# HARMONY ENERGY TECHNOLOGIES CORPORATION

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

AS OF JUNE 12, 2020

Management discussion and analysis for the year ended December 31, 2019

# SCOPE OF MD&A AND NOTICE TO INVESTORS

The following management discussion and analysis of the financial position and results of operations ("MD&A"), should be read in conjunction with the audited financial statements of Harmony Energy Technologies Corporation ("Harmony" or "Company") for the year ended December 31, 2019.

This MD&A is prepared as of June 12, 2020 and complements audited financial statements of the Company for the year ended December 31, 2019.

All financial information has been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and interpretations of the International Financial Reporting Committee (IFRIC). All amounts are in United States dollars unless otherwise indicated. Additional information is provided in the Company's audited financial statements for the year ended December 31, 2019.

The financial statements and the MD&A have been reviewed by the audit committee and approved by the Company's Board of Directors on June 12, 2020. These documents and more information about the Company are available on SEDAR (<a href="www.sedar.com">www.sedar.com</a>).

# FORWARD-LOOKING STATEMENTS

Certain statements made in this MD&A are forward-looking statements or information. The Company is hereby providing cautionary statements identifying important factors that could cause the Company's actual results to differ materially from those projected in the forward-looking statements. Any statements that express, or involve discussions as to, expectations, beliefs, plans, objectives, assumptions or future events or performance (often, but not always, through the use of words or phrases such as "may", "is expected to", "anticipates", "estimates", "intends", "plans", "projection", "could", "vision", "goals", "objective" and "outlook") are not historical facts and may be forward-looking and may involve estimates, assumptions and uncertainties which could cause actual results or outcomes to differ materially from those expressed in the forward-looking statements. In making these forward-looking statements, the Company has assumed that the current market will continue and grow and that the risks listed below will not adversely impact the business of the Company. By their nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, which contribute to the possibility that the predicted outcomes may not occur or may be delayed. The risks, uncertainties and other factors, many of which are beyond the control of the Company that could influence actual results include, but are not limited to: the risks could be adapted to the energy storage industry, examples: instability in market prices of metals, foreign currency exchange rate, poorly estimated reserves, risks to the environment (more stringent regulations), battery technologies conditions, regulation and government policy changes (laws or policies), failure to obtain necessary permits and approvals from government authorities, future capital requirements; intellectual property protection and infringement risks; competition; reliance on key management personnel and the other risks factors summarized below under the heading "Risks and Uncertainties".

Further, unless otherwise noted, any forward-looking statement speaks only as of the date of this MD&A, and, except as required by applicable law, the Company does not undertake any obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for management to predict all such factors and to assess in advance the impact of each such factor on the business of the Company, or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statement.

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# CORPORATE OVERVIEW

On June 19, 2018, Harmony Energy Technologies Corporation ("Harmony" or "Company") was registered under the General Corporation Law of the State of Delaware, USA. Harmony's registered office is located at 2711 Centerville Road, Suite 400, City of Wilmington, County of New Castle, Delaware, USA 19808. The Company's common shares are not listed or quoted on any market at this moment.

On January 14, 2019, the Company completed the acquisition of the Energy Business from Golden Share Resources Corporation ("Golden Share"), a Canadian public Company listed on the TSX Venture Exchange ("TSXV"). For more information on the spinout, please refer to Golden Share's press releases of October 15, 2018, December 13, 2018 and December 24, 2018, as well as Golden Share's management information circular dated October 22, 2018 which is available at <a href="https://www.sedar.com">www.sedar.com</a>.

On November 6, 2019, the Company signed an Acquisition Agreement with the shareholder of Shenzhen Smarten Technology Co., Ltd. ("Smarten") to acquire the 100% ownership of Smarten. The Company will issue 1,800,000 common shares and a cash payment as Chinese Renminbi 2,000,000 (approximately \$287,282). The Company has issued 1,800,000 shares upon receiving lockup agreements into total representing approximately 61.24% of total outstanding issued shares to support the acquisition. The cash payment will be transacted upon final approval of the special shareholders meeting of Harmony. For more information on the acquisition, please refer to the Company's press release of November 14, 2019.

