

**NXT ENERGY SOLUTIONS INC.**

**ANNUAL INFORMATION FORM**

**FOR THE YEAR ENDED DECEMBER 31, 2023**

*March 27, 2024*

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## 1 ADVISORIES

Certain statements contained in this Annual Information Form (“AIF”) constitute “forward-looking information” within the meaning of applicable securities laws. These statements typically contain words such as “anticipate”, “believe”, “could”, “would”, “should”, “estimate”, “expect”, “intend”, “seek”, “may”, “plan”, “will”, “target”, “foresee”, “continue” and similar words and phrases suggesting future outcomes or an outlook. Forward-looking statements in this AIF include, but are not limited to: receipt of accounts receivable from the Turkish SFD® survey; the Company’s ability to achieve the remaining milestone with respect to the Consideration (as defined below) owing to Mr. George Liszicasz, the future payment of the Consideration (as defined below) to the estate of Mr. George Liszicasz, and the satisfaction of the conditions thereto (including with respect to cash balances); the development, commercialization and protection of the SFD® (as defined below) technology for geothermal resource exploration; the extent to which expanding the Company’s scope of business to include exploring for both hydrocarbon and geothermal resources is anticipated to result in an expansion of its scope of revenue sources; receipt of the remaining US\$900,000 from the Ataraxia Subscription Agreement (as defined herein) and approval of terms for the remaining US\$900,000 by the Toronto Stock Exchange (“TSX”); the Company’s ability to successfully work with Synergy and Ataraxia (each as defined herein) to develop future business in the African continent; expectations regarding competition within the industries in which the Company operates; the Company’s ability to continue operating as a going concern; the Company’s ability to pay deferred operating costs such as payroll, operating costs and general and administrative expenses; the Company’s ability to repay amounts outstanding under the Ataraxia and November Debentures; expectations regarding the future conversion of the Ataraxia Debentures or the November Debentures into common shares or Preferred Shares (each as defined herein) of the Company; expectations around the future appointment of a representative of Mork Capital to the Board, including the identity of such representative and the timing of such appointment; estimates related to our future financial position and liquidity including certain contractual obligations; the implementation of cost reduction measures; the sufficiency of aircraft and general business insurance coverage, should it be required; and general business strategies and objectives.

Such forward-looking information is based on a number of assumptions which may prove to be incorrect. Assumptions have been made with respect to the following matters, in addition to any other assumptions identified in this AIF: our ability to market our SFD® technology and services to current and new customers; our ability to source personnel and equipment in a timely manner and at an acceptable cost; our ability to obtain all permits and approvals required; our ability to obtain financing on acceptable terms; our ability to obtain adequate insurance; foreign currency exchange and interest rates; and general business, economic and market conditions (including global commodity prices).

Although NXT believes that the expectations reflected in such forward-looking information are reasonable, undue reliance should not be placed on them as NXT can give no assurance that such expectations will prove to be correct. Forward-looking information is based on expectations, estimates and projections that involve a number of risks and uncertainties which could cause actual results to differ materially from those anticipated by NXT and are described in the forward-looking information. Material risks and uncertainties include, but are not limited to: the ability of management to execute its business plan; health, safety and the environment; the emergence of alternative competitive technologies; our ability to protect and maintain our intellectual property (“IP”) and rights to our SFD® technology; our reliance on a limited number of key personnel; our reliance on a single aircraft; our reliance on a limited number of clients; counterparty credit risk; foreign currency and interest rate fluctuations; inflation; geopolitical instability; risks associated with climate change; changes in, or in the interpretation of, laws, regulations or policies; general business, economic and market conditions (including global commodity prices); and other factors described herein under the heading “*Risk Factors*”.

The forward-looking information contained in this AIF is made as of the date hereof and, except as required by applicable securities law, NXT undertakes no obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise.

In this AIF, except as specified otherwise or unless the context requires otherwise, “we”, “us”, “our”, the “Company”, and “NXT” refer to NXT Energy Solutions Inc. and its subsidiaries. All references to “fiscal” in connection with a year shall mean the year ended December 31.

All financial information contained herein is expressed in Canadian dollars unless otherwise stated. Our functional and reporting currency is the Canadian dollar. All references to “dollars,” “\$” and “CDN\$” in this AIF are to Canadian dollars unless specific reference is made to United States dollars (“US\$”). The information in this AIF is given as of December 31, 2023 unless otherwise indicated.

## **2 CORPORATE STRUCTURE**

### **2.1 Company Information**

NXT is a Calgary-based technology company whose proprietary airborne SFD<sup>®</sup> survey system (“SFD<sup>®</sup>”), applied in numerous basins around the world, uses the principles of quantum mechanics to infer stress anomalies of exploration interest. The method can be used both onshore and offshore to remotely identify areas conducive to fluid entrapment in order to recommend areas with commercial hydrocarbon and/or geothermal potential. The SFD<sup>®</sup> survey system enables our clients to focus their exploration decisions concerning land commitments, data acquisition expenditures and prospect prioritization on areas with the greatest potential. SFD<sup>®</sup> is environmentally friendly and unaffected by ground security issues or difficult terrain and is the registered trademark of NXT.

We are continued under the *Business Corporations Act* (Alberta). The Company was originally incorporated on September 27, 1994 in the state of Nevada and was established in Alberta pursuant to a Certificate of Continuance issued October 24, 2003 by the Registrar of Corporations of the Province of Alberta. NXT’s Alberta Corporate Access Number is 2010730915. There have been no material amendments to our Articles of Continuance other than those filed on: (i) December 27, 2006 providing for the creation of the first series of preferred shares in the capital of the Company (“Preferred Shares”); (ii) September 19, 2008 providing for the name change from Energy Exploration Technologies Inc. to NXT Energy Solutions Inc. Our registered office and head office is located at Suite 302, 3320 - 17<sup>th</sup> Avenue SW, Calgary, Alberta, Canada, T3E 0E8; and (iii) August 2, 2023 cancelling the first series of Preferred Shares and creating an unlimited quantity of Series 2 Preferred Shares. Our phone number is (403) 264-7020.

We are a reporting issuer in Alberta, Ontario and British Columbia and are principally governed by the Alberta Securities Commission in accordance with the *Securities Act* (Alberta). We are a foreign private issuer under United States securities laws and are subject to the regulation of the United States Securities in accordance with the *Securities Exchange Act of 1934*, as amended.

### **2.2 Intercorporate Relationships**

The following table provides a list of all subsidiaries and other companies controlled by NXT:

<b>Subsidiaries</b>	<b>Date and Manner of Incorporation</b>	<b>Authorized Share Capital</b>	<b>Issued and Outstanding Shares</b>	<b>Nature of the Business</b>	<b>% of each Class of Shares owned by NXT</b>
NXT Energy USA, Inc.	October 20, 1995 by Articles of Incorporation – State of Nevada, USA	20,000,000 common shares	5,000,000 common shares	Inactive	100%
NXT Aero USA, Inc.	August 28, 2000 by Articles of Incorporation – State of Nevada, USA	1,000 common shares 4,000 Preferred Shares	100 common shares	Inactive	100%
Cascade Petroleum Inc. (Formerly Survey Services International Inc.) <sup>1</sup>	September 6, 2011 by Articles of Incorporation – Province of Alberta	Unlimited number of common shares	100 common shares	Inactive	100%
NXT Energy Services (SFD) Inc.	December 2008 by Articles of Incorporation – Canada	Unlimited number of common shares	100 common shares	Inactive	100%
PetroCaza Exploration Inc.	May 2015 by Articles of Incorporation – Province of Alberta	Unlimited number of common and Preferred Shares	100 common shares	Inactive	100%

<sup>1</sup> On January 16, 2017, the name of Survey Services International Inc. was changed to “Cascade Petroleum Inc.”

In addition, in March 2015, NXT registered NXT Energy Solutions Inc. (Sucursal Bolivia) as a wholly-owned “branch” entity under the laws of the Plurinational State of Bolivia, to contract and conduct survey operations in Bolivia. Operations have now ceased in Bolivia and we closed the branch in 2021.

### **3 GENERAL DEVELOPMENT OF THE BUSINESS**

#### **3.1 Three Year History**

We have an opportunity to provide our services in any region of the world where oil and gas exploration activities are conducted. However, we choose to be strategic and focus our limited marketing and sales resources on a limited number of markets in the early stages of commercialization.

A summary of revenues derived in our primary geographic market segments for the last three fiscal years is below:

Year ended December 31,	2023	2022	2021
International	\$ 2,145,716	\$ -	\$ 3,134,250
Other	-	-	-
Total	\$ 2,145,716	\$ -	\$ 3,134,250

(a) 2021

The Company completed the delivery of certain pre-existing SFD® data to one of its existing customers (the “Pre-existing SFD® Data Sale”).

On April 18, 2021, the Company acquired the rights to the geothermal applications of the SFD® technology (the “Geothermal Rights”) from Mr. George Liszicasz, the former Chairman, President and Chief Executive Officer (“CEO”) of NXT (the “Acquisition”). The agreement providing for the Acquisition was negotiated between Mr. Liszicasz and a special committee of the board of directors (the “Board”) comprised entirely of independent directors (the “Committee”). The Board delegated authority to the Committee to perform the negotiations with respect to the Acquisition. The initially-negotiated consideration payable by the Company in connection with the Acquisition included the following:

1. a US\$40,000 (CAD\$50,310) signature payment, which was paid in April, 2021;
2. a CAD\$15,000 signature milestone payment paid in August, 2021;
3. 300,000 common shares, which were issued in December, 2021;
4. a US\$200,000 milestone payment which will become due in the event that the Company’s cash balance exceeds CAD\$5,000,000 due to receipt of funds from operations; and
5. a US\$250,000 milestone payment payable in the event that the Company executed, completed, and received full payment for an SFD® contract valued at US\$10,000,000 or greater, provided that such contract was entered into and completed, and payment of at least US\$5,000,000 was received, by April 18, 2023. This milestone expired as of April 18, 2023 and no such payments were made in connection with this milestone. (Collectively the five milestones are known as, the “Consideration”).

Geothermal applications of the SFD® technology include naturally occurring sub-surface fluid reservoirs or rock conditions from which heat can be extracted and utilized for generating electric power, or for direct utilization in industrial, agricultural or domestic applications. The main subsurface properties such as porosity, permeability and impermeable cap rock that are vital in the search for oil and gas resources and are equally critical for locating the most prospective geothermal resources. For these reasons, the SFD® technology has a natural extension to geothermal applications.

Since first commercialized in 2007 for hydrocarbon use, the SFD® has enabled NXT’s customers to significantly improve drilling success rates while reducing the overall negative environmental impact of traditional large-scale ground surveys by minimalizing disruptions to community life and surface use. NXT anticipates applying for patent protection for the geothermal applications of SFD® once development of the SFD® sensors for geothermal applications reach appropriate milestones.

As industries worldwide transition toward a low-carbon economy, geothermal energy has gained greater prominence for its environmental benefits as a non-intermittent renewable energy source. NXT will begin to utilize the research and marketing skillsets acquired in hydrocarbon resources to develop and commercialize the application of the SFD® technology for geothermal resource exploration. By expanding

the Company's scope of business to include exploring for both hydrocarbon and geothermal resources, the Company anticipates that its scope of revenue sources will expand as well.

(i) Description of Review and Approval Process

The Acquisition constituted a "related party transaction" for the purposes of Multilateral Instrument 61-101 – *Protection of Minority Security Holders in Special Transactions* ("MI 61-101") on the basis that Mr. Liszicasz was a director, officer and control person of the Company.

The Acquisition was reviewed and unanimously approved by the Committee. Due to the fair market value of the Geothermal Right not being readily determinable, the Committee considered the potential value to be realized by the Company in exercising the Geothermal Rights, the value of the Consideration being offered to Mr. Liszicasz, and the effect on the Company's share ownership before and after the completion of the Acquisition (the "Deemed Fair Market Value").

The Acquisition was exempt from the formal valuation and disinterested shareholder approval requirements typically applicable to related party transactions under MI 61-101 on the basis that, at the time the Acquisition was agreed to, the Deemed Fair Market Value did not exceed 25% of the Company's market capitalization, calculated as of April 18, 2021 as follows:

- Deemed Fair Market Value of the Geothermal Rights and fair market value of the Consideration, approximately \$837,947, if all of the milestones are met;
- market capitalization of the Company, approximately \$44,579,810; and
- Deemed Fair Market Value as a percentage of market capitalization, 1.88%.

Following the issuance of the 300,000 common shares at the time, Mr. Liszicasz's ownership increased to 15,378,679 common shares (representing approximately 23.56% of the Company's then 65,250,710 common shares).

As of December 31, 2023, the Company has recognized \$275,610 for the acquisition Geothermal Rights, which is the combination of the US\$40,000 and CAD\$15,000 signature payments, the value of the 300,000 common shares and legal costs. The cost of the remaining milestone will be recognized when it is deemed probable that this milestone will be achieved as determined by a special committee of the Board of Directors, comprised entirely of independent directors. As of December 31, 2023 the remaining milestone has not been achieved.

Progress continues with respect to the development of the geothermal sensor technology for which NXT received advisory services and funding from the National Research Council of Canada Industrial Research Assistance Program (the "NRC IRAP") during 2021. NXT tested existing SFD<sup>®</sup> sensors under different operating parameters associated with subsurface conditions favourable for geothermal resources. The test results have demonstrated that the development of a dedicated Geothermal Rights sensor technology can be accelerated.

NXT has done development work on processing algorithms that will assist in the attribute mapping, interpretation and integration of SFD<sup>®</sup> data. A number of new approaches, algorithms, and models have been successfully trialed and provide a more definitive approach to corroborating SFD<sup>®</sup> results by direct spatial comparison with subsurface properties that are pertinent to both hydrocarbon and geothermal applications. While these methods require final formalization and further field testing, NXT expects that the eventual implementation of these enhancements will help drive the integration of SFD<sup>®</sup> data and results into the overall upstream exploration cycle.



