

# ZINC8 ENERGY SOLUTIONS INC. (Formerly, MGX RENEWABLES INC.)

Unit 1 – 8765 Ash Street  
Vancouver, BC V6P 6T3

## MANAGEMENT DISCUSSION AND ANALYSIS FOR THE YEAR ENDED DECEMBER 31, 2019

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The following Management's Discussion and Analysis ("MD&A"), prepared as of June 12, 2020, should be read in conjunction with the audited financial statements of Zinc8 Energy Solutions Inc. (formerly, MGX Renewables Inc.) ("Zinc8" or the "Company") for the year ended December 31, 2019. The referenced financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS"). All financial amounts are stated in Canadian dollars unless stated otherwise.

Additional information relating to the Company and its operations is available under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com)

### FORWARD-LOOKING STATEMENTS

The Company's financial statements for the year ended December 31, 2019, and this accompanying MD&A contain statements that constitute "forward-looking statements" within the meaning of National Instrument 51-102 - *Continuous Disclosure Obligations* of the Canadian Securities Administrators.

It is important to note that, unless otherwise indicated, forward-looking statements in this MD&A describe the Company's expectations as of June 12, 2020.

Certain statements contained in this MD&A may constitute "forward-looking statements". Such term is defined in applicable securities laws. The forward-looking statements include, without limitation, statements with respect to the success of research and development activities; the Company's new and existing technology; the Company's ability to obtain necessary financing; the completion of the Transaction (as defined herein) and the listing of the Company's shares on the Canadian Securities Exchange; the Company's ability to meet its obligations as they become due; and other similar statements concerning anticipated future events, conditions or results that are not historical facts. These statements reflect management's current estimates, beliefs, intentions and expectations; they are not guarantees of future performance. The Company cautions that all forward-looking information is inherently uncertain and that actual performance may be affected by a number of material factors, many of which are beyond the Company's control. Such factors include, among others, risks relating to research and development; the Company's intellectual property applications being approved; the Company's ability to protect its proprietary rights from unauthorized use or disclosure; the ability of the Company to obtain additional financing; the Company's limited operating history; the need to comply with environmental and governmental regulations; fluctuations in currency exchange rates; operating hazards and risks; competition; and other risks and uncertainties. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Accordingly, actual future events, conditions and results may differ materially from the estimates, beliefs, intentions and expectations expressed or implied in the forward-looking information. All statements are made as of the report date and, except as required by law, the Company is under no obligation to update or alter any forward-looking information.

### DESCRIPTION OF BUSINESS

The Company was incorporated on December 8, 2011 pursuant to the BC Business Corporations Act and the Company's head office is located at #1 – 8765 Ash Street Vancouver, BC V6P 6T3. The Company is executing the development and commercialization of a dependable, low cost zinc-air battery. The Company believes that this mass storage system will offer both environmental and economic benefits.

The Company's technology has been developed around the utilization of zinc as the anode fuel, which is expected to offer numerous advantages over other forms of metals due to its unique attributes, which include high energy density, abundant availability, low cost, and ease of storage and handling. The regenerative system does not require fuel replacement and offers scalable energy capacity through the simple introduction of additional fuel tanks.

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On December 19, 2017 there was a change of control event whereby MGX Minerals Inc. ("MGX") acquired all of the outstanding common shares of the Company in exchange for common shares of MGX and cash considerations. On April 3, 2018, MGX announced it would pursue a reorganization, pursuant to which it would spin-out its interests in the Company, resulting in the Company becoming listed as a separate company on the Canadian Securities Exchange ("CSE") (the "Transaction"). On July 15, 2019 the Company filed a Listing Statement outlining the full details of the Transaction. Additional information is also contained in news releases of Zinc8 dated July 9, 2019 and July 22, 2019 available on Sedar.com

## HIGHLIGHTS

On June 11, 2019 Zinc8 completed a private placement of 8,020,000 Units at a price of \$0.25 per Unit for gross proceeds of \$2,005,000. Each Unit was comprised on one common share of Zinc8 and one-half share purchase warrant with each whole warrant exercisable at a price of \$0.35 until November 30, 2020. In connection with the private placement the Company issued 770,200 finders shares and 347,500 broker warrants and incurred \$35,950 of cash issue costs. Upon completion of the financing MGX's interest in Zinc8 was reduced from 100% to 77%.