Harmony is engaged to develop the solutions which entail the integration of clean energy and rechargeable battery technology, in order to become a service provider for clean electricity for a niche market at present.

### BOARD OF DIRECTORS AND MANAGEMENT

Harmony's Board of Directors is comprised of four members: Mr. Christian Guilbaud, Mr. Kenneth Charles ("K.C.") Grainger, Dr. Zhen Huang and Mr. Nick Zeng as the Chairman. The management team includes Mr. Nick Zeng as President and Chief Executive Officer, Mr. Demin (Fleming) Huang as Chief Financial Officer.

# CORPORATE DEVELOPMENT HIGHLIGHTS

# 1) Completion of Energy Business Acquisition

On January 14, 2019, the Company completed the acquisition of the Energy Business from Golden Share.

# 2) Private Placement Financing

During the year ended December 31, 2019, the Company completed a private placement for total proceeds of \$100,000 through issuing 100,000 units at the price of \$1.00 per unit. Each Unit consists of one common share and one common share purchase warrant ("Warrant"). Each Warrant entitles the holder thereof to acquire one Harmony Share at a price of \$1.00 for a period of 36 months from the issuance date (January 14, 2019).

# 3) Signed the acquisition agreement of Shenzhen Smarten Technology Co., Ltd.

On November 6, 2019, the Company signed an Acquisition Agreement for acquisition of 100% ownership of Shenzhen Smarten Technology Co., Ltd. ("Smarten").

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# **BUSINESS DEVELOPMENTS**

# **Highlights:**

- In development a Residential Intelligent Energy System ("RIES") which is based on lithium-ion batteries.
- 2. The right to access the technology for an advanced vanadium electrolyte for Vanadium Redox Flow Battery ("VRFB").

### **Details:**

A solution which entails the integration of clean energy, mainly solar photovoltaic ("solar"), and rechargeable battery will be the future method of how consumers receive their electricity. The technologies for such solutions should not be the major challenge; however, the high costs for both solar and battery, are the hurdles at present. Such solutions are presently viable for a niche market. Continued research and development created for technological breakthroughs will be necessary for a solution suitable for mainstream applications.

The clean energy technologies to generate electricity are at more advanced stage than energy storage to store electricity at present. Recognizing the opportunities, Harmony has decided to become more involved with energy storage. Harmony has been developing two kind of energy storage systems, one is the rechargeable residential lithium-ion battery system (KWh, 1 KWh, being the equivalent of 1 thousand watts for one hour) and the second is the rechargeable stationary grid vanadium flow battery system (MWh, 1 MWh, being the equivalent of 1 million watts for one hour).

Harmony is of the view that lithium-ion battery with KWh capabilities are more suitable for residential applications, while VRFB with MWh capabilities should be more suitable for stationary grid applications.

# 1) A Residential Intelligent Energy System ("RIES")

The lithium-ion battery is the most advanced and matured battery technology as of today. And the cost of lithium-ion batteries has been tremendously reduced over the past decade, and probably will be continually lower The Manufacturing of lithium-ion battery is capital intensive and very competitive. Harmony selected to partner with the reliable lithium-ion battery manufacturer for possible best cell source for the system.

### System's key specifications:

6 KW continuous power; 15 KWh Capacity; Operating temperature: -4 to 122 F.

### Target market:

- a) The areas in the United States and Canada with much higher rates for electricity than the national average, including and especially the remote isolated areas and the other off grid areas and applications.
- b) For the customers who would like to improve the resilience and reliability of their electricity supply, where the grid is not completely so dependable or for extreme weather conditions.
- c) For the customers who would accept paying extra for environmental or other reasons.

### Development status:

The Company will continue developing the RIES through Smarten. The Company signed an Acquisition Agreement to acquire 100% of Smarten in November 2019. The prototype system is under development and testing at Smarten facility during the fourth quarter of 2019.

