NXT

Energy Solutions

Increasing Exploration Success, While Lowering Finding Cost, Time-To-Discovery & Environmental Impact

Disclaimer and Forward-looking Statements

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Caution Regarding Forward-Looking Statements

This presentation contains certain “forward-looking statements” within the meaning of applicable Canadian securities legislation. The Company includes forward-looking statements to assist readers in understanding the Company’s future plans and expectations and the use of such information for other purposes may not be appropriate. All statements and disclosures, other than those of historical fact, which address activities, events, outcomes, results or developments that NXT anticipates or expects may or will occur in the future (in whole or in part) should be considered forward-looking statements. In some cases, forward-looking statements can be identified by terms including, but not limited to, "future", "may", "will", "could", "might", "expect", "anticipate", "believe", "potential", "enable", "plan", "predict", "continue", “contemplate", "intend" or other comparable terminology. In particular, this presentation contains, among other things, forward-looking statements pertaining to: the timing and extent of potential growth opportunities in new international and geothermal markets, the intentions and spending estimates of explorations companies, including the potential securing of SFD® contracts, new business ventures, and the satisfaction by third-parties of certain necessary conditions related thereto, including obtaining government and regulatory approvals; the ability to successfully complete the SFD® data acquisition in accordance with the terms of the contract; completion of SFD® recommendations within the contract parameters; ensuring payments of all contract revenue in accordance with the terms of the contract; estimates related to our future financial position and liquidity; general business strategies and objectives; the cost deficiencies associated with the deployment of NXT’s SFD® technology in identifying, evaluating and exploiting oil and gas reserves.

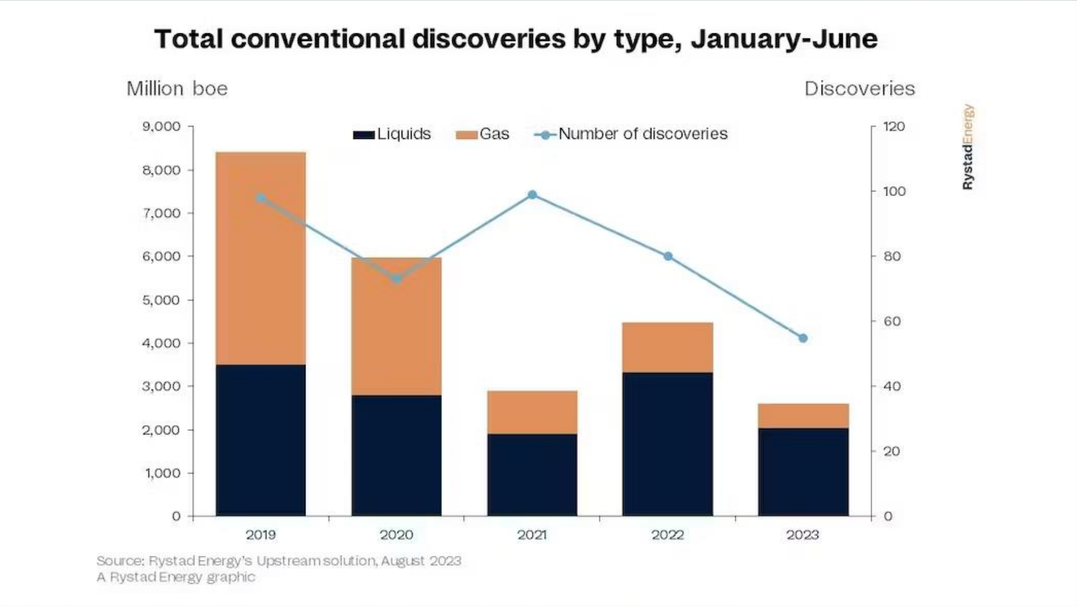
These forward-looking statements are based on a number of assumptions which may prove to be incorrect. Assumptions have been made with respect to the following matters, in addition to any other assumptions identified in this presentation: our ability to source personnel and equipment in a timely manner and at an acceptable cost; our ability to obtain all permits and approvals required; general business, economic and market conditions (including global commodity prices); the ability to obtain insurance to mitigate the risk of default on client billings; the success rate of SFD® recommendations continuing at 80% (on average); foreign currency exchange and interest rates; the Company’s ability to successfully execute its business plans and intentions; the products and technology offered by the Company’s competitors; and market competition.

