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Management Report

Quarter Ended
December 31, 2022

5N PLUS
Enabling Performance™

This Management's Discussion and Analysis ("MD&A") of the financial condition and results of operations is intended to assist readers in understanding 5N Plus Inc. (the "Company" or "5N Plus"), its business environment, strategies, performance and risk factors. This MD&A should be read in conjunction with the audited consolidated financial statements and the accompanying notes for the year ended December 31, 2022, based on International Financial Reporting Standards (''IFRS'') as issued by the International Accounting Standards Boards, unless otherwise stated. This MD&A has been prepared in accordance with the requirements of the Canadian Securities Administrators.

All amounts in this MD&A are expressed in U.S. dollars, and all amounts in the tables are in thousands of U.S. dollars, unless otherwise indicated.

Information contained herein includes any significant developments until February 21, 2023, the date on which the MD&A was approved by the Company's Board of Directors. Unless otherwise indicated, the terms "we", "us", "our" and "the group" as used herein refer to the Company together with its subsidiaries. "Q4 2022" and "Q4 2021" refer to the three-month periods ended December 31, 2022 and December 31, 2021, respectively. "FY 2022" and "FY 2021" refer to the years ended December 31, 2022 and December 31, 2021, respectively.

Non-IFRS Measures

This MD&A contains certain non-IFRS financial measures and ratios, which do not have a standard meaning under IFRS and, therefore, may not be comparable to similar measures presented by other issuers. Such non-IFRS measures and ratios include backlog, bookings, EBITDA, EBITDA margin, Adjusted EBITDA, Adjusted EBITDA margin, Adjusted operating expenses, Adjusted net earnings, Basic adjusted net earnings, Adjusted gross margin, total debt, net debt, working capital and working capital ratio.

For definitions, further information and reconciliation of these measures to the most directly comparable measures under IFRS, see the "Non-IFRS Measures" section.

Notice Regarding Forward-Looking Statements

Certain statements in this MD&A may be forward-looking within the meaning of applicable securities laws. Forward-looking information and statements are based on the best estimates available to the Company at the time and involve known and unknown risks, uncertainties or other factors that may cause the Company's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Factors of uncertainty and risk that might result in such differences include the risks associated with interest rate, foreign currency, credit, liquidity, global economic conditions, crisis and climate change management, international operations including China, environmental regulations, social and governance (ESG) considerations, safety and hazards, prolonged armed conflict in Ukraine, COVID-19, availability and retention of qualified employees, collective agreements, litigation, our growth strategy, competition, commodity price, sources of supply, protection of intellectual property, inventory price, business interruptions, changes in backlog, acquisitions, systems, network infrastructure and data failure, as well as market price of the common shares. A description of the risks affecting the Company's business and activities appears under the heading "Risk and Uncertainties" of this MD&A dated February 21, 2023.

Forward-looking statements can generally be identified by the use of terms such as "may", "should", "would", "believe", "expect", the negative of these terms, variations of them or any similar terms. No assurance can be given that any events anticipated by the forward-looking information in this MD&A will transpire or occur, or if any of them do so, what benefits that 5N Plus will derive therefrom. In particular, no assurance can be given as to the future financial performance of 5N Plus. The forward-looking information contained in this MD&A is made as of the date hereof and the Company has no obligation to publicly update such forward-looking information to reflect new information, subsequent or otherwise, unless required by applicable securities laws. The reader is warned against placing undue reliance on these forward-looking statements.

Management's Discussion and Analysis

Overview

5N Plus is a leading global producer of specialty semiconductors and performance materials. The Company's ultra-pure materials often form the core element of its customers' products. These customers rely on 5N Plus' products to enable performance and sustainability in their own products. 5N Plus deploys a range of proprietary and proven technologies to develop and manufacture its products. The Company's products enable various applications in several key industries, including renewable energy, security, space, pharmaceutical, medical imaging, and industrial. Headquartered in Montréal, Québec, 5N Plus operates R&D, manufacturing and commercial centers in strategically located facilities around the world including Europe, North America and Asia.

Vision, Mission and Values

The Company's vision is to enable critical industries through essential products based on advanced material technology and 5N Plus' aim is to propel the growth of these markets by developing and manufacturing advanced materials to enable product performance.

The Company's mission is to be critical to its customers, valued by its employees and trusted by its shareholders. The Company's core values are integrity, commitment and customer development, with an emphasis on sustainable development, continuous improvement, and health and safety.

Reporting Segments

Following the acquisition of AZUR SPACE Solar Power GmbH ("AZUR") on November 5, 2021, and the subsequent integration of its activities within the Company's operations, 5N Plus repositioned certain products and applications between its two reportable segments effective in the fourth quarter of 2021.

Since then, the Company has the following two reportable segments: Specialty Semiconductors and Performance Materials. Corresponding operations and activities are managed accordingly by the Company's key decision makers. Segmented operating and financial information and labelled key performance indicators are available and used to manage these business segments, review performance and allocate resources. Financial performance of any given segment is evaluated primarily in terms of revenues and Adjusted EBITDA[1], which are reconciled to consolidated numbers considering corporate income and expenses.

Operating in North America and Europe, the Specialty Semiconductors segment is similar to the former Electronic Materials segment and integrates the products and operations of AZUR since November 5, 2021. The segment manufactures and sells products used in several applications, such as renewable energy, space satellites and imaging. Typical end markets include photovoltaics (terrestrial and spatial solar energy), medical imaging, infrared imaging, optoelectronics and advanced electronics. These products are sold either as semiconductor compounds, semiconductor wafers, ultra high purity metals, epitaxial semiconductor substrates and solar cells. Revenues and earnings associated with recycling services and activities provided to Specialty Semiconductors customers are captured in this segment.

The Performance Materials segment operates in North America, Europe and Asia and is similar to the former Eco-Friendly Materials segment. The segment manufactures and sells products that are used in several applications in pharmaceutical and healthcare, industrial, and catalytic and extractive. Main products are sold as active pharmaceutical ingredients, animal feed additives, specialized chemicals, commercial grade metals, alloys and engineered powders. All commercial grade metal and engineered powder sales have been regrouped under Performance Materials. Revenues and earnings associated with recycling services and activities provided to Performance Materials customers are captured in this segment.

Corporate expenses associated with the head office and unallocated selling, general and administrative expenses (SG&A), together with financial expenses (income), are grouped under "Corporate".

[1] See Non-IFRS Measures

Q4 and FY 2022 Highlights – Building on our Momentum

Fiscal 2022 was an important chapter in the history of 5N Plus. Executing on its strategy, the Company made significant progress and is now well-positioned to build on its momentum and market leadership in the promising sectors in which it operates, as illustrated by its historically high backlog as at December 31, 2022.

All amounts are expressed in U.S. dollars.

FY 2023 and FY 2024 Adjusted EBITDA[1] guidance is presented in the Outlook section.

Against the backdrop of geo-political and macro-economic challenges, the Company responded swiftly to inflationary and energy related cost pressures, quickly implementing the first wave of its commercial excellence program to mitigate the negative impact of inflation on product margins. This resulted in a sequential improvement of consolidated adjusted gross margins[1] from 21.9% for Q1 2022 to 26.7% in Q4 2022. The Company continues to approach partnerships and product development opportunities with discipline.

During the year, the Company renewed and increased its supply agreement with First Solar, for the supply of semiconductor materials associated with the manufacturing of thin-film photovoltaic (PV) modules, further strengthening its leadership in renewable energy. Under the new agreement, the Company's supply volumes will increase by 35% in 2023 and over 100% in 2024, compared to 2022 levels, in line with First Solar's own growth plans.

Through its subsidiary AZUR, 5N Plus signed a ten-year extension to an exclusive teaming arrangement with Sierra Space, a leading U.S.-based commercial space company, to produce a new solar cell for use in the production of Sierra Space's unique Space Solar Surface Mount Technology solar array systems. Sales to Sierra Space are anticipated to reach $10 million in 2023 and over $20 million in 2024, incremental to the current sales. The commercial relationship entrenches 5N Plus as a trusted partner in a sector experiencing rapidly accelerating demand which is expected to exceed current available capacity. AZUR is uniquely positioned to supply both North America and Europe. In 2022, the Company completed its integration of AZUR, which was acquired in November 2021.

In December 2022, the Company exited the manufacturing of low margin extractive and catalytic products with the divestiture of its Tilly, Belgium operations to a third party, thereby completing the strategic review of its operations. On a forward-looking basis, exiting this business is expected to provide incremental Adjusted EBITDA[1] contribution to consolidated results and support more favourable net working capital levels.

By year end, the Company completed its St-Laurent project (Montréal, Canada), expanding the development and manufacturing of critical minerals for advanced II-VI based semiconductor compounds. For this facility, by-products sourced from Rio Tinto's copper operations from its Kennecott, Utah copper operation started late December 2022, part of a strategic commercial agreement with Rio Tinto announced in May 2022 to secure a North American supply of tellurium.

Financial Highlights

- Revenue in Q4 2022 reached $61.0 million, compared to $64.6 million for the same period last year. The decrease is primarily attributable to the phase out and divestiture of the Tilly, Belgium operations. Revenue increased by 26% to $264.2 million in FY 2022, compared to $210.0 million last year, supported by the acquisition of AZUR and higher demand for renewable energy in Specialty Semiconductors, as well as for pharmaceutical and health in Performance Materials.

[1] See Non-IFRS Measures

- Adjusted EBITDA[1] in Q4 2022 reached $6.7 million, compared to $10.1 million for the same period last year, due to AZUR realizing the majority of its 2021 annual Adjusted EBITDA in the months following its acquisition. Adjusted EBITDA for FY 2022 reached $30.0 million, achieving the high end of the Company's FY 2022 guidance, compared to $28.2 million last year, despite the negative impact of the Russia/Ukraine conflict in Q1 2022, rising inflation and the winding down and divestiture of the Tilly, Belgium operations.

- In Q4 2022, the Company recorded a loss on divestiture of $7.8 million on the winding down and divestiture of the Tilly, Belgium operations completed in December 2022, as well as a $3.2 million in litigation and restructuring costs, mainly attributable to the same transaction.

- On December 31, 2022, the backlog[1] represented 253 days of annualized revenue, 61 days higher than the previous quarter, and 32 days higher than the same period last year. The increase in the backlog is attributable to favourable negotiations of long-term contracts under Specialty Semiconductors.

- Net debt[1] stood at $78.3 million on December 31, 2022, down from $80.1 million at the end of the prior year.

