors the liquidity position and expects to have adequate sources of funding to finance the Company’s projects and operations.



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**2.4 – Other MD&A Requirements**

**Share Capital**

The authorized share capital consists of an unlimited number of common shares without par value.

The total number of common shares issued and outstanding as at September 30, 2021 was 93,515,892 and at January 28, 2022 is 119,535,892.

As at September 30, 2021 the Company has 89,990,892 common shares held in escrow and 84,918,847 escrowed shares at January 28, 2022. These escrowed shares are subject to escrow trading restrictions pursuant to the Escrow agreement and are released as follows: 5,072,045 on December 2, 2021, 7,854,090 on March 2, 2022, 17,425,678 on June 2, 2022, 15,708,178 September 2, 2022, 17,425,678 December 2, 2022, 19,635,223 March 2, 2023, 1,717,500 June 2, 2023, 1,717,500 December 2, 2023, 1,717,500 June 2, 2024 and 1,717,500 December 2, 2024.

**Warrants and Options**

As at September 30, 2021 and January 28, 2022, there are no incentive warrants outstanding.

As at September 30, 2021 there were 1,492,750 broker warrants outstanding and at January 28, 2022, there were 3,314,150 broker warrants outstanding all with an exercise price of \$0.05 and a weighted average term to expiry of 2 years from undergoing a liquidity event.

As at September 30, 2021 there were 3,525,000 share purchase warrants outstanding and at January 28, 2022, there were 29,545,000 share purchase warrants outstanding, all with an exercise price of \$0.60 and a weighted average term to expiry of 2 years from undergoing a liquidity event.

As at September 30, 2021 there were 13,050,000 stock options outstanding and at January 28, 2022 there were 9,050,000 stock options outstanding, all with an exercise price of \$0.20 and a weighted average term to expiry of 5 years.

**Additional Disclosures**

	September 30, 2021	September 30, 2020
Exploration and evaluation assets or expenditures	\$ Nil	\$ Nil
Expensed research and development costs	\$ Nil	\$ Nil
Intangible assets arising from development	See Note 4 to Financial Statements	See Note 4 to Financial Statements
General and administration expenses	See Statement of Loss Financial Statements	See Statement of Loss Financial Statements
Material costs, whether expensed or recognized as assets, not referred to	NA	NA

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**RISK FACTORS AND UNCERTAINTIES**

The Company is pursuing the opportunity to exploit patented technology to produce graphene, hydrogen, syngas, methane and other products and business opportunities. Due to the nature of the Company's business and the present stage of its activities, many risk factors will apply. The risks described below are not the only ones facing the Company. Additional risks not presently known to the Company may also impair the business operations.

An investment in the Company is speculative and involves a high degree of risk. Accordingly, prospective investors should carefully consider the specific risk factors set out below, in addition to the other information contained in this document, before making any decision to invest in the Company. The Directors consider the following risks and other factors to be the most significant for potential investors in the Company, but the risks listed do not necessarily comprise all those associated with an investment in the Company and are not set out in any particular order of priority. Additional risks and uncertainties not currently known to the Directors may also have an adverse effect on the Company's business.

If any of the following risks actually occur, the Company's business, financial condition, capital resources, results or future operations could be materially adversely affected. In such a case, the price of the Common Shares could decline, and investors may lose all or part of their investment.

**How risk is related to return**

Generally, there is a strong relationship between the amount of risk associated with a particular investment, and that investment's long-term potential to increase in value.

Investments that have a lower risk also tend to have lower returns because factors that can affect the value of the investment, the risks, are well known or are well controlled and have already been worked into the price of the investment. On the other hand, investments that could have potentially higher returns if conditions for success are favourable also risk generating equally higher losses if conditions become unfavourable. This is because the factors affecting the value of such investments are unknown or difficult to control.

**Dilution**

The financial risk of the Company's future activities will be borne to a significant degree by purchasers of the Common Shares. If the Company issues Common Shares from its treasury for financing purposes, control of the Company may change, and purchasers may suffer additional dilution.

**No Market for Securities**

There is currently no market through which any of the Common Shares, may be sold and there is no assurance that such securities of the Company will be listed for trading on a stock exchange, or if listed, will provide a liquid market for such securities. Until the Common Shares are listed on a stock exchange, holders of the Common Shares may not be able to sell their Common Shares. Even if a listing is obtained, there can be no assurance that an active public market for the Common Shares will develop or be sustained after Listing. The offering price determined by the Company was based upon several factors and may bear no relationship to the price that will prevail in the public market. The holding of Common Shares involves a high degree of risk and should be undertaken only by investors whose financial resources are sufficient to enable them to assume such risks and who have no need for immediate liquidity in their investment. Common Shares should not be purchased by persons who cannot afford the possibility of the loss of their entire investment.