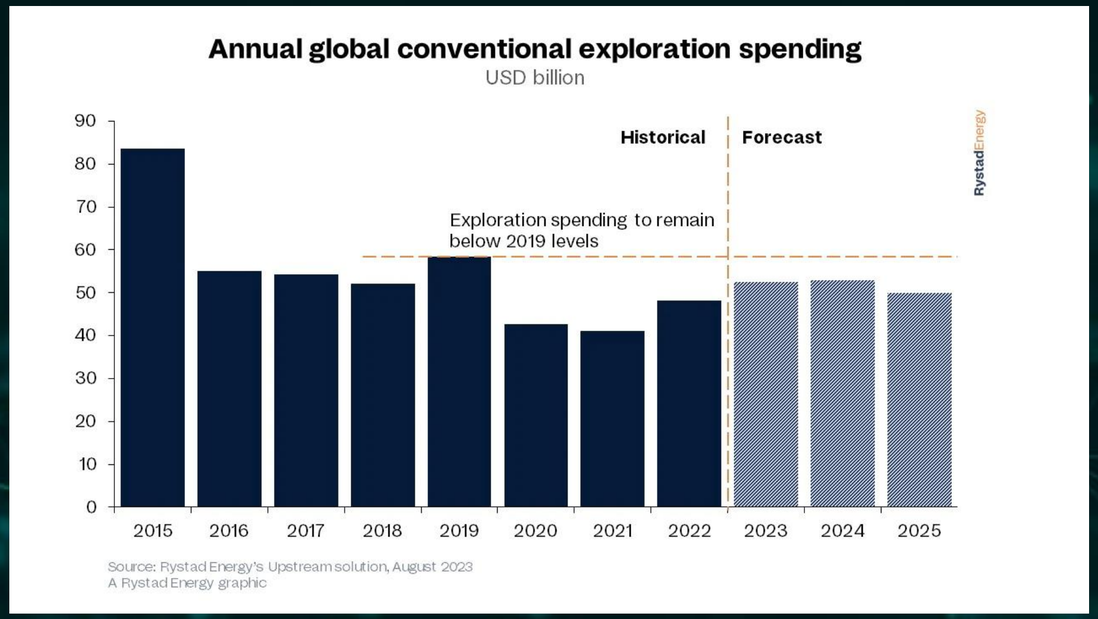
Although we believe that the assumptions underlying these forward-looking statements are reasonable, they may prove to be incorrect, and we cannot assure that actual results will be consistent with these forward-looking statements. These forward-looking statements are based on current expectations and are subject to a wide range of known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Known risks include, but are not limited to: our ability to generate sufficient ongoing cash flow from operations or to raise adequate capital to allow us to grow the business and continue operations; conducting operations in international markets; the emergence of alternative competitive technologies; protection of our intellectual property and rights to our SFD® technology; reliance on a limited number of aircraft; the loss of key personnel; our dependence on a limited number of clients; foreign currency and interest rate fluctuations may affect our financial position; changes in, or in the interpretation of, laws, regulations or policies; volatility in oil and natural gas commodity prices may reduce demand for our services; specialized equipment; geological conditions; flight operation; changes in market competition; general economic conditions; that the Company will be able to access capital, including debt, on acceptable terms; and applicable political and economic conditions.
Although the Company has attempted to identify important factors and risks that could cause actual actions, events or results to differ materially from those described in the forward-looking statements, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended. For more information relating to risks, see the section titled "Risk Factors" in NXT's current Annual Information Form for the year ended December 31, 2022 and Management and Discussion Analysis for the three and six month periods ended June 30, 2023.

These forward-looking statements are made as of the date of this presentation and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the Company does not assume any obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this presentation.

Critical Industry Challenge: Spending More, Finding Less

- Spending on conventional oil and gas exploration is rebounding and expected to top $50 billion this year, the highest since 2019, yet discovered volumes are falling to new lows. Upstream companies are facing a period of uncertainty. They are eager to capitalize on the increased demand for fossil fuels and find additional resources, but recent results have been lackluster.