Outlook

Under its Specialty Semiconductors segment, 5N Plus continues to be the only viable global supplier, outside China, of ultra-high purity semiconductor compounds used in a wide range of critical technologies essential to people's lives. With unprecedented demand for applications, such as terrestrial renewable energy and space solar power, the Company is well-positioned to unlock the full potential of its enhanced product offering and is investing in its operations to meet exceptional customer demand in the years to come.

The Company is uniquely positioned to play a significant role in the new Photon Counting Detectors technology for CT scan, which is set to revolutionize medical imaging in the medium-term. The Company also continues to explore other potential market opportunities for its specialty semiconductor products in namely the defence and security sectors.

Under Performance Materials, management expects its health and pharmaceutical products to continue providing high profitability and consistent cashflows. The Company will continue to focus on the right sectors to expand the segment's product mix in attractive end markets.

The Company will continue to implement operational optimization initiatives, where appropriate, to bring incremental benefits to 5N Plus in support of organic growth, while remaining opportunistic regarding M&As.

Given its investments in high-growth potential opportunities, with unprecedented demand in key end markets and a simplified business and product mix, management expects its projected Adjusted EBITDA[1] range to be between $35 million and $40 million for FY 2023, with a higher contribution in the second half of the year, and between $45 million and $50 million for FY 2024.

Looking ahead, 5N Plus is focused on meeting customer demand and building on its momentum to reap the full potential of its strategy, supported by its commercial excellence program and investments in value-added and high-growth markets.

[1] See Non-IFRS Measures

Summary of Results

(in thousands of U.S. dollars, except per share amounts)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Revenue	**61,042**	64,556	**264,223**	209,990
Adjusted operating expenses[1]*	**(54,337)**	(54,470)	**(234,195)**	(181,751)
Adjusted EBITDA[1]	**6,705**	10,086	**30,028**	28,239
Impairment of inventories	**-**	-	**-**	-
Share-based compensation recovery (expense)	**171**	460	**(999)**	(689)
Litigation and restructuring costs	**(3,210)**	(1,644)	**(3,823)**	(2,144)
Impairment of non-current assets	**-**	-	**(12,478)**	-
Loss on divestiture of subsidiary	**(7,834)**	-	**(7,834)**	-
Loss on disposal of assets held for sale	**-**	-	**(216)**	-
Foreign exchange and derivative gain (loss)	**497**	(1,080)	**(42)**	(418)
EBITDA[1]	**(3,671)**	7,822	**4,636**	24,988
Interest on long-term debt, imputed interest and other interest expense	**716**	1,164	**5,192**	3,713
Depreciation and amortization	**4,051**	4,364	**17,732**	12,535
(Loss) earnings before income taxes	**(8,438)**	2,294	**(18,288)**	8,740
Income tax expense (recovery)				
Current	**43**	1,446	**6,865**	5,580
Deferred	**(335)**	(132)	**(2,154)**	50
	(292)	1,314	**4,711**	5,630
Net (loss) earnings	**(8,146)**	980	**(22,999)**	3,110
Basic (loss) earnings per share	**($0.09)**	$0.01	**($0.26)**	$0.04
Diluted (loss) earnings per share	**($0.09)**	$0.01	**($0.26)**	$0.04

**Excluding impairment of inventories, share-based compensation recovery (expense), litigation and restructuring costs, impairment of non-current assets, loss on divestiture of subsidiary, loss on disposal of assets held for sale, and depreciation and amortization.*

Revenue by Segment and Adjusted Gross Margin

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	Change	**FY 2022**	FY 2021	Change
	$	$		**$**	$	
Specialty Semiconductors	**31,951**	30,160	6%	**121,918**	70,655	73%
Performance Materials	**29,091**	34,396	(15%)	**142,305**	139,335	2%
Total revenue	**61,042**	64,556	(5%)	**264,223**	209,990	26%
Cost of sales	**(47,909)**	(53,090)	(10%)	**(215,715)**	(171,214)	26%
Depreciation included in cost of sales	**3,155**	3,515	(10%)	**14,208**	10,539	35%
Adjusted gross margin[1]	**16,288**	14,981	9%	**62,716**	49,315	27%
Adjusted gross margin percentage[1]	**26.7%**	23.2%		**23.7%**	23.5%	

Revenue in Q4 2022 decreased by 5%, reaching $61.0 million, compared to $64.6 million for the same period last year. The decrease is primarily attributable to the phase out, initiated earlier in the year, of the Company's extractive and catalytic products manufactured in Tilly, Belgium, and its divestiture in late December 2022, recorded under Performance Materials. In FY 2022, revenue increased by 26%, reaching $264.2 million, compared to $210.0 million in FY 2021, supported by the acquisition of AZUR completed in November 2021, higher demand from renewable energy under Specialty Semiconductors, as well as pharmaceutical and health under Performance Materials.

Adjusted gross margin[1] in Q4 2022 was favourably impacted by the product mix and the Company's commercial excellence program launched earlier this year aimed at rapidly mitigating the negative impact of inflation on product margins. The Adjusted gross margin reached $16.3 million, or 26.7%, compared to $15.0 million, or 23.2%, in Q4 2021. In FY 2022, Adjusted gross margin was also favourably impacted by higher volumes and the acquisition of AZUR, reaching $62.7 million, or 23.7%, compared to $49.3 million, or 23.5%, in FY 2021.

[1] See Non-IFRS Measures

Specialty Semiconductors Segment

Revenue in Q4 2022 increased by 6%, reaching $32.0 million, compared to $30.2 million in Q4 2021. In FY 2022, revenue reached $121.9 million, compared to $70.7 million in FY 2021, supported by higher demand over and above the contribution from AZUR.

Adjusted gross margin[1] in Q4 2022 was 31.0%, compared to 29.5% in Q4 2021. In FY 2022, Adjusted gross margin was 28.1%, compared to 31.5% in FY 2021, mainly explained by inflation.

Performance Materials Segment

Revenue in Q4 2022 reached $29.1 million, compared to $34.4 million in Q4 2021, impacted by the phase out, initiated earlier in the year, of the Company's extractive and catalytic products manufactured in Tilly, Belgium, and its divestiture in late December 2022. In FY 2022, revenue reached $142.3 million, compared to $139.3 million in FY 2021, favourably impacted by product mix and price increases, primarily in pharmaceutical and health sectors.

Adjusted gross margin in Q4 2022 was 22.5%, compared to 18.8% in Q4 2021, favourably impacted by product mix and price increases to mitigate inflation. In FY 2022, Adjusted gross margin was 20.4%, compared to 19.8% in FY 2021.

Operating (Loss) Earnings, EBITDA and Adjusted EBITDA

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	Change	**FY 2022**	FY 2021	Change
	$	$		**$**	$	
Specialty Semiconductors	**5,690**	8,304	(31%)	**24,318**	18,817	29%
Performance Materials	**3,997**	5,159	(23%)	**17,277**	18,957	(9%)
Corporate	**(2,982)**	(3,377)	(12%)	**(11,567)**	(9,535)	21%
Adjusted EBITDA[1]	**6,705**	10,086	(34%)	**30,028**	28,239	6%
EBITDA[1]	**(3,671)**	7,822	(147%)	**4,636**	24,988	(81%)
Operating (loss) earnings	**(8,219)**	4,538	(281%)	**(13,054)**	12,871	(201%)

Adjusted EBITDA[1] in Q4 2022 reached $6.7 million, a decrease of $3.4 million, compared to $10.1 million in the same period last year. Adjusted EBITDA decreased by $2.6 million under Specialty Semiconductors, mainly explained by AZUR's better balanced quarterly Adjusted EBITDA contribution throughout FY 2022 compared to in FY 2021 when most of the contribution was realized in Q4 2021 following their acquisition in November 2021. Under Performance Materials, Adjusted EBITDA decreased by $1.2 million, mainly impacted by inflation, and the phase out and divestiture of the Company's low-margin product manufacturing activities in Tilly, Belgium. For more information, see the "Divestiture of 5N Belgium SA" section.

Adjusted EBITDA for FY 2022 reached $30.0 million, compared to $28.2 million last year, despite the negative impact of the Russia/Ukraine conflict in Q1 2022, rising inflation and the winding down and divestiture of the Tilly, Belgium operations. Corporate incurred additional expenses related to the integration of AZUR, other corporate projects and the impact of inflation.

In Q4 2022, EBITDA[1] was negative $3.7 million, compared to $7.8 million in Q4 2021. The decrease of $11.5 million is mainly explained by a decrease in Adjusted EBITDA of $3.4 million mentioned above, a loss on divestiture of a subsidiary of $7.8 million and $1.6 million in litigation and restructuring costs.

In FY 2022, EBITDA was $4.6 million, compared to $25.0 million in FY 2021. While the Adjusted EBITDA increase by $1.8 million, this increase did not compensate for the elements mentioned above and for the impairment on non-current assets of $5.4 million recorded earlier in the year to reflect the assessment of the carrying value of intangible assets impacted by the Russia/Ukraine conflict. In addition to the loss on divestiture recorded in Q4 2022, the Company recorded an impairment on non-current assets of $7.1 million in Q3 2022 following the Company's intention to exit the manufacturing of low margin extractive and catalytic products in Tilly, Belgium.

[1] See Non-IFRS Measures

In Q4 2022, operating loss amounted to $8.2 million, compared to operating earnings of $4.5 million in Q4 2021. In FY 2022, operating loss amounted to $13.1 million, compared to operating earnings of $12.9 million in FY 2021. The decreases are mainly explained by the same reasons mentioned above.

Specialty Semiconductors Segment

Adjusted EBITDA[1] in Q4 2022 decreased by $2.6 million to $5.7 million, representing an Adjusted EBITDA margin[1] of 18%, compared to 28% in Q4 2021 due to the recognition timing of R&D subsidies and other income. Adjusted EBITDA in FY 2022 increased by $5.5 million to $24.3 million, representing an Adjusted EBITDA margin of 20%, compared to 27% for the same period in 2021, which was favourably impacted by the contribution timing from AZUR.

Performance Materials Segment

Adjusted EBITDA in Q4 2022 decreased by $1.2 million to $4.0 million representing an Adjusted EBITDA margin of 14%, compared to 15% in Q4 2021. Adjusted EBITDA in FY 2022 decreased by $1.7 million to $17.3 million, representing an Adjusted EBITDA margin of 12%, compared to 14% in FY 2021.