In July 2021, the Company began receiving advisory services and funding of up to \$50,000 from the NRC IRAP to support the research and development of the SFD® technology for geothermal applications. The objective of this project was to test, identify and analyze the desired elements of the SFD® geothermal sensor response over known geothermal areas with the ultimate goal of providing a green upstream geophysical service for advancing renewable power initiatives in Canada and abroad. This project was completed in November, 2021 for total funding of \$50,000 from the NRC IRAP.

In July, 2021, NXT announced its patent application in India was officially granted by the Office of the Controller General of Patents, Designs and Trade Marks. Additionally, the Company received notice in February 2022 that its Brazilian Patent Application has been allowed. As of the date of this AIF, NXT has been granted SFD® patents in forty-seven jurisdictions, including India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and Europe (January 2020). These patents protect our proprietary SFD® technology and serve as independent third-party recognition of our technological invention.

(b) 2022

On December 2, 2022, NXT closed the Rights Offering that had been announced on October 31, 2022. The Company issued 2,149,180 common shares a price of \$0.18 per common share, for aggregate gross proceeds of \$386,852. Share issue costs of \$170,790 were recorded as a reduction to share capital.

On December 22, 2022, the Company announced a multi-tranche private placement (the “Private Placement”) at \$0.195 per share. At December 22, 2022 the Company issued 1,148,282 common shares for gross proceeds of \$223,915 in the first tranche, less issuance costs of \$7,732.

January 25, 2023, the Company closed the Private Placement by issuing an additional 8,510,000 common shares, at \$0.195 per common shares, for additional aggregate gross proceeds of approximately \$1,659,450, less issuance costs of \$1,170.

(c) 2023

On September 5, 2023, NXT announced that it has executed a contract to provide an SFD® survey to an independent oil and gas exploration company in Türkiye, which is strategically located at the junction of Eastern Europe, Central Asia and the Middle East. NXT has delivered the final SFD® survey results to its Turkish customer, and in March 2024 performed the integration of SFD® data with the customers’ existing geological and geophysical data. The Company’s Turkish customer and one of its partners had requested NXT to add additional line kilometers to the original SFD® survey. All flight operations related to the data acquisition survey phase were completed in January 2024 and NXT’s aircraft and equipment subsequently returned to Calgary thereafter. As part of NXT’s SFD® services, recommendations with rankings are provided to the customer identifying their highest value prospects for exploration. The accounts receivable from this Turkish SFD® survey are insured by Export Development Canada.

Given the passing in January 2023 of Mr. George Liszicasz, former Chairman, President and CEO, the Board formally empowered a committee of the Board to assume the CEO’s duties. The committee, met several times weekly with NXT management, consisted of Lead Director Charles Selby and directors Gerry Sheehan and Bruce G. Wilcox, who collectively possess senior operating and management experience in the Energy and Capital Markets Industries. The committee undertook its executive role, until Mr. Bruce G. Wilcox was appointed Interim CEO on June 21, 2023.

On May 24, 2023, the Company entered into a ten-year strategic alliance and associated financing with Synergy E&P Technologies Limited (“Synergy”) which grants Synergy an exclusive license to use, distribute,

sub-license, market and sell NXT's SFD<sup>®</sup> solutions in Africa. In addition, on September 30, 2023 NXT extended the exclusive license to include Ataraxia Capital ("Ataraxia"), an affiliate of Synergy.

PE Energy Limited, an affiliate of Synergy and Ataraxia, has performed several commercial projects with NXT in Africa in the past.

Synergy and Ataraxia, with this new arrangement, will be advancing the SFD<sup>®</sup> technology to address energy security in and transition in the African continent for both oil and gas and geothermal sources. Synergy, Ataraxia and NXT will work closely together to train local technical teams and regulatory authorities on the patented SFD<sup>®</sup> technology.

Building upon a record of successful collaborations underpinned by the continued market demand in Africa, Ataraxia, executed a subscription agreement (the "Ataraxia Subscription Agreement") pursuant to which Ataraxia agreed to subscribe for an aggregate of US\$2.3 million convertible debentures (collectively, the "Ataraxia Debentures"), with a subscription price to be advanced in instalments of which it completed US\$1.4 million.

The terms of the Ataraxia Subscription Agreement includes an annual interest rate of 10%, paid quarterly, a fixed conversion price of US\$0.143 (CDN\$0.194) per common share, the right to appoint a board member, and are payable on demand. On May 31, 2023, the Company received US\$1,200,000 (CDN\$1,631,954) of the Ataraxia Debenture, representing the first instalment under the terms of the Ataraxia Subscription Agreement. The Company received an additional US\$200,000 (CDN\$265,560) instalment of the Ataraxia Subscription Agreement on July 10, 2023 for a total amount of US\$1,400,000 (CDN\$1,897,514). The US\$900,000 balance of the Ataraxia Subscription Agreement remains unfunded and it is uncertain whether Ataraxia is able or willing to fund this balance.

The Ataraxia Debentures may also be converted into voting Preferred Shares with an annual dividend rate of 10% paid per quarter. The Preferred Shares are not transferable, but may be converted on a one-to-one basis into common shares. The Ataraxia Debentures are payable on demand and is secured by a general security agreement, subordinate to the long-term debt.

The proceeds from the Ataraxia Debentures were used to fund general and administrative costs including working capital, business development and marketing activities to convert NXT's existing opportunity pipeline into firm contracts.

On November 2, 2023, the Company received conditional approval from the TSX to offer a multi-tranche convertible debenture (the "November Debentures"). The November Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable two years after issuance of the November Debentures. The November Debentures are convertible into common shares of NXT at a conversion price of US\$0.1808 (CDN\$0.25).

On November 8, 2023 the Company issued the first tranche of the November Debentures for US\$1,000,000 (approximately CDN\$1,378,340) to MCA PM, LP and Michael P. Mork ("Mork Capital"). As of December 31, 2023, Mork Capital had the right to obtain 5,530,973 common shares upon the conversion of the November Debentures at the fixed conversion price of US\$0.1808 subject to shareholder approval at the next annual general meeting of shareholders ("AGM"). With the acquisition of the November Debentures, Mork Capital has the right to own, including the conversion of the first tranche of the November Debentures, 20,452,206 common shares, representing approximately 24.2% of the issued and outstanding common shares at December 31, 2023 (after giving effect to the conversion of the full amount of November Debentures as of

December 31, 2023). The Company has agreed to appoint a representative from Mork Capital to its board of directors in the near future.

On December 22, 2023, the Company issued the second tranche of the November Debentures for US\$150,000 (approximately CDN\$199,260) which gives the subscribers the right to obtain an additional 829,646 common shares in the aggregate upon the conversion of the November Debentures.

On January 12, 2024, the Company closed the final tranche of the November Debentures for an additional US\$722,000 (approximately CDN\$966,036). With the final tranche, the Company issued a total of US\$1,872,000 (approximately CAD\$2,543,636) for the November Debentures which will allow the subscribers to obtain an aggregate of up to 10,353,982 common shares. Insiders, which included Mork Capital, were issued November Debentures valued in the aggregate principal amount at US\$1,522,000 (approximately CDN\$2,076,776).

Mork Capital purchased an additional US\$375,000 (approximately CDN\$501,750) of November Debentures in the final tranche. Subject to shareholder approval at the next AGM, Mork Capital will have the right to own, after conversion of all of their November Debentures at a fixed price of US\$0.1808, 22,526,321 common shares, representing approximately 28.8% of the issued and outstanding common shares, as of the date of this AIF.

On January 12, 2024, all six current Directors, as of that date, participated in the November Debentures by converting their outstanding director fees payable as at December 31, 2023 into November Debentures valued, in the aggregate principal amount, at US\$147,000 (approximately CDN\$196,686). In connection with this issuance, the current directors have the right to obtain, in the aggregate, up to 813,053 Common Shares.

The proceeds from November Debentures are being used for SFD® survey working capital requirements.

### **3.2 Outlook**

In 2024, NXT intends to continue its business model of providing SFD® surveys on a fee-for-service basis, and will consider vertical models where it will share in revenues from successful production as a result of SFD® recommendations. No changes to the business are anticipate in the current financial year.

## **4 BUSINESS OVERVIEW**

### **4.1 Company's Operations and Principal Activities**

We utilize our proprietary, airborne SFD® survey system to provide a service for the geothermal and oil and gas exploration industry. NXT provides a rapid and cost-effective method for our clients to evaluate large land areas for their exploration potential. NXT's principal markets have been in South America, Africa, the Middle East and Asia.

The underlying technology employed by our SFD® survey system was invented by Mr. George Liszicasz, our former President, CEO, and Chairman. The technology was initially licensed to the Company by Mr. Liszicasz until December 31, 2006 through a series of consecutive license agreements. On December 31, 2006, NXT obtained the rights to the technology from Mr. Liszicasz pursuant to the terms of a Technology Transfer Agreement (the "TTA").

Upon execution of the TTA, Mr. Liszicasz transferred to NXT all his rights and entitlements to the SFD® technology for use in the field of hydrocarbon exploration.

SFD® technology for the purposes of the TTA is defined as the theories of quantum physics and engineering which are utilized in the operation of stress field detectors used by NXT for the reception, collection and recording of subsurface geological stresses for hydrocarbon exploration.

SFD® sensors remotely respond to gravity perturbations that are associated with subsurface density and stress regimes that are meaningful for hydrocarbon and geothermal exploration. These responses are captured as raw data that, when interpreted, can provide a qualitative method to detect the presence of geological features such as structures, faults, fractures and reefs that are often associated with fluid accumulations and transport. The SFD® technology can be deployed over any terrain in onshore, offshore and near-shore environments and has been used both for prospect level exploration and as a reconnaissance tool in frontier and under-explored areas. The SFD® survey system has been demonstrated to quickly focus exploration resources, offering the benefit of reducing the risk, time and expense associated with the upstream cycle. As part of NXT's SFD® services, recommendations with rankings are provided to the customer which helps prioritize their highest value prospects for exploration.

Following completion of the aerial surveys, we deliver our clients a detailed report and maps of the surveyed area that identifies, ranks and recommends areas with SFD® indications of reservoir potential.

In 2006, we commenced our current business model and began providing SFD® survey services to clients on a fee-for-service basis. In accordance with this model, we have not invested either directly or indirectly in exploration or development wells or engaged in other exploration or production activities. Our current business model minimizes our capital requirements, thereby conserving cash, and minimizes any perceived or real conflicts between the interests of NXT and its survey clients.

NXT's primary business model is to earn revenues by conducting SFD® surveys for clients on a fee-for-service basis. Secondly, we may be able to negotiate to earn revenue from gross overriding royalty income and/or other incentive fees from clients should they generate production on areas recommended by SFD® surveys. Finally, in the future, we may earn a fee by providing other related geological and geophysical integration services to clients.

We also continue to utilize high-quality local sales representatives with key knowledge of their respective areas, potential clients and the exploration potential of a region allowing us to cover larger areas and more clients with minimum fixed cost. Our sales representatives continue to pursue SFD® opportunities in numerous regions. To ensure our sales representatives follow industry best practices, each representative is required to annually certify they adhere to NXT's Code of Conduct & Business Ethics.

NXT has been effective in positioning the SFD® method as an established geophysical tool for oil and gas exploration following the successful completion of projects in Canada, the United States, Columbia, Argentina, Bolivia, Mexico, Pakistan, Africa and most recently in Türkiye. Our efforts have been supported with the publication of technical papers, creation of project case studies and the development of a strong list of references and recommendation letters. In addition, NXT has now been granted patents or received patent allowance in forty-seven separate countries.

Our overall objective remains to continue to increase industry awareness and appreciation of the value of our SFD® survey system and our strategy to achieve this includes maximizing client endorsement opportunities (such as through joint case studies) and targeting the most appropriate markets (i.e. where SFD® provides the maximum benefits). Our specific tactics include:

1. focusing the majority of sales resources on high profile primary markets with national oil companies that offer maximum opportunities for success;

2. building upon success in this initial market, and step out to other markets in Latin America, Middle East, Africa and South Asia;
3. pursuing expressions of interest from qualified potential client “bluebirds” from all other locations in the world. The bluebird model is defined as an opportunity that arises, not from deliberate targeted sales initiatives, but in response to unsolicited client enquiries;
4. continuing to conduct pilot surveys to expand our knowledge base and provide documentation to support the use of SFD® in new applications. Each new application opens more market opportunities and provides valuable case studies to support our sales initiatives; and
5. responding to opportunities to present at technical conferences, publish papers in periodicals and generally maximize our opportunities to educate the industry on SFD® capabilities and document case study successes.

As we continue to progress and grow our project pipeline on a fee-for-survey-projects basis, we remain optimistic given our progress during 2023. NXT continues the development of an alternative business line through the sale of “Multi-Client Datasets” focused on national oil companies and the development of their national exploration strategies. The purpose of this alternative strategy has been to integrate our SFD® technology into the standard exploration process of such organizations. We believe this approach will be instrumental in helping us to build an independent and steady backlog of smaller scale data sales enabling us to enhance and smooth our revenue flow while pursuing larger fee-for-survey-projects, royalty interests, bonuses and participation rights in recommended prospects.

There is currently no one contract upon which NXT’s business is substantially dependent; and NXT does not expect any aspect of its business in 2024 to be impacted by a renegotiation or termination of any contract.

#### **4.2 Seasonality of the Company’s Business**

There is no seasonality to our business. However, NXT has a very cyclical business, as revenue activity is dependent upon the level of capital investment in exploratory drilling in the oil and gas industry and the size and timing of a limited number of survey contracts each year.