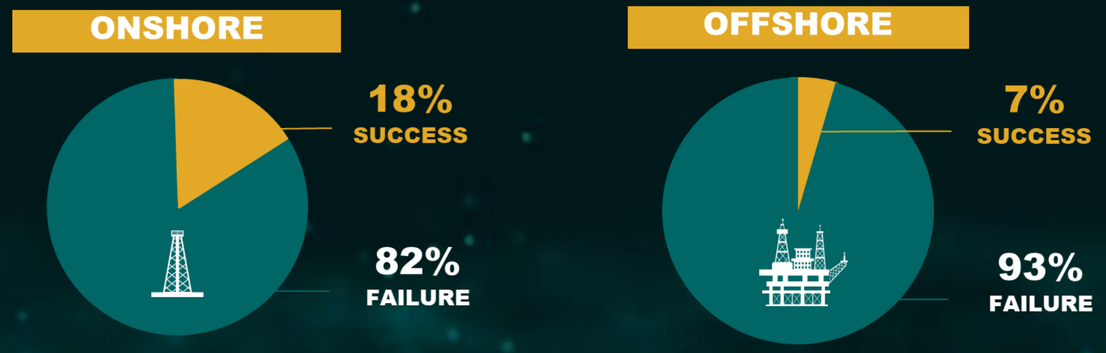




- In the hunt for new resources, exploration companies are prioritizing the offshore sector, trying to capitalize on underexplored or frontier areas to unlock new volumes through high-risk, higher-cost offshore developments. The offshore industry accounted for about 95% of exploration spending this year to date but only about two-thirds of discovered volumes.
- These underexplored or virgin regions hold some of the most technically prospective yet-to-be-drilled prospects, with majors playing a vital role in recent years in exploring these areas, but national oil companies (NOC) have the most extensive subsurface resource base at their collective disposal. More than half of the projected exploration spending in 2023 will come from NOCs and NOCs with international portfolios (INOC).

Source: Rystad Energy 2023

Critical Industry Challenge: Poor Exploration And Discovery Success Rates



(Source: Wood Mackenzie)

Exploration is high risk, time consuming and capital intensive. The cost of an unsuccessful exploration, such as one that consisted of seismic studies and drilling a dry well, can cost $5 million to $20 million per exploration site, and in some cases, much more. Identifying new well sites is a complex and time-consuming process even in developed and producing oil and gas reservoirs.

Critical Industry Challenge: Lowering Environmental Impact

Infrastructure built for oil and gas extraction can leave behind radical impacts on wildlands. The construction of roads, facilities and drilling sites requires the use of heavy equipment and can destroy big chunks of pristine wilderness.

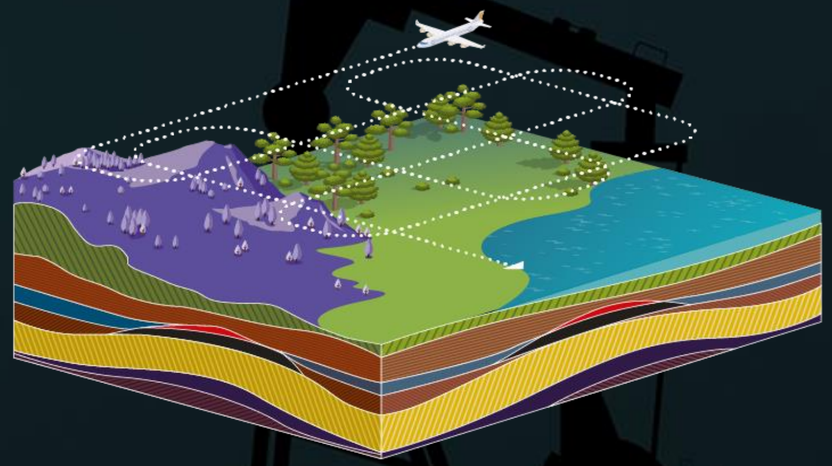
Loud noises, human movement and vehicle traffic from seismic and drilling operations can disrupt animals' communication, breeding and nesting. Powerlines, wellpads, fences, and roads can also fragment habitats for many species.