Net (Loss) Earnings and Adjusted Net Earnings (Loss)

(in thousands of U.S. dollars, except per share amounts)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Net (loss) earnings	**(8,146)**	980	**(22,999)**	3,110
Basic (loss) earnings per share	**($0.09)**	$0.01	**($0.26)**	$0.04
Reconciling items:				
Share-based compensation (recovery) expense	**(171)**	(460)	**999**	689
Litigation and restructuring costs	**3,210**	1,644	**3,823**	2,144
Impairment of non-current assets	**-**	-	**12,478**	-
Loss on divestiture of subsidiary	**7,834**	-	**7,834**	-
Loss on disposal of assets held for sale	**-**	-	**216**	-
Income tax recovery on taxable items above	**(595)**	(285)	**(2,618)**	(589)
Adjusted net earnings (loss)[1]	**2,132**	1,879	**(267)**	5,354
Basic adjusted net earnings per share[1]	**$0.02**	$0.02	**$-**	$0.06

In Q4 2022, net loss was $8.1 million or $0.09 per share, compared to net earnings of $1.0 million or $0.01 per share in Q4 2021. Adjusted net earnings[1] were $2.1 million or $0.02 per share in Q4 2022, compared to $1.9 million or $0.02 per share in Q4 2021.

In FY 2022, net loss was $23.0 million or $0.26 per share, compared to net earnings of $3.1 million or $0.04 per share in FY 2021. Adjusted net loss was $0.3 million or $nil per share in FY 2022, compared to Adjusted net earnings of $5.4 million or $0.06 per share, in FY 2021.

Excluding income tax recovery, the items reconciling to Adjusted net earnings (loss) in Q4 2022 and FY 2022 were share-based compensation (recovery) expense, litigation and restructuring costs, an impairment of non-current assets, a loss on divestiture of subsidiary and a loss on disposal of assets held for sale. For more information, see the "Expenses" section.

Backlog and Bookings

	BACKLOG[1]			**BOOKINGS[1]**		
(in thousands of U.S. dollars)	**Q4 2022**	Q3 2022	Q4 2021	**Q4 2022**	Q3 2022	Q4 2021
	$	$	$	**$**	$	$
Specialty Semiconductors	**129,710**	104,336	94,363	**57,325**	71,013	83,180
Performance Materials	**39,611**	35,054	60,454	**33,648**	23,959	39,512
Total	**169,321**	139,390	154,817	**90,973**	94,972	122,692

Comparative results have been adjusted to reflect a change in our reporting segments

[1] See Non-IFRS Measures

(number of days based on annualized revenues) *	BACKLOG[1]			BOOKINGS[1]		
	Q4 2022	Q3 2022	Q4 2021	**Q4 2022**	Q3 2022	Q4 2021
Specialty Semiconductors	**370**	297	293	**164**	202	258
Performance Materials	**124**	93	160	**106**	64	105
Weighted average	**253**	192	221	**136**	131	175

** Backlog and bookings are also presented in number of days to normalize the impact of commodity prices.*

Q4 2022 vs. Q3 2022

Backlog[1] on December 31, 2022, represented 253 days of annualized revenue, an increase of 61 days, or 32%, over the backlog on September 30, 2022. The increase in the backlog is mainly attributable to favourable negotiations of long-term contracts under Specialty Semiconductors, confirming the near-term growth potential in renewable energy and space applications.

Backlog on December 31, 2022, for Specialty Semiconductors represented 370 days of annualized revenue an increase of 73 days, or 25%, over the backlog on September 30, 2022. The backlog for Performance Materials represented 124 days of annualized revenue, an increase of 31 days, or 33%, over the backlog on September 30, 2022. The increase under Performance Materials is mainly associated with the timing of the renewal of key contracts, usually occurring in the fourth quarter of the year.

Bookings[1] for Specialty Semiconductors decreased by 38 days, from 202 days in Q3 2022 to 164 days in Q4 2022. Bookings for Performance Materials increased by 42 days, from 64 days in Q3 2022 to 106 days in Q4 2022. Bookings are calculated by adding revenues to the increase or decrease in backlog for the period divided by annualized revenues. As such, the increase or decrease in bookings is attributable to the same factors as the increase or decrease in backlog.

Q4 2022 vs. Q4 2021

Backlog on December 31, 2022, for Specialty Semiconductors increased by 77 days, largely attributable to favourable negotiations of long-term contracts under Specialty Semiconductors, confirming the near-term growth potential in renewable energy and space applications. The backlog for Performance Materials decreased by 36 days, compared to December 31, 2021, reaching 124 days, compared to 160 days in Q4 2021. The decrease is mainly associated with the Company's divestiture of its Tilly, Belgium operations.

Following the acquisition of AZUR in Q4 2021, the integration of its backlog led to a higher than usual increase in bookings and mainly explained the decrease of 94 days in bookings for Specialty Semiconductors in Q4 2022. Bookings for Performance Materials increased by 1 day compared to the previous year quarter.

Expenses

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Depreciation and amortization	**4,051**	4,364	**17,732**	12,535
SG&A	**7,183**	7,025	**28,565**	21,883
Share-based compensation (recovery) expense	**(171)**	(460)	**999**	689
Litigation and restructuring costs	**3,210**	1,644	**3,823**	2,144
Impairment of non-current assets	**-**	-	**12,478**	-
Loss on divestiture of subsidiary	**7,834**	-	**7,834**	-
Loss on disposal of assets held for sale	**-**	-	**216**	-
Financial expense	**219**	2,244	**5,234**	4,131
Income tax (recovery) expense	**(292)**	1,314	**4,711**	5,630
Total expenses	**22,034**	16,131	**81,592**	47,012

[1] See Non-IFRS Measures

Depreciation and Amortization

Depreciation and amortization expenses in Q4 2022 and FY 2022 amounted to $4.1 million and $17.7 million, respectively, compared to $4.4 million and $12.5 million, respectively, for the same periods in 2021. The increase in FY 2022 is mainly explained by the increase in property, plant and equipment ("PPE"), intangible assets and right-of-use assets following the acquisition of AZUR in Q4 2021.

SG&A

SG&A expenses in Q4 2022 and FY 2022 were $7.2 million and $28.6 million, respectively, compared to $7.0 million and $21.9 million, respectively, for the same periods in 2021. The increases are mainly explained by the acquisition of AZUR in Q4 2021, inflation impacting various expenses and the lifting of restrictions related to COVID-19.

Share-based Compensation (Recovery) Expense

Share-based compensation recovery in Q4 2022 amounted to $0.2 million, compared to $0.5 million in Q4 2021. In FY 2022, share-based compensation expense amounted to $1.0 million, compared to $0.7 million in FY 2021.

Litigation and Restructuring Costs

In Q4 2022 and FY 2022, the Company recorded litigation and restructuring costs of $3.2 million and $3.8 million, respectively. These include $2.6 million related to the divestiture of a subsidiary, $0.4 million for the site closure in Asia, $0.2 million due to a change to its senior executive management recorded in Q2 2022, and $0.4 million for the settlement of a contract by mutual agreement recorded in Q1 2022.

In FY 2021, the Company recorded a charge of $1.5 million following the announcement of a change to its senior executive management as well as a provision for restructuring costs of $0.6 million which consisted of severance and other related costs related to the site closure in Asia.

Impairment of Non-Current Assets

In Q3 2022, the Company recorded an impairment of non-current assets of $7.1 million ($2.4 million for buildings, $4.6 million for machinery and $0.1 million for furniture and fixtures), under its Performance Materials segment, to reflect the assessment of the carrying value of PPE following its intention to halt production at its manufacturing facility in Tilly, Belgium.

In Q1 2022, the Company recorded an impairment of non-current assets of $5.4 million ($5.1 million for customer relationships and $0.3 million for other intangibles) under its Specialty Semiconductors segment, to reflect the assessment of the carrying value of intangible assets due to the impact of the Russia/Ukraine conflict on the Company's Russia-based customer relationships. The Company's initial assumptions regarding future cashflows from these customers are no longer supported given the international sanctions in place against Russia and the uncertainty related to, and the unknown duration of, the Ukraine/Russia conflict.

Loss on Divestiture of Subsidiary

In Q4 2022, the Company divested its 100% interest in 5N Belgium SA and recognized a loss on divestiture of $7.8 million. For more information, see the "Divestiture of 5N Belgium SA" section.

Loss on Disposal of Assets Held for Sale

In Q3 2022, the Company recorded a loss of $0.2 million on the disposal of assets held for sale. The asset, previously presented as held for sale within the Specialty Semiconductors segment, pertains to a building reclassification of $3.0 million in Q2 2022. The reclassification was related to the planned relocation of operations to Canada from one of the Company's subsidiaries in Asia, announced in the third quarter of 2020.

Financial Expense

Financial expense in Q4 2022 amounted to $0.2 million, compared to $2.2 million in Q4 2021. The positive impact is mainly due to interest income earned following the recent settlement of an international tax arbitration between two jurisdictions where the Company operates, a gain of foreign exchange and derivatives mitigated by higher interest on long-term debt and imputed interest following the acquisition of AZUR, as well as a significant increase in interest rates in the second half of FY 2022.

In FY 2022, financial expense amounted to $5.2 million, compared to $4.1 million in FY 2021. The negative impact is mainly due to the same reasons mentioned above, with the exception of a lower loss on foreign exchange and derivatives recorded in FY 2022 compared to FY 2021.

Income Taxes

The Company reported a loss before income taxes of $8.4 million in Q4 2022 and $18.3 million in FY 2022. Income tax recovery in Q4 2022 and income tax expense in FY 2022 was $0.3 million and $4.7 million, respectively, compared to income tax expense of $1.3 million and $5.6 million, respectively, in the same periods in 2021. Both periods were impacted by deferred tax assets applicable only in certain jurisdictions.

Liquidity and Capital Resources

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Funds from operations before the following	**5,478**	5,604	**13,498**	16,553
Net changes in non-cash working capital items	**7,927**	(3,233)	**10,243**	(6,283)
Cash from operating activities	**13,405**	2,371	**23,741**	10,270
Cash used in investing activities	**(8,895)**	(42,615)	**(18,994)**	(49,929)
Cash (used in) from financing activities	**(2,308)**	42,922	**2,409**	36,219
Effect of foreign exchange rate changes on cash and cash equivalents	**317**	107	**(405)**	(570)
Net increase (decrease) in cash and cash equivalents	**2,519**	2,785	**6,751**	(4,010)

In Q4 2022, cash generated by operating activities amounted to $13.4 million, compared to $2.4 million in Q4 2021 positively impacted by the realization of working capital held at Tilly, Belgium prior to the divestiture. In FY 2022, cash generated by operating activities amounted to $23.8 million, compared to $10.3 million in FY 2021. The increase in FY 2022 was due to the positive changes in non-cash working capital.