**Negative Cash Flow from Operating Activities**

The Company's activities have been focused on developing its technology and accordingly cash flow is negative, and the Company has been required to raise funds through equity financings.

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**RISK FACTORS AND UNCERTAINTIES** (continued)

**Current Market Volatility**

The securities markets in the United States and Canada have recently experienced a high level of price and volume volatility, and the market prices of securities of many companies have experienced wide fluctuations in price which have not necessarily been related to the operating performance, underlying asset values or prospects of such companies. There can be no assurance that continual fluctuations in price will not occur. It may be anticipated that any market for the Common Shares will be subject to market trends generally, notwithstanding any potential success of the Company. The value of the Common Shares distributed hereunder will be affected by such volatility.

**Personnel**

The Company has a small management team and the loss of any key individual could affect the Company's business. Additionally, the Company will be required to secure other personnel to facilitate its development plans. Any inability to secure and/or retain appropriate personnel may have a materially adverse impact on the business and operations of the Company.

**Tax Issues**

Income tax consequences in relation to the securities offered will vary according to the circumstances of each purchaser. Prospective purchasers should seek independent advice from their own tax and legal advisers prior to purchasing the securities.

**Smaller Companies**

The share price of publicly traded smaller companies can be highly volatile. The value of the Common Shares may go down as well as up and, in particular, the share price may be subject to sudden and large falls in value given the restricted marketability of the Common Shares.

**Competition**

Both the Hydrogen and Graphene industries are characterized by larger companies with more financial resources than the Company. There is no assurance that the Company will be able to effectively compete in that environment.

**Illiquidity** The Common Shares are not listed on a stock exchange. Investors should be aware that there may never be a market for the Common Shares and an investor may never realize a return on their investment. The Common Shares, therefore, may not be suitable as a short-term investment.

**Going Concern and Financing Risks**

The Company has limited financial resources, has no source of operating cash flow and has no assurance that additional funding will be available to it to sustain operations. Although the Company has been successful in the past in obtaining financing through the issuance of common shares, there can be no assurance that it will be able to obtain the necessary financing and raise capital sufficient to cover its operating costs.

**Licensed Technology**

The Company believes the licensed technology will be commercially scalable and the products can be profitably marketed. There can be no assurance that the Company will be able to develop the technology to the point that may be required to carry out its business plans, on reasonable terms, or at all. Delays, or a failure to develop such economically viable products or a failure to comply with the terms of the license could have a material adverse effect on the Company.

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**RISK FACTORS AND UNCERTAINTIES (continued)**

**General Economic Conditions**

The recent events in global financial markets have had a profound impact on the global economy. A continued or worsened slowdown in the financial markets or other economic conditions, including but not limited to, consumer spending, employment rates, business conditions, inflation, fuel and energy costs, consumer debt levels, lack of available credit, the state of the financial markets, interest rates, and tax rates may adversely affect the Company's growth and profitability. These factors could have a material adverse effect on the Company's financial condition and results of operations.

**Coronavirus (COVID-19)**

In March 2020 the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, has adversely affected workforces, economies, and financial markets globally, potentially leading to an economic downturn. It is not possible for the Company to predict the duration or magnitude of the adverse results of the outbreak and its effects on the Company's business or ability to raise funds. However, COVID-19 may directly impact the Company by disrupting the financial markets of which the Company relies on for raising funds or interfering with its supply chains.

**Hydrogen Production Risk Factors**

**Proof of High Scale Production**

The Company needs to work with many different types of engines to see which type is optimal for mass centralized Hydrogen production. Another engine type might be best for smaller decentralized production. The Company does not know how effectively and reliably the engines will work. Since the engines will be running on a very rich fuel mixture that they were not designed for, the Company does not know the long-term consequences. Risks exist that the engines may need to be modified to work with a very rich methane and pure oxygen fuel mixture which would substantially increase the cost to the Company. There are methane engines, but they run with a mixture of methane and air, so the possible need to adopt engines for our fuel mixture is a risk factor.

**Integration of Novel Mixing Chamber**

The Company has designed and patented a novel pre-mixing chamber, which needs to be affixed between the engine and the fuel source, like a fuel injector in a gas car engine. The pre-mix chamber will be fully digital and attached to digitally controlled valves and pumps. There is uncertainty as to how the device will function, as it will be a brand-new device mixing methane and oxygen in very specific ratios. The device will need to be tested and this may protract the time to achieve adequate production levels.