Lowering the environmental impact is one of the most important challenges the O&G industry faces today.

Value Proposition: Spend Less, Find More.

Speed	500 km/h
Altitude	3,000 m
Sample Rate	2 kHz per sensor
Number of Sensors	22 independent sensors

Stress Field Detection (SFD®) is an airborne geophysical survey technology developed by NXT Energy Solutions Inc., headquartered in Calgary, Canada. SFD® is proprietary and patented in 46 countries including the USA, European Union, Canada, and Japan.



How SFD® Increases Exploration Success

30 SFD® Recommendations (2009-2018) Drilled Internationally (2010-2021)

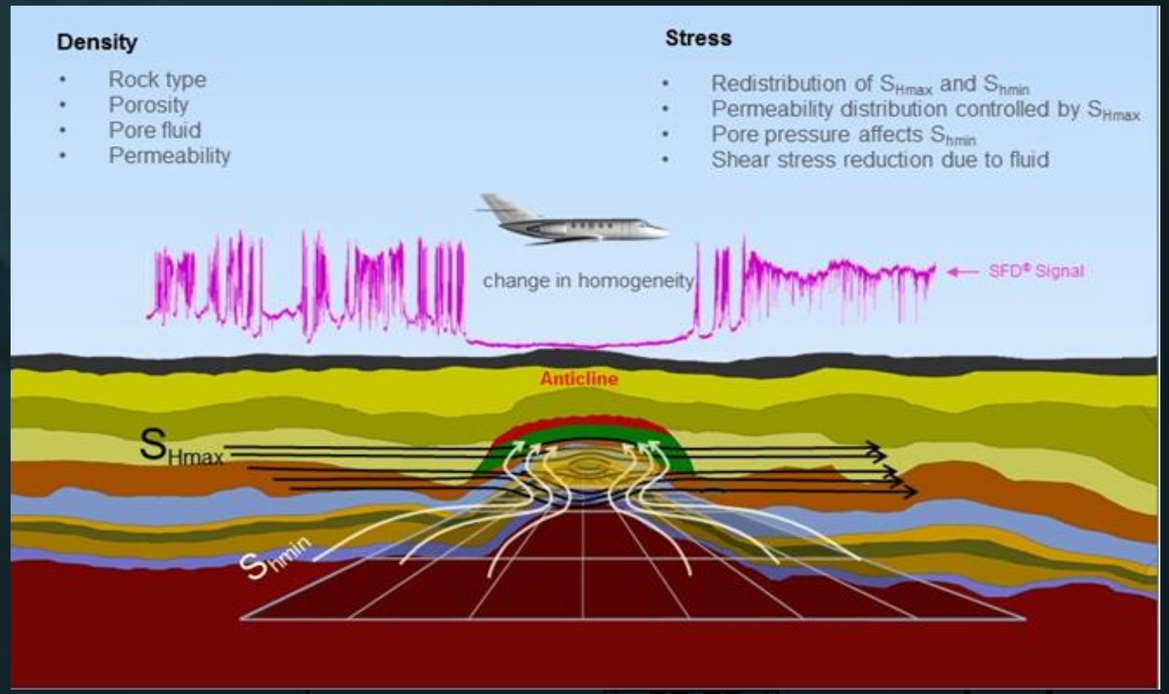
21 Commercial Discoveries

3 Pre-Drill Confirm

6 Dry Holes

Prediction Strength

~ 80%



What Do We Detect?

SFD® sensor responds to subsurface discontinuities induced by density and stress variations in and around reservoirs. The sensor detects stress orientation changes along the horizontal plane over fine spatial scales using gravity as a proxy.