#### **4.3 Sources and Availability of Raw Materials and Equipment**

We do not foresee any constraints upon materials or equipment that will impede our ability to execute our business plan or affect our ability to conduct and/or expand our business. Our main direct project input costs are aircraft operating costs and data interpretation staff.

In order to conduct our survey operations, we require the following:

- *Survey aircraft* – Historically, we have both owned aircraft and chartered aircraft from independent charter aircraft companies. From 2009 to December 2015, we utilized an aircraft charter agreement with Air Partners Corp. (“Air Partners”), a Calgary-based air-charter operator, to provide aircraft, crew and maintenance services for our survey operations worldwide. In December 2015, we acquired a jet aircraft from Air Partners which was previously charter hired to NXT. In April, 2017, NXT completed a sale and leaseback agreement of its aircraft with a Calgary-based international aircraft services organization. The terms of the agreement resulted in NXT selling its 1997 Cessna Citation Ultra 560 jet aircraft. We currently rely on Air Partners as the manager and operator of the aircraft which we use in SFD®-survey operations. On March 22, 2024 the Company extended its Aircraft lease for three years, until March 28, 2027. The Aircraft Lease will be converted to a capital lease and the Company will own the aircraft at the end of the lease.

- *SFD® sensors* – All of the 22 survey sensors are currently manufactured in-house. Certain machining is required by third-party machine shops, with final assembly performed by our technical staff. The sensors, once assembled, require flight testing prior to being considered acceptable for operational use. Not all sensors meet the performance criteria for operational use; however, we have demonstrated our ability to manufacture new functional SFD® sensors.
- *SFD® assembly* – The units in which the sensors are housed in are custom-designed, fabricated and assembled in-house or through subcontracted vendors. We utilize the services of Transport Canada approved Design Approval Representatives to prepare subsequent type certificates (“STC”) for the installation of our SFD® units in each aircraft that we utilize for surveys. The time to obtain an STC approval for the installation of our SFD® units into any proposed aircraft type may require several months.
- *Computer hardware and software (Data Acquisition System, SFD® Signal Conditioning Unit, and data interpretation software)* – During 2016, NXT completed final testing on a new data acquisition system. The software was developed by in-house personnel and is being utilized on SFD® surveys. The hardware we use in our SFD® survey systems (other than the SFD® unit), and the balance of the computer software we use, are all readily available from retail or wholesale sources.

We are not dependent upon any other third-party contract manufacturers or suppliers to satisfy our technology requirements.

#### **4.4 Marketing Channels**

We largely use direct sales methods with use of independent commissioned sales representatives in international markets.

#### **4.5 Employees**

As of the fiscal year ended December 31, 2023 we had a total of 11 employees. NXT has no employees that are members of a labor union. The following summarizes the number of employees and independent contractors by main job function as at December 31, 2023:

<u>Function</u>	<u>Employees</u>	<u>Contractors</u>	<u>Total</u>
Senior management team	2	-	2
Finance & administration	3	-	3
<u>Operations and technical development</u>	<u>6</u>	<u>-</u>	<u>6</u>
<u>Total</u>	<u>11</u>	<u>-</u>	<u>11</u>

Ten of the above noted staff are based in Canada; our Interim CEO is based in New York City, New York, USA. The six operations and technical development staff include one research scientist holding a Ph.D., two geoscientists, two engineer and an information technology professional. We periodically engage other technical and administrative contract personnel as required on a project basis.

#### **4.6 Patents**

In May 2012, we commenced a “provisional” patent application process in the United States and formally filed a SFD® technology patent on May 22, 2013, which was subsequently published on November 28, 2013. We intend to continue expanding the process with additional formal patent applications in the future. We understand that our right to patent the SFD® technology is not compromised by our ongoing commercial

use of the technology, as the components of the SFD® technology have never been disclosed to third parties (except under very limited and confidential terms) or released in any manner into the public domain.

In 2017, NXT expanded and protected its IP (including patenting and new research and development initiatives). Squire Patton Boggs LLP, a United States-based leader in IP protection, has been advising NXT on our IP strategy, including the prior filing of an initial United States provisional patent application in May 2012. In November 2014, NXT filed a related patent amendment submission in the United States and since that time has undertaken new patent applications in select strategic international markets.

NXT has been granted SFD® patents in India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and in the European Union (January 2020). In total, NXT has obtained SFD® patents in forty-seven jurisdictions. These patents protect our proprietary SFD® technology and serve as independent third-party recognition of our technological invention in terms of practical applicability, conceptual novelty, and knowledge advancement.

#### **4.7 Competition**

Our SFD® airborne survey service is based upon a proprietary technology, which is capable of remotely identifying, from a survey aircraft, subsurface anomalies associated with potential hydrocarbon traps with a resolution that we believe is technically superior to other airborne survey systems. To our knowledge there is no other company employing technology comparable to our SFD® survey system for oil and natural gas exploration.

Seismic is the standard technology used by the oil and gas industry to image subsurface structures. It is our view that the SFD® survey system is highly complementary to seismic analysis. Our system may reduce the need for seismic in wide-area reconnaissance but will not replace the role of seismic in verifying structure, closure and selecting drilling locations. The seismic industry is competitive with many international and regional service providers.

The SFD® system can be used as a focusing tool for seismic. With a SFD® survey, a large tract (that is, a tract over 5,000 square kilometers) of land can be evaluated quickly to identify locations with indications of reservoir potential. Seismic surveys, although effective in identifying these locations, are much more expensive, require significantly more time and impose a much greater negative impact on local communities and the environment. An SFD® survey deployed first can provide necessary information to target a seismic program over a limited area of locations selected by SFD®. This approach can result in a more effective seismic program as compared to traditional seismic surveying, and can reduce the overall cost, time, community resistance and environmental impact required to locate and qualify a prospect.

The industry uses other technologies for wide area oil and natural gas reconnaissance exploration, such as aeromagnetic and gravity surveys. These systems can provide regional geological information, such as basement depth, sedimentary thickness and major faulting and structural development; however, these other airborne techniques are not as suitable for identifying areas with reservoir potential as the SFD® system.

#### 4.8 Government and Environmental Regulation

The operation of our business, namely conducting aerial SFD® surveys and interpreting SFD® data, is not subject to material governmental or environmental regulation in Canada or the United States with the exception of flight rules issued by Transport Canada and the Federal Aviation Authority governing the use of commercial aircraft, including rules relating to low altitude flights. The requirements in other countries vary greatly and may require permits and/or provide other restrictions to conducting flight operations in the country that may restrict our ability to perform SFD® surveys as freely as in Canada and the United States.

For example, in Colombia, SFD® surveys must comply with three requirements not encountered in Canada and the United States. These requirements are:

- i) customs obligations and bonds related to the importation and exportation of the aircraft into Colombia;
- ii) obtaining permits from the local aviation authority; and
- iii) obtaining permits from the Colombian Air Force.

NXT has successfully operated in the past in Colombia in accordance with these requirements.

With our past experience in Canada, the United States, Türkiye, Nigeria, Bolivia, Mexico, Colombia and other countries, we do not anticipate any unusual government controls or regulations that might significantly prevent timely completion of SFD® surveys. However, we may encounter unforeseen government regulations or restrictions in other countries that may impair or restrict our ability to conduct surveys, which could limit our ability to earn revenue or potentially expose us to forfeiture of performance bonds.

#### 4.9 Property, Plant and Equipment

##### (a) Facilities / Office Premises

In August 2015, NXT moved to a new office premises (11,333 square feet) at 3320 – 17th Avenue SW in Calgary under a 10-year lease at an initial estimated minimum monthly lease payment of \$48,279 (including building operating costs) commencing in October 2015. On March 15, 2022, the Company surrendered 828 square feet of its office building lease to the landlord under such lease.

##### (b) Equipment

Our SFD® technology is comprised of three main components, as detailed in the first three items below, which we collectively refer to as our SFD® survey system. This system is generally stored at our Calgary office facility unless deployed during survey operations. When deployed, this equipment travels with the aircraft or is stored in a locked facility at the survey location when not in use. In addition, there is extensive interpretation equipment located in Calgary. The main categories of equipment we use are:

- *Stress Field Detector* – The stress field detector, or SFD® system, including a unit which houses the SFD® sensors, is the principal component of our technology. The SFD® sensors respond to fine-scale perturbations in the gravitational field caused by changes in subsurface density and stress distribution. These responses are transformed through electromechanical transduction into electronic digital signals as the output. The SFD® method has proven highly effective at identifying potential hydrocarbon traps in a wide variety of geological settings onshore and offshore. Airborne SFD® surveys are currently conducted utilizing an array of 22 SFD® sensors, consisting of six primary, eight secondary and eight research and



development sensors, allowing multiple independent SFD® signals to be acquired at all points of a designed survey.

- *SFD® Signal Conditioning Unit* – This self-contained unit contains electronic circuits for powering the sensors and for stabilizing and conditioning electronic signals. All sensor output is directly connected to this unit and after signal conditioning is completed, all output is forwarded to the computer system.
- *Data Acquisition System* – This is used in conjunction with the SFD® sensor array on surveys. Our data acquisition system is a compact, portable computer system which concurrently acquires the electronic digital signals from the SFD® sensor array and other pertinent client data, including the GPS location information of the data.
- *Interpretation Theatre* – Once returned to our base of operations, the SFD® data collected is processed and converted into a format that can be used by our interpretation staff using systems consisting of generally off-the-shelf computer equipment, high definition monitors, projectors and screens. This equipment is generally permanently set up at our Calgary office facility. A remote SFD® data interpretation theatre is available and may be deployed during survey operations and would be set up in a facility at the survey client's city.

(c) Oil and Gas Properties

We have minor historical interests in a limited number of acreage holdings of undeveloped lands in western Canada. These assets are not a material asset and have been written off in our financial statements. We are not affected by any significant environmental concerns, nor is there any planned significant capital additions contemplated.

## 5 RISK FACTORS

Investing in our common shares involves a high degree of risk. In addition to the other information included in this AIF, you should carefully consider the risks described below before purchasing our common shares. If any of the following risks actually occur, our business, financial condition and results of operations could materially suffer. As a result, the trading price of our common shares could decline, and you might lose all or part of your investment.

### 5.1 Future Operations

NXT is still in the early stages of realizing widespread commercialization of its SFD® technology. Its ability to generate cash flow from operations will depend on its ability to service its existing clients and develop new clients for its SFD® services. Management recognizes that the commercialization phase can last for several years, and that it can have significant economic dependence on a small number of clients, which can have a material effect on the Company's operating results and financial position.

The events described in the following paragraphs highlight that there is substantial doubt about NXT's ability to continue as a going concern within one year after the date that the consolidated financial statements have been issued. The Company's current cash position is not expected to be sufficient to meet the Company's obligations and planned operations for a year beyond the date that the consolidated financial statements have been issued.

Since 2022, the Company has deferred payment of certain operating costs, including payroll and other general and administrative costs. During 2023 and subsequent to December 31, 2023, the Company completed private placements which resulted in raising an additional net proceeds of \$5.08 million, and

completed a SFD® survey which generated operating funds. Further financing options that may or may not be available to the Company include issuance of new equity, debentures or bank credit facilities. The need for any of these options will be dependent on the timing of securing new SFD® related revenues and obtaining financing on terms that are acceptable to both the Company and the financier.

NXT continues to develop its pipeline of opportunities to secure new revenue contracts. However, the Company's longer-term success remains dependent upon its ability to convert these opportunities into successful contracts, to continue to attract new client projects, expand its revenue base to a level sufficient to exceed fixed operating costs, and generate consistent positive cash flow from operations. The occurrence and timing of these events cannot be predicted with sufficient certainty.

The consolidated financial statements do not reflect adjustments that would be necessary if the going concern basis was not appropriate. If the going concern basis was not appropriate for these consolidated financial statements, then adjustments would be necessary in the carrying value of the assets and liabilities, the reported revenues and expenses, and the balance sheet classifications used. These adjustments could be material.

## **5.2 Reliance on Key Personnel**

We rely on a limited number of key personnel who collectively possess the knowledge and skills to conduct SFD® surveys and interpret SFD® data as required to meet contract obligations. Additional or replacement personnel may not be found and trained quickly. The loss of any of these key persons or increased demand for our services from clients could impair our ability to meet contract obligations, thereby adversely impacting our reputation and our ability to earn future revenue from clients.

The Company's future success depends, to a significant extent, on the continued service of its key technical and management personnel and on our ability to continue to attract and retain qualified employees. The loss of the services of our employees or a failure to attract, retain and motivate qualified personnel could have a material adverse effect on our business, financial condition and results of operations. We do not have "key person" insurance on any of our personnel.

We depend on key staff members that are involved in the SFD® data interpretation process and to continue to enhance our technology. We are working to minimize dependency on key personnel. Currently, a total of four persons, two of which are highly experienced, are trained to interpret SFD® signals. A process of formal documentation of the ongoing research and development of the sensor technology, the acquisition/survey methodologies, and the processing and interpretation work flows is ongoing and will be part of the management systems.

Within the Province of Alberta, the skilled personnel that we require may periodically be in short supply and there is specialized training required that can take several months in order for a new employee to become effective. If we cannot hire these key personnel, we have inadequate time to train them or should we lose current personnel, then our ability to accept contracts or meet contract commitments may be adversely affected, thereby restricting our ability to earn revenue.

## **5.3 Availability of Aircraft**

In April 2017, NXT completed a sale and leaseback agreement of its aircraft with a Calgary-based international aircraft services organization (the "Lessor"). The terms of the agreement resulted in NXT selling its 1997 Cessna Citation Ultra 560 jet aircraft that was purchased in 2015. NXT has leased the aircraft

over an initial term of 60 months and retains all existing operating rights and obligations. NXT was required to make monthly payments to the Lessor of approximately US\$39,500 until April 2022.

In Q4-21 the Company extended the term of its Aircraft Leasing Agreement effective in the second quarter of 2022 for a period of 24 months.