Smarten is a start-up focusing on research, development, production and sales of energy storage system ("ESS"), based on Shenzhen, China. With many years' experience in solar industry and being endowed with solar PV energy generation technology, battery storage technology, on/off grid

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technology, Smarten's team have designed high quality, high efficiency and high reliability energy storage products which are certified by TUV, SAA, CE etc. The ESS from Smarten have be installed in China, Europe and Asia.

# 2) Vanadium Redox Flow Batteries ("VRFB")

VRFB is a type of rechargeable flow battery that employs vanadium ions in different oxidation states to store potential chemical potential energy. After enormous research and developments since the 1980s, the VRFB is regarded as a mature technology in flow battery technologies.

VRFB offers the following desirable characteristics:

- a) demonstrates excellent electrochemical reversibility and length life cycle;
- b) the electrolytes are aqueous and inherently safe and non-flammable.

VRFB's main drawback is a relatively low energy density (energy-to-volume ratio). The heavy weight of the battery due to aqueous electrolyte therefore limits applications, but still might be well-suited to stationary grid applications.

# Target Markets:

- a) For utility companies to increase the capacity and capability of existing transmission and distribution utility assets, defer grid upgrade investments; improve grid reliability, and support the ability of grid operators to manage increasingly variable loads and resources.
- b) For renewable energy power plants to buffer and smooth the variability of energy output generated by solar and wind; and shifting output to enable increased delivery of renewable energy to maximize the return of investment.
- c) For the other Commercial & Industrial customers, with the energy storage installed after the electric meter, benefits include lower energy costs, increased reliability and power quality; and possible revenue streams through arbitrage where applicable.
- d) Intelligent integration with VRFBs as long duration energy storage would make the microgrid more reliable and competitive than today's extremely complicated ultra large one grid.

### Development status:

- a) a License Agreement (the "License Agreement") with Battelle Memorial Institute ("Battelle") to produce, use and sell vanadium electrolytes developed by Pacific Northwest National Laboratory ("PNNL") of the United States Department of Energy.
  - The licensed vanadium electrolytes ("VE") developed by PNNL have advantages over previous generations, including a wider temperature-operating range and higher energy density, particularly at higher temperatures, constituting a reliability improvement of the licensed VE.
- b) The samples from trial production of the licensed VE were under independent testing for composition, chargeability, dischargeability and stability. The satisfactory results met the specifications of the patent of PNNL. The licensed VE from Harmony is ready for commercial application.

Emerging VRFB has been attracting attention and sounds exciting but is still a nascent industry at the developmental stage. Harmony believes that VRFB still requires a few break-through developments. Harmony's strategy is to remain fully engaged in this exciting nascent industry while optimizing use of the Company's limited financial and management resources as a small company. The Company would like to hold the position for future possible maximum rewards but with possible minimum risks. Battery manufacturing, which is a true capital-intensive business, is not what the Company would like to pursue. With the Company's licensed VE, partnership with an established and trustworthy VRFB manufacturer through "Contract Manufacturing" would be ideal for Harmony to supply its own VRFB with possibly lowest cost and risks.

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Harmony will continue to focus on the vanadium electrolyte, the most important and expensive component of VRFB. A better vanadium electrolyte would in principle be expected to improve overall VRFB performance.

Harmony will also focus on implementing applications to hopefully engineer a sustainable business model suitable for VRFB based on its main advantage as the extremely long-life span as defined as decades.

# SELECTED FINANCIAL INFORMATION

During the year ended December 31, 2019, the Company's selected financial information as the following:

## FINANCIAL POSITION ANALYSIS

The information presented as at December 31, 2019 and 2018 represents the information of Harmony Energy Technologies Corporation.