In Q4 2022, cash used in investing activities totaled $8.9 million, compared to $42.6 million in Q4 2021. In FY 2022, cash used in investing activities totaled $19.0 million, compared to $49.9 million in FY 2021, of which $42.3 million was attributable to the acquisition of AZUR and $2.0 million to the acquisition of a minority equity stake in Microbion Corporation. In contrast, cash used in investing activities in FY 2022 is mainly attributed to the timing of additions to PPE, such as the St-Laurent project (Montréal, Canada), partially mitigated by the proceeds of $2.8 million from the disposal of assets held for sale in Q3 2022.

In Q4 2022, cash used in financing activities amounted to $2.3 million, compared to cash from financing of $42.9 million in Q4 2021. In FY 2022, cash generated by financing activities amounted to $2.4 million, compared to $36.2 million in FY 2021, mainly explained by the difference in the net drawdown of the credit facility during the periods. In FY 2021, the Company made a significant drawdown of the credit facility to finance the acquisition of AZUR, net of repayment of equipment loans in AZUR.

Working Capital

(in thousands of U.S. dollars)	**As at December 31, 2022**	As at December 31, 2021
	$	$
Inventories	**86,254**	95,526
Other current assets	**100,908**	99,996
Current liabilities	**(62,846)**	(65,059)
Working capital[1]	**124,316**	130,463
Working capital current ratio[1]	**2.98**	3.01

The decrease of $6.1 million in working capital[1], as compared to December 31, 2021, was mainly attributable to the divestiture of Tilly, Belgium at the end of FY 2022, net of higher other current assets and lower current liabilities for the remaining operations.

[1] See Non-IFRS Measures

Net Debt

(in thousands of U.S. dollars)	As at December 31, 2022	As at December 31, 2021
	$	$
Bank indebtedness	-	-
Long-term debt including current portion	121,000	116,000
Total Debt[1]	121,000	116,000
Cash and cash equivalents	(42,691)	(35,940)
Net Debt[1]	78,309	80,060

Total debt[1] stood at $121.0 million on December 31, 2022, from $116.0 million at the end of last year, following a drawdown of $10.0 million in Q2 2022 and reimbursements of $2.5 million in Q3 2022 and in Q4 2022 related to the credit facility.

Net debt[1], after considering cash and cash equivalents, decreased by $1.8 million to $78.3 million on December 31, 2022, from $80.1 million on December 31, 2021.

Available Short-Term Capital Resources

(in thousands of U.S. dollars)	As at December 31, 2022	As at December 31, 2021
	$	$
Cash and cash equivalents	42,691	35,940
Available revolving credit facility	28,000	33,000
Available short-term capital resources	70,691	68,940

In June 2022, the Company signed a senior secured multi-currency revolving credit facility of $124.0 million maturing in April 2026 to replace its existing $124.0 million senior secured revolving facility maturing in April 2023. At any time, the Company has the option to request that the credit facility be expanded through the exercise of an additional $30.0 million accordion feature, subject to review and approval by the lenders. This revolving credit facility can be drawn in U.S. dollars, Canadian dollars or Hong Kong dollars (up to $4.0 million). Drawings bear interest at either the Canadian prime rate, U.S. base rate, Hong Kong base rate or SOFR, plus a margin based on the Company's senior net debt to consolidated EBITDA[1] ratio. Under the terms of its credit facility, the Company is required to satisfy certain restrictive covenants as to financial ratios. As at December 31, 2022 and December 31, 2021, the Company had met all covenants.

In February 2019, the Company signed a five-year subordinated term loan with Investissement Québec. The loan was disbursed in two tranches: the first tranche of $5.0 million on February 6, 2019 and the second tranche of $20.0 million on March 22, 2019. The two tranches of the term loan bear interest equivalent to the five-year U.S. dollar swap rate plus a margin of 4.19%, which equals to 6.82% and 6.64%, respectively. Under the terms of the loan, the Company is required to satisfy certain restrictive covenants as to financial ratios. As at December 31, 2022 and December 31, 2021, the Company had met all covenants.

Share Information

	As at February 21, 2023	As at December 31, 2022
Issued and outstanding shares	88,330,236	88,330,236
Stock options potentially issuable	1,598,938	1,598,938

Restricted Share Unit and Performance Share Unit Plan

On November 4, 2015, the Company adopted a new Restricted Share Unit ("RSU") and Performance Share Unit ("PSU") Plan (the "RSU & PSU Plan") to replace the previous RSU Plan. The RSU & PSU Plan enables the Company to award eligible participants: (i) phantom RSUs that vest no later than three years following the grant date; and (ii) phantom PSUs that vest after certain periods of time, not exceeding three years, and subject to the achievement of certain performance criteria as determined by the Board of Directors. Such plan provides for the settlement of RSUs and PSUs through either

[1] See Non-IFRS Measures

cash or the issuance of common shares of the Company from treasury, for an amount equivalent to the volume weighted average of the trading price of the common shares of the Company on the TSX for the five trading days immediately preceding the applicable RSU vesting determination date or PSU vesting determination date.

In FY 2022, the Company granted 95,881 RSUs (2021 – 164,412), 146,549 RSUs were paid (2021 – 413,710) and 13,110 RSUs were forfeited (2021 – 143,851). On December 31, 2022, 278,481 RSUs were outstanding (2021 – 342,259).

In FY 2022, the Company granted nil PSUs (2021 – nil), nil PSUs were paid (2021 – 166,700) and 200,000 were cancelled (2021 – 230,000). On December 31, 2022, nil PSUs were outstanding (2021 – 200,000).

Stock Option Plan

On April 11, 2011, the Company adopted a new stock option plan under which a maximum number of options granted cannot exceed 5,000,000. Options granted under the Stock Option Plan may be exercised during a period not exceeding ten years from the date of grant. The stock options outstanding on December 31, 2022, may be exercised during a period not exceeding six years from their date of grant. Unless the Board of Directors decides otherwise at its sole discretion, options vest at a rate of 25% (100% for directors) per year, beginning one year following the grant date of the options. Any unexercised options will expire one month after the date beneficiary ceases to be an employee, director or officer and one year for retired directors.

The following table presents information concerning all outstanding stock options:

		2022		2021
	Number of options	**Weighted average exercise price**	Number of options	Weighted average exercise price
		CA$		CA$
Outstanding, beginning of year	**825,968**	**2.46**	672,600	2.09
Granted	**772,970**	**1.33**	648,212	2.49
Exercised	**-**	**-**	(428,678)	1.88
Forfeited	**-**	**-**	(66,166)	2.78
Outstanding, end of year	**1,598,938**	**1.91**	825,968	2.46
Exercisable, end of year	**457,749**	**2.41**	267,007	2.33

Off-balance Sheet Arrangements

The Company has few off-balance sheet arrangements since most of the leases are recognized on the consolidated statement of financial position following the adoption of the standard, IFRS 16 – Leases, as at January 1, 2019. Any off-balance sheet arrangements consist of contractual obligations in the normal course of business.

The Company is exposed to currency risk on sales in euros and other currencies, as well as interest rate fluctuations on its credit facility, and, therefore, may periodically enter into foreign currency forward contracts and interest rate or foreign currency swap contracts to protect itself against interest rate and currency fluctuations. The reader will find more details related to these contracts in Notes 19 and 27 of the audited consolidated financial statements for the year ended December 31, 2022.

The following table reflects the contractual cash flows of the Company's financial liabilities as at Dec 31, 2022:

(in thousands of U.S. dollars)	Carrying amount	1 year	2 years	3 years	4 years	Over 5 years	**Total**
	$	$	$	$	$	$	**$**
Trade and accrued liabilities	40,200	40,200	-	-	-	-	**40,200**
Long-term debt	121,000	7,836	31,584	6,166	98,055	-	**143,641**
Lease liabilities	30,402	2,770	2,601	2,494	2,451	24,834	**35,150**
Total	191,602	50,806	34,185	8,660	100,506	24,834	**218,991**

Commitments

As at December 31, 2022, in the normal course of business, the Company contracted letters of credit for an amount of $0.9 million ($1.0 million as at December 31, 2021).

Contingencies

In the normal course of operations, the Company is exposed to events that could give rise to contingent liabilities or assets. As at the date of issue of the consolidated financial statements, the Company was not aware of any significant events that would have a material effect on its consolidated financial statements.

Acquisition of AZUR

On November 5, 2021, the Company acquired all of the issued and outstanding shares of AZUR for a purchase price of 50.1 million euros, subject to post-closing adjustments. The consideration transferred was comprised of 6.5 million shares of 5N Plus, which were issued from the treasury at 12.4 million euros, along with a cash payment of 37.7 million euros. Furthermore, the Company financed the working capital and equipment loans for an amount of 23.8 million euros. The cash portion and the working capital of the transaction were funded through the Company's liquidity and senior debt facility. Transaction fees for an amount of $0.3 million for 2022 (2021 - $0.7 million and 2020 - $0.5 million) were expensed as incurred in the consolidated statement of earnings.

Located in Heilbronn, Germany, AZUR is a global leader and develops and manufactures multi-junction solar cells based on III-V compound semiconductor materials. The integration of AZUR has not only expanded the Company's position within renewable energy, but has also established 5N Plus as a reliable and competitive supplier to the European and U.S. space programs through Canada's membership in the European Space Agency (ESA).

To estimate the fair value of the intangible assets, management used the excess earnings method to value customer relationships and the royalty relief method to value technology and trade names using discounted cash flow models. Management developed significant assumptions related to revenue and gross margin forecasts, customer retention rates, royalty rates and discount rates.

The tables below present the consideration paid and the Company’s final assessment of the fair values of the assets acquired and liabilities assumed. As a result of finalizing its assessment, the Company has not restated the consolidated statement of financial position as at December 31, 2021 as the adjustments were deemed not material. The Company also determined that the net impact on net earnings as a result of these adjustments was not material for the year ended December 31, 2021, and, as such, were accounted for in the consolidated statement of (loss) earnings for the year ended December 31, 2022.

Consideration transferred	
	$
Cash and cash equivalents	34,301
Consideration payable [(1)]	9,158
Common shares issued	14,249
	57,708

[(1)] This amount of 8.0 million euros held in escrow and recorded in Other current assets, is expected to be released within 12 months in accordance with the terms of the Share Purchase Agreement.