On March 22, 2024 the Company extended its Aircraft lease for three years, until March 28, 2027. The Aircraft Lease will be converted to a capital lease and the Company will own the aircraft at the end of the lease. Terms of the extension include a principle of US\$1,210,000, an interest rate of 12%, and monthly payments of US\$40,189. The Company has an early purchase option to acquire the aircraft on any of the following date, March 28, 2025, September 28, 2025, March 28, 2026 or September 28, 2026. The purchase price would be the amortized value of the lease liability, plus a four month interest penalty.

When the aircraft is not needed for use by NXT, we seek to earn charter hire reimbursements from the aircraft through a third party, Air Partners.

In the event that NXT's aircraft is not available (due to damage, a need for extensive repairs, or other unforeseen events) to conduct survey projects, there is a risk that suitable alternative aircraft may not be available on a timely basis from other charter operators when needed. This inability to conduct survey operations could have a material adverse effect on the Company's business, financial condition and results of operations.

#### **5.4 Debt Service**

NXT has financed a significant portion of its operations through debt. Amounts paid in respect of interest and principal on debt incurred by NXT may impair NXT's ability to satisfy its other obligations. All of NXT's debt is fixed rate. Lenders have been provided with security over substantially all of the assets of NXT. If NXT becomes unable to pay its debt service charges or otherwise commits an event of default such as bankruptcy, a lender may be able to foreclose on or sell the assets of NXT.

#### **5.5 Reliance on Specialized Equipment**

NXT relies on specialized data acquisition equipment, including a limited number of SFD<sup>®</sup> sensor devices, to conduct our aerial SFD<sup>®</sup> survey operations. We would be at risk if these survey sensors were to become damaged, destroyed, worn out, stolen or in any way became unavailable for use in operations prior to us creating and testing additional sensors. Should the sensors become unavailable for any reason, our ability to conduct surveys could be delayed for several months as we built new sensors. During this period we may become unable to satisfy contractual obligations, which may jeopardize future revenue opportunities and may potentially result in a client drawing on a contract performance bond posted by the Company or otherwise making claims against the Company for breach of contract. In addition, an inability to satisfy contractual obligations may have an adverse effect on our developing reputation within the oil and gas community. NXT mitigates this risk by researching new designs, constructing additional SFD<sup>®</sup> sensor devices and obtaining replacement cost insurance on each SFD<sup>®</sup> sensor.

#### **5.6 Foreign Currency**

The Company is exposed to foreign exchange risk in relation to its potential holding of significant US\$ balances in cash and cash equivalents, deposits, accounts payables, accrued liabilities, and lease obligations, and entering into United States dollar revenue contracts. The Company does not enter into hedging contracts to mitigate exposure to fluctuations in foreign exchange, but uses strategies to reduce the

volatility of US\$ assets and liabilities, including converting excess US\$ to Canadian dollars. As at December 31, 2023, the Company held net U.S. dollar liabilities totaling US\$1,179,649. Accordingly, a hypothetical 10% change in the value of one United States dollar expressed in Canadian dollars as at December 31, 2023 would have had an approximately \$156,063 effect on the unrealized foreign exchange gain or loss for the year. Changes in currency exchange rates could have an adverse effect on the Company's business, financial condition and results of operations.

## **5.7 Interest Rate Fluctuations**

We periodically invest available cash in short term investments that generate interest income that will be affected by any change in interest rates. The Company's long-term debt interest is fixed at 4% until 2031 and both the November Debentures and the Ataraxia Debentures carry a fixed interest rate of 10% until their maturity date which, in the case of each such convertible debenture, is two years after issuance. Any refinancing of the convertible debentures, or new debt financing could result in a significantly different interest rate.

## **5.8 Commodity Prices**

NXT's customer base is in the oil and natural gas exploration industry, which is exposed to risks of volatility in oil and natural gas commodity prices. As such, demand for our services and prospective revenues may become adversely impacted by fluctuations in oil and natural gas prices. The impact of price changes on our ability to enter into SFD<sup>®</sup> survey contracts cannot be readily determined at this time. However, in general, if commodity prices decline significantly, our opportunity to obtain and execute SFD<sup>®</sup> survey contracts may also likely decline, at least in the short term. Therefore, NXT focuses on national oil companies as they have a long term strategic view and are not as affected by short-term oil fluctuations.

## **5.9 Segregation of Duties**

Certain duties that are most appropriately segregated between different employees are, due to our current limited staff, assigned to one individual.

Standard internal control methodology involves the separation of incompatible functions by assigning these functions to separate individuals and in larger organizations to separate departments. We often cannot allocate these functions to separate individuals because our administrative staff is limited.

Although we have adopted alternative control methods designed to mitigate for the reduced ability to separate incompatible functions, these alternative controls may not operate at the same level of precision and there is more than a remote likelihood that our internal control over financial reporting will not prevent or detect material misstatements if they should exist in our financial statements. This lack of separation of duties exposes us to potential misappropriation of funds, embezzlement and other forms of fraud and could have a material adverse effect on our business, financial condition and results of operations.

## **5.10 Related Party Transactions**

We may periodically enter into related party transactions. One of the members of NXT's Board, Thomas Valentine, is a partner in the law firm Norton Rose Fulbright Canada LLP which provides legal services to NXT. Another director, Theodore Patsellis is also a board member of Ataraxia Capital which holds US\$1,400,000 of convertible debentures.

Although we publicly disclose all related party transactions and manage potential conflicts of interest through mandated adherence to our Code of Conduct & Business Ethics and the maintenance of a strong independent Board, all related party transactions have the potential for conflicts of interest that may

compromise the ability of Board members to exercise their fiduciary responsibility to the Company.

### **5.11 Rights to SFD® Technology**

Our rights to ownership and use of SFD® technology depended on Mr. Liszicasz's having the lawful right to sell to NXT the exclusive rights to exploit the SFD® technology for the exploration of hydrocarbons and the Geothermal Rights as agreed to in the TTA.

A risk exists that an unknown party may claim some legal entitlement to our IP, our rights to commercialize this IP or our right to create SFD® devices and processes. However, we believe that such a claim would be without merit.

The SFD® technology is an essential component of our business plan. If a third party challenged our lawful entitlement to this technology, the legal defense of our right to the technology may be expensive and could cause a loss of our right to the SFD® technology, or a protracted legal process to assert our right to the technology would have a material adverse effect on the Company's business, financial condition and results of operations.

### **5.12 Geological Conditions**

SFD® surveys have not been tested over all potential geological conditions. Some geological conditions may subsequently be proven to be unsuited for SFD® surveys thereby creating unforeseen limitations to the application of SFD® surveys.

Any limitation to the application of SFD® surveys has the potential of restricting future revenue opportunities and if not properly disclosed to industry clients, such limitations may impact the reputation of the Company with these clients.

### **5.13 Technological Improvement**

Unless we pursue ongoing technological improvement and development, we may be unable to respond to changes in customer requirements or new competitive technologies.

We must continue to refine and develop our SFD® survey system to make it scalable for growth and to respond to potential future competitive pressures. These improvements require substantial time and resources. Furthermore, even if resources are available, there can be no assurance that the Company will be commercially or technically successful in enhancing the technology. If we are unable to keep pace with new technologies, evolving industry standards and demands, that could have a material adverse effect on our business, financial condition and results of operations.

### **5.14 Financial Statements**

The preparation of financial statements requires our management to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities including the disclosure of contingent assets and liabilities as well as revenues and expenses recorded in our financial statements. Estimates made relate primarily to the measurement of accrued liabilities, stock-based compensation expense, valuation of future income tax assets, estimates for asset retirement obligations, and the useful lives of capital assets and IP.

The estimates and assumptions are reviewed periodically and are based upon the best information available to management; however, we cannot provide assurance that future events will not prove that these estimates and assumptions are inaccurate. Any revisions to our estimates and assumptions may have a material impact on our future reported net income or loss and assets and liabilities.

## **5.15 Cyber Security**

Our ability to manage our operations successfully is critical to our success. Our business relies on our ability to electronically gather, compile, process, store and distribute data and other information. Unintended interruptions or failures resulting from computer and telecommunications failures, equipment or software malfunction, power outages, catastrophic events, security breaches (such as unauthorized access by hackers), social engineering schemes, unauthorized access, errors in usage by our employees, computer viruses, ransomware or malware, and other events could harm our business.

We have undertaken efforts and other steps to enhance our data security infrastructure. Any security breach or failure in our computer equipment, systems or data could result in the interruption of our business operations and adversely impact our financial results.

## **5.16 Ability to Trade Shares**

There is no certainty that an investor can trade our common shares on public markets at a stable market price. The Company has historically had a limited public market for our common shares on the TSX and the United States OTC Markets Group's Venture Stage Marketplace (the "OTC") and there is a risk that a broader or more active public trading market for our common shares will not develop or be sustained, or that current trading levels will not be sustained.

The market price for the common shares on the exchanges where our common shares are listed has been, and we anticipate will continue to be, very volatile and subject to significant price and volume fluctuations in response to a variety of external and internal factors. This is especially true with respect to emerging companies such as ours. Examples of external factors, which can generally be described as factors that are unrelated to the operating performance or financial condition of any particular company, include changes in interest rates and worldwide economic and market conditions, as well as changes in industry conditions, such as changes in oil and natural gas prices, oil and natural gas inventory levels, regulatory and environment rules, and announcements of technology innovations or new products by other companies. Examples of internal factors, which can generally be described as factors that are directly related to our consolidated financial condition or results of operations, would include release of reports by securities analysts and announcements we may make from time to time relative to our operating performance, clients exploration results, financing, advances in technology or other business developments.

Because we have a limited history of profitability to date, the market price for the common shares is more volatile than that of a seasoned issuer. Changes in the market price of the common shares, for example, may have no connection with our operating results or the quality of services provided to clients. No predictions or projections can be made as to what the prevailing market price for the common shares will be at any time, or as to what effect, if any, that the sale of common shares or the availability of common shares for sale at any time will have on the prevailing market price. Given the relatively low historic trading volumes, small trades of common shares can adversely and potentially dramatically affect the market prices for those shares. Accordingly, investors in our common shares should anticipate both volatile stock price and poor liquidity unless these conditions change.

## **5.17 Dilution**

Our right to issue additional securities at any time could have an adverse effect on a shareholder's proportionate ownership.

We are authorized under our Articles of Continuance to issue an unlimited number of common shares and unlimited number of Preferred Shares. We may issue common shares and Preferred Shares under such circumstances and in such manner and at such times, prices, amounts and purposes as our Board may, in

its discretion, determine to be necessary and appropriate, subject to compliance with all applicable exchange regulations and corporate and securities laws. Any such issue of common shares or Preferred Shares would dilute the proportionate ownership of the current holders of those securities.

### **5.18 Intellectual Property**

We may not be able to protect our trade secrets and IP from competitors who would use this knowledge to eliminate or reduce our technological advantage.

Our success and future revenue growth will depend, in part, on our ability to protect our IP. We have commenced an IP strategy process to obtain patents related to the SFD<sup>®</sup> technology, while also utilizing “trade secrets” protection of the proprietary nature of our technology as applicable.

Initiatives to expand and protect our IP (including patenting and new research and development initiatives) have been very successful. Squire Patton Boggs LLP, a United States-based leader in IP protection, has been advising NXT on our IP strategy, including the prior filing of an initial United States provisional patent application in May 2012. In November 2014, NXT filed a related patent amendment submission in the United States and since that time has undertaken new patent applications in select strategic international markets.

So far, SFD<sup>®</sup> patents have been granted in India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and in the European Patent Office (January 2020). In summary, the total number countries granting our patents is forty-seven. In addition, one more patent application in Brazil is pending. The patents serve an important purpose of the protection for our proprietary SFD<sup>®</sup> technology. The patents also serve as multiple independent third-party recognitions of the technological invention in terms of practical applicability, conceptual novelty, and knowledge advancement.

The patent protection application process requires disclosure of at least some aspects of our SFD<sup>®</sup> technology to third parties and ultimately public disclosure. This disclosure could significantly increase the risk of unlawful use of our technology by third parties. Furthermore, we have no assurance that, even with patent protection, a patent could be registered to protect our IP in all or any jurisdictions within North America or other countries throughout the world. If registered, there can be no assurance that it would be sufficiently broad to protect our technology or that any potential patent would not be challenged, invalidated or circumvented or that any right granted thereunder would provide meaningful protection or a competitive advantage to us. Finally, protection afforded by patents is limited by the financial resources available to legally defend IP rights. We currently do not possess the required financial resources to fund a lengthy defense of our rights if challenged by a much larger competitor or oil and gas company.

We enjoy common and contract law protection of our technology and trade secrets. Employees and contractors are governed by confidentiality agreements as well as a fiduciary responsibility to protect our technology, supporting documentation and other proprietary information.

Our strongest protection of the SFD<sup>®</sup> technology comes from restricting access to knowledge concerning the technology. Only a very limited number of NXT personnel have access to or knowledge of the underlying SFD<sup>®</sup> technology and no one employee has access or knowledge of all aspects of the SFD<sup>®</sup> system. Currently, no third party has any significant knowledge of the technology. As further protection, SFD<sup>®</sup> equipment does not leave the direct control of NXT employees, thereby preventing unauthorized replication of the equipment.

The Company reassesses the appropriateness of its IP protection strategy on an ongoing basis and seeks advice from IP advisors as necessary.

It is possible that a third party will copy or otherwise obtain and use the Company's technology without authorization, develop a similar technology independently or design around the Company's secrets. Accordingly, there can be no assurance that the steps taken by the Company to prevent misappropriation or infringement of our IP will be successful.

An inability to protect our IP would make it possible for competitors to offer similar products and services that could have a material adverse effect on our business, financial condition and results of operations.