	December 31, 2019	<b>December 31, 2018</b>		
	\$	\$		
Assets	1,373,325	1		
Liabilities	162,374	-		
Equity	1,210,951	1		

### ASSETS

The total assets at December 31, 2019 were \$1,373,325 compared to \$1 at December 31, 2018, an increase of \$1,373,324. During the year ended December 31, 2019, the Company acquired the energy business which included \$100,000 prepaid research expenditure according to the Agreement for Commercializing Technology according to the plan of arrangement of Golden Share. At the same time, the Company closed a \$100,000 private placement and issued 100,000 common share and 100,000 warrants. The Company signed acquisition agreement of 100% ownership of Smarten and issued 1,800,000 shares of Harmony common share, which the share fair value was recorded as \$1,170,000. The Company loaned \$180,000 to Golden Share during the year ended December 31, 2019, and the Company accrued \$17,106 interest for the loan.

# **LIABILITIES**

Total liabilities at December 31, 2019 was \$162,374 while nil at December 31, 2018, mainly due to the increased liabilities are unpaid the travel expense, accrued management fee and audit fee.

### **EQUITY**

Total equity at December 31, 2019 was 1,210,951 compared to \$1 at December 31, 2018, an increase of \$1,210,950 mainly due to the share issued for the acquisition of energy business from Golden Share, the acquisition of 100% ownership of Smarten and private placement.

# **OPERATING RESULTS ANALYSIS**

Readers are invited to take into consideration of the operation results of Harmony Energy Technologies Corporation for the three-month and twelve-month period ended December 31, 2019 and period from incorporation to December 31, 2018.

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	Three-month ended December 31, 2019	Three-month ended December 31, 2018	Twelve-month ended December 31, 2019	Period from incorporation to December 31, 2018	
	\$	\$	\$	\$	
Net loss before income taxes	77,657	-	159,049	-	
Basic and diluted net loss per common share	0.016	-	0.040	-	

The above net loss for three-month and twelve-month period ended December 31, 2019 is composed as the following:

### Gain on the interest income

During the twelve-month period ended December 31, 2019, the Company entered into agreements of short term unsecured loans to Golden Share and totalling released US\$180,000 to Golden Share. The unsecured loans bear interest at 1% monthly and payback upon request. During the twelve-month period ended December 31, 2019, the Company accrued \$17,106 interest income for \$180,000 loan.

## Energy business expenditures

For the twelve-month period ended December 31, 2019, the Company incurred energy business expenditures \$3,746, while the expenditures were paid by Golden Share during the year of 2018 due to the Energy business spin off was completed in January 2019.

### Administrative expenses

For the twelve-month period ended December 31, 2019, the Company incurred \$172,284 in administrative expenses included management fee of \$72,000, professional fee of \$54,503, travel, accommodation and meal of \$31,285, transfer agent fee of \$9,914 and regulatory fee of \$4,021.

# **CASH FLOW ANALYSIS**

	Three-month ended December 31, 2019	Three-month ended December 31, 2018	Twelve-month ended December 31, 2019	Period from incorporation to December 31, 2018	
	\$	\$	\$	\$	
Operating activities	(3,860)	-	(13,781)	-	
Investing activities	-	-	(80,001)	-	
Financing activities	-	1	100,000	1	

# THREE-MONTH AND TWELVE-MONTH PERIODS ENDED DECEMBER 31, 2019 AND PERIOD FROM INCORPORATION TO DECEMBER 31, 2018 COMPARISON

## **Operating Activities**

During the twelve-month period end December 31, 2019, the operating activities used cash flows of \$13,781 while the three-month period operating activities used cash flow of \$3,860 for operating expenditure.

## **Investing Activities**

The Company acquired the energy business assets from Golden Share during the year ended December 31, 2019, include \$100,000 prepaid research expenditure paid by Golden Share, and the Company received the refund of prepaid research expenditure in 2019. The Company received \$100,000 from private placement during the year ended December 31, 2019. The \$200,000 was offset by the \$180,000 loan released in the same period.