**Volume Oxygen Generation**

Currently the Company is purchasing canisters of oxygen to mix with methane. The Company needs to purchase an oxygen generator to bring down the feedstock costs. The O<sub>2</sub> generator has to be integrated into the pre-mix chamber and the engine. Until further development work is done, the Company cannot predict the success of the system.

**Membrane Separation Technology**

The Company produces Syngas from Methane and Oxygen as its primary product coming out of the engine. Syngas is COH<sub>2</sub>, essentially carbon monoxide and hydrogen. Using membrane separation technology, the Company splits the CO from the H<sub>2</sub> (it is 80% H<sub>2</sub>). There are uncertainties as to the performance of the membranes and the life cycle of them. They will be in constant usage and the Company does not know how quickly they will clog up, thereby shutting down production. The Company may need several membranes onsite and will need to pull out old, clogged membranes and replace with new ones, the Company does not know how long this procedure will take. This process could cause significant production delays.

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**RISK FACTORS AND UNCERTAINTIES** (continued)

**Risks Related to Gases**

The gases produced by the Company's process, Hydrogen and Oxygen are flammable and carbon monoxide is poisonous. There is no assurance that the Company will be able to devise methods to safely deal with these gases. Carbon monoxide is used in some chemical processes. In the event the Company is not able to find a customer for the carbon monoxide by product of its production process which is not assured it may incur considerable costs to dispense of the carbon monoxide could impact its production costs.

**Graphene Production Risk Factors:**

**Limited Production**

The Company's production plan calls for beyond 6Kg per canister per day. In order to do so new pumps and valves have to be purchased and tested. The Company also needs to fabricate more robust electrodes. Within the canister, after detonation, it is a very hostile environment for electrodes. Carbon can get in the gap between the electrodes and foul the entire process. The Company cannot guarantee this will be successfully achieved.

**Increased Frequency of Detonations**

When the Company increases the frequency of detonations it is hard on the equipment. Right now, the Company detonates every 40 seconds and wants to get the frequency down to every 20 seconds. So, the new pumps, valves and electrodes have to fill the canister with acetylene and oxygen twice as fast, and vacuum pull the contents into the holding vessel. Moreover, the electrodes have to spark twice as often in a very hostile environment for electrodes. There is no assurance the Company will be able to achieve this increased frequency of detonation.

**Production Line Automation**

The Company has the front-end process automated, up to containing the product after multiple automated detonations in a holding vessel, it does not have the backend production line from the holding vessel done. Although it is a conventional mass manufacturing issue, the Company still need it solved and there is uncertainty about it.

**Health Risks**

It is possible that Nano-graphene particles from leakage will get into human bodies and cause harm. The Company will need to ensure it has adequate safety procedures at its plant to deal with such risks, which may cause delays in the production process.

**Graphene Sales Risk Factors:**

**Limited Market**

The Company does not believe the market for Graphene is limited; however, the present market for Graphene is limited partially because of the high cost of Graphene. It may take considerable time for manufacturers to adopt Graphene which could delay potential future revenue and/or profitability for the Company.

**HYDROGRAPH CLEAN POWER INC.**  
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**RISK FACTORS AND UNCERTAINTIES** (continued)

**Protracted Sales Cycle** (continued)

Graphene is not yet a commodity product. Therefore, it has to be an engineered solution in most cases. That is Graphene samples get tested and if there is interest, then the Graphene gets functionalized for specific applications. Moreover, the insertion of Graphene into a composite requires modification of an existing production line. If this process takes too much time, it will affect the Company's potential future revenue and profitability.

**High Cost of Customer Acquisition**

It takes time and money to get prospective customers from testing to functionalizing to integrating our graphene into their production. The Company needs to find a way to drive down customer acquisition costs through expediting the process. There is no assurance the Company will be able to do so.

**General**

Although management believes that the above risks fairly and comprehensibly illustrate all material risks facing the Company, the risks noted above do not necessarily comprise all those potentially faced by the Company as it is impossible to foresee all possible risks.

Although the Directors will seek to minimise the impact of the risk factors, an investment in the Company should only be made by investors able to sustain a total loss of their investment. Investors are strongly recommended to consult a person who specialises in investments of this nature before making any decision to invest.

**APPROVAL**

The Board of Directors of the Company has approved the disclosure contained in this MD&A on January 28, 2022.