#### **5.19 Development, Commercialization, and Protection of the Geothermal Rights**

With the acquisition of the Geothermal Rights, the Company will continue to refine and develop the SFD® survey system to commercialize the Geothermal Rights. This development requires substantial time and resources, and continued government assistance is not guaranteed. Furthermore, even if resources are available, there can be no assurance that the Company will be commercially or technically successful in enhancing the technology. If we are unable to develop and commercialize the geothermal applications of SFD® technologies, or adapt to evolving industry standards and demands, these could have a material adverse effect on our business, financial condition, and results of operations.

#### **5.20 Flight Operations**

We experience operational hazards in our flight operations that may subject us to potential claims in the event that an incident or accident occurs. The flight operations of SFD® surveys are subject to the hazards associated with general flight operations. An aircraft accident may cause personal injury and loss of life, as well as severe damage to and destruction of property or the SFD® sensors and related equipment.

The Company has experienced one instance of GPS "jamming" in a survey area which could have impaired the ability to navigate to the standards required for accurate survey data. This problem was solved by the acquisition of a supplemental GPS antenna that allowed our staff to overcome the jamming and accurately follow the survey planned flight lines. Worldwide, instances of jamming have become more frequent.

Independent third parties provide all the services required to maintain and operate the aircraft and they mitigate the primary risks of flight operations. These services are provided by an organization accredited by Transport Canada to operate aircraft in accordance with Transport Canada approved and audited operating procedures. The aircraft operator employs the required pilots, aircraft maintenance engineers, support personnel and ensures that they operate within their Transport Canada operating certificate. Our employees do not perform any airworthiness or flight safety operations.

We require the flight contractor to maintain appropriate insurance coverage for the risks associated with aircraft operations and we obtain insurance coverage to provide us with additional risk protection. In addition, we maintain general business insurance coverage and believe that this insurance and the policy limits are appropriate for the operational risks that we incur.

Despite our policy to not operate the aircraft directly and our insurance coverage, we cannot avoid or alternatively be insured for all risks of flight operations. In the event of an incident or accident we may be sued by injured parties in excess of our policy limits or for damages that are not covered by our insurance policy. The magnitude of a lawsuit of this nature is not determinable. Furthermore, to the extent that our SFD® equipment is damaged, we may be unable to conduct SFD® surveys for several months following an accident.



## 5.21 Foreign Countries

We conduct operations in foreign countries, which exposes us to several risks that may have a material adverse effect on the Company.

### a) Criminal Activity and Social Instability

We operate in foreign countries that can experience significant social upheaval and criminal activity. Systemic criminal activity in a country or isolated criminal acts may disrupt operations, impact our ability to earn revenue, dramatically add to our cost of operations or potentially prevent us from earning any survey revenue in a country.

### b) Political Instability

Any changes in regulations or shifts in political attitudes are beyond the control of the Company and may adversely affect our business. Exploration may be affected in varying degrees by government regulations which have the effect of restricting exploration and production activities. These changes may adversely impact the laws and policies governing price controls, export controls, foreign exchange controls, income taxes, expropriation of property, environmental legislation, site safety or other areas.

Currently, there are no restrictions (other than the payment of local withholding taxes) on the repatriation back to Canada of our earnings in foreign countries in which we have operated, such as Nigeria; however, there can be no assurance that significant restrictions on repatriation to Canada of earnings will not be imposed in the future.

Our operations may also be adversely affected by changes in laws and policies in Canada impacting foreign travel and immigration, foreign trade, taxation and investment.

### c) Commercial Disputes

While operating in a foreign country, we are subjected to local commercial laws which often involve executing contracts in a foreign language. Although every effort is made to ensure we have access to an accurate English translation, misunderstandings and potential disputes between parties may arise.

In the event of a dispute arising in connection with our foreign operations for any reason, we may be subject to the exclusive jurisdiction of foreign courts or may not be successful in subjecting foreign persons to the jurisdictions of the courts of Canada or enforcing Canadian judgments in such other jurisdictions. We may also be hindered or prevented from enforcing our rights with respect to a government instrumentality because of the doctrine of sovereign immunity.

Accordingly, these risk factors have the potential of adversely reducing the level of survey revenue from our clients, our ability to operate effectively or our ability to be paid for our services and may have a material adverse effect on our financial position.

Where possible, NXT utilizes risk mitigation products offered by entities such as Export Development Canada ("EDC"). EDC financial products include insurance coverage of contract accounts receivable, guarantee support for contract performance bonds, and wrongful call insurance for such bonds.

### d) Corruption and Bribery

Foreign markets may be susceptible to a higher risk of corruption and bribery. All of NXT's employees, contractors, and independent sales agents are required to adhere to the Company's Code of Conduct & Business Ethics, which prohibits illegal activities, including any acts of bribery or corruption. NXT conducts

appropriate due diligence on all of its sales representatives and distributors and requires them to complete annual certifications that they adhere to the Company's Anti-Bribery and Anti-Corruption Policy.

## **5.22 Flight Permits**

We rely upon the right to conduct airborne surveys in foreign countries. These foreign operations expose us to the risks that we will be prevented from conducting surveys when requested by clients.

The operation of our business, namely conducting aerial SFD® surveys and interpreting SFD® data, is not subject to material governmental or environmental regulation in Canada and the United States with the exception of flight rules issued by Transport Canada and the Federal Aviation Administration governing the use of commercial aircraft, including rules relating to low altitude flights. The requirements in other countries vary greatly and may require permits and/or provide other restrictions to conducting flight operations in the country that may restrict our ability to perform SFD® surveys.

For example, in South American countries in which we have operated, such as Colombia and Bolivia, SFD® surveys must comply with additional requirements not encountered in Canada and the United States, including customs obligations and bonds related to the importation and exportation of the aircraft into the country, obtaining permits from the local aviation authority, and obtaining permits from the local Air Force. We have successfully operated in South America, Africa, Türkiye, and other global regions in accordance with these typical requirements.

Based on our North America and international experience to date, we do not anticipate any government controls or regulations that will prevent timely completion of SFD® surveys. However, we may encounter government restrictions in other countries that may impact or restrict our ability to conduct surveys.

If we encounter government regulation and restrictions that impact or prevent us from conducting surveys in any country, then we will not be able to earn revenue in the country and we may be exposed to forfeiting any performance bonds which may have been issued.

## **5.23 Credit Risk**

Credit risk arises from the potential that the Company may incur a loss if counterparty to a financial instrument fails to meet its obligation in accordance with agreed terms. The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents, short-term investments and accounts receivable. The carrying value of cash and cash equivalents, short-term investments, and accounts receivable reflects management's assessment of credit risk. At December 31, 2023, cash and cash equivalents included balances in bank accounts placed with financial institutions with investment grade credit ratings. The Company manages accounts receivable credit risk by requiring advance payments before entering into certain contract milestones and when possible, accounts receivable insurance.

## **5.24 Tax Matters**

The Company and its subsidiaries are subject to income, value added and other taxes in Canada, the United States and numerous foreign jurisdictions. Changes in tax laws or interpretations thereof or tax rates in the jurisdictions in which the Company or its subsidiaries do business could adversely affect the Company's results from operations, returns to shareholders, and cash flow. Our effective tax rates could also be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities, or changes in tax laws or their interpretation. While management believes the Company and its subsidiaries are in compliance with current prevailing tax laws

and requirements, one or more taxing jurisdictions could seek to impose incremental or new taxes on the Company or its subsidiaries or the Company or its subsidiaries could be subject to assessment, reassessment, audit, investigation, inquiry or judicial or administrative proceedings by any such taxing jurisdiction. The timing or impacts of any such assessment, reassessment, audit, investigation, inquiry or judicial or administrative proceedings or any future changes in tax laws, including the impacts of proposed regulations, cannot be predicted. Any adverse tax developments, including legislative changes, judicial holdings or administrative interpretations, could have a material and adverse effect on the results of operations, financial condition and cash flows of the Company.

## **5.25 Occurrence of Natural Disasters, Epidemics or Other Events**

Our business could be materially and adversely affected by natural disasters, such as fires or floods, the outbreak of a widespread health epidemic or pandemic, or other events, such as wars, including the military conflicts, acts of terrorism, power shortages or communication interruptions. The occurrence of a disaster or similar event could materially disrupt our business and operations. These events could also cause us to close our operating facilities temporarily, which would severely disrupt our operations and have a material adverse effect on our business, financial condition and results of operations. In addition, our net sales could be materially reduced to the extent that a natural disaster, health epidemic or other major event harms the economies of the countries in which we operate. As such, the outbreak of hostilities between Russia and Ukraine could result in more widespread conflict and could have a severe adverse effect on the surrounding regions and the related markets, and on our business, financial condition and results of operations. The duration of the conflicts and related events and whether they escalate further cannot be predicted. Our operations could also be severely disrupted if our customers, partners and other third-party providers or other participants were affected by natural disasters, health epidemics, or other major events, such as wars and military conflicts.

**We caution that the factors referred to above and those referred to as part of particular forward-looking statements may not be exhaustive and that new risk factors emerge from time to time in our rapidly changing business environment.**

## **6 DIVIDEND POLICY**

We have never paid any cash dividends on our common shares and we do not anticipate that we will pay any dividends in the foreseeable future. Our current business plan is to retain any future earnings to finance the expansion of our business. Any future determination to pay cash dividends will be at the discretion of our Board and will be dependent upon our consolidated financial condition, results of operations, capital requirements and other factors as our Board may deem relevant at that time.

## **7 CAPITAL STRUCTURE**

### **7.1 Common Shares**

The Company is authorized to issue an unlimited number of common shares. There were 78,025,237 common shares outstanding at December 31, 2023, and there are 78,121,746 fully paid and non-assessable common shares issued and outstanding as of March 27, 2024. The holders of common shares are entitled to dividends (subject to any prior rights of the holders of Preferred Shares) if, as and when declared by the Board.

The holders of common shares are entitled to one vote per share at any meeting of the shareholders of the Company and to receive in the event of liquidation or dissolution (subject to any prior rights of the holders of Preferred Shares), all assets of the Company as are distributable to the holders of shares.

The complete description of the rights, privileges, restrictions and conditions of the common shares is included in our Articles of Continuance, a copy of which is available through the Company's issuer profile on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

## **7.2 Preferred Shares**

The Company is authorized to issue an unlimited number of preferred shares, issuable in series. The Board may by resolution fix before issuance, the designation, rights, privileges, restrictions and conditions to attach to the preferred shares of each series. The Preferred Shares are entitled to preference over the common shares with respect to the payment of dividends, if any, and in the event of liquidation, dissolution or winding-up of the Company. As of March 27, 2024, there are no Preferred Shares outstanding.

At the Annual Meeting of Shareholders on August 2, 2023 shareholders approved the cancellation of the outstanding Series 1 preferred shares and approve the creation of the Series 2 Preferred Shares to facilitate the conversion of the convertible debentures to be issued under the Ataraxia Subscription Agreement (as defined herein).

Holders of Series 2 Preferred Shares are entitled to receive notice of and to attend and vote at all meetings of NXT (except meetings of holders of another class of shares) and shall be entitled to one vote per Series 2 Preferred Share at any such meeting. Dividends on the Series 2 Preferred Shares may be declared by the Board at the rate of 10% per annum on the sum of the Redemption Price thereof (as defined below). If declared, such dividends shall accrue and compound, and shall be cumulative from the respective date of issuance of the Series 2 Preferred Shares. Upon the liquidation of NXT, the holders of such Series 2 Preferred Shares shall be entitled to receive an amount equal to the redemption price of \$0.143 per Series 2 Preferred Share (the "Redemption Price") before the distribution of any part of the property and assets of NXT to the holders of its common shares. Following the payment of such Redemption Price, the Series 2 Preferred Shares shall be entitled to participate with the holders of common shares then outstanding on a pro rata basis as a single class of shareholders with respect to the distribution of the remaining property and assets of NXT. On written notice, the Series 2 Preferred Shares shall be convertible into common shares of NXT, on a basis of one Preferred Share to one common share. Common shares shall not be convertible into Series 2 Preferred Shares. The Series 2 Preferred Shares shall not be transferred without the prior consent of the Board.

The complete description of the rights, privileges, restrictions and conditions of the Preferred Shares is included in our Articles of Continuance, a copy of which is available through the Company's issuer profile on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

## 8 MARKET FOR SECURITIES

The following tables set forth the price history of the common shares listed on the OTC in the United States and on the TSX in Canada.

Month Ended	TSX			OTC		
	High (CDN\$)	Low (CDN\$)	Volume	High (US\$)	Low (US\$)	Volume
December 31, 2023	\$0.245	\$0.145	221,607	\$0.150	\$0.108	76,397
November 30, 2023	\$0.220	\$0.160	80,873	\$0.160	\$0.118	131,166
October 31, 2023	\$0.255	\$0.185	216,486	\$0.200	\$0.128	332,206
September 30, 2023	\$0.280	\$0.165	473,887	\$0.210	\$0.139	582,288
August 31, 2023	\$0.270	\$0.120	1,311,565	\$0.196	\$0.087	1,621,456
July 31, 2023	\$0.320	\$0.315	112,420	\$0.231	\$0.190	386,383
June 30, 2023	\$0.350	\$0.345	468,486	\$0.270	\$0.132	674,044
May 31, 2023	\$0.220	\$0.205	133,863	\$0.160	\$0.128	180,519
April 30, 2023	\$0.190	\$0.175	79,811	\$0.157	\$0.120	82,256
March 31, 2023	\$0.200	\$0.165	38,185	\$0.135	\$0.119	149,481
February 28, 2023	\$0.210	\$0.175	19,824	\$0.170	\$0.125	48,980
January 31, 2023	\$0.290	\$0.175	288,234	\$0.221	\$0.134	281,802

## 9 PRIOR SALES

During the most recently completed financial year, and up to the date hereof, the Company has issued the following securities that were not listed on an exchange or marketplace:

<b>Security:</b>	<b>Date of Issue:</b>	<b>Principal Amount:</b>	<b>Conversion Price:</b>
convertible debentures <sup>(1)</sup>	May 31, 2023	US\$1,200,000 (CDN\$1,631,954)	US\$0.143 (CDN\$0.194)
convertible debentures <sup>(2)</sup>	July 10, 2023	US\$200,000 (CDN\$265,560)	US\$0.143 (CDN\$0.194)
convertible debentures <sup>(3)</sup>	November 8, 2023	US\$1,000,000 (CDN\$1,379,000)	US\$0.1808 (CDN\$0.25)
convertible debentures <sup>(4)</sup>	December 22, 2023	US\$150,000 (CDN\$199,260)	US\$0.1808 (CDN\$0.25)
convertible debentures <sup>(5)</sup>	January 12, 2024	US\$722,000 (CDN\$966,036)	US\$0.1808 (CDN\$0.25)

(1) First Tranche of the Ataraxia Debenture

(2) Second tranche of the Ataraxia Debenture

(3) First tranche of the November Debentures.