On June 26, 2019 the Transaction was completed and MGX completed a distribution of 11,991,761 common shares of Zinc8 as a return of capital reducing MGX's interest in Zinc8 from 77% to 46.4%. The common shares were distributed pursuant to a spin-out by MGX and MGX did not receive any proceeds from the distribution.

On July 22, 2019 the Company's common shares commenced trading on the CSE under the trading symbol "MGXR".

On September 11, 2019 the Company completed a private placement of 8,333,329 Units at \$0.06 per Unit for gross proceeds of \$500,000. Each Unit was comprised of one common share of the Company and one share purchase warrant. The warrants expire on September 11, 2021 and are exercisable at \$0.08 per warrant for the first year and \$0.10 per warrant thereafter. The Company fair valued the warrants using the residual method, allocating 100% of the value to the common shares.

## OVERALL PERFORMANCE

The Company's operations are not currently revenue generating and the Company will need to continue to rely on its ability to obtain the necessary financing through grants and other financings to complete the development of zinc-air flow batteries.

### Zinc-Air Technology

The Company's zinc-air technology consists of three major components: the fuel tank where zinc particles and a potassium hydroxide (KOH) electrolyte are stored; the cell stack where the fuel is converted to electrical power; and the regenerator unit where the electrical power is converted back to fuel. In operation, electrical energy from a source is used to convert zinc oxide to zinc metal in the regenerator unit. The zinc "fuel" thus created is stored in the fuel tank until required. When stored energy is to be released, the zinc fuel is pumped into the cell stack where it reacts with atmospheric oxygen to produce electricity.

The Company has commenced development of a scaled-up 20 kW/160-kilowatt hour ("kWh") system for use in utility-scale battery storage. The 20kW/160kWh modules represent a four-times increase in both energy and power as compared to its current 5kW systems. The 20kW system is expected to retain all attributes of the Company's existing 5kW systems, while providing additional benefits, including lower costs and higher energy density along with adaptability for new applications beyond mass energy storage. The containerized system may be easily scaled to megawatt storage and output capacities. To date, Zinc8 has been awarded 20 patents covering its mass storage technology.

The Company has started production of carbon-based cathodes for its initial mass storage battery systems. Each 5kW system fuel cell stack utilizes 50 cathodes and the Company currently has produced 300 cathodes.

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## SELECTED ANNUAL INFORMATION

The following is a summary of certain selected audited financial information of the Company for the years ended December 31, 2019, 2018 and 2017:

	2019	2018	2017
	\$	\$	\$
Total revenues	525,632	-	448,783
Net (loss) income	(5,146,870)	(2,595,544)	(8,040,182)
Net loss per share (basic and diluted)	(0.14)	(0.09)	(0.27)
Intangible assets	4,950,134	4,950,134	4,950,134
Total assets	5,594,352	5,220,115	4,986,547
Long term liabilities	-	4,104,558	-
Working capital deficit	(6,018,775)	(189,348)	(1,387,424)

## DISCUSSION OF OPERATIONS

### Year ended December 31, 2019

The Company recorded a net loss of \$5,146,870 (\$0.14 per share) for the year ended December 31, 2019 as compared to a loss of \$2,595,544 (\$0.09 per share) for the year ended December 31, 2018.