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# Financing Activities

The Company received \$100,000 from private placement during the year ended December 31, 2019, while the Company issued 1 share to Golden Share for \$1 at its initial registration in the year ended December 31, 2018.

# QUARTERLY RESULTS TREND (IN THOUSANDS OF \$)

The following table presented the operating results for each quarter since the Company registered on June 19, 2018. Management considers that the information for each of those quarters was determined in the same way as for our audited financial statements for the year ended December 31, 2019.

	2019			2018			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2
	\$	\$	\$	\$	\$	\$	\$
Revenue	-	-	1	-	1	-	-
Net loss and other comprehensive loss	73	20	21	29	-	-	-
Basic and diluted net loss per common share	0.016	0.006	0.007	0.008	-	-	-

# LIQUIDITY, CAPITAL RESOURCES AND SOURCES OF FINANCING

The Company has operating losses currently. To date, the Company has been financed primarily through private placement.

As of December 31, 2019, the Company had a cash position of \$6,219 and the Company has a working capital of \$40,951 on December 31, 2019. The Company believes it will not have sufficient liquidity to fund its operations and capital needs for the next 12 months and consequently intends to raise capital to generate cash in sufficient amounts to meet its planned business objectives.

The Company has to make a royalty payment of one and five tenths of one percent of electrolyte sales revenues to Battelle to fulfil its commitments related to license agreement with the Battelle, and the minimum royalty cash payment of US\$5,000 in 2022, US\$10,000 in 2023 and US\$20,000 in 2024 and each calendar year thereafter during the term of the agreement. The Company can terminate the agreement at any time upon sixty (60) days written notice in advance.

The Company will make Chinese Renminbi2,000,000 (approximately \$287,282) cash payment to close the acquisition of 100% ownership of Smarten after the approval from the special shareholders meeting.

# INFORMATION ON OUTSTANDING SECURITIES

The following table sets out the number of common shares and warrants outstanding as of the date hereof:

Common shares issued and outstanding	5,762,079
Potential issuance of common shares	
Warrants	100,000
Fully diluted shares	5,862,079

# RELATED PARTY TRANSACTIONS

The Company has not entered into any other related party transaction except the disclosure in Note 9 of the financial statements for the year ended December 31, 2019.

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# **OFF-BALANCE SHEET ARRANGEMENTS**

The Company has no off-balance sheet arrangements.

# ESTIMATES, JUDGMENTS AND ASSUMPTIONS

The Company prepares its financial statements in accordance with IFRS, which require management to make estimates and assumptions that affect the amounts of its assets and liabilities, the information provided with regard to future assets and liabilities as well as the amounts of revenues and expenses for the relevant periods. Readers are invited to refer to the Note 4 of the financial statements for the year ended December 31, 2019 for details.

### **FUTURE CHANGES IN ACCOUNTING POLICIES**

At the date of authorization of these financial statements, certain new standards, amendments and interpretations to existing standards have been published by the International Accounting Standards Board (IASB) but are not yet effective and have not been adopted early by the Company.

Management anticipates that all of the relevant pronouncements will be adopted in the Company's accounting policies for the first period beginning after the effective date of the pronouncement. Readers are invited to refer to the financial statements for the year ended December 31, 2019 for a full description of these new standards.

### GOING CONCERN ASSUMPTION

The Company's financial statements were prepared according to the IFRS and under the going concern assumption. They do not reflect adjustments that should be made to the book value of assets and liabilities, the reported amounts of income and expenses and the classification of balance sheet postings if the going concern assumption was unfounded. These adjustments could be important.

### RISKS RELATED TO FINANCIAL INSTRUMENTS

Capital market conditions and other unforeseeable events may impact the Company's ability to finance and develop its projects.

The Company intends to continue the evaluation and development of its energy business subject to the availability of financing on acceptable terms. The Company intends to finance these activities either through existing financial resources or through additional equity or quasi-equity financing. However, there can be no assurance that the Company will be able to raise such additional equity.

Additional information on the Company can be found on SEDAR (www.sedar.com).