(4) Second tranche of the November Debentures.

(5) Third tranche of the November Debentures.

## 10 ESCROWED AND RESTRICTED SECURITIES

There are no securities held in escrow and no securities subject to a contractual restriction on transfer.

## 11 DIRECTORS AND OFFICERS

Our Articles of Continuance provide the Board shall be comprised of a minimum of one director and a maximum of 15 directors. At present, our Board is comprised of six members.

Our directors are elected by our shareholders at each annual meeting of shareholders and hold the position either until the next annual shareholders' meeting, the date of their resignation or until a successor is appointed.

The following sets forth information, including directorships in other reporting issuers, as of March 27, 2024, for our directors, and executive officer:

**THEODORE PATSELLIS**  
**ATHENS, HELLENIC REPUBLIC**

*Director since*  
*June 2023*

Mr. Patsellis is a Greek attorney who was admitted to the Athens Bar Association in 1996. He is a Greek Ministry of Justice certified Mediator and has been the owner of a boutique Law firm since 2013. He holds a Bachelor Degree from the National and Kapodistrian University of Athens - Law Faculty and an LL.M. degree from the Ludwig-Maximilian University of Munich. Having worked for many years with Ernst & Young LLP, Hill International Inc. and several renowned law firms, Mr. Patsellis has acquired experience working in diversified environments and a variety of business cultures. With a strong German background and the experience of having lived and worked in Germany, Greece, Serbia and Romania as a lawyer and tax professional, he was able to lead various teams of professionals involved in large business transactions in the South-East European region. His expertise spans across mergers and acquisitions, corporate and transactional law, local and international taxation, corporate governance and compliance. His industry knowledge ranges from the telecommunications and energy sectors to the retail, hospitality and consumer products, pharmaceuticals, and real estate. In addition to NXT, as of the date hereof, he sits on the Board of Directors of PANA Holdings in Mauritius and Vivid Living Co. S.A. in Greece.

Mr. Patsellis is a member of the Audit, and the Strategic Planning Committees.

**CHARLES SELBY**  
**CALGARY, ALBERTA, CANADA**

*Director since*  
*January 2006*

Mr. Selby obtained a Bachelor of Science (Hons.) degree in Chemical Engineering from Queen's University, a Juris Doctorate degree from the University of Calgary, and is a registered Professional Engineer and lawyer in the Province of Alberta. He previously practiced law for two large Canadian law firms, specializing in securities and international transactions primarily in the energy business. Mr. Selby served as Vice President of Pengrowth Corporation for almost 20 years participating in the growth of that entity to an enterprise value of more than \$4 billion. He also has served as a director and officer of a number of reporting issuers in the oil and natural gas industry including Arakis Energy Corp., with operations in the Sudan. Since 2017 he is President and Director of Caledonian Midstream Corporation, a company that has

**GERRY SHEEHAN**  
**DUBLIN, IRELAND**

*Director since*  
*July 2021*

natural gas and oil production together with a sour natural gas plant and infrastructure in the Alberta foothills and is also the CEO and a director of Wildcat Royalty Corporation.

Mr. Selby is the Lead Director of NXT. He is also Chair of the Audit, Compensation, Disclosure Committees and a member of the Strategic Planning Committee.

Mr. Sheehan has worked continuously in international oil and gas exploration, development, and production for over 40 years. He has broad technical and business development experience in Africa, South Asia and Europe.

Mr. Sheehan began his career in 1982 as a geophysicist working with the British National Oil Corporation (“BNOC”), after privatization becoming Britoil plc. He evaluated acreage in the United Kingdom, Dutch, Danish, Irish and Norwegian sectors. In 1986 he transferred to the BNOC Houston office as a technical auditor. He was later seconded to the Global Basin Evaluation Team, focusing on Africa and Asia.

In 1987 Mr. Sheehan joined the fledgling oil company Tullow Oil plc. as part of the founding technical team. The company was operated in Senegal on a World Bank-sponsored gas to power project. New acreage was secured in the UK onshore, Pakistan, Syria and Yemen, with follow-on exploration and field development projects.

From 1992 to 1998, Mr. Sheehan held the position of Chief Geophysicist. The company operated in South Asia culminating in the discovery and development of a one trillion cubic feet-sized Bangora gas field in Bangladesh, operated on behalf of Texaco and Chevron. His project team also deployed on the re-development of the offshore Espoir field in Cote d’Ivoire, West Africa, with partners Canadian Natural Resources Limited and Addax Petroleum.

From 1998 to 2006 Mr. Sheehan held the post of International Exploration Manager, this role also encompassed a business development responsibility. This was a time of expansion in the company with new assets acquired in West Africa, North Africa, Central and Eastern Europe and South Asia. In 2004, Mr. Sheehan led the technical due-diligence team on the corporate acquisition of Energy Africa plc. The company expanded its footprint in Africa with oil exploration successes in Ghana and Uganda.

In 2007 Mr. Sheehan founded a private company, Blackstairs Energy plc. The company acquired oil field rehabilitation projects in Romania, and exploration acreage in Armenia and Senegal. The company also undertook technical and commercial asset evaluations on behalf of third parties.

In 2014 Mr. Sheehan was a founder of T5 Oil & Gas, a private London-based oil and gas company. T5 is a licence partner in a portfolio of assets in Gabon, comprising offshore oil production and a suite of un-developed oil and gas fields, both offshore and onshore, now being advanced to development.

Mr. Sheehan holds a Bachelor of Science degree in Geology and a Master of Science in Applied Geophysics, both obtained from the National University of Ireland. He is a Fellow of the Geological Society (FGS, elected 2009) and is an active member of the American Association of Petroleum Geologists (AAPG, 1986) and the Society of Exploration Geophysicists (SEG, 1996).

Mr. Sheehan is the chair of the Strategic Planning Committee and a member of the Governance Committee.

**JOHN TILSON**  
**MONTECITO, CALIFORNIA, USA**

*Director since*  
*February 2015*

Mr. Tilson obtained his Master of Business Administration degree from the University of Southern California and further obtained his Chartered Financial Analyst designation. Following this, Mr. Tilson worked as an analyst, portfolio manager, and advisor in the United States investment and financial industry with firms such as Sutro & Company and EF Hutton & Company. Mr. Tilson joined Roger Engemann & Associates, Inc. in 1983. During his tenure in such position, the Pasadena Group of Mutual Funds was started, with Pasadena Capital Corporation formed as the holding company for the mutual funds and investment management business. After working as an Analyst and Portfolio Manager, Mr. Tilson later became Executive Vice President & Managing Director of Pasadena Capital Corporation. Assets under management had grown to over US\$5 billion by the time the firm was sold to Phoenix Companies in 1997. Mr. Tilson later retired in 2005.

From 2006 to 2012, Mr. Tilson was a member of the Board of Trustees, including three years serving as Vice President and Chairman of the Long-Range Planning Committee for Lotusland, a Santa Barbara non-profit organization established by Madame Ganna Walska.

Mr. Tilson is a member of the Audit Committee, the Compensation Committee and the Governance Committee.

**THOMAS E. VALENTINE**  
**CALGARY, ALBERTA, CANADA**

*Director since*  
*November 2007*

*Corporate Secretary since*  
*April 2014*

Mr. Valentine is a Partner with Norton Rose Fulbright Canada LLP, where he has practiced law, both as a barrister and a solicitor, since being admitted to the Law Society of Alberta in 1987. He is a member of the firm's Energy and Infrastructure Practice Group and is involved in energy-related matters throughout the Middle East, North Africa, the Commonwealth of Independent States, Asia and South America. His principal occupation is as a lawyer.

Mr. Valentine is Corporate Secretary of Touchstone Exploration Inc., and formerly was a director of two other Canadian public companies, Calvalley Petroleum Inc. (to May 2015) and Veraz Petroleum Ltd. (to December 2012).

Mr. Valentine holds a Bachelor of Arts degree from the University of British Columbia, a Bachelor of Laws degree from Dalhousie University, and a Master of Laws degree from the London School of Economics.



Mr. Valentine is the Chair of the Governance Committee and a member of the Compensation and Committee.

**BRUCE G. WILCOX**  
**NEW YORK, NEW YORK, USA**

*Interim Chief Executive Officer  
since June 2023 and Director  
since June 2015*

Mr. Wilcox has had a long career as an investment company CEO, analyst and portfolio manager. He spent most of his career with Cumberland Associates, LLC, a New York equity fund, from 1986 through retirement in 2010, progressing from analyst / portfolio manager to partner (1989), and Chairman of the Management Committee (1997). Mr. Wilcox specialized in Cumberland's investments in the energy industry (exploration and production and service companies), with an emphasis on value and long-term holdings. During his tenure, the fund's assets under management ranged from US\$0.7 billion to \$1.5 billion.

From 1984 to 1986, Mr. Wilcox was with Central National- Gottesman, Inc. as an analyst and portfolio manager on a team responsible for a \$500 million listed equity portfolio.

Mr. Wilcox was CEO of E Street Management, LLC from 2016 through 2020 which managed a long/short equity fund of funds.

From January 2011 to present he has also been one of three managing members of Xiling Fund III, LLC, part of a series of private equity funds (US\$100+ million) which invests in museum-quality Imperial Chinese porcelains, archaic bronzes and ink paintings.

Mr. Wilcox obtained a Bachelor of Arts (Honors), in Modern Chinese from the University of California, Santa Barbara (1977); and a Master of International Management from the American Graduate School of International Management in Phoenix (1980, now a part of Arizona State University).

Mr. Wilcox is a member of several boards, including the Teachers College of Columbia University (2003 to date, including serving as the Chair of the Investment Committee for that entire period), the University of California Santa Barbara Foundation (2003 to date, including as former Chair of the Board of Trustees, Investment and Finance Committees), and was a Trustee (2001 to May 2023) of the Manhattan Institute For Policy Research, a leading urban, state, and national policy institution, which works on matters such as energy policy.

Mr. Wilcox is a member of the Disclosure Committee.

**EUGENE WOYCHYSHYN**  
**CALGARY, ALBERTA, CANADA**

*VP Finance and Chief  
Financial Officer since  
December 2018*

Mr. Woychyshyn brings to NXT over 25 years of leadership experience in multiple industries and worldwide regions including North America, Europe and Asia. Mr. Woychyshyn has extensive hands-on experience and accomplishments in mergers and acquisitions, organizational restructuring, purchasing, treasury, financial reporting and control, compliance, human resource management and tax planning. In almost ten years as an expatriate with assignments in Norway, China, the United States and South East Asia, Mr. Woychyshyn developed international business competencies.

Mr. Woychyshyn originally served as a consultant to NXT from November 2017 to November 2018, providing controllership services. From 2015 to 2017 he was the Chief Financial Officer of Imaging Dynamics Company Limited.

Mr. Woychyshyn is a Chartered Professional Accountant, CA, who holds a Bachelor of Commerce (Hons) degree from the University of Manitoba and a Masters of Business Administration degree from St. Joseph's University, Philadelphia PA.

Mr. Woychyshyn is a member of the Disclosure Committee.

As of March 27, 2024, the directors and officers of NXT, as a group, beneficially owned or controlled or directed, directly or indirectly, 8,725,525 common shares or approximately 11.2% of the issued and outstanding common shares. In addition, directors held US\$147,000 of convertible debentures at March 27, 2024 which could convert to 813,053 common shares. With the US\$147,000 of convertible debentures, directors and officers will have the right to own, after conversion of the convertible debentures, 9,538,578 common shares, representing approximately 12.2% of the issued and outstanding common shares as of March 27, 2024.

#### **11.1 Cease Trade Orders, Bankruptcies, Penalties or Sanctions**

None of the directors or executive officers is, or has been in the last ten years, a director, CEO or chief financial officer of any company, including NXT, except as noted below that: (i) was subject to a cease trade order or order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days that was issued while the director or executive officer was acting in that capacity; or (ii) was subject to a cease trade order, an order similar to a cease trade order, or an order that denied the relevant company access to any exemption under securities legislation after the proposed director ceased to be a director, CEO or chief financial officer and which resulted from an event that occurred while that person was acting in such a capacity.

None of the directors or executive officers is, or has been in the last ten years, a director or executive officer of any company, including NXT, that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets.

None of the directors or executive officers has, within the last ten years, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold their assets.

Charles Selby was a board member of Montana Exploration Corp. ("MEC") when it was issued a cease trade order by the Alberta Securities Commission on May 4, 2018 against MEC for failing to file its annual audited financial statements, annual management's discussion and analysis and certification of annual filings within the required time period. MEC ceased operations in June 2021.

Messrs. Patsellis, Selby, Sheehan, Tilson and Valentine are considered "independent" within the meaning of Canadian securities law.