The increase in loss for the year ended December 31, 2019 is due to the following:

- The Company recorded interest expense of \$601,891 (2018 - \$210,592) related to the promissory note from MGX.
- Research and development increased from \$1,502,473 during the year ended December 31, 2018 to \$1,857,466 in the year ended December 31, 2019. The Company has focused its efforts on furthering its Zinc air technology and is working towards completing full scale systems.
- Marketing expense increased to \$1,121,020 from \$106,366 as the Company completed the Transaction and has engaged consultants to help increase the Company's visibility.
- The Company incurred \$167,421 (2018 - \$nil) of filing and listing fees associated with completing the Transaction.
- The Company incurred share-based compensation expense of \$944,107 (2018 - \$nil) related to the grant of 4,688,000 stock options

### Three months ended December 31, 2019

The Company recorded a net loss of \$1,051,158 (\$0.02 per share) for the three months ended December 31, 2019 as compared to a loss of \$756,084, (\$0.03 per share) for the three months ended December 31, 2018.

The increase in loss for the three months ended December 31, 2019 is due to the following:

- The Company recorded interest expense of \$159,816 (2018 - \$112,787) related to the promissory note from MGX.
- Marketing expense increased to \$646,593 (2018 - \$29,255) as the Company completed the Transaction and has engaged consultants to help increase the Company's visibility.
- The Company incurred \$49,818 (2018 - \$nil) of filing and listing fees associated with completing the Transaction.

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## RESEARCH AND DEVELOPMENT

In order to execute the Company's business strategy, Zinc8 focusses heavily on research and development. During the year ended December 31, 2019 the Company incurred \$1,462,068 (2018 - \$1,072,508) of research and development expense. A breakdown of research and development expenditures during the years ended December 31, 2019 and 2018 is as follows:

	December 31, 2019	December 31, 2018
	\$	\$
Materials	189,651	163,444
Operations	62,632	46,211
Personnel	1,587,321	1,284,967
Testing	17,862	7,851
	<b>1,857,466</b>	<b>1,502,473</b>

## SUMMARY OF QUARTERLY RESULTS

The following table sets out financial information for the past eight quarters:

	Three Months Ended (\$)			
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019
Net and comprehensive loss	(1,051,158)	(1,990,714)	(1,199,615)	(905,383)
Basic and diluted loss per share*	(0.02)	(0.05)	(0.04)	(0.02)
Total assets	5,594,352	5,780,848	6,135,264	5,258,462
Working capital (deficit)	(6,018,775)	21,550	419,554	(234,884)

	Three Months Ended (\$)			
	December 31, 2018	September 30, 2018	June 30, 2018	March 31, 2018
Net and comprehensive income	(756,084)	(831,724)	(606,655)	(401,181)
Basic and diluted loss per share*	(0.04)	(0.06)	(0.03)	(0.02)
Total assets	5,220,115	5,242,768	5,480,842	5,375,834
Working capital	(189,348)	(31,301)	442,125	377,696

\* No exercise or conversion is assumed during the periods in which a loss is incurred, as the effect is anti-dilutive.

The increase in loss during the three months ended December 31, 2017 is due to an impairment of intangible assets of \$6,553,366. The increase in loss during the quarters ended June 30, 2018 and March 31, 2018 are due to a decrease in funding for research and development.

## OUTSTANDING SHARE DATA

The Company has authorized unlimited common shares without par value.

All share information is reported as of June 12, 2020, in the following table:

Type of Security	Number
Issued and outstanding common shares	78,262,573
Stock options with a weighted average exercise price of \$0.25	7,475,951
Warrants with a weighted average exercise price of \$0.17	39,543,698
Total	125,282,222

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## TRANSACTIONS BETWEEN RELATED PARTIES

Compensation paid to key management during the years ended December 31, 2019 and 2018 was as follows:

	2019	2018
	\$	\$
Management fees <sup>1</sup>	234,500	-
Payroll expense <sup>2</sup>	132,000	280,476
Share-based payments	520,697	-
	<b>887,197</b>	<b>280,476</b>

<sup>1</sup>Includes fees paid to CFO Michael Reimann, former CEO Jared Lazerson and current CEO Ron MacDonald

<sup>2</sup>Incldues fees paid to VP of Engineering John McLeod and CEO Ron MacDonald

Key management includes the CFO, CEO, VP of Engineering and the Board of Directors. All related party transactions are in the normal course of operations and have been measured at the agreed to amounts, which is the amount of consideration established and agreed to by the related parties.