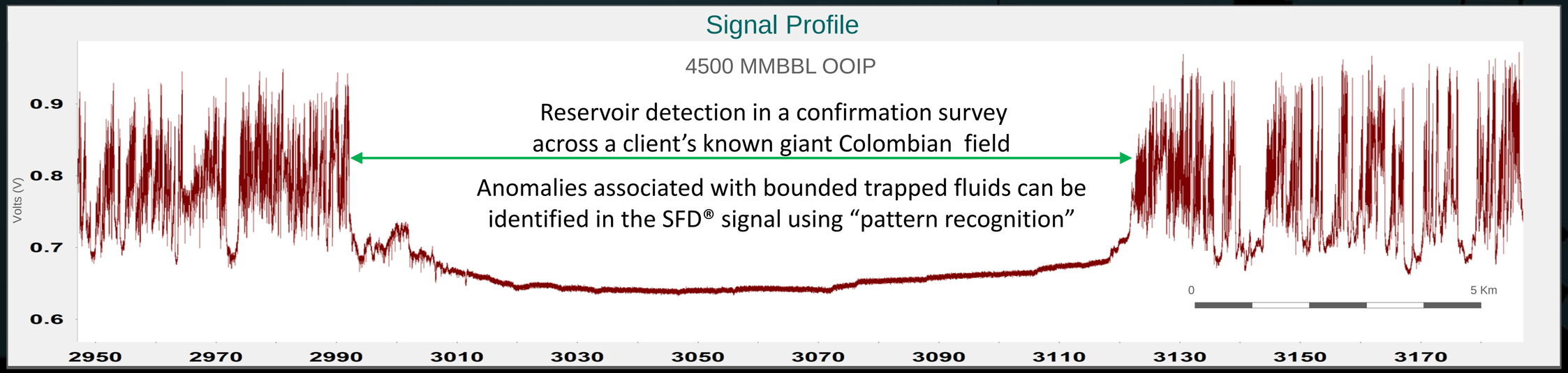
How Do We Detect?

Surveys are flown with 22 independent sensors. SFD® sensor elements oscillate at their natural frequencies driven by the anisotropic (varying in the vertical and horizontal planes) sedimentary column. Perturbations are detected, amplified and converted into electrical signals via an Active Interface to produce a time-dependent waveform output.

Interpretation of signal evolution and dynamics is used to infer potential trapped fluid accumulations in sedimentary basins.

SFD® Value Proposition

- ✓ Provides prospect level investigation
- ✓ Onshore / offshore applications
- ✓ Effectively opens up under-explored and frontier regions and allows operators to focus more expensive seismic and other G&G expenditures
- ✓ Prioritize “drill no-drill” decisions
- ✓ Minimize environmental / community impact and security concerns
- ✓ Significantly increases the chance of commercial discoveries



Environmental Benefits of Using NXT's Stress Field Detection (SFD®)

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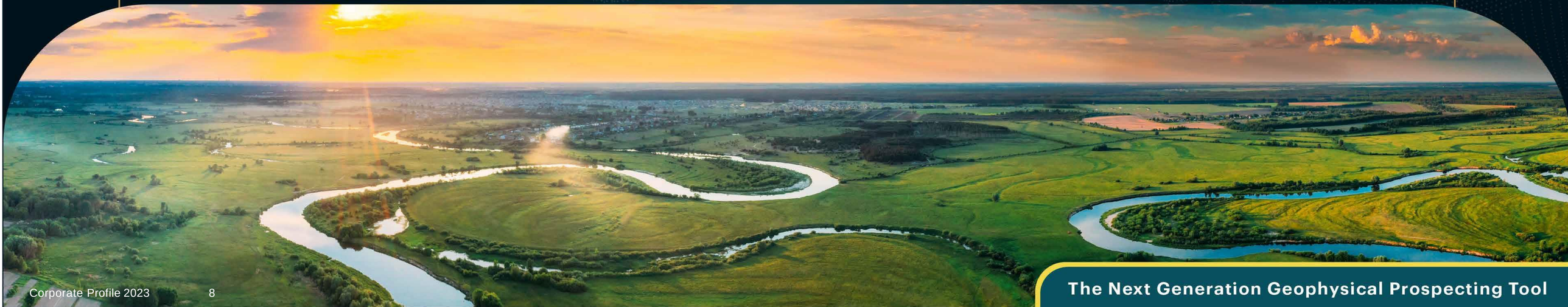
- ✓ Zero direct environmental footprint
- ✓ Zero disruption of surface and community use
- ✓ Zero disturbance to wildlife habitats

The non-intrusive SFD® airborne survey drastically reduces the negative environmental impact of large-scale ground surveys by identifying highly prospective zones, thus avoiding non-prospective areas entirely.