## 11.2 Board Committees

### (a) Corporate Governance Committee

The Company and the Board recognize the importance of corporate governance to the effective management of the Company and to its shareholders. The Company's approach to significant issues of corporate governance is designed with a view to ensuring that the business and affairs of the Company are effectively managed so as to enhance shareholder value. The mandate of the Corporate Governance Committee is posted on the Company's website and may be viewed at [www.nxtenergy.com](http://www.nxtenergy.com). Investors may also request a copy be mailed to them by writing to our offices at Suite 302, 3320 – 17<sup>th</sup> Avenue SW Calgary, Alberta, Canada, T3E 0B4.

The Board and management endorse the need to establish forward-looking governance policies and to continuously evaluate and modify them to ensure their effectiveness.

#### (i) *Composition*

Mr. Valentine (Chair), Mr. Sheehan and Mr. Tilson are members of the Corporate Governance Committee. All members of the Corporate Governance Committee are independent.

#### (ii) *Responsibilities*

The Corporate Governance Committee's duties, as outlined in its charter, are to deal with the Company's approach to corporate governance and the promotion of compliance with industry and regulatory standards. The committee is responsible for overseeing and assessing the functioning of the Board and the committees of the Board and for the development, recommendation to the Board, implementation and assessment of effective corporate governance principles and guidelines. The committee's responsibilities also include identifying new candidates for appointment as directors and recommending that the Board select qualified director candidates for election at the next annual meeting of shareholders.

### (b) Disclosure Committee

#### (i) *Composition*

The Disclosure Committee currently consists of Mr. Wilcox and Mr. Selby and Mr. Woychyshyn.

#### (ii) *Responsibilities*

The Disclosure Committee's duties are to ensure that the Company provides timely, accurate and balanced disclosure of all material information about the Company and to provide fair and equal access to such information. All news releases, including but not limited to releases of material information, are managed by the Disclosure Committee. If the information has been determined by the Disclosure Committee to be material, news releases will be prepared, reviewed and then disseminated through a news-wire service that provides simultaneous service to widespread news services and financial media. Additionally, the Disclosure Committee is responsible for ensuring public disclosure through filing these news releases on SEDAR+, EDGAR, and our website.

### (c) Audit Committee

#### (i) *Composition*

The Audit Committee consists of Messrs. Selby (Chair), Tilson, and Patsellis. All members of the Audit Committee are independent within the meaning of National Instrument 52-110 – *Audit Committees*, and

each member is financially literate. The Audit Committee Charter is attached in Appendix "A". All members of the Audit Committee have an educational background and experience that provides them with the knowledge and ability to understand accounting policies and related financial reporting and disclosure issues, in order to fulfill their duties and responsibilities as a member of the Audit Committee.

(A) Charles Selby

Mr. Selby is both a lawyer and professional engineer, with past legal experience specializing in securities and corporate finance matters. He has served on the board or in senior management roles with a number of private firms as well as reporting issuers in the oil and natural gas industry. Mr. Selby has previously served on the audit committees of Alta Canada Energy Corp. and served as the audit committee chairman for Idaho Natural Resources Corp. (formerly Bridge Resources Corp.).

(B) John Tilson

After obtaining a Master of Business Administration degree and his Chartered Financial Analyst designation, Mr. Tilson had a career as an analyst, portfolio manager, and advisor in the United States investment and financial industry with such firms as Sutro & Company and EF Hutton & Company. Mr. Tilson is now retired.

(C) Theodore Patsellis

Mr. Patsellis, obtained Bachelor Degree from the National and Kapodistrian University of Athens - Law Faculty and an LL.M. degree from the Ludwig-Maximilian University of Munich. His expertise comprises mergers and acquisitions, corporate and transactional law, local and international taxation, corporate governance and compliance. He has acquired experience working in diversified environments and a variety of business cultures as a lawyer and tax professional. He led a team of professionals involved in large business transactions in the South-East European region.

(ii) *Oversight*

The Board has adopted all recommendations by the Audit Committee with respect to the nomination and compensation of the external auditor.

(iii) *Pre-Approval Policies and Procedures*

The Audit Committee has adopted a formal policy requiring the pre-approval of all audit and non-audit related services to be provided by the Company's principal auditor prior to the commencement of the engagement, subject to the following:

- the Audit Committee will review annually a list of audit, audit related, recurring tax and other non-audit services and recommend pre-approval of those services for the upcoming year. Any additional requests will be addressed on a case-by-case specific engagement basis;
- for engagements not on the pre-approved list, the Audit Committee has delegated to the Chair of the Audit Committee the authority to pre-approve individual non-audit service engagements with expected costs of up to \$50,000 (annual aggregate total) subject to reporting to the Audit Committee, at its next scheduled meeting; and
- for engagements not on the pre-approved list and with expected costs greater than \$50,000 (annual aggregate total), the entire Audit Committee must approve this service, generally at its next scheduled meeting.

(iv) *Audit Fees, Audit-Related Fees, Tax Fees and All Other Fees*

The following table sets forth the aggregate audit fees, audit-related fees, tax fees, and all other fees of our principal accountants (MNP LLP and KPMG LLP for 2023 and KPMG LLP for 2022) and all other fees billed for products and services provided by our principal accountants for the fiscal years ended December 31, 2023 and 2022.

	<b>2023</b>	<b>2022</b>
Audit fees <sup>1</sup>	\$261,803	\$407,670
Audit-related fees	-	-
Tax fees	-	12,273
Other fees	-	-
<b>Total fees</b>	<b>261,803</b>	<b>419,943</b>

1. Includes fees related to reviews of each of the Company's unaudited interim, 3 month quarterly filing period.

Our Audit Committee nominates and engages our independent auditors to audit our financial statements and also requires management to obtain the Audit Committee's approval on a case-by-case basis before engaging our independent auditors to provide any audit or permitted non-audit services to the Company or any of our subsidiaries. All fees shown have been pre-approved by the Audit Committee.

(v) *Change of Auditor*

Effective April 25, 2023 KPMG LLP indicated that they will not stand for reappointment as the auditor of the Company for the fiscal year ended December 31, 2023. MNP LLP was appointed auditor of the Company as of the fiscal year ended December 31, 2023 at the annual meeting of shareholders on August 2, 2023.

(d) Compensation Committee

(i) *Composition*

Messrs. Selby (Chair), Tilson and Valentine are the current members of the Compensation Committee. All members are independent within the meaning of National Instrument 58-101 – *Disclosure of Corporate Governance Practices* and have extensive direct financial and legal experience which is relevant to fulfilling their responsibilities related to executive compensation. Mr. Selby has approximately 20 years of experience in advising a Canadian company on compensation issues and has served on the compensation committees of the board of directors of other reporting issuers. Mr. Valentine currently serves on the compensation committee of two public companies, and has dealt with compensation and employment law issues for 25 years. Mr. Tilson's career as an executive and managing director at various firms dealing with human resource matters has also given him experience in dealing with compensation related issues. The charter of the Compensation Committee is posted on the Company's website and may viewed at [www.nxtenergy.com](http://www.nxtenergy.com). Investors may also request a copy be mailed to them by writing to our offices at Suite 302, 3320 – 17th Avenue SW, Calgary, Alberta, Canada, T3E 0B4.

(ii) *Responsibilities*

The Compensation Committee's duties, as outlined in its charter, are to deal with the assessment of management and succession to key positions and compensation within the Company. The Compensation Committee shall assist the Board in discharging the Board's oversight responsibilities relating to the compensation and retention of key senior management employees, and in particular the CEO, with the skills and expertise needed to enable the Company to achieve its goals and strategies at fair and competitive compensation and appropriate performance incentives. In discharging its responsibilities, the Compensation Committee will report and, where appropriate make recommendations to the Board in respect of the matters identified in the charter.

(e) Strategic Planning Committee

(i) *Composition*

Messrs. Sheehan (Chair), Selby, and Patsellis are the current members of the Strategic Planning Committee. All members of the Strategic Planning Committee are independent within the meaning of National Instrument 58-101 – *Disclosure of Corporate Governance Practices*.

(ii) *Responsibilities*

The Strategic Planning Committee's duties are to set out the long-term goals of the Company and to take an active role in the development and execution of plans to achieve those goals. The Committee participates in establishing priority areas of Company business, assessment of strategic initiatives from Company senior executives with regard to development and implementation control of the Company strategy and business area specific strategies of the Company. The Committee also makes recommendations regarding the overall organization and management structure including areas where management needs to be strengthened, reviewing the organizational job descriptions and requirements and procedures for coordination of organizational management and board resources. The Committee is actively involved in the Company's strategic planning process and reviews all materials relating to the strategic plan with management. The Board is responsible for reviewing and approving the strategic plan. At least one board meeting each year is centered on discussing and considering the strategic plan, which takes into account the risks and opportunities of the business. Management must seek the Board's approval for any transaction that would have a significant impact on the strategic plan.

## **12 CONFLICTS OF INTEREST**

Potential material conflicts of interest with directors, officers and insiders are discussed in sections 3.1, 5.9 and 5.10 of this AIF, which include related party transactions and segregation of duties.

### **12.1 Board Practices**

(a) Expiration Dates

No director or member of our administrative, or supervisory bodies has an expiration date for their current term of office. Directors are elected by shareholders at the annual meeting of shareholders and hold the position either until the next annual shareholders' meeting or until a successor is appointed. The period during which each individual has served as a director is set out in the table under "*Directors and Officers*".

(b) Service Contracts

No non-executive directors have service contracts with the Company or any of its subsidiaries that provide benefits upon termination.

(c) Board of Directors Mandate

The principal role of the Board is stewardship of the Company through the creation of shareholder value, including the protection and enhancement of the value of its assets, as the fundamental objective. The stewardship responsibility means that the Board oversees the general operation of the business and management, which is responsible for the day-to-day conduct of the business. The Board must assess and ensure systems are in place to manage the risks of the Company's business with the objective of preserving

the Company's assets. The Board, through the CEO, sets the attitude and disposition of the Company towards compliance with applicable laws, environmental, safety and health policies, financial practices and reporting. In addition to its primary accountability to shareholders, the Board is also accountable to employees, government authorities, other stakeholders and the public. The Mandate of the Board is attached as Appendix "B".

### **13 TRANSFER AGENT AND REGISTRAR**

Our transfer agent and registrar is Computershare Trust Company of Canada, located in Calgary, Alberta, Canada at #800, 324 - 8th Avenue SW, Calgary, AB T2P 2Z2, [www.compuershare.com](http://www.compuershare.com).

### **14 MATERIAL CONTRACTS**

On May 24, 2023, the Company and Ataraxia entered into the Ataraxia Subscription Agreement. See "*General Development of the Business – Three Year History*" above for a description of the Ataraxia Debentures issuable under the Ataraxia Subscription Agreement.

On May 31, 2023, the Company and Ataraxia entered into an Investor Rights Agreement (the "Investor Rights Agreement") pursuant to which Ataraxia has been granted the right: (i) to nominate one person for election or appointment as a director of the Company; (ii) to have one representative of Ataraxia attend the Company's board of director meetings as an observer (except any portion of a board of director meeting where the Company's relationship with Ataraxia is to be a subject of discussion); (iii) to purchase up to its *pro rata* portion (calculated on a fully diluted basis) of any securities offered by the Company, subject to certain limitations set forth in the Investor Rights Agreement; and (iv) receive certain information regarding the Company, including annual and quarterly financial statements, annual budgets, the capitalization tables, and access to its premises upon reasonable notification. In each case Ataraxia will the rights set forth in the Investor Rights Agreement for so long as Ataraxia holds (i) any principal amount of the Ataraxia Debentures or (ii) common shares or Preferred Shares (as applicable), representing at least 5% of the outstanding common shares of the Company (on an as-converted basis, if Ataraxia holds Preferred Shares).

### **15 LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

The Company was not party to, and its property was not the subject of, any legal proceedings during the year ended December 31, 2023, and no settlement agreements were entered into before a court relating to securities legislation or with a securities regulatory authority during the period. Furthermore, to the best of our knowledge, there are no legal or regulatory proceedings existing or pending which have had or may have significant effects on the Company's financial position or profitability, and no such proceedings are pending or known to be contemplated by governmental or regulatory authorities.

### **16 INTERESTS OF EXPERTS**

MNP LLP are the auditors of the Company and have confirmed with respect to the Company that they are independent within the meaning of the relevant rules and related interpretations prescribed by the relevant professional bodies in Canada and any applicable legislation or regulations, and also that they are independent accountants with respect to the Company under all relevant United States professional and regulatory standards.

## 17 ADDITIONAL INFORMATION

The Company's consolidated financial statements are stated in Canadian dollars and are prepared in accordance with United States generally accepted accounting principles. Additional information relating to NXT can be found on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

Additional information, including directors' and officers' remuneration, principal holders of NXT's securities, and options to purchase securities, is included in the information circular for NXT's most recent annual meeting of shareholders that involves the election of directors. Additional financial information is contained in NXT's audited consolidated financial statements and management's discussion and analysis for the year ended December 31, 2023.



## APPENDIX "A"

### AUDIT COMMITTEE CHARTER

#### INTRODUCTION

This charter (the "Charter") has been adopted to govern the composition, mandate, responsibilities and authority of the Audit Committee (the "Committee") of the Board of Directors (the "Board") of NXT Energy Solutions Inc. (the "Company").

#### COMPOSITION AND PROCEDURES

1. The Committee shall be appointed by the Board and shall be composed of three directors, with at least two of whom being "independent" as required by the *Business Corporations Act* (Alberta) (the "Act").
2. The Board will appoint the chair of the Committee.
3. Quorum for meetings shall be a majority of the members of the Committee, present in person or by telephone or other telecommunication device that permits all persons participating in the meeting to speak and to hear each other.
4. Meetings of the Committee shall be conducted as follows:
  - (a) the Committee shall meet, in person or by teleconference, at least four times annually at such times and locations as may be requested by the chair of the Committee. Notice of meetings to the members shall be the same as set out in the by-laws of the Company for meetings of the Board. The Auditors or any member of the Committee may request a meeting of the Committee; and
  - (b) management representatives may be invited to attend meetings (except private sessions with the Auditors as defined below).