During the year ended December 31, 2018 the Company received \$2,376,744 (2017 - \$nil) in loans from MGX. On June 30, 2018 the Company entered into a promissory note agreement with MGX in the amount of \$2,952,222 (the "Promissory Note"). The Promissory Note replaced the existing loans payable that were owing to MGX. The Promissory Note bears interest at 12%, is unsecured and due on December 31, 2020. Additional loans received from MGX subsequent to the Promissory Note have the same terms as the Promissory Note.

	\$
<b>Balance, December 31, 2017</b>	-
Additions	3,893,966
Interest	210,592
<b>Balance, December 31, 2018</b>	<b>4,104,558</b>
Additions	739,038
Repayments	(251,499)
Interest	582,591
<b>Balance, December 31, 2019</b>	<b>5,174,688</b>

On March 11, 2020 the Company settled its debt with MGX Minerals by agreeing to a payment of \$1,500,000 to be made over the following four months. As part of the debt settlement, Jared Lazerson, a former director of the Company, agreed to resign from his board position. Mr. Lazerson agreed to a severance agreement with the Company whereby the Company issued 800,000 units at a deemed price of \$0.38, with each unit consisting of one common share and one share purchase warrant. Each warrant is exercisable for 2 years at a price of \$0.50 per warrant.

As at December 31, 2019 the Company had \$68,500 in advances payable to a related party of the Company, the amounts owing are due on demand and non-interest bearing. Subsequent to December 31, 2019 the advances were repaid.

## LIQUIDITY AND CAPITAL RESOURCES

As at December 31, 2019 the Company had a working capital deficit of \$6,018,775 (December 31, 2018 - \$189,348), has not generated any revenue from operations and has an accumulated deficit of \$15,779,705 (December 31, 2018 - \$10,632,835).

To date the Company has been funded through government grants and shareholder funding for research and development. As at December 31, 2019 the Company did not have sufficient funds to cover working capital expenditures for the next 12 months. The Company will need additional funding to continue the development of

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its zinc-air technology. Zinc8 has no capital commitments for the next 12 months, and in order to execute the Company's business strategy the Company will need to continue capital development through research and development. The Company expects to fund its future capital requirements through additional government grants and shareholder funding. The circumstances that could affect such sources of financing include those set out under "Risk Factors" in the accompanying Circular. See also the "Financial Instruments" section of this MD&A.

## FINANCING ACTIVITIES AND CAPITAL EXPENDITURES

On June 11, 2019 Zinc8 completed a private placement of 8,020,000 Units at a price of \$0.25 per Unit for gross proceeds of \$2,005,000. Each Unit was comprised on one common share of Zinc8 and one-half share purchase warrant with each whole warrant exercisable at a price of \$0.35 until November 30, 2020. In connection with the private placement the Company issued 770,200 finders shares and 347,500 broker warrants and incurred \$61,520 of cash issue costs. Upon completion of the financing MGX's interest in Zinc8 was reduced from 100% to 77%. The Company fair valued the broker warrants at \$31,795 using the Black-Scholes option pricing model using the following assumption: Volatility 100%; risk-free rate – 1.9%, forfeiture – nil; dividend rate – nil.

On September 11, 2019 the Company completed a private placement of 8,333,329 Units at \$0.06 per Unit for gross proceeds of \$500,000. Each Unit was comprised of one common share of the Company and one share purchase warrant. The warrants expire on September 11, 2021 and are exercisable at \$0.08 per warrant for the first year and \$0.10 per warrant thereafter. The Company fair valued the warrants using the residual method, allocating 100% of the value to the common shares.

During the year ended December 31, 2019 the Company received an additional \$739,038 (December 31, 2018 - \$750,000) in loans from MGX and repaid \$251,499

On February 11, 2020 the Company closed a non-brokered private placement issuing 27,879,513 units at \$0.11 per unit for gross proceeds of \$3,066,746. Each unit consists of one common share and one non-transferrable share purchase warrant. The warrants have a two-year life and an exercise price of \$0.155 during the year first year and \$0.40 for the balance of the term. The Company paid \$186,893 in finders fees and issued 632,887 finders shares. As at December 31, 2019 the Company had received \$21,000 in subscriptions related to the private placement.