SFD® surveys minimize disruptions to community life and surface use.

Using SFD® as the lead technology will reduce the environmental impact for the E&P sector via focusing upstream activities on the highest value prospects.



R&D: Geothermal Application of the SFD® Technology

Geothermal Applications for SFD

- Geothermal resource 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 hydrocarbon prospecting are equally critical for identifying geothermal resources.
- NXT is leveraging its extensive research and marketing skillset to develop and commercialize the geothermal application of the SFD® technology.
- Geothermal resource exploration is a natural extension of NXT's patented SFD® technology.

Path to Commercialization for NXT's Geothermal Segment

- **Expanding existing portfolio to include green energy sector.**
- **Phase-1 IRAP Approved government R&D grant for sensor modification and field testing.**
- **Engaging Geothermal experts.**
- **Anticipated geothermal projects in North America and internationally.**
- **Sales model will be initially based on fee-for-service.**

Summary

- ✓ The O&G Industry is facing critical challenges of low drilling success rates, increased costs, long time-to-discovery periods, and the overall negative environmental impact consequences of exploration as a whole.

- ✓ NXT's Stress Field Detection (SFD®) airborne geophysical survey technology offers solutions to these challenges by:
  - ✓ Increasing drill success rates to ~80% from current levels of 18% onshore and 7% offshore
  - ✓ Major reductions for E&P companies in cost, time-to-discovery
  - ✓ Reduce environmental impact by identifying only highly-prospective areas for exploration, thus avoiding the need to disturb vast, non-prolific areas of the environment for exploration use.

Recent Institutional Ownership & Strategic Alliance

- ✓ May 24, 2023 - NXT announced a ten-year strategic alliance and associated US$2.3 million convertible debenture 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® solutions in Africa.
  - ✓ PE Energy Limited, an affiliate of Synergy, has performed several commercial projects with NXT in Africa in the past.

- ✓ Jan. 11, 2023 – NXT announced Mr. Michael P. Mork and MCAPM, LP, (together "Mork Capital") have purchased a total of 8,750,000 common shares or $1,706,250 of a Private Placement. Mork Capital now owns approx. 19.3% of the outstanding common shares of the Company.

NXT Energy Solutions

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Management

BRUCE G. WILCOX
Interim Chief Executive Officer

EUGENE WOYCHYSHYN
VP Finance and CFO

DR. XIANG GUI
Dir. of Research & Development

RASHID TIPPU, MSC
Dir. of Geoscience, Asia, Africa, MEA

ENRIQUE HUNG, MSc
Dir. Of Geoscience, LATAM, Europe

Board of Directors

BRUCE G. WILCOX
Interim CEO NXT Energy Solutions

TOM VALENTINE
Senior Partner, Norton Rose Fulbright LLP

CHARLES SELBY
Lead Director, NXT; President of Caledonian Midstream Corp. CEO Wildcat Royalty Corp .Board Member Innova Hydrogen Corp.

GERRY SHEEHAN
Formerly Chief Geophysicist Tullow Oil, Currently Head of Exploration New Horizon Oil & Gas Ltd.

JOHN TILSON, CFA
Business Advisor

THEODORE PATSELLIS
Partner, PRP Law Office

Capital Structure

TSX: SFD	OTCQB: NSFDF
C$ 0.28	US$0. 212
Equity Market Cap: C$ 21.6 M	Equity Market Cap: US$16.5 M
Shares Outstanding	FD Shares O/S
Shares Outstanding (in Millions) as at June 30, 2023	Fully Diluted (in Millions) as at June 30, 2023
77.7	86.1

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Email: nxt_info@nxtenergy.com
Website: www.nxtenergy.com

Appendix: SFD® Patents Granted in 46 Countries Worldwide

Public Company

- TSX: SFD
- OTC: NSFDF
- HDQTR: Calgary, Canada

Key Business Points

- Patented Technology
- Proven Success
- Repeat Clientele
- 10+ Years R&D
- Commercialized 2007