Identified assets acquired and liabilities assumed	(in thousands of U.S. dollars)		
	Preliminary	Adjustments	Final
	$	$	$
Cash and cash equivalents	1,017	-	1,017
Accounts receivable	8,342	1,057	9,399
Inventories	21,394	(1,057)	20,337
Other current assets	256	-	256
Property, plant and equipment	31,128	4,993	36,121
Right-of-use assets	21,626	(938)	20,688
Intangible assets	32,144	(973)	31,171
Other assets	5	-	5
Goodwill	13,841	(2,016)	11,825
Total assets acquired	129,753	1,066	130,819
Trade and accrued liabilities	7,291	-	7,291
Current portion of deferred revenue	4,906	(1,294)	3,612
Long-term debt[1]	27,396	-	27,396
Employee benefit plan obligations	2,673	-	2,673
Lease liabilities	21,626	(938)	20,688
Deferred revenue	-	2,011	2,011
Other liabilities	1,059	216	1,275
Deferred tax liabilities	7,094	1,071	8,165
Total liabilities assumed	72,045	1,066	73,111
Total net assets	57,708	-	57,708

[1] The long-term debt acquired was repaid in full on November 5, 2021.

For the 57-day period ended December 31, 2021, AZUR contributed $17.0 million of revenue and $2.3 million of net earnings to the Company's consolidated statement of earnings based on operations after the acquisition date. If the acquisition of AZUR had been completed as of January 1, 2021, the Company estimates that its consolidated revenues and net earnings for the year ended December 31, 2021 would have totalled $261.0 million and $nil respectively, inclusive of the additional depreciation and amortization expenses recorded in reference to the preliminary purchased price allocation. AZUR delivers products to its customers on a project basis creating an unequal distribution of revenue and profitability from one period to another.

The amount recorded for goodwill is not deductible for tax purposes. The accounts receivable are presented net of a loss allowance of $28 thousand.

Divestiture of 5N Belgium SA

On December 19, 2022, the Company divested its 100% interest in 5N Plus Belgium SA, previously included within its Performance Materials segment, and recognized a loss on divestiture of $7.8 million. The decision to cease the production of lower margin products used in catalytic and extractive applications was made following a strategic review of the Company's legacy operations. As part of the transaction, a provision of $2.6 million, of which 2.0 million euros or $2.1 million is held in escrow, was recorded under Litigation and Restructuring costs to support the new owners to ensure site compliance with most recent environmental standards and other related costs. Prior to the divestiture, the Company recorded an impairment charge of $7.1 million on PPE following the announcement of its intention to halt production at its manufacturing facility in Tilly, Belgium.

If the divestiture of 5N Belgium SA had been completed as of January 1, 2022, the consolidated Adjusted EBITDA[1] would have been higher by approximately $2.0 million, and revenue under Performance Materials segment lower by $39.3 million.

[1] See Non-IFRS Measures

Governance

As required by Multilateral Instrument 52-109 of the Canadian Securities Administrators (“MI 52-109”), 5N Plus has filed certificates signed by the Chief Executive Officer and the Chief Financial Officer that, among other things, attest to the design of the disclosure controls and procedures and the design and effectiveness of internal controls over financial reporting.

Disclosure Controls and Procedures

The Chief Executive Officer and the Chief Financial Officer have designed disclosure controls and procedures, or have caused them to be designed under their supervision, in order to provide reasonable assurance that:

- Material information relating to the Company has been made known to them; and
- Information required to be disclosed in the Company’s filings is recorded, processed, summarized and reported within the time periods specified in securities legislation.

An evaluation of the effectiveness of the Company’s disclosure controls and procedures was carried out under the supervision of the Chief Executive Officer and Chief Financial Officer. Based on this evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that the disclosure controls and procedures are effective.

Internal Control over Financial Reporting

The Chief Executive Officer and the Chief Financial Officer have also designed internal controls over financial reporting (ICFR) or have caused them to be designed under their supervision, in order to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS.

Based on their evaluation carried out to assess the effectiveness of the Company’s ICFR, the Chief Executive Officer and the Chief Financial Officer have concluded that the ICFR were designed and operated effectively using the Internal Control – Integrated Framework (“2013 Framework”) issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO 2013 Framework”).

Changes in Internal Control over Financial Reporting

No changes were made to the ICFR during the fiscal year ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, the ICFR.

Adoption of New Accounting Standards and Future Changes in Accounting Policies

Adoption of new accounting standards

IFRS 3 – Business combinations

On January 1, 2022, the Company adopted the amendments to IFRS 3 regarding its reference to the Conceptual Framework. With this amendment, IFRS 3 will reference the current version of the Conceptual Framework rather than the Conceptual Framework in effect at the time of IFRS 3’s development. The amendments to IFRS 3 also indicate that for the purposes of identifying certain liabilities within the context of a business combination, the definition of a liability as per IAS 37 – Provisions Contingent Liabilities and Contingent assets, shall supersede the definition within the Conceptual Framework. The amendments are effective for annual periods beginning on or after January 1, 2022, with earlier application permitted. In adopting the amendments, there has been no significant impact to the financial statements for the year ended December 31, 2022.

IAS 16 – Property, plant and equipment

On January 1, 2022, the Company adopted the amendments to IAS 16 regarding the accounting of Proceeds before Intended Use. Proceeds received from the sale of items produced by property, plant and equipment (PPE) which is still being prepared for its intended use cannot be deducted from the PPE's cost. Instead proceeds must be immediately recognized in the consolidated statement of earnings. The amendments are effective for annual periods beginning on or after January 1, 2022, with earlier application permitted. In adopting the amendments, there has been no significant impact to the financial statements for the year ended December 31, 2022.

IFRS 9 – Financial Instruments

On January 1, 2022, the Company adopted the amendment to IFRS 9 which clarifies which fees should be considered for the purpose of applying the derecognition test to a modified financial liability. The IASB clarified that only fees paid or received between the borrower and the lender should be considered. The amendment is effective for annual periods beginning on or after January 1, 2022, with earlier application permitted. In adopting the amendments, there has been no significant impact to the financial statements for the year ended December 31, 2022.

Future Changes in accounting policies

The following standards have been issued but not yet effective:

IAS 1 – Presentation of Financial Statements

In January 2020, the IASB issued amendments to IAS 1 to clarify its requirements for the presentation of liabilities in the statement of financial position. The amendments are effective from annual reporting periods beginning on or after January 1, 2024. The Company is currently evaluating the impact of the amendments on its consolidated financial statements.

Significant Management Estimation and Judgment in Applying Accounting Policies

The following are significant management judgments used in applying the accounting policies of the Company that have the most significant effect on the consolidated financial statements.

Estimation uncertainty

When preparing the consolidated financial statements, management undertakes a number of judgments, estimates and assumptions about recognition and measurement of assets, liabilities, revenues and expenses. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Information about the significant judgments, estimates and assumptions that have the most significant effect on the recognition and measurement of assets, liabilities, revenues and expenses are discussed below.

Impairment of non-financial assets

Non-financial assets are reviewed for an indication of impairment at each consolidated statement of financial position date upon the occurrence of events or changes in circumstances indicating that the carrying value of the assets may not be recoverable, which requires significant judgement.

An impairment loss is recognized for the amount by which an asset's or cash-generating unit's ("CGU") carrying amount exceeds its recoverable amount, which is the higher of fair value less cost of disposal and value in use.

An intangible asset and related equipment that are not yet available for their intended use and CGUs to which goodwill is allocated are tested for impairment at least annually, which also requires significant judgement. To determine the recoverable amount (value in use or fair value less cost to dispose of these assets), management estimates expected future cash flows from the asset or CGU and determines a suitable interest rate in order to calculate the present value of those cash flows. In the process of measuring expected future cash flows for intangible and tangible assets not yet available for their intended use and CGUs to which goodwill is allocated, management makes assumptions about future operating results using the estimated forecasted prices obtained from various market sources. These key assumptions relate to future events and circumstances. The actual results will vary and may cause adjustments to the Company's assets in future periods.

In most cases, determining the applicable discount rate involves estimating the appropriate adjustment to market risk and to asset specific risk factors. Assets not yet available for intended use have a higher estimation uncertainty, since they depend on future market information and the Company's ability to finish the project and realize the budgeted earnings. Management believes that the following assumptions are the most susceptible to change and therefore could impact the valuation of the assets in the next year: metal prices which have an impact on revenues and metal margins and the discount rate.

Inventories

Inventories are carried at the lower of cost and net realizable value, with cost determined using the average cost method. In estimating net realizable values, management takes into account the most reliable evidence available at the time the estimates are made. The Company's core business is subject to changes in foreign policies and internationally accepted metal prices which may cause future selling prices to change rapidly. The Company evaluates its inventories using a group of similar items basis and considers expected future prices as well as events that have occurred between the consolidated statement of financial position date and the date of the completion of the consolidated financial statements. Net realizable value for inventory to satisfy a specific sales contract is measured at the contract price.

Business Combination

The Company must make assumptions and estimates to determine the fair value of identifiable assets acquired and liabilities assumed. These estimates are based on future events, forecasts of future cash flows, future operating costs, future capital expenditures and estimated discount rates. Changes to the preliminary measurements of assets and liabilities acquired may be retrospectively adjusted when new information is obtained until the final measurements are determined within one year of the acquisition date.

Income taxes

The Company is subject to income taxes in numerous jurisdictions. Significant judgment is required in determining the worldwide provision for income taxes. There are many transactions and calculations for which the ultimate tax determination is uncertain. The Company recognizes liabilities for anticipated tax audit issues based on estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will impact the current and deferred income tax assets and liabilities in the period in which such determination is made.

The Company has deferred income tax assets that are subject to periodic recoverability assessments. Realization of the Company's deferred income tax assets is largely dependent on its achievement of projected future taxable income and the continued applicability of ongoing tax planning strategies. The Company's judgments regarding future profitability may change due to future market conditions, changes in tax legislation and other factors that could adversely affect the ongoing value of the deferred income tax assets. These changes, if any, may require a material adjustment of these deferred income tax asset balances through an adjustment to the carrying value thereon in the future. This adjustment would reduce the deferred income tax asset to the amount that is considered to be more likely than not to be realized and would be recorded in the period such a determination was to be made. Refer to note 18 of the 2022 audited consolidated financial statements of the Company.

Related Party Transactions

The Company's related parties are its directors and executive members. Transactions with these related parties are described in Note 26 in the 2022 audited consolidated financial statements of the Company.

Financial Instruments and Risk Management

Fair Value of Financial Instruments

A detailed description of the methods and assumptions used to measure the fair value of the Company's financial instruments and their fair value is discussed in Note 19 – Fair Value of Financial Instruments in the 2022 audited consolidated financial statements of the Company.