## OFF-BALANCE SHEET ARRANGEMENTS

The Company does not utilize off-balance sheet transactions.

## PROPOSED TRANSACTIONS

The Company has no proposed transactions that will materially affect the performance of the Company.

## ACCOUNTING POLICIES

The Company uses the same accounting policies and methods of computation as in the annual financial statements for the year ended December 31, 2018.

The following standards were adopted during the period.

### IFRS 16 Leases

IFRS 16 will replace IAS 17 Leases. IFRS 16 specifies how to recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. The standard became effective on January 1, 2019, as the Company does not currently have any leases the adoption of this standard did not have an impact on the Company's financial statements.

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## FINANCIAL INSTRUMENTS

### Fair Values

The Company has classified fair value measurements of its financial instruments using a fair value hierarchy that reflects the significance of inputs used in making the measurements as follows:

- Level 1: Valuation based on quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: Valuation based on directly or indirectly observable inputs in active markets for similar assets or liabilities, other than Level 1 prices, such as quoted interest or currency exchange rates; and
- Level 3: Valuation based on significant inputs that are not derived from observable market data, such as discounted cash flow methodologies based on internal cash flow forecasts.

As at December 31, 2019, the fair values of financial instruments measured on a recurring basis include cash, determined based on Level 1 inputs and consisting of quoted prices in active markets for identical assets. The fair values of other financial instruments, which include accounts payable and accrued liabilities, loans payable, approximate their carrying values due to the relatively short-term maturity of these instruments.

### Liquidity Risk

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they fall due. The Company currently settles its financial obligations out of cash. The ability to do this relies on the Company raising equity financing in a timely manner and by maintaining sufficient cash in excess of anticipated needs. As at December 31, 2019, the Company had a working capital deficit of \$6,018,775 (December 31, 2018 - \$189,348).

### Credit Risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations. The Company's cash is largely held in large Canadian financial institutions. The Company does not have any asset-backed commercial paper. The Company's receivables consist of GST receivable due from the Federal Government of Canada. The Company has not experienced any significant credit losses and believes it is not exposed to any significant credit risk.

### Interest Rate Risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Financial assets and liabilities with variable interest rates expose the Company to cash flow interest rate risk. The Company does not hold any financial liabilities with variable interest rates. The Company does maintain bank accounts which earn interest at variable rates but it does not believe it is currently subject to any significant interest rate risk.

### Foreign Currency Exchange Rate Risk

The Company's functional and reporting currency is the Canadian dollar and major purchases are transacted in Canadian dollars. As a result, the Company's exposure to foreign currency risk is minimal.

## RISKS AND UNCERTAINTIES

Risk is inherent in all business activities and cannot be entirely eliminated. The Company's goal is to mitigate the risks arising from business activities, the markets and political environments in order to sustain and develop the Company's operations. The risks and uncertainties described in the accompanying Circular under "*Risk Factors*" are considered by management to be the most important in the context of the Company's business. Such risks and uncertainties are not inclusive of all risks and uncertainties the Company may be subject to and other risks may apply.

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## **FINANCIAL AND DISCLOSURE CONTROLS AND PROCEDURES**

In connection with National Instrument 52-109 (Certification of Disclosure in Issuer's Annual and Interim Filings) ("NI 52-109"), the Chief Executive Officer and Chief Financial Officer of the Company have filed a Venture Issuer Basic Certificate with respect to the financial information contained in the financial statements for the year ended December 31, 2019, and this accompanying MD&A (together the "Annual Filings").

In contrast to the full certificate under NI 52-109, the Venture Issuer Basic Certificate does not include representations relating to the establishment and maintenance of disclosure controls and procedures and internal control over financial reporting, as defined in NI 52-109. For further information the reader should refer to the Venture Issuer Basic Certificates filed by the Company with the Annual Filings on SEDAR at [www.sedar.com](http://www.sedar.com).