#### PRIMARY RESPONSIBILITIES OF THE COMMITTEE

The primary responsibilities of the Committee are:

1. To recommend to the Board:
  - (a) the external auditor (the "Auditors") to be nominated for appointment by the Shareholders of the Company for the purpose of preparing or issuing the Auditor's report or performing other audit, review or attest services for the Company; and
  - (b) the compensation of the Auditors.
2. To oversee the work of the Auditors in preparing or issuing the Auditor's report on the Company's annual consolidated financial statements or performing other audit, review or attest services for the Company including the resolution of disagreements between management of the Company and the Auditors regarding financial reporting.
3. To pre-approve, as required by the Act and subject to the exemptions in the Act, all non-audit services to be provided to the Company by the Auditors. The Committee may, in accordance with the requirements of the Act, delegate to one or more members of the Committee the authority to

pre-approve non-audit services to be provided by the Auditors, provided that all such pre-approvals of non-audit services shall be presented to the Committee at its first scheduled meeting following such pre-approval.

4. To review:
  - (a) the Company's unaudited quarterly consolidated financial statements for the first, second and third quarters of the Company's fiscal year ("quarterly statements") and the Company's audited annual consolidated financial statements ("annual statements");
  - (b) the Management's Discussion and Analysis ("MD&A") prepared in conjunction with the quarterly and annual statements; and
  - (c) all press releases to be issued by the Company with respect to its annual and quarterly earnings and press releases on other material financial reporting matters.
5. To satisfy itself that adequate procedures are adopted by the Company for the review of the Company's public disclosure of financial information extracted or derived from the Company's financial statements other than the public disclosure referred to in section 4 above, and to regularly assess the adequacy of such procedures.
6. To satisfy itself that adequate procedures are adopted and oversee the maintenance of procedures for:
  - (a) the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters; and
  - (b) the confidential anonymous submission by employees of the Company and its subsidiaries of concerns regarding questionable accounting or auditing matters.
7. To review and approve the Company's and its subsidiaries' hiring policies regarding partners, employees and former partners and employees of the current and former Auditors of the Company and its subsidiaries.

#### **AUTHORITY OF THE COMMITTEE**

Subject to prior consultation with the Chief Executive Officer or the Chief Financial Officer (except in unusual circumstances), the Committee is authorized to:

1. engage independent counsel and other advisors it determines necessary to carry out the Committee's duties and responsibilities;
2. set and require the Company to pay the compensation and charged expenses for any advisors engaged by the Committee; and
3. communicate directly with any internal audit staff of the Company and its subsidiaries (if any) and the Auditors.

## **ADDITIONAL RESPONSIBILITIES AND DUTIES OF THE COMMITTEE**

### **Auditors**

1. The Committee shall ensure that the Company requires and instructs the Auditors to report directly to the Committee.
2. The Committee is responsible for ensuring the independence of the Auditors. On an annual basis, the Committee shall obtain a formal written statement from the Auditors delineating all relationships between the Auditors and the Company and confirming the independence of the Auditors. This written statement shall be obtained in conjunction with the audit of the annual financial statements after each fiscal year end.

### **Review of Annual Financial Statements**

The Committee shall review the annual financial statements and related MD&A of the Company prior to their public release and shall report the results of its review to the Board and make recommendations to the Board with respect to Board approval of the financial statements and related MD&A. At the Committee meeting at which the Company's annual financial statements are to be reviewed, the Committee shall meet, in person or by teleconference, with representatives of the Auditors and with the Company's management to assess and understand the annual financial statements and the results of the audit including, but not limited to:

1. that the Company's system of internal controls and financial reporting systems are adequate to produce fair and complete disclosure of its financial results;
2. that the Company's reporting is complete and fairly presents its financial condition in accordance with generally accepted accounting principles;
3. that accounting judgments and estimates used by management are reasonable and do not constitute earnings management;
4. that risk management policies are in place to identify and reduce significant financial and business risks; and
5. that the Company has in place a system to ensure compliance with applicable laws, regulations and policies.

### **Review of Quarterly Financial Statements**

The Committee shall review the interim quarterly financial statements and related MD&A of the Company prior to their public release and shall report the results of its review to the Board and make recommendations to the Board with respect to Board approval of the quarterly statements and related MD&A unless the Board has delegated to the Committee the authority to approve the quarterly statements and related MD&A, in which case the Committee shall also approve the quarterly statements and related MD&A. The review by the Company shall be substantially completed prior to the issuance of a press release respecting the quarterly financial results. The Committee shall meet with the Company's management to assess and understand the interim quarterly financial statements and to discuss the results of their preparation and review.

## Other Responsibilities and Duties

1. As part of the quarterly and annual reviews described above, the Committee will:
  - (a) meet with management in the absence of the Auditors for the annual review;
  - (b) meet with the Auditors in the absence of management for the annual review;
  - (c) review with management and the Auditors any proposed changes in major accounting policies, the presentation and impact of significant risks and uncertainties, and key estimates and judgments of management that may be material to financial reporting;
  - (d) review with management and the Auditors any significant financial reporting issues discussed during the fiscal period and the method of resolution;
  - (e) review any problems experienced by the Auditors in performing the annual audit, including any restrictions imposed by management or significant accounting issues on which there was a disagreement with management;
  - (f) obtain an explanation from management of all significant variances between comparative reporting periods;
  - (g) review the post-audit or management letter, containing the recommendations of the Auditors, and management's response and subsequent follow up to matters raised by the Auditors;
  - (h) review any evaluation of internal controls by the Auditors, together with management's response; and
  - (i) review and reassess the Charter for adequacy at least annually and make changes as it deems necessary.
2. In addition to the quarterly and annual reviews, the Committee will:
  - (a) prior to the commencement of each annual audit, meet with the Auditors to review the Auditors' audit plan for the ensuing audit;
  - (b) review with management and the Auditors all material accounting and financial issues affecting the Company not dealt with in annual and quarterly reviews; and
  - (c) review annually and recommend changes to the Company's Code of Conduct & Business Ethics.
3. The Committee shall perform such other duties as may be required by the Board or as may be delegated to the Committee by the Board.

## APPENDIX "B"

### BOARD OF DIRECTORS MANDATE

#### PURPOSE

The principal role of the Board of Directors (the "Board") of NXT Energy Solutions Inc. (the "Company") is stewardship of the Company through the creation of shareholder value, including the protection and enhancement of the value of its assets, as the fundamental objective. The stewardship responsibility means that the Board oversees the conduct of the business and management, which is responsible for the day-to-day conduct of the business. The Board must assess and ensure systems are in place to manage the risks of the Company's business with the objective of preserving the Company's assets. The Board, through the Chief Executive Officer ("CEO"), sets the attitude and disposition of the Company towards compliance with applicable laws, environmental, safety and health policies, financial practices and reporting. In addition to its primary accountability to shareholders, the Board is also accountable to employees, government authorities, other stakeholders and the public.

#### PRIMARY RESPONSIBILITIES

The principal responsibilities of the Board, which are required to ensure the overall stewardship of the Company are as follows:

1. the Board must ensure that there are long-term goals in place and must adopt a strategic planning process. The CEO, with the approval of the Board, must establish long-term goals for the Company. The CEO formulates the Company's strategy, policies and proposed actions and presents them to the Board for approval. The Board brings objectivity and judgment to this process. The Board ultimately approves, on an annual basis, the strategic plan which takes into account, among other things, the opportunities and risks of the Company's business;
2. the Board must identify and have an understanding of the principal risks associated with the Company's businesses and must ensure that appropriate systems are in place which effectively monitor and manage those risks;
3. the Board must ensure that processes are in place to enable it to monitor and measure management's, and in particular the CEO's, performance in achieving the Company's stated objectives. These processes should include appropriate training, development and succession planning of management;
4. to the extent feasible, the Board shall satisfy itself as to the integrity of the CEO and other executive officers and that the CEO and other executive officers create a culture of integrity throughout the Company;
5. the Board must ensure that the necessary internal controls and management systems are in place that effectively monitor the Company's operations and ensure compliance with applicable laws, regulations and policies;
6. the Board must monitor compliance with the Company's Code of Business Conduct and Ethics; and
7. the Board must ensure the Company has adopted a communication policy which effectively communicates with and receives feedback from shareholders. The Board must also ensure that the Company has appropriate processes in place to effectively communicate with employees, government authorities, other stakeholders and the public.

## **NON-DELEGABLE RESPONSIBILITIES**

Pursuant to the *Business Corporations Act* (Alberta) (the “Act”), certain matters are considered to be of such importance, so as to warrant the attention of all Directors and, accordingly, the Act prescribes that the following matters either cannot be delegated or may only be delegated in a qualified or partial manner:

- the submission of items to shareholders for their approval;
- the filling of a vacancy among the directors or in the office of auditor;
- the appointment of additional directors;
- the issue of securities;
- the declaration of dividends;
- the purchase, redemption or other acquisition of the Company’s own shares;
- the payment of certain commissions prescribed by the Act;
- the approval of a management proxy circular;
- the approval of annual financial statements; and
- the adoption, amendment or repeal of by-laws.

## **CUSTOMARY BOARD MATTERS**

The following typifies matters customarily considered by the Board in fulfilling its responsibility for stewardship of the Company. The Board may determine it appropriate to delegate certain of these matters to committees of the Board:

- the appointment of officers, other than executive officers;
- adopting a process to consider the competencies and skills the Board, as a whole, should possess and assess the competencies and skills of each Board member and consider the appropriate size of the Board, with a view to facilitating effective decision-making;
- determining the remuneration of directors and auditors;
- reviewing and recommending to shareholders, changes to capital structure;
- approving the Company’s long-term strategy and the annual capital expenditure plan of the Company and its subsidiaries and where appropriate any supplementary capital plan;
- approving banking, borrowing and investment policies;
- determining dividend policy;
- developing the Company’s approach to corporate governance including, without limitation, developing a set of corporate governance principles and guidelines;
- approving the holding, location and date of meetings of shareholders;

- appointment of members to committees of the Board of Directors and approving terms of reference for and the matters to be delegated to such committees;
- granting any waivers from the Company's Code of Business Conduct and Ethics for the benefit of the Company's directors or executive officers;
- granting and delegating authority to designated officers and employees including the authority to commit capital, open bank accounts, sign bank requisitions and sign contracts, documents and instruments in writing;
- determining the number of directors and recommending nominees for election by the shareholders;
- approving amendments to the Company's existing: Stock Option Plan, employee benefits plans, or such other plans as the Company approves from time to time;
- approving the acquisition or disposition of certain corporate assets; and
- appointing the Company's transfer agents and registrars.

#### **BOARD COMMITTEES**

The Board of Directors has the authority to appoint a committee or committees of the Board and may delegate powers to such committees (with the exceptions prescribed by the Act). The matters to be delegated to committees of the Board and the constitution of such committees are assessed annually or more frequently as circumstances require. The following committees have been constituted:

1. the Audit Committee, to deal with financial reporting and control systems;
2. the Compensation Committee, to deal with the assessment of management and succession to key positions and compensation within the Company;
3. the Disclosure Committee, to deal with the Company's approach to disclosure and the promotion of compliance; and
4. the Corporate Governance Committee, to deal with the Company's approach to corporate governance and the promotion of compliance.

#### **COMPOSITION & PROCEDURE**

The Board of Directors is elected annually by shareholders. The number of Directors to be elected at shareholders meetings is fixed by the by-laws. While the election of directors is ultimately determined by the shareholders, it is the policy of the Board that a majority of the Directors be independent (as defined under applicable stock exchange rules and securities laws).

The Chairman of the Board presides as Chair at all meetings of the Board and shareholders of the Company. The Corporate Secretary or the Recording Secretary attends all meetings of the Board and shareholders and records the proceedings thereof. The Corporate Secretary prepares and keeps minutes and records of all meetings of the Board.

Meetings of the Board of Directors, including telephone conference meetings, are to be held at such time and place as the Chairman of the Board, or any two Directors, may determine. Notice of meetings shall be given to each Director in accordance with the by-laws. Meetings of the Board of Directors may be held

without formal notice if all of the Directors are present and do not object to notice not having been given, or if those absent waive notice in any manner before or after the meeting.

Notice of meeting may be delivered personally, given by mail, facsimile or other electronic means of communication.

Each Board member is expected to attend Board meetings and meetings of committees of which he or she is a member and to become familiar with deliberations and decisions as soon as possible after any missed meetings. In that regard, members of the Board are expected to prepare for Board (and committee) meetings by reviewing meeting materials distributed to members of the Board, to the extent feasible, in advance of such meetings. Matters of a confidential or sensitive nature may be discussed at Board (or committee) meeting without advance distribution of meeting materials to members of the Board. It is expected that members of the Board will actively participate in determining and setting the long and short-term goals and interests of the Company.

In recognition of its independence, the Board shall regularly hold discussions without management present.

A resolution in writing signed by all the Directors entitled to vote on that resolution at a meeting of the Directors is as valid as if it had been passed at a meeting of the Directors. A copy of any such resolution in writing is kept with the minutes of the proceedings of the Directors.

At meetings of the Board, any matter requiring a resolution of the Directors is decided by a majority of the votes cast on the question; and in the case of an equality of votes, the Chair of the meeting is entitled to a second or casting vote.

The Board shall ensure that there is a process in place for annually evaluating the effectiveness of the Board, the committees of the Board and individual directors.

## **COMPENSATION**

No director, unless they is are an officer of the Company, should receive remuneration from the Company other than compensation received in their capacity as a director.