The fair value of the financial instruments was as follows:

(in thousands of U.S. dollars)	**2022**	2021
	$	$
Indexed deposit agreement	**5,517**	4,819
Investment in equity instruments	**2,000**	2,000
Restricted investment	**620**	713
Interest rate swap agreement	**-**	(109)

Financial Risk Management

For a detailed description of the nature and extent of risks arising from financial instruments, and their related risk management, refer to Note 27 of the 2022 audited consolidated financial statements of the Company.

Interest Rate

Interest rate risk refers to the risk that future cash flows will fluctuate as a result of changes in market interest rates. The Company's policy is to limit its exposure to interest rate risk fluctuation by ensuring that a reasonable portion of its long-term debt is made of subordinated debts at fixed rate. The Company is exposed to interest rate fluctuations on its revolving credit facility, which bears a floating interest rate. A 1% increase/decrease in interest rates would have an impact of approximately $1.0 million on the Company's net earnings on a twelve-month horizon based on the balance outstanding on December 31, 2022.

Foreign Currency

The Company's sales are primarily denominated in U.S. dollars whereas a portion of its operating costs are realized in local currencies, such as euros and Canadian dollars. Even though the purchases of raw materials are denominated in U.S. dollars, which reduce to some extent exchange rate fluctuations, we are subject to currency translation risk which can negatively impact our results. Management has implemented a policy for managing foreign exchange risk against the relevant functional currency.

In addition, the Company will occasionally enter into foreign exchange forward contracts to sell U.S. dollars in exchange for Canadian dollars and euros. These contracts would hedge a portion of ongoing foreign exchange risk on the Company's cash flows since much of its non-US dollar expenses are incurred in Canadian dollars and euros. The Company may also enter into foreign exchange contracts to sell euros for U.S. dollars. As at December 31, 2022, the Company had no foreign exchange contracts outstanding.

The following table summarizes in U.S. dollar equivalents the Company's major currency exposures as at December 31, 2022:

(in thousands of U.S. dollars)	CA$	EUR	GBP	HKD	MYR	Other
	$	$	$	$	$	$
Cash and cash equivalents	686	4,164	14	21	156	9
Accounts receivable	513	4,707	-	-	1	128
Other current assets	5,517	10,613	-	-	-	-
Other non-current assets	-	620	-	-	-	-
Trade and accrued liabilities	(10,834)	(16,175)	(317)	(199)	(219)	(149)
Lease liabilities	(6,033)	(339)	-	(171)	-	-
Net financial assets (liabilities)	(10,151)	3,590	(303)	(349)	(62)	(12)

For the Company's subsidiaries with a functional currency other than the U.S. dollar, their exposures of financial assets and financial liabilities denominated in U.S. dollars are $6.8 million and $0.6 million, respectively, with a net position of $6.3 million. A strengthening or weakening in the exchange rate between the functional currencies of these subsidiaries and the U.S. dollar of five-percentage points results in a decrease or increase of $0.3 million to earnings before income tax.

The following table shows the impact on earnings before income tax of a five-percentage point strengthening or weakening of foreign currencies against the U.S. dollar as at December 31, 2022 for the Company's financial instruments denominated in non-functional currencies:

(in thousands of U.S. dollars)	CA$	EUR	GBP	HKD	MYR	Other
	$	$	$	$	$	$
5% Strengthening	(508)	179	(15)	(17)	(3)	(1)
5% Weakening	508	(179)	15	17	3	1

Credit

Credit risk refers to the possibility that a customer or counterparty will fail to fulfill its obligations under a contract and, as a result, create a financial loss for the Company. The Company has a credit policy that defines standard credit practice. This policy dictates that all new customer accounts be reviewed prior to approval and establishes the maximum amount of credit exposure per customer. The creditworthiness and financial well-being of the customer are monitored on an ongoing basis.

The Company applies the IFRS 9 simplified approach to measuring expected credit losses using a lifetime expected credit loss allowance for trade receivables. The expected loss rates are based on the Company's historical credit losses experienced over the three-year period prior to the period end. The historical loss rates are then adjusted for current and forward-looking information on macroeconomic factors affecting the Company's customers. Historically, the Company has not incurred any significant losses in respect of its trade receivables. Therefore, the loss allowance at the end of each period and the change recorded for each period is insignificant.

As at December 31, 2022 and 2021, the Company had a loss allowance of $0.1 million. The loss allowance is included in selling, general and administrative expenses in the consolidated statement of (loss) earnings and is net of any recoveries that were provided for in prior periods.

Liquidity

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they come due. The Company manages liquidity risk through the management of its capital structure. It also manages liquidity risk by continually monitoring actual and projected cash flows, taking into account the Company's sales and receipts and matching the maturity profile of financial assets and financial liabilities. The Board of Directors reviews and approves the Company's annual operating and capital budgets as well as any material transactions out of the ordinary course of business, including proposals on acquisitions and other major investments. Under the terms of its credit facility, the Company is required to satisfy certain restrictive covenants. In order to comply with these covenants, the Company will need to execute on its EBITDA[1] and cash flow estimates. Management believes that the assumptions used by the Company in preparing its estimates are reasonable. However, risk remains. Successful achievement of these estimates results is dependent on stability in the price of metals and other raw materials, the reduction of debt due to the optimization of the Company's working capital and the continued viability and support of the Company's banks.

Risk and Uncertainties

In the normal course of business, we are subject to a number of risk factors which may limit our ability to execute our strategy and achieve our long-term growth objectives. We identify these risks and implement strategies in order to minimize their impact on the Company's performance. The Audit Committee together with the Corporate Internal Audit and site leadership teams have the mandate to review all business risks semi-annually. The risks and risk reduction measures are presented to the Audit Committee and the Board of Directors on an ongoing basis. The realization of the risks described in any of the following risk factors could have a material adverse effect on the Company's business, results of operations and financial condition.

Risks and uncertainties not presently known to the Company or that the Company currently considers as not material could become material in the future or impair its business operations or cause a decline in the price of shares.

Global Economic Conditions

Current global economic conditions, which have been subject to increased volatility, may impact the Company's access to public financing and its ability to obtain equity or debt financing on favourable terms. The Company operates in a volatile economic environment. As a result, if unemployment, interest or inflation rates fluctuate substantially or increase to significant levels, they could have an impact on the Company's operating activities, financial position and profitability. In addition, the Company is exposed to market risk related to the current global inflationary situation, as the various environmental, social, political, economic and health factors had significant consequences on the world economy. In order to reduce inflation, several central banks are now tightening their monetary policies, which has an impact on interest rates, foreign currency exchange rates and economic development. The risks of recession in one or several of the countries where the Company operates are growing and could have an adverse impact on the Company's net earnings, financial position or cash flows.

Crisis and Climate Change Management

Unexpected events including geopolitical crises, pandemic and epidemic outbreaks, catastrophes, and natural disasters, such as extreme and increasingly frequent weather-related disasters linked to climate change, could have a negative impact on the continuation of the Company's operations as well as its suppliers.

International Operations

We operate in several countries, including China and Laos, and as such, face risks associated with international business activities. We could be significantly affected by such risks, which include, but are not limited to, the integration of international operations, challenges associated with dealing with numerous legal and tax systems, the potential for volatile economic and labor conditions, political instability, foreign exchange, expropriation, changes in taxes, and other regulatory costs. Although we operate primarily in countries with relatively stable economic and political climates, there can be no assurance that our business will not be adversely affected by the risks inherent in international operations.

[1] See Non-IRFS Measures

The following conditions or events could disrupt our supply chain, interrupt production at our facilities or those of our suppliers or customers, increase our cost of sales and other operating expenses, result in material asset losses, or require additional capital expenditures to be incurred:

- fires, pandemics (including regional and global infectious diseases), extraordinary weather conditions, or natural disasters, such as hurricanes, tornadoes, floods, tsunamis, typhoons, and earthquakes;
- political instability, social and labor unrest, war, or terrorism;
- disruptions in port activities, shipping and freight forwarding services;
- interruptions in the availability of basic services and infrastructure, including power and water shortages;
- changes in a specific country's or region's economic conditions, such as a recession;
- new certification requirements; significant fluctuations in currency exchange rates;
- the invasion of Ukraine by Russia;
- new trade barriers; and
- change to legal, political, social, cultural, tax or other regulatory requirements.

Our insurance programs do not cover every potential loss associated with our operations, including potential damage to assets, lost profits, and liability that could result from the aforementioned conditions or events. In addition, our insurance may not fully cover the consequences resulting from a loss event, due to insurance limits, sub-limits, or policy exclusions. Any occurrence not fully covered by insurance could have a negative effect on our business.

Risks Related to China

The legal system in mainland China is a civil law system based on written statutes. Unlike common law systems, it is a system in which decided legal cases have little precedential value. The legal system in mainland China evolves rapidly, and the interpretations of many laws, regulations and rules may contain inconsistencies and their interpretation and enforcement involve uncertainties. These uncertainties could limit the legal protections available to us. In addition, the Company cannot predict the effect of future developments in the mainland Chinese legal system, including the promulgation of new laws, changes to existing laws or the interpretation or enforcement thereof, or the pre-emption of local regulations by national laws. Such unpredictability towards the Company's contractual, property (including intellectual property) and procedural rights could adversely affect the Company's business and impede its ability to continue operations. Furthermore, any litigation in mainland China may be protracted and result in substantial costs and diversion of resources and management attention.

The mainland Chinese government exercises significant control over mainland China's economic growth through strategically allocating resources, controlling the payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries or companies. Any growth in the Chinese economy may not continue and any slowdown may have a negative effect on our business. Any adverse changes in economic conditions in mainland China, in the policies of the mainland Chinese government, or in the laws and regulations in mainland China, could have a material adverse effect on the overall economic growth of mainland China. Such developments could adversely affect the Company's business, lead to reduction in demand for its products and adversely affect the Company's competitive position.

Environmental Regulations

Our operations involve the use, handling, generation, processing, storage, transportation, recycling and disposal of hazardous materials and are subject to extensive environmental laws and regulations at the national, provincial, local and international level. These environmental laws and regulations include those governing the discharge of pollutants into the air and water, the use, management and disposal of hazardous materials and wastes, the clean-up of contaminated sites and occupational health and safety. Failure to comply with such laws, regulations and permits can have serious consequences, including damage to our reputation; stopping us from pursuing operations at one of our facilities; being subject to substantial fines, penalties, criminal proceedings, third party property damage or personal injury claims, clean-up costs or other costs; increasing the costs of development or production and litigation or regulatory action against us, and materially adversely affecting our business, results of operations or financial condition. Future changes in applicable environmental and health and safety laws and regulations could substantially increase costs and burdens to achieve compliance or otherwise have an adverse impact on our business, results of operations or financial condition.

We have incurred and will continue to incur capital expenditures in order to comply with environmental laws and regulations. Exceedances in wastewater and air emissions generated by some Company facilities over the limits prescribed in applicable laws and permits have been registered in the past. At such facilities, the Company is collaborating with governmental authorities and implementing various measures including upgrading equipment to ensure compliance. Management believes that dealing with these environmental compliance issues will not have a material effect on the Company's earnings or competitive position during fiscal 2023. Future developments such as more aggressive enforcement policies, the implementation of new, more stringent laws and regulations, or the discovery of currently unknown environmental conditions may require expenditures that could have a material adverse effect on our business, results of operations and financial condition.

Environmental, Social and Governance (ESG) Considerations

The Company could be subject to growing stakeholder expectations as it relates to ESG factors, including from investors, who are increasingly placing a greater emphasis on ESG factors when assessing investment options. Future investments made in the Company, or future partnerships or business relations made with the Company may depend on various ESG standards.

Safety Risks and Hazards

The Company's health, safety and wellbeing systems, processes and policies are aimed at reducing risks to employees, subconsultants and others; however, work sites can put employees and others in proximity with large equipment, moving vehicles, dangerous processes or highly regulated materials in challenging or remote locations which may increase the risk to health and safety. Failure to implement or follow appropriate safety procedures by the Company or others could result in personal injury, illness or loss of life to people, or environmental and other damage to the Company's property or the property of others.

Prolonged Armed Conflict in Ukraine

In February 2022, Russian military forces invaded Ukraine; the invasion is being actively resisted by Ukrainian military personnel and the people of Ukraine, and the outcome of the ongoing conflict is uncertain at this time. Although AZUR had sales in Russia in the past, the amount of such sales is not material to the Company as a whole. A prolonged armed conflict in Ukraine or an expansion of the armed conflict to other European countries could have a negative effect on the European and global economies. As well, Russia is a major exporter of oil and natural gas. Any disruption of supplies of oil and natural gas from Russia could have a significant adverse effect on the European and world economies. All the foregoing factors could potentially have a negative impact on the Company's sales and results of operations.

COVID-19

The worldwide outbreak of a disease, a virus including the COVID-19 pandemic or any other contagious disease could have an adverse impact on the Company's operations, operating results and financial position. While it is sudden, its impact on economic cycles can give rise to unfavourable temporary disruptions in the market where the Company operates as well as on its internal structure, such as plant closures, shortages of raw materials and labour, and in supply chains and distribution channels.

Availability and Retention of Qualified Employees

We rely on the expertise and know-how of our personnel to conduct our operations. The loss of any member of our team could have a material adverse effect on us. Our future success also depends on our ability to execute succession plans, attract and retain key employees, train, retain and successfully integrate new talent into our management and technical teams. Recruiting and retaining talented personnel, particularly those with expertise in the specialty metals industry and refining technology is vital to our success and may prove difficult. We cannot provide assurance that we will be able to attract and retain qualified personnel when needed, especially in light of the current labor shortage affecting several markets in which we operate. If the Company is unable to recruit and retain additional qualified personnel in the future, its business, financial condition and operating results could be adversely affected.

Collective Agreements
A portion of our workforce is unionized, and we are party to collective agreements that are due to expire at various times in the future. If we are unable to renew these collective agreements on similar terms as they become subject to renegotiation from time to time, this could result in work stoppages or other labour disturbances, such as strikes, walkouts or lockouts, potentially affecting our performance.

Litigation Risks
We may be subject to a variety of civil or other legal proceedings, with or without merit. Although the Company establishes provisions for such litigation, there can be no assurance that the provisions for all claims correspond to the settlement amount. A significant judgment against the Company or the imposition of a significant fine or penalty could have a material adverse effect on its business, financial condition and results of operations.

Risks Associated with our Growth Strategy
5N Plus' strategic plan is designed to enhance profitability while reducing earnings volatility, delivering quality growth from both existing growth initiatives and future M&A opportunities. There is a risk that some of the expected benefits will fail to materialize or may not occur within the time periods anticipated by management. The realization of such benefits may be affected by a number of factors, many of which are beyond our control.

Competition
We are a leading producer of specialty semiconductors and performance materials with a limited number of competitors, few of which are as fully integrated as we are or have a similar range of products. Accordingly, they have limitations to provide the same comprehensive set of services and products as we do. However, there can be no guarantee that this situation will continue in the future and competition could arise from new low-cost metal refiners or from certain of our customers who could decide to backward integrate. Greater competition could have an adverse effect on our revenues and operating margins if our competitors gain market share and we are unable to compensate for the volume lost to our competition.

Commodity Price
The price we pay for, and availability of, various inputs fluctuate due to numerous factors beyond our control, including political and economic conditions, currency exchange rates, inflation or deflation, global supply and demand for metal products, fluctuations in the value of the U.S. dollar and foreign currencies, speculative trading, trade sanctions, tariffs, labor costs, competition, over capacity of producers and price surcharges. Fluctuations in availability and cost of inputs may materially affect our business, financial condition, results of operations and cash flows. These fluctuations can be unpredictable and can occur over short periods of time. To the extent that we are not able to pass on any increases, our business, financial condition, results of operations and cash flows may be materially adversely affected.

Sources of Supply
We may not be able to secure the critical raw material feedstock on which we depend for our operations. We currently procure our raw materials from a number of suppliers with whom we have had long-term commercial relationships. The loss of any one of these suppliers or a reduction in the level of deliveries to us may reduce our production capacity and impact our deliveries to customers. This would in turn negatively impact our sales, net margins and may lead to liabilities with respect to some of our supply contracts.

In addition, supplemental supply-chain challenges created by the economic conjecture following the COVID-19 global pandemic could negatively affect the Company's general procurement through longer delays of transportation or through an increase in prices to obtain supplies. This may adversely affect the business, financial condition and operating results of the Company.

Protection of Intellectual Property

Protection of our proprietary processes, methods and other technologies is important to our business. We rely on international patents as well as trade secrets and employee confidentiality agreements to safeguard our intellectual property. We have deliberately chosen to limit our patent position for certain intellectual properties to avoid disclosing valuable information. Failure to protect and monitor the use of our existing intellectual property rights could result in the loss of valuable technologies and processes. There can be no assurance that our confidentiality agreements will provide meaningful protection for our intellectual property rights or other proprietary information in the event of any unauthorized use or disclosure or that we will be able to meaningfully protect our trade secrets.

Inventory Price

We monitor the risks associated with the value of our inventories in relation to the market price of such inventories. Because of the highly illiquid nature of many of our inventories, we rely on a combination of standard risk measurement techniques, such as value at risk as well as a more empirical assessment of the market conditions. Decisions on appropriate physical stock levels are taken by considering both the value at risk calculations and the market conditions.

Business Interruptions

We may incur losses resulting from business interruptions. In many instances, especially those related to our long-term contracts, we have contractual obligations to deliver product in a timely manner. Any disruption in our activities which leads to a business interruption could harm our customers' confidence level and lead to the cancellation of our contracts and legal recourse against us. Although we believe that we have taken the necessary precautions to avoid business interruptions and carry business interruption insurance, we could still experience interruptions which would adversely impact our financial results.

Changes to Backlog

The Company cannot guarantee that the revenues projected in its backlog will be realized. In addition, contract delays, suspensions, terminations, cancellations, reductions in scope or other adjustments may occur from time to time due to considerations beyond the Company's control and may have an impact on the value of reported backlog with a corresponding adverse impact on future revenues and profitability.

Acquisition Risk

The Company completed the acquisition of AZUR in November 2021 and may from time to time acquire or propose to acquire other companies. The Company's inability to properly integrate acquired companies, unanticipated acquisition costs, unforeseen delays and unknown liabilities associated with acquisitions, the potential loss of key employees following acquisitions, challenges with the integration of new operations and new personnel, the diversion of management's time and focus from other business concerns, opportunities and operational matters to work on acquisitions or integrate acquisitions, the loss of momentum in ongoing operations and disruptions to operations, possible inconsistencies in procedures and policies among the combined companies, and the need to implement new accounting, information technology, human resources or other administrative systems, may each materially and adversely affect the Company's business, results of operations or financial condition.

Systems, Network Infrastructure and Data Failure, Interruption and Breach

Our operations rely on information systems, communications technology, business and other technology applications, including global and regional networks, complex server infrastructure and operating systems, in order to operate properly. If we are unable to continually maintain our software and hardware, effectively upgrade our systems and network infrastructure, and take other steps to improve the efficiency and protect our systems, the Company's operation systems could be interrupted or delayed. The same applies if our network, communication and operations systems are damaged or interrupted by natural disasters, telecommunications failures, acts of war or terrorism, computer viruses, sabotage, human errors, physical or electronic security breaches, or similar events or disruptions. The Company also faces the threat of unauthorized system access, computer hackers, malicious code and organized cyber-attacks. The COVID-19 pandemic context with a significant number of employees working remotely contributes to an increase in cyber-attack attempts.

Executive Management consultations are held regularly to monitor the progress of various cybersecurity projects, review significant incidents and review various security-related performance indicators. Executive Management reports on its work to the members of the Board of Directors on a biannual basis. The Corporate IT function sets up and coordinates prevention, detection, and remediation measures in the area of cybersecurity. Cybersecurity measures include, among others, setting up strong controls with respect to systems access, implementing information security awareness programs, and hiring specialized firms to carry out occasional intrusion tests.

Although the Company has not experienced any material losses relating to cyberattacks or other information security breaches in the past, there can be no assurance that the Company will not experience such losses in the future due to the evolving nature of these threats.

Market Price of Common Shares

The common shares of the Company are traded on the Toronto Stock Exchange under the symbol ''VNP''. The market price of securities of many companies experiences wide fluctuations from time to time that are not necessarily related to the operating performance, underlying asset values or future growth prospects of such companies. There can be no assurance that fluctuations in the price of the common shares of the Company will not occur.

Non-IFRS Measures

In this Management's Report, certain non-IFRS measures are used. The Company's management believes that these non-IFRS measures provide useful information to investors regarding the Company's financial condition and results of operations as they provide additional key metrics of its performance. These non-IFRS measures are not recognized under IFRS, do not have any standardized meaning prescribed under IFRS and may differ from similarly named measures as reported by other issuers, and accordingly may not be comparable. These measures should not be viewed as a substitute for the related financial information prepared in accordance with IFRS.

Backlog represents the expected orders the Company has received, but has not yet executed, and that are expected to translate into sales within the next twelve months, expressed in number of days. Bookings represent orders received during the period considered, expressed in number of days, and calculated by adding revenues to the increase or decrease in backlog for the period considered, divided by annualized year revenues. 5N Plus uses backlog to provide an indication of expected future revenues in days, and bookings to determine its ability to sustain and increase its revenues.

EBITDA means net earnings (loss) before interest expenses, income taxes, depreciation and amortization. 5N Plus uses EBITDA because it believes it is a meaningful measure of the operating performance of its ongoing business, without the effects of certain expenses. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

EBITDA is reconciled to the most comparable IFRS measure:

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Net (loss) earnings	**(8,146)**	980	**(22,999)**	3,110
Interest on long-term debt, imputed interest and other interest expense	**716**	1,164	**5,192**	3,713
Income taxes (recovery) expense	**(292)**	1,314	**4,711**	5,630
Depreciation and amortization	**4,051**	4,364	**17,732**	12,535
EBITDA	**(3,671)**	7,822	**4,636**	24,988

EBITDA margin is defined as EBITDA divided by revenues.

Adjusted EBITDA means Operating earnings (loss) as defined before the effect of impairment of inventories, share-based compensation expense (recovery), litigation and restructuring costs, impairment of non-current assets, loss on divestiture of subsidiary, loss on disposal of assets held for sale and depreciation and amortization. 5N Plus uses adjusted EBITDA because it believes it is a meaningful measure of the operating performance of its ongoing business without the effects of certain expenses. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

Adjusted EBITDA margin is defined as Adjusted EBITDA divided by revenues.

Adjusted EBITDA and Adjusted EBITDA margin are reconciled to the most comparable IFRS measure:

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Revenues	**61,042**	64,556	**264,223**	209,990
Operating expenses	**(69,261)**	(60,018)	**(277,277)**	(197,119)
Operating (loss) earnings	**(8,219)**	4,538	**(13,054)**	12,871
Share-based compensation (recovery) expense	**(171)**	(460)	**999**	689
Litigation and restructuring costs	**3,210**	1,644	**3,823**	2,144
Impairment of non-current assets	**-**	-	**12,478**	-
Loss on divestiture of subsidiary	**7,834**	-	**7,834**	-
Loss on disposal of assets held for sale	**-**	-	**216**	-
Depreciation and amortization	**4,051**	4,364	**17,732**	12,535
Adjusted EBITDA	**6,705**	10,086	**30,028**	28,239
Adjusted EBITDA margin	**11.0%**	15.6%	**11.4%**	13.4%

Adjusted operating expenses means operating expenses before impairment of inventories, share-based compensation expense (recovery), litigation and restructuring costs, impairment of non-current assets, loss on divestiture of subsidiary, loss on disposal of assets held for sale and depreciation and amortization. 5N Plus uses adjusted operating expenses to calculate Adjusted EBITDA. 5N Plus believes it is a meaningful measure of the operating performance of its ongoing business. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

Adjusted operating expenses are reconciled to the most comparable IFRS measure:

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Operating expenses	**69,261**	60,018	**277,277**	197,119
Share-based compensation recovery (expense)	**171**	460	**(999)**	(689)
Litigation and restructuring costs	**(3,210)**	(1,644)	**(3,823)**	(2,144)
Impairment of non-current assets	**-**	-	**(12,478)**	-
Loss on divestiture of subsidiary	**(7,834)**	-	**(7,834)**	-
Loss on disposal of assets held for sale	**-**	-	**(216)**	-
Depreciation and amortization	**(4,051)**	(4,364)	**(17,732)**	(12,535)
Adjusted operating expenses	**54,337**	54,470	**234,195**	181,751

Adjusted net earnings (loss) means the net earnings (loss) before the effect of impairment of inventory, share-based compensation expense (recovery), litigation and restructuring costs, impairment of non-current assets, loss on divestiture of subsidiary and loss on disposal of assets held for sale, net of the related income tax. 5N Plus uses adjusted net earnings (loss) because it believes it is a meaningful measure of the operating performance of its ongoing business without the effects of unusual expenses or income. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

Basic adjusted net earnings (loss) per share means adjusted net earnings (loss) divided by the weighted average number of outstanding shares. 5N Plus uses basic adjusted net earnings (loss) per share because it believes it is a meaningful measure of the operating performance of its ongoing business without the effects of unusual expenses or income. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

Adjusted net earnings (loss) and Basic adjusted net earnings (loss) are reconciled to the most comparable IFRS measures:

(in thousands of U.S. dollars, except per share amounts and number of shares)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Net (loss) earnings	**(8,146)**	980	**(22,999)**	3,110
Basic (loss) earnings per share	**($0.09)**	$0.01	**($0.26)**	$0.04
Reconciling items:				
Share-based compensation (recovery) expense	**(171)**	(460)	**999**	689
Litigation and restructuring costs	**3,210**	1,644	**3,823**	2,144
Impairment of non-current assets	**-**	-	**12,478**	-
Loss on divestiture of subsidiary	**7,834**	-	**7,834**	-
Loss on disposal of assets held for sale	**-**	-	**216**	-
Income tax recovery on taxable items above	**(595)**	(285)	**(2,618)**	(589)
Adjusted net earnings (loss)	**2,132**	1,879	**(267)**	5,354
Basic weighted average number of shares	**88,330,236**	88,330,236	**88,330,236**	88,330,236
Basic adjusted net earnings per share	**$0.02**	$0.02	**$-**	$0.06

Adjusted gross margin is a measure used to monitor the sales contribution after paying cost of sales, excluding depreciation and inventory impairment charges. 5N Plus also expressed this measure in percentage of revenues by dividing the gross margin value by the total revenue.

Adjusted Gross margin is reconciled to the most comparable IFRS measure:

(in thousands of U.S. dollars)	**Q4 2022**	Q4 2021	**FY 2022**	FY 2021
	$	$	**$**	$
Total revenue	**61,042**	64,556	**264,223**	209,990
Cost of sales	**(47,909)**	(53,090)	**(215,715)**	(171,214)
Gross margin	**13,133**	11,466	**48,508**	38,776
Depreciation included in cost of sales	**3,155**	3,515	**14,208**	10,539
Adjusted Gross margin	**16,288**	14,981	**62,716**	49,315
Adjusted Gross margin percentage	**26.7%**	23.2%	**23.7%**	23.5%

Net debt is calculated as total debt less cash and cash equivalents. Any introduced IFRS 16 reporting measures in reference to lease liabilities are excluded from the calculation. 5N Plus uses this measure as an indicator of its overall financial position.

Total debt and Net debt are reconciled to the most comparable IFRS measure:

(in thousands of U.S. dollars)	**As at December 31, 2022**	As at December 31, 2021
	$	$
Bank indebtedness	**-**	-
Long-term debt including current portion	**121,000**	116,000
Lease liabilities including current portion	**30,402**	32,640
Subtotal Debt	**151,402**	148,640
Lease liabilities including current portion	**(30,402)**	(32,640)
Total Debt	**121,000**	116,000
Cash and cash equivalents	**(42,691)**	(35,940)
Net Debt	**78,309**	80,060

Working capital is a measure of liquid assets that is calculated by taking current assets and subtracting current liabilities. Given that the Company is currently indebted, it uses it as an indicator of its financial efficiency and aims to maintain it at the lowest possible level.

Working capital ratio is calculated by dividing current assets by current liabilities.

Working capital is reconciled to the most comparable IFRS measure:

(in thousands of U.S. dollars)	**As at December 31, 2022**	As at December 31, 2021
	$	$
Inventories	**86,254**	95,526
Other current assets excluding inventories	**100,908**	99,996
Current assets	**187,162**	195,522
Current liabilities	**(62,846)**	(65,059)
Working capital	**124,316**	130,463
Working capital current ratio	**2.98**	3.01

Additional Information

5N Plus' common shares trade on the Toronto Stock Exchange (TSX) under the ticker symbol VNP. Additional information relating to the Company, including the Company's annual information form, is available under the Company's profile on SEDAR at www.sedar.com.

Selected Quarterly Financial Information

(in thousands of U.S. dollars, except per share amounts)	**Dec 31, 2022**	Sept 30, 2022	June 30, 2022	March 31, 2022	Dec 31, 2021	Sept 30, 2021	June 30, 2021	March 31, 2021
			$	$	$	$	$	$
Revenue	**61,042**	66,372	72,388	64,421	64,556	50,839	47,719	46,876
EBITDA[1]	**(3,671)**	1,751	6,739	(183)	7,822	5,105	6,318	5,743
Adjusted EBITDA[1]	**6,705**	9,114	8,583	5,626	10,086	5,537	6,336	6,280
Net (loss) earnings	**(8,146)**	(6,968)	(2,130)	(5,755)	980	(792)	2,159	763
Basic (loss) earnings per share	**($0.09)**	($0.08)	($0.02)	($0.07)	$0.01	($0.01)	$0.03	$0.01
Diluted (loss) earnings per share	**($0.09)**	($0.08)	($0.02)	($0.07)	$0.01	($0.01)	$0.03	$0.01
Adjusted net earnings (loss)[1]	**2,132**	520	(997)	(1,922)	1,879	(246)	1,932	1,789
Basic adjusted net earnings (loss) per share[1]	**$0.02**	$-	($0.01)	($0.02)	$0.02	$-	$0.02	$0.02
Funds from operations	**5,478**	2,055	3,165	2,800	5,604	2,394	3,656	4,899
Backlog[1]	**253 days**	192 days	140 days	196 days	221 days	174 days	199 days	195 days

Net (loss) earnings are completely attributable to equity holders of 5N Plus Inc.

Selected Yearly Financial Information

As at and for the years ended December 31 (in thousands of U.S. dollars except per share amounts)	**2022**	2021	2020
	$	$	$
Revenue	**264,223**	209,990	177,192
EBITDA	**4,636**	24,988	22,424
Adjusted EBITDA	**30,028**	28,239	28,791
Net (loss) earnings	**(22,999)**	3,110	2,186
Basic (loss) earnings per share	**($0.26)**	$0.04	$0.03
Diluted (loss) earnings per share	**($0.26)**	$0.04	$0.03
Adjusted net (loss) earnings	**(267)**	5,354	4,980
Basic adjusted net earnings per share	**$-**	$0.06	$0.06
Funds from operations	**13,498**	16,553	25,830
Backlog	**253 days**	221 days	189 days
Balance Sheet			
Total assets	**347,985**	373,590	226,678
Total non-current liabilities	**172,363**	172,284	71,752
Net debt[1]	**78,309**	80,060	10,159
Shareholders' equity	**112,776**	136,247	118,376

Net (loss) earnings are completely attributable to equity holders of 5N Plus Inc.

[1] See Non-IFRS Measures