SFD® Projects Completed

- USA
- Colombia
- Bolivia
- Belize
- Nigeria
- Canada
- Mexico
- Argentina
- Guatemala
- Pakistan

NXT Clients

PEMEX, bp, NNPC, YPFB Corporación, YPFB Chaco S.A., PPL, ecopetrol, PENGROWTH, PCR, NEXSTAR ENERGY LTD., HOCOL, Pacific Exploration & Production, CPA Compañía Petrolera del Atlántico, RESULT ENERGY INC., BlueParrot ENERGY INC., crew energy inc., Encal ENERGY LTD, Providence Energy Group, KEROGEN EXPLORATION LLC, BLACK SHALE RESOURCES INC., Renaissance Energy, MONTANA

Appendix: Interpretation Process

Non-Grid Survey Widely Spaced Transects

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SFD Interpretation Process

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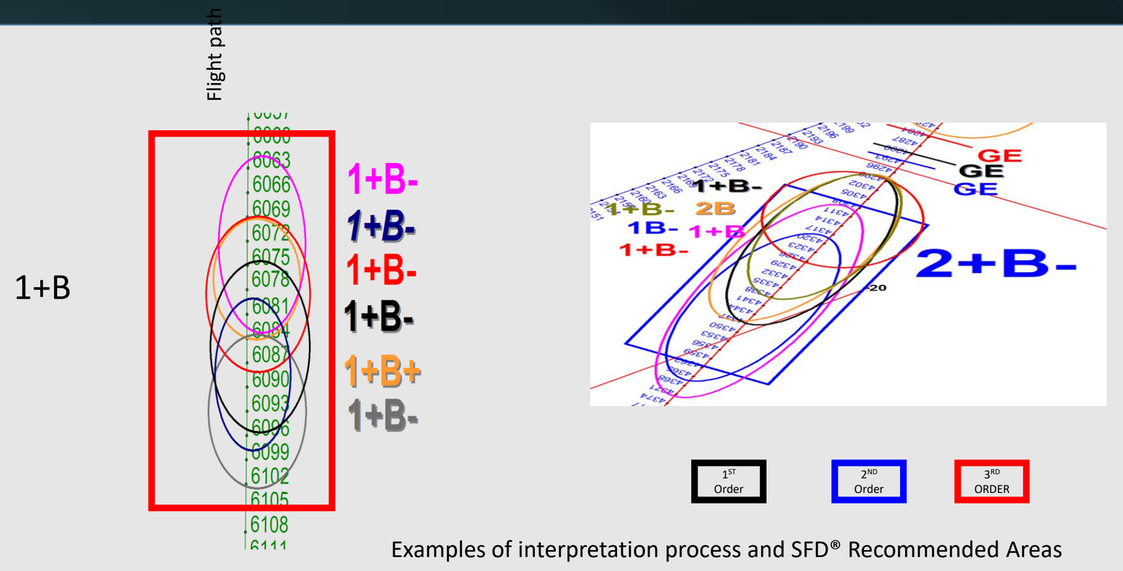
1) Spatial Identification of anomalous areas.
2) Assignment of SFD Rankings.
3) Assignment of identified areas into prospectivity groups – primary, secondary and tertiary.
4) Prospect Maps with applicable basemap data.
5) Prospect Outlines and SFD Metadata in ESRI shapefile format.



Examples of interpretation process and SFD® Recommended Areas

SFD® Ranking Scheme

Trap Indicators		Reservoir Indicators	
1	Moderate trap potential	C+	Low reservoir potential
1+	Very Good trap potential	B-	Moderate reservoir potential
2	Very Good trap potential	B	Good reservoir potential
2+	Excellent trap potential	B+	Very Good reservoir potential
		A	Excellent reservoir potential
		A+	Exceptional reservoir potential
			Anomalous Area Extent

Signal Image Legend:

- **Inflexion Point** ↓ — Inflexion Point: is defined as the point in the signal evolution and development which trap and reservoir attributes are at their maxima.
- **Local Geological Change (GE)** ↓ — DM-CH – Lithologic Change
- **Major Geological Change (NG)** ↓ — FLT – Potential Fault

Note: Trap and reservoir potential is determined by interpreting *MULTIPLE* SFD® sensor responses