



**OUR  
5N21  
PLAN  
IS  
WORKING**

2017  
ANNUAL  
REPORT



## MISSION

As a leading global material technology company, our mission, each and every day, is to earn and retain the privilege to be essential to our customers, preferred by our employees and trusted among our shareholders in a quest to enable innovation and technology deployment based on natural resources for the betterment of the human race.

## VISION

As a leading global material technology company with employees and assets throughout the world, we are determined to enable and empower our people in a manner which inspires them to perform collectively at their best and optimize resource utilization so as to deliver competitive financial returns.

## OUR FOOTPRINT

With multiple facilities on three continents, 5N Plus is strategically situated close to resources, suppliers and customers, making us a reliable link in any supply chain.



MANUFACTURING  
FACILITIES IN  
NORTH AMERICA,  
EUROPE AND ASIA

EMPLOYEES  
ON THREE  
CONTINENTS

SALES  
OFFICES  
AROUND THE  
WORLD

## CONTENTS

Message to Shareholders	1	Management's Discussion	
5N21 Strategy	4	and Analysis	12
Market-based Strategy	5	Consolidated Financial Statements	34
Electronic Materials	6	Notes to Consolidated	
Eco-Friendly Materials	8	Financial Statements	42
Recycling, Refining and R&D	10	Board of Directors &	
Finance	11	Executive Committee	81
		Corporate Information	82

# DEAR SHAREHOLDERS,

On February 20th, 2018, 5N Plus reported its second financial year under the guidance of its strategic plan 5N21, delivering significant improvement across an array of metrics. Adjusted EBITDA reached \$25.1 million, a growth of 25% as compared to the previous year. Gross margin continued to expand to 26.1% versus 22.4% in 2016, and return on capital employed (ROCE) grew to 12.3% from 6.7% in 2016. The company continues to generate significant cash, with funds from operations reaching \$26.3 million in 2017, thereby further enabling net debt reduction to \$11.4 million from \$19.0 million the previous year. In short, 5N Plus is generating returns above its cost of capital, with a substantial reduction in earnings volatility and a strong balance sheet that will afford multiple options for future growth. I believe it is safe to say that our strategic plan 5N21 – which targets ambitious deliverables by 2021 – is working.

---

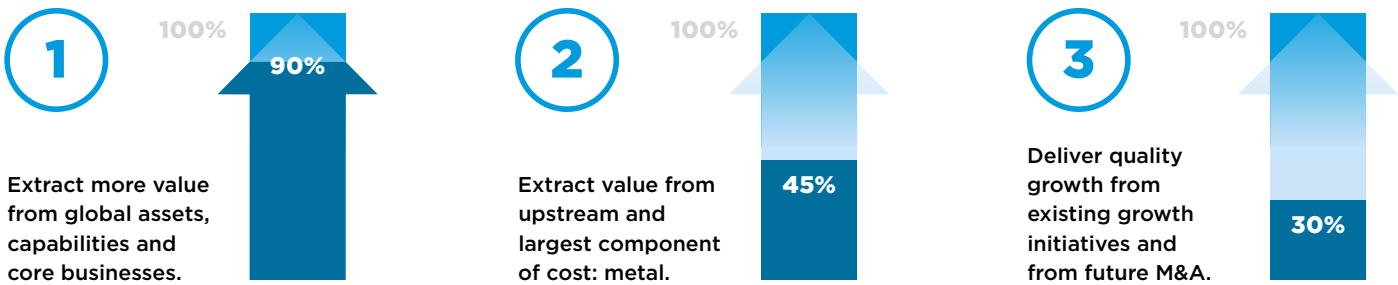
## PILLAR 1 OF 5N21 NEARLY COMPLETE

At the end of 2017, nearly every initiative under pillar 1 of our 5N21 strategic plan – to extract more value from core businesses – had been successfully completed (see page 2). During this period our teams consolidated production from Wellingborough, U.K. and Madison, Wisconsin to other plants within the group. Our commercial teams exercised high selectivity in repositioning the company's product portfolio, striking a healthy balance between profitability and market share. And our operating teams continued to optimize product flows while focusing on efficiency gains

and extracting additional value from existing assets. Meanwhile, our various sites around the globe remained vigilant with respect to our Environment, Health & Safety commitments, and maintained a record low serious injury rate performance.

Early in 2017 we reorganized the company's Executive Committee to bring greater weight to market development and customer focus. My management team also launched fresh measures to enhance talent development and innovation, which are key to our sustained success.

## PROGRESS REPORT ON 5N21



### SHIFTING FOCUS TO PILLARS 2 AND 3

As we continue the 5N21 journey through 2018 and beyond, my team is shifting focus to also deliver on our plan's second and third pillars — increase contributions from upstream activities and deliver growth from a wider range of initiatives. We will therefore continue to target products requiring more value-added activities, thereby decreasing the proportion of pass-through specialty metals in overall sales. Nevertheless, in the near term a notable portion of variable costs will continue to be invested in specialty metals. This is why it's of strategic importance to establish a strong upstream presence, ensuring reliable access and competitive valorization of metals essential to our final products. To support this ambition, we will continue to invest in our metallurgical competencies and grow our refining capabilities. Furthermore, we will leverage our upstream assets across the globe, working closely with partners to maximize mutual value creation, as we exert greater control over the cost of pass-through metals associated with our products. We expect material contributions from all these activities throughout 2018.

### A TIME FOR GROWTH — PILLAR 3 OF 5N21

We expect to make significant progress in 2018 on several growth opportunities. These include:

- Building and commissioning an animal feed additive plant in Europe by year end, paving the way for qualification campaigns for our products
- Finalizing several product qualification campaigns with new customers for our micro-powder venture, and increasing repeat orders from customers in the electronics industry
- Securing new long-term contracts in the field of specialty semi-conductor materials, to extend our market penetration

As for inorganic growth, we will continue to monitor the marketplace for quality ventures and businesses that meet strict criteria for compatibility with our organizational DNA, have attractive and affordable valuation, and offer potential for 5N Plus to add value. Should such opportunities arise, we are well positioned to properly address them. That being said, we will exercise patience and discipline, resisting market pressure for M&A activities that produce only short-term impact. We seek to grow our business in a sustainable fashion and are prepared to prudently sweat the details to meet our objective.



## TRANSFORMATION: BECOMING A LEADING SPECIALTY MATERIAL TECHNOLOGY COMPANY

The original foundation of 5N Plus was based on the production and development of high purity materials, largely associated with the solar power and electronics industries. By 2011, the company had shifted toward chemicals and products containing significant amounts of specialty metals, with a business model largely dependent on speculative gains from movements in metal notations. From 2011 through 2015, this model drove much of the company's bottom line performance and earnings volatility.

In 2016, shortly after joining 5N Plus, I began working with my management team to assess the viability of the company's trajectory as a going-concern. This assessment pointed to a misalignment between the company's business model and its organizational DNA. At the core of 5N Plus lies a high-performance dynamo of technological innovation and know-how well suited to developing practical solutions for customers across the globe. Indeed, many of the company's most successful ventures have been based on collaborative efforts between 5N Plus and its customers.

In recent years, however, the company had become overly dependent on market share, with many products containing a higher ratio of metal to value-added activities. This model is common among our competitors, especially those who have moved from the trading and resource space toward intermediary products and chemicals, and whose profitability depends heavily on speculative positions in specialty metals. The finding from this assessment clearly identified the need for a shift in the company's posture in order to become more compatible with its natural capabilities. This critical learning point was incorporated into the company's future strategy 5N21.



Arjang J. (AJ) Roshan  
President and  
Chief Executive Officer



## AN ENGINE OF GROWTH

When the executive team designed 5N21, our goal was to transform 5N Plus from a company vulnerable to metal market volatility into an engine of sustainable profit and growth — one that generates a significant majority of its profits from value-added activities. In practical terms, this means deploying our technological and operational know-how to turn specialty metals, chemicals and precursors into materials and engineered products that are key enablers in critical industries. While specialty metals remain a cost component of our materials and services, our aim is to ensure their value as a percentage of total products and service value rendered to customers is significantly reduced. What's more, in this model co-developments and joint initiatives with customers, partners and stakeholders will escalate as our materials become increasingly critical to the viability of the final products and systems.

As we continue to implement our strategic plan, we expect to be increasingly identified with 5N Plus materials and services that enable key markets and industries rather than by the metals and chemicals we utilize as a pass-through component in our production processes.

Instead, we're a company that serves strategic market segments, providing high-value enabling materials, services and solutions.

## LOOKING FORWARD TO 2018

As we continue our path through 2018, I would like to thank our shareholders for placing their trust in the executive team. Please be assured that we work every day with diligence and dedication to earn and reward your trust. I would also like to thank all our employees for their hard work in 2017. I look forward to working with all our teams and the Board of Directors to achieve our goals in 2018 and beyond.

# 5N21 STRATEGY

5N21 is starting to show results.  
The proof is in the numbers.

Adjusted EBITDA

**\$25.1M**

↑  
25%

Gross Margin

**\$57.3M**

↑  
11%

Net Income

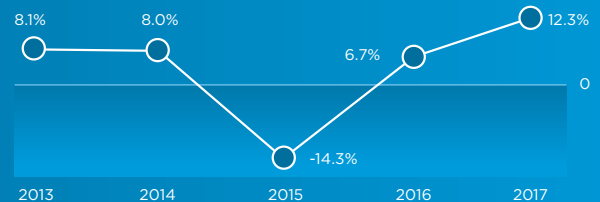
**\$12.M**

improved from loss making

Return on Capital Employed

**12.3%**

nearly doubled



Investments

below rate of depreciation

Net Debt

**\$11.4M**

reduced from \$19M

# TRANSFORMATION

5N Plus is becoming a leading specialty material technology company.

What does this mean? Increasingly, 5N Plus is...

- Providing high-value materials, services and solutions to a wide range of industries
- Harnessing innovation and know-how to develop materials and services that enable performance in our customers' products and services
- Becoming the preferred partner for our customers and suppliers
- Reducing the impact of earnings from metals market

Upstream  
Activities:

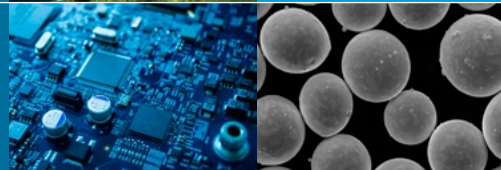
PSR2 - Primary  
Supply,  
Recycling &  
Refining

## Electronic Materials

SASI: Security  
Aerospace  
Sensing & Imaging  
Materials

Renewable Energy  
& Resource  
Management

Technical  
Materials



## Eco-Friendly Materials

Health &  
Pharmaceutical  
Materials

Industrial  
Materials

Catalytic &  
Extractive  
Materials



Consistent with our 5N21 strategy, we're favouring products that require higher value-added and technological know-how. This both leverages our strengths and reduces earnings volatility associated with fluctuating metals markets. The Electronic Materials business unit focuses on growth initiatives where metals represent a smaller portion of the cost of good sold (COGS) in the final product. Our team has redefined the business into three market sectors (see below) that are delivering results today and will continue to do so tomorrow. As we move forward, we will continue to emphasize co-developments and joint-partnerships with customers and partners, in order to develop a product offering that is relevant and competitive.

## **SASI MATERIALS** Security, Aerospace, Sensing and Imaging markets

### **Security & Aerospace**

5N Plus supplies engineered substrates and semiconductor materials used for the manufacture of spacecraft, aircraft and other products. As a partner to the U.S. government and various commercial companies, we collaborate closely to deliver solutions aimed at addressing specific challenges.

While the space industry has experienced a 40% reduction in large satellite awards and launches, the emerging trend is toward smaller satellites with lower-orbit missions positioning 5N Plus well to competitively address the new demands associated with powering these satellites and enabling their imaging systems.

Within the security market, 5N Plus provides ultra-high purity materials enabling the performance of advanced sensors, infrared cameras and high-energy radiation scanners and spectrometers. 5N Plus is the industry's preferred supplier and process-of-record. Our products are used in infrared cameras, focal plane arrays, and in a growing array of applications. As an example, in one application our detector materials are used to monitor brake systems on high-speed trains.

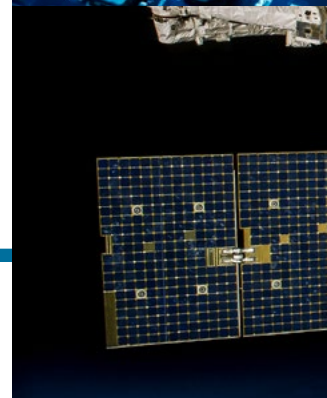
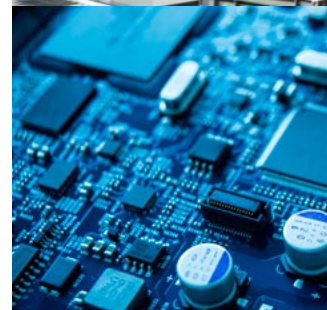
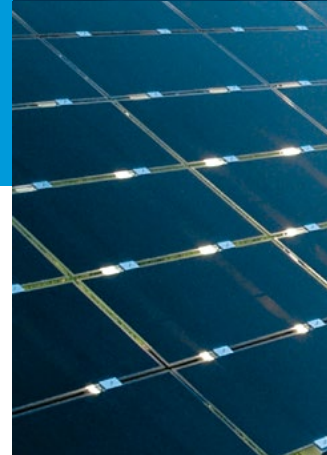
Systems using our products can also be found in nuclear plants, as well as in airport and border screening for national security purposes.

### **Medical Imaging**

5N Plus delivers semiconductor materials required for the next generation of medical imaging devices. We are the preferred supplier and process-of-record to nearly all major device producers.

Benefits associated with the advanced devices made from materials we supply include higher resolution, multi-colour imaging and significantly reduced radiation exposure to patients. This all translates into improved diagnostics and the safer application of life saving technologies.

Throughout 2016 and 2017, demand for 5N Plus semiconductor materials continued to grow. We expect further growth in this sector as we continue to collaborate with customers on new projects.





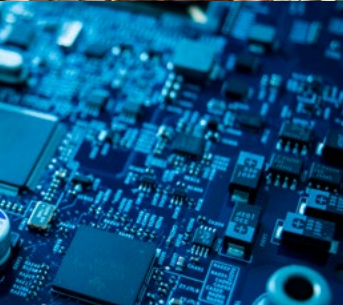


# ELECTRONIC MATERIALS



## RENEWABLE ENERGY AND RESOURCE MANAGEMENT

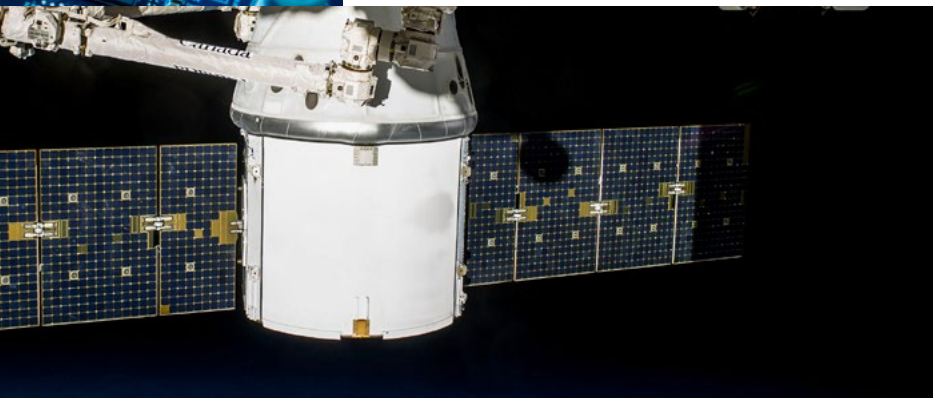
Customers use our high-purity semiconductor materials to make thin-film solar modules. In the ever-increasing drive to further enhance energy generation, these modules are requiring different compounds. Indeed, future generations of products will generate even more energy from a given amount of compounds, positioning 5N Plus advantageously as the industry's preferred partner to address these challenges.



## TECHNICAL MATERIALS

Our broad range of products serve many markets, with micro-powders (MP) promising the highest potential in electronics packaging and assembly. This is a vast segment that currently requires alloys of specific morphology and purity for high-end pastes and inks. Most competitors use process technologies for volume production based on current market requirements. By contrast, 5N Plus technology produces particle sizes that are up to an order of magnitude smaller and of significantly higher quality. As electronics continue to trend toward higher functionality, requiring ever-smaller components in tighter packages, it's fair to say our offerings align perfectly with tomorrow's more stringent demands.

Other markets we're currently pursuing for our MP products include printed electronics, cold-spray processes, additive (3D) manufacturing, and brazing. Anticipated breakthroughs in these markets could lead to a significant surge in demand.



# ECO-FRIENDLY MATERIALS

Many of the initiatives outlined at the start of 2017 have come to fruition. We have simplified our global footprint and streamlined operations. In the markets we serve, we are balancing quality of earnings against market share. And we remain focused on delivering quality product and services to our customers, as we continue to be their partner of choice. In the meantime, we're expanding into new markets with materials that contain higher value-added content.

## ENTERING THE ANIMAL NUTRITION MARKET

Given our proven track record within the pharmaceutical and health segment, we made the natural choice to enter the animal nutrition market, which demands many of the same attributes: ultra-high quality and consistent product along with outstanding customer service. We have established 5N Additives GmbH, which will produce animal feed materials containing a range of trace elements critical for a healthy diet. We believe our competencies in this area will differentiate us in the market.







## CATALYTIC AND EXTRACTIVE MATERIALS

This emerging sector is another growth initiative within Eco-Friendly Materials. Our materials are primarily used in precious metal mining, as well as in the oil and gas industries. Our value proposition is aimed at improving yield and reducing process cost for our customers.

## INDUSTRIAL MATERIALS

In line with the 5N21 strategic plan, we are exercising greater discipline and selectivity, favouring margins over volume. As expected, selectivity has reduced revenues with little impact on margins. We believe this rebalancing is healthy and is the right decision for the medium-to-long-term health of the business.

## AS WE MOVE AHEAD...

We see opportunities to extract even more value from our core activities, which we'll be addressing in 2018. Furthermore, we have some notable investments in the pipeline, aimed at growth, most of which are slated for delivery within the next 12 months. Our teams are energized by these transformations and by the healthy prospects ahead.



Our closed-loop recycling offers a remarkable value proposition to our customers: Transform your waste streams into revenue streams, while also honouring your commitment to sustainable development. The benefits to 5N Plus and its shareholders are equally robust. Recycling and refining enhance our financial contribution from upstream activities and give our downstream businesses greater sourcing flexibility. In addition, our R&D separates us from competitors. It builds on our people's scientific and technical expertise and permits new business partnerships.

# RECYCLING, REFINING AND R&D

## MEETING 5N21 OBJECTIVES

Upstream recycling and refining contributed a significantly higher proportion of metals to downstream products in 2017. We also met all productivity, efficiency and profitability targets for the year. We're now working to fulfill more demanding targets in 2018, and are well placed to meet our longer-term 5N21 goals.

## DEVELOPING OUR BUSINESS

To further grow upstream contributions, we're making capital investments that enhance our flexibility in treating higher-complexity raw materials.

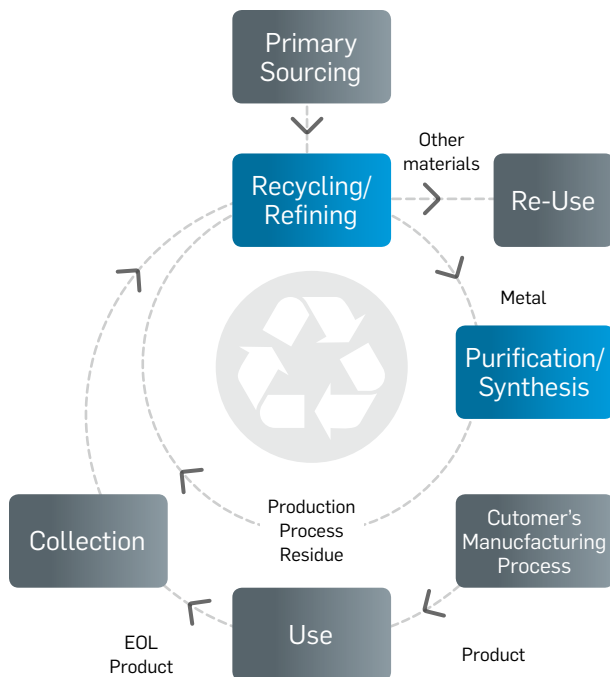
5N Plus now offers refined products in a wider range of purities and shapes, enabling our downstream business to better meet customer specifications.

## RESEARCH & DEVELOPMENT

To support the 5N21 strategic plan, in 2017 we completed numerous upstream and downstream R&D projects that enhance process efficiencies and reduce costs. We expect these projects to begin generating benefits in the near term.

Semiconductor R&D activities were particularly fruitful in 2017. New products/processes have the potential to enhance sales and decrease production costs in 2018 and beyond.

Looking forward, in 2018 we will continue to focus our R&D activities on not only supporting our existing businesses, but also playing a notable role in positioning us for growth.





# FINANCE

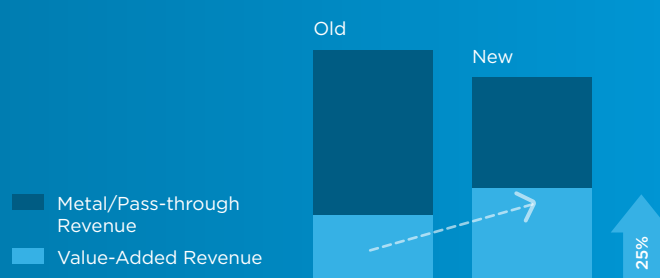
The launch of 5N21 was a catalytic event in a pivotal year. Indeed 2017 confirmed that we are fully aligned to lead the transformation of 5N Plus, energized by an enhanced business model and growth strategy. The company continued to show improved profitability, recurrent cash flows and a solid balance sheet. Under the mantra “selectivity,” it right-sized its assets portfolio across a wide range of products in both mature and fast-growth markets. Adjusted EBITDA reached \$25.1 million compared to \$20.1 million in 2016, impacted by better realized gross margins and sustainable demand for our key products.

## MISSION ACCOMPLISHED

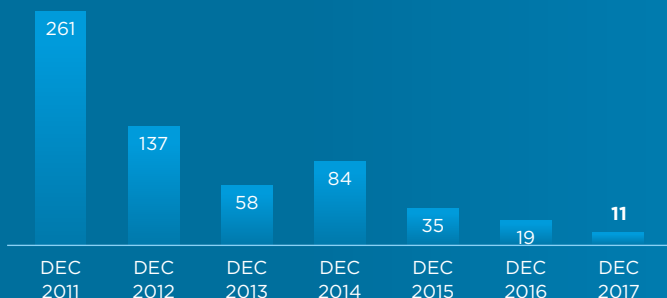
The company delivered on most of its short-term objectives for 5N21, specifically those associated with optimizing core businesses and global assets. We made notable progress in balancing quality of earnings against maintaining healthy market share, and increasing the value-added component of revenue while reducing earnings volatility.

Customer and market diversity should continue to yield substantial benefits, as will the combination of upstream and growing downstream activities — among the hallmarks of 5N Plus.

## Transformation of Revenue Units



## Net Debt

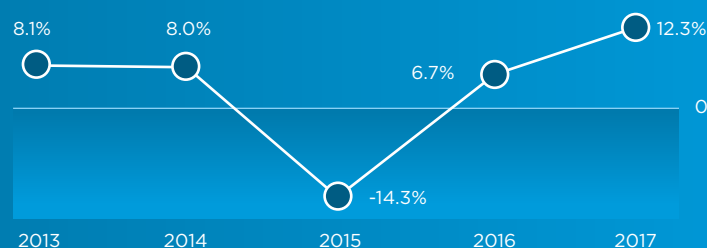


## REDUCED DEBT, STRONGER BALANCE SHEET

The company further strengthened its balance sheet, reducing net debt by an additional \$8 million. We also continued to improve ROCE across our businesses. A solid balance sheet reflects management's determination to keep all options open to finance potential M&A projects, and enough liquidity to execute internal growth initiatives and business optimization.

For many years 5N Plus was a volume-driven business, where we accepted low prices to defray high fixed costs. A major change is now underway, with increasing evidence that production volume is being displaced by return on capital, which reached 12.3% in 2017.

## Return on Capital Employed



## DELIVERING ON SHAREHOLDER EXPECTATIONS

Our most important assets remain our clients and reputation, which we are leveraging to access a wider diversity of markets. Shareholders can expect 5N Plus to invest in a highly disciplined manner to grow its businesses and ability to serve customers.

We believe we are making strong progress. However, we still have work to do convincing financial markets that the fundamental structure of 5N Plus has changed. The best way of doing that is by delivering sustained growth in 2018 and beyond.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

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, 2017. This MD&A has been prepared in accordance with the requirements of the Canadian Securities Administrators.

Information contained herein includes any significant developments to February 20, 2018, 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 2017" and "Q4 2016" refer to the three-month periods ended December 31, 2017 and 2016 respectively, and "FY 2017" and "FY 2016" refer to the twelve-month periods ended December 31, 2017 and 2016 respectively. 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. All quarterly information disclosed in this MD&A is based on unaudited figures.

## **Non-IFRS Measures**

This MD&A also includes certain figures that are not performance measures consistent with IFRS. These measures are defined at the end of this MD&A under the heading Non-IFRS Measures.

## **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 related to growth strategy, credit, liquidity, interest rate, inventory pricing, commodity pricing, currency fluctuation, fair value, source of supply, environmental regulations, competition, dependence on key personnel, business interruptions, protection of intellectual property, international operations, international trade regulations, collective agreements and being a public issuer. 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 20, 2018. 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.

## Overview

5N Plus is a leading producer of specialty chemicals and engineered materials. Fully integrated with closed-loop recycling facilities, the Company is headquartered in Montreal, Quebec, Canada and operates manufacturing facilities and sales offices in several locations in Europe, the Americas and Asia. 5N Plus deploys a range of proprietary and proven technologies to manufacture products which are used in a number of advanced pharmaceutical, electronic and industrial applications. Typical products include purified metals such as bismuth, gallium, germanium, indium, selenium and tellurium, inorganic chemicals based on such metals and compound semiconductor wafers. Many of these are critical precursors and key enablers in markets such as pharmaceutical, healthcare, renewable energy, aerospace, security and sensing, imaging, technical and industrial materials, extractive and catalytic materials and animal feed additive.

## Reporting Segments

The Company has two reportable segments, namely Electronic Materials and Eco-Friendly Materials. Corresponding operations and activities are managed accordingly by the Company's key decision makers. Segmented operating and financial information, 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<sup>1</sup> which is reconciled to consolidated numbers by taking into account corporate income and expenses.

The Electronic Materials segment operates in North America, Europe and Asia. The Electronic Materials segment manufactures and sells refined metals, compounds and alloys which are primarily used in a number of electronic applications. Typical end-markets include photovoltaics (terrestrial and spatial solar energy), light emitting diodes (LED), displays, high-frequency electronics, medical imaging and thermoelectrics. Main products are associated with the following metals: cadmium, gallium, germanium, indium and tellurium. These are sold either in elemental or alloyed form as well as in the form of chemicals, compounds and wafers. Revenues and earnings associated with recycling services and activities provided to customers of the Electronic Materials segment are also included in the Electronic Materials segment and management of such activities is the responsibility of the Electronic Materials executive team.

The Eco-Friendly Materials segment is so labelled because it is mainly associated with bismuth, one of the very few heavy metals which has no detrimental effect on either human health or in the environment. As a result, bismuth is being increasingly used in a number of applications as a replacement for more harmful metals and chemicals. The Eco-Friendly Materials segment operates in North America, Europe and Asia. The Eco-Friendly Materials segment manufactures and sells refined bismuth and bismuth chemicals, low melting point alloys as well as refined selenium and selenium chemicals. These are used in the pharmaceutical and animal-feed industry as well as in a number of industrial applications including coatings, pigments, metallurgical alloys and electronics. Management of such activities is the responsibility of the Eco-Friendly Materials executive team.

Corporate expenses associated with the head office and unallocated selling, general and administrative expenses (SG&A) together with financial expenses (revenues) have been regrouped under the heading Corporate.

## Vision and Strategy

As a leading global materials technology company with employees and assets throughout the world, we are determined to enable and empower our people in a manner which inspires them to perform collectively at their best and optimize resource utilization to deliver competitive financial returns.

The Company unveiled its Strategic Plan 5N21 ("5N21") designed to enhance profitability while reducing earnings volatility on September 12, 2016. 5N21 focuses on three major pillars:

1. Extracting more value from core businesses and global assets;
2. Optimizing balance of contribution from upstream and downstream activities; and
3. Delivering quality growth from both existing growth initiatives and future M&A opportunities.

---

<sup>1</sup> See Non-IFRS Measures

### Highlights of Q4 2017 and Fiscal Year 2017 – 5N21 Strategic Plan is Paying Off

The Company completed a second financial year under the guidance of its strategic plan 5N21, delivering significant improvement reflected by the various financial metrics, lending credence to the efficacy of the plan. By the end of 2017, nearly all initiatives linked to the first pillar of 5N21, namely extraction of more value from core businesses and existing assets, were successfully completed. At the same time, new initiatives related to the second and third pillars of 5N21, namely increasing contribution from upstream activities and delivering quality growth from new initiatives gained momentum. Consequently, at the end of the year, significant enhancement in margins and profitability were achieved, while, earnings volatility reduced as the Company continued to shift focus from lower margin products with high content of pass-through commodities to products and services requiring higher contribution from value-added activities and technological solutions. Furthermore, the Company continued to deliver recurrent cashflows and further solidified its balance sheet which has enhanced its options going forward.

- During the year, Adjusted EBITDA<sup>1</sup> and EBITDA<sup>1</sup> reached \$25.1 million and \$26.9 million, compared to \$20.1 million and \$15.1 million in 2016. The Adjusted EBITDA demonstrates improved profitability, with gross margin<sup>1</sup> reaching 26.1% compared to 22.4% in 2016 largely supported by growth in value-added activities and services within an environment of stable commodity prices and sustainable demand.
- A number of factors culminated in a net positive impact on EBITDA for 2017 such as optimizing commercial agreements yielding a \$3.0 million gain and a realized gain of \$1.9 million on real estate disposal, all of which were envisioned to support the first pillar of 5N21, namely extracting more value from core businesses and existing assets. However, the EBITDA was negatively impacted by the repositioning of activities linked to production of powder alloys triggering an impairment charge of \$3.1 million.
- The Adjusted EBITDA and EBITDA for the fourth quarter reached \$6.1 million and \$4.4 million in 2017 compared to \$4.3 million and \$4.8 million in 2016.
- Net earnings for the year 2017 reached \$12.0 million or \$0.14 per share compared to a net loss of \$5.9 million or (\$0.07) per share for the year 2016.
- Growth in sales from products and services with higher value-added component resulted in significant improvement in gross margin percentage and absolute dollars reaching \$57.3 million in 2017 compared to \$51.8 million in 2016. Revenue in 2017 reached \$219.9 million compared to \$231.5 million in 2016, mainly due to lower sales of pass-through metal component, consistent with the Company's plan to reduce its earnings volatility. Return on Capital Employed (ROCE)<sup>1</sup> reached 12.3% in 2017 as compared to 6.7% in 2016 reflecting the overall margin expansion associated with the Company's products and services.
- Net debt<sup>1</sup> was further reduced during the year and stood at \$11.4 million as at December 31, 2017 down from \$19.0 million for the same period last year, positively impacted by working capital management and overall better performance.
- Backlog<sup>1</sup> reached as at December 31, 2017 a level of 187 days of sales outstanding, higher than the previous quarter following the renewal pattern of most contracts which generally occurs in the fourth quarter or the first quarter of the year. Bookings<sup>1</sup> in Q4 2017 reached 108 days compared to 118 days in Q3 2017 and 78 days in Q4 2016.
- On February 20, 2017, 5N Plus announced changes to its executive management structure. Responsibilities assumed by the former functions of Chief Commercial Officer and Chief Operating Officer were reallocated across the existing business segments Eco-Friendly and Electronic Materials.

---

<sup>1</sup> See Non-IFRS Measures



- On March 2, 2017, la Caisse de dépôt et placement du Québec announced the acquisition of 8,700,000 additional shares of 5N Plus on the secondary market, reinvesting \$14.8 million, bringing la Caisse's ownership to 18.93%.
- On October 11, 2017, 5N Plus announced that its Electronic Materials segment had been awarded a multi-year program by the U.S. Government to supply engineered semiconductor materials essential for space and aeronautical missions. The award was granted following a comprehensive multi-party competitive process with emphasis on total value creation based on products and services rendered. The program is expected to commence in the second half of 2018.
- On November 6, 2017, 5N Plus announced that the footprint optimization initiatives announced a year earlier, when unveiling its 5N21, had been completed. As a part of this initiative, all key product lines formerly produced at its Wellingborough, U.K, plant have been successfully relocated to other plants within the Group, namely plants in Canada, Germany and China.
- On December 7, 2017, 5N Plus announced its entry into the animal feed minerals market, focusing initially on the production and development of animal feed containing trace elements essential for good health and nutrition. This sector of the feed minerals market is assessed to be worth in excess of \$100 million annually. The Company's investments will be in multiple phases with the initial tranche aimed at establishing capacity and capability in Europe and is slated for completion within 12 months, with qualification samples available in Q4 2018 and volume production shortly thereafter.

The end of 2017 marks the second, and a full year, under 5N21. Thus far, the Company's performance is driven by the execution of the plan's short-term objectives, mainly related to optimizing core businesses and global assets. The outcome can be summarized by significant growth in profitability, enhancement in quality of earnings and reduction of earnings volatility. Consequently, return on capital employed has improved markedly and the Company has continued to strengthen its balance sheet aided by recurrent cashflows.

With the short-term objectives of the plan successfully fulfilled, the Company has intensified its focus on mid to long-term objectives under 5N21 with the aim of transforming itself from a specialty chemicals and metals company to a leading materials technology company across the globe. Further expansion into future markets with value-added activities, increased contribution from growth initiatives and exerting more control over pass-through component of sales will be the topics of focus and relevance.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### Summary of Results

	Q4 2017	Q4 2016	FY 2017	FY 2016
	\$	\$	\$	\$
Revenue	52,492	54,704	219,916	231,498
Adjusted operating expenses <sup>1*</sup>	(46,441)	(50,373)	(194,799)	(211,387)
Adjusted EBITDA <sup>1</sup>	6,051	4,331	25,117	20,111
Impairment of inventory	-	-	-	-
Gain on disposal of property, plant and equipment	1,497	-	1,887	-
Impairment of non-current assets	(3,100)	-	(3,100)	-
Litigation and restructuring (costs) income	(415)	-	2,953	(5,945)
Change in fair value of debenture conversion option	67	14	85	20
Foreign exchange and derivative gain (loss)	320	458	(79)	925
EBITDA <sup>1</sup>	4,420	4,803	26,863	15,111
Interest on long-term debt, imputed interest and other interest expense	1,372	1,851	6,097	8,241
Depreciation and amortization	2,434	2,120	8,226	10,739
Earnings (loss) before income taxes	614	832	12,540	(3,869)
Income tax expense (recovery)				
Current	243	(1,145)	3,595	440
Deferred	(1,851)	1,819	(3,068)	1,587
	(1,608)	674	527	2,027
Net earnings (loss)	2,222	158	12,013	(5,896)
Basic earnings (loss) per share	\$0.03	\$0.00	\$0.14	(\$0.07)
Diluted earnings (loss) per share	\$0.03	\$0.00	\$0.14	(\$0.07)

\*Excluding litigation and restructuring (income) costs, impairment of non-current assets, gain on disposal of property, plant and equipment and depreciation and amortization.

### Revenue by Segment and Gross Margin

	Q4 2017	Q4 2016	Change	FY 2017	FY 2016	Change
	\$	\$		\$	\$	
Electronic Materials	17,917	19,333	(7%)	73,448	79,038	(7%)
Eco-Friendly Materials	34,575	35,371	(2%)	146,468	152,460	(4%)
<b>Total revenue</b>	<b>52,492</b>	<b>54,704</b>	<b>(4%)</b>	<b>219,916</b>	<b>231,498</b>	<b>(5%)</b>
Cost of sales	(41,035)	(44,802)	(8%)	(170,514)	(190,037)	(10%)
Depreciation on property, plant and equipment (PPE)	2,363	2,046	15%	7,908	10,353	(24%)
<b>Gross margin<sup>1</sup></b>	<b>13,820</b>	<b>11,948</b>	<b>16%</b>	<b>57,310</b>	<b>51,814</b>	<b>11%</b>
<b>Gross margin percentage<sup>1</sup></b>	<b>26.3%</b>	<b>21.8%</b>		<b>26.1%</b>	<b>22.4%</b>	

During Q4 2017 and FY 2017, revenue decreased by 4% and 5% respectively compared to the same periods of 2016. Although sales volumes were lower in 2017, gross margin<sup>1</sup> has improved reflecting the moderate price stability in metals supported by our selective approach focused on better margin products. The gross margin reached 26.3% in Q4 2017 compared to 21.8% in Q4 2016, tracking an average gross margin of 26.1% for the year, or \$57.3 million compared to 22.4%, or \$51.8 million for 2016.

<sup>1</sup> See Non-IFRS Measures

## Operating earnings, EBITDA and Adjusted EBITDA

	Q4 2017	Q4 2016	Change	FY 2017	FY 2016	Change
	\$	\$		\$	\$	
Electronic Materials	5,642	5,111	10%	24,835	19,824	25%
Eco-Friendly Materials	3,667	2,544	44%	14,976	13,467	11%
Corporate	(3,258)	(3,324)	2%	(14,694)	(13,180)	(11%)
<b>Adjusted EBITDA<sup>1</sup></b>	<b>6,051</b>	<b>4,331</b>	<b>40%</b>	<b>25,117</b>	<b>20,111</b>	<b>25%</b>
<b>EBITDA<sup>1</sup></b>	<b>4,420</b>	<b>4,803</b>	<b>(8%)</b>	<b>26,863</b>	<b>15,111</b>	<b>78%</b>
<b>Operating earnings</b>	<b>1,599</b>	<b>2,211</b>	<b>(28%)</b>	<b>18,631</b>	<b>3,427</b>	<b>444%</b>

In Q4 2017, operating earnings decreased by \$0.6 million to \$1.6 million compared to \$2.2 million in Q4 2016, mainly impacted by an impairment of non-current assets mitigated by better realized gross margins<sup>1</sup>, and a gain on disposal of redundant property, plant and equipment ("PPE"). In FY 2017, operating earnings rose by \$15.2 million and reached \$18.6 million compared to \$3.4 million for the corresponding period last year, positively impacted by better realized gross margins, favorable litigation and restructuring income, lower depreciation and amortization, and a gain on disposal of properties, before impairment of non-current assets recorded in 2017.

In Q4 2017, EBITDA<sup>1</sup> reached \$4.4 million compared to \$4.8 million in Q4 2016. In Q4 2017, the Company's EBITDA was positively impacted by better realized gross margins, moderate price stability for most metals, and sustainable demand for its products as well as by the same reasons mentioned above.

Adjusted EBITDA<sup>1</sup> for the Electronic Materials segment increased by \$0.5 million to \$5.6 million representing an Adjusted EBITDA margin<sup>1</sup> of 31% compared to 26% in Q4 2016. Adjusted EBITDA for the Eco-Friendly Materials segment increased by \$1.1 million representing an Adjusted EBITDA margin of 11% compared to 7% in Q4 2016.

For the same reasons mentioned above, EBITDA for FY 2017 increased by \$11.8 million to \$26.9 million compared to \$15.1 million for the same period last year. For FY 2017, Adjusted EBITDA of the Electronic Materials segment increased by \$5.0 million to \$24.8 million representing an Adjusted EBITDA margin of 34% compared to 25% last year. Adjusted EBITDA for the Eco-Friendly Materials segment increased by \$1.5 million to \$15.0 million, representing an Adjusted EBITDA margin of 10% compared to 9% last year. The Adjusted EBITDA under Corporate for FY 2017 decreased compared to FY 2016 due to higher long-term incentive plan provisions recorded following the important increase of the Company's share price during the period.

## Net Earnings (Loss) and Adjusted Net Earnings

	Q4 2017	Q4 2016	FY 2017	FY 2016
	\$	\$	\$	\$
Net earnings (loss)	2,222	158	12,013	(5,896)
Basic earnings (loss) per share	\$0.03	\$0.00	\$0.14	(\$0.07)
Reconciling items:				
Accelerated depreciation of tangible assets	-	-	-	1,804
Litigation and restructuring costs (income)	415	-	(2,953)	5,945
Gain on disposal of property, plant and equipment	(1,497)	-	(1,887)	-
Impairment of non-current assets	3,100	-	3,100	-
Change in fair value of debenture conversion option	(67)	(14)	(85)	(20)
Income tax (expense) recovery on taxable items above	(812)	4	416	5
<b>Adjusted net earnings<sup>1</sup></b>	<b>3,361</b>	<b>148</b>	<b>10,604</b>	<b>1,838</b>
<b>Basic adjusted net earnings per share<sup>1</sup></b>	<b>\$0.04</b>	<b>\$0.00</b>	<b>\$0.13</b>	<b>\$0.02</b>

<sup>1</sup> See Non-IFRS Measures

## MANAGEMENT'S DISCUSSION AND ANALYSIS

Net earnings reached \$2.2 million in Q4 2017 compared to \$0.2 million in Q4 2016. In Q4 2017, Adjusted net earnings<sup>1</sup> increased by \$3.2 million and reached \$3.4 million compared to \$0.1 million in Q4 2016. Excluding the income tax expense, the main items reconciling the Adjusted net earnings in Q4 2017 are the impairment of non-current assets, higher litigation and restructuring costs mitigated by the gain on disposal of a redundant PPE.

Net earnings reached \$12.0 million in FY 2017 compared to a net loss of \$5.9 million in FY 2016. In FY 2017, Adjusted net earnings increased by \$8.8 million and reached \$10.6 million compared to \$1.8 million in FY 2016. Excluding the income tax expense, the main items reconciling the Adjusted net earnings for FY 2017 were costs related to the termination of a non-core activity and impairment on non-current assets mitigated by an income resulting from an amendment to optimize commercial agreements as well as gains on disposal on redundant PPE.

### Bookings and Backlog

	BACKLOG <sup>1</sup>			BOOKINGS <sup>1</sup>		
	Q4 2017	Q3 2017	Q4 2016	Q4 2017	Q3 2017	Q4 2016
	\$	\$	\$	\$	\$	\$
Electronic Materials	59,705	57,590	35,417	20,032	30,639	13,821
Eco-Friendly Materials	47,681	40,334	46,377	41,922	34,418	32,702
<b>Total</b>	<b>107,386</b>	<b>97,924</b>	<b>81,794</b>	<b>61,954</b>	<b>65,057</b>	<b>46,523</b>

(number of days based on annualized revenues) *	BACKLOG <sup>1</sup>			BOOKINGS <sup>1</sup>		
	Q4 2017	Q3 2017	Q4 2016	Q4 2017	Q3 2017	Q4 2016
Electronic Materials	304	298	167	102	159	65
Eco-Friendly Materials	126	113	120	111	96	84
Weighted average	187	178	136	108	118	78

\*Bookings and backlog are also presented in number of days to normalize the impact of commodity prices.

#### Q4 2017 vs Q3 2017

Backlog<sup>1</sup> as at December 31, 2017 reached a level of 187 days of annualized revenue, representing an increase of 9 days compared to the previous quarter.

Backlog as at December 31, 2017 for the Electronic Materials segment represented 304 days of annualized segment revenue, an increase of 6 days or 2% over the backlog ended September 30, 2017. The backlog for the Eco-Friendly Materials segment represented 126 days of annualized segment revenue, an increase of 13 days or 12% over the backlog ended September 30, 2017.

Bookings<sup>1</sup> for the Electronic Materials segment decreased by 57 days, from 159 days in Q3 2017 to 102 days in Q4 2017. Bookings for the Eco-Friendly Materials segment increased by 15 days, from 96 days in Q3 2017 to 111 days in Q4 2017.

#### Q4 2017 vs Q4 2016

Backlog as at December 31, 2017 for the Electronic Materials segment increased by 137 days and by 6 days for the Eco-Friendly Materials segment compared to December 31, 2016.

Bookings increased by 37 days for the Electronic Materials segment and by 27 days for the Eco-Friendly Materials segment compared to the previous year quarter.

<sup>1</sup> See Non-IFRS Measures



## Expenses

	Q4 2017	Q4 2016	FY 2017	FY 2016
	\$	\$	\$	\$
Depreciation and amortization	2,434	2,120	8,226	10,739
SG&A	6,678	6,195	26,220	25,986
Litigation and restructuring costs (income)	415	-	(2,953)	5,945
Impairment of non-current assets	3,100	-	3,100	-
Financial expenses	985	1,379	6,091	7,296
Income tax (recovery) expense	(1,608)	674	527	2,027
<b>Total expenses</b>	<b>12,004</b>	<b>10,368</b>	<b>41,211</b>	<b>51,993</b>

**Depreciation and Amortization**

Depreciation and amortization expenses in Q4 2017 and FY 2017 amounted to \$2.4 million and \$8.2 million respectively, compared to \$2.1 million and \$10.7 million for the same periods of 2016. The decrease is primarily attributable to the accelerated depreciation recorded in FY 2016 following the Company's decision to optimize its footprint.

**SG&A**

For Q4 2017 and FY 2017, SG&A expenses were \$6.7 million and \$26.2 million respectively, compared to \$6.2 million and \$26.0 million for the same periods of 2016.

**Litigation and Restructuring Costs (Income)**

In Q4 2017, the Company recorded litigation and restructuring costs of \$0.4 million related to an incident delaying the consolidation of US operations into a new updated and scaled facility, initiative announced in 2016. In FY 2017, the Company recognized in Q1 2017 an income resulting from contract amendments for securing higher margins in the short term versus higher market share in the downstream business mitigated by costs related to the termination of non-core commercial activities in the upstream business activities, for a net income of \$3.0 million.

In Q3 2016, the Company recorded a provision for litigation and restructuring costs of \$4.9 million. Following the Company's announcement to consolidate its operations at Wellingborough, U.K. with other sites within the Group, and its operations at DeForest, Wisconsin, U.S.A. and Fairfield, Connecticut, U.S.A. during the first half of 2017 into a newly updated and scaled facility, the Company recorded restructuring and severance costs and other facility closure costs of \$3.5 million. The Company also recorded in Q3 2016, litigation costs of \$1.0 million following initiatives to renegotiate unfavourable purchasing contracts. In Q1 2016, the Company had recorded non-recurring costs of \$1.0 million for the closure of an administrative office in Europe as well as for the settlement of unfavorable supply contracts.

**Impairment of non-current assets**

In Q4 2017, the Company recorded an impairment charge on non-current assets of \$3.1 million (\$1.1 million for production equipment, \$0.8 million for technology and \$1.1 for development costs), included in the Electronic Materials segment, reflecting recent development to assumptions used in assessing the carrying value of specific product development assets. The change in assumptions is from an active decision to alter the market penetration strategy, other factors remaining constant. It is motivated by intentional delays in increasing production level in order to prioritize products with higher premiums in niche applications requiring longer market development cycle compared to other products. A discount rate of 17.5% was used to determine the recoverable amount of these non-current assets.

**Financial Expenses and Revenues**

Financial expenses for Q4 2017 amounted to \$1.0 million compared to \$1.4 million for the same period last year. The decrease in financial expenses of \$0.4 million is mainly due to lower imputed interest compared to last year.

Financial expenses for FY 2017 amounted to \$6.1 million compared to \$7.3 million for the same period last year. The decrease in financial expenses of \$1.2 million is mainly due to lower imputed interest and other interest expenses mitigated by unfavorable foreign exchange and derivatives when compared to last year.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### Income Taxes

The Company reported earnings before income taxes of \$0.6 million in Q4 2017 and \$12.5 million in FY 2017. Income tax recovery for Q4 2017 was \$1.6 million while income tax expense was \$0.5 million for FY 2017 compared to \$0.7 million and \$2.0 million for the same periods last year. These amounts were favorably impacted by deferred tax assets applicable in certain jurisdictions.

### Liquidity and Capital Resources

	Q4 2017	Q4 2016	FY 2017	FY 2016
	\$	\$	\$	\$
Funds from operations <sup>1</sup>	5,398	5,256	26,336	12,486
Net changes in non-cash working capital items	(7,511)	(2,048)	(13,226)	10,978
Operating activities	(2,113)	3,208	13,110	23,464
Investing activities	137	(2,882)	(4,788)	(7,793)
Financing activities	807	946	884	(1)
Effect of foreign exchange rate changes on cash and cash equivalents	129	(218)	517	(185)
<b>Net (decrease) increase in cash and cash equivalents</b>	<b>(1,040)</b>	<b>1,054</b>	<b>9,723</b>	<b>15,485</b>

Cash used in operating activities amounted to \$2.1 million for Q4 2017 compared to cash generated of \$3.2 million for Q4 2016. The decrease is mainly due to negative variance from working capital changes. In FY 2017, cash provided by operating activities amounted to \$13.1 million compared to \$23.5 million in FY 2016 for the same reasons mentioned above mitigated by the increase in EBITDA<sup>1</sup>. The negative change of non-cash working capital resulted mainly from an increase of \$10.3 million in inventory aimed at hedging commercial positions, and \$6.2 million in other current assets referring to an equity swap agreement.

In Q4 2017, cash generated by investing activities totaled \$0.1 million compared to cash used of \$2.9 million for Q4 2016. This increase is mainly explained by proceeds from the disposal of redundant PPE. For FY 2017, cash used in investing activities decreased for the same reasons mentioned above.

Cash provided by financing activities amounted to \$0.8 million in Q4 2017, compared to \$0.9 million in Q4 2016. In FY 2017, cash provided by financing activities amounted to \$0.9 million compared to \$nil in FY 2016. The increase is associated with the timing of contributions from a product development partnership program. At the end of FY 2017 and FY 2016, the Company had no drawdown under its credit facility.

### Working Capital

	As at December 31, 2017	As at December 31, 2016
	\$	\$
Inventories	90,647	80,309
Other current assets	74,581	63,750
Current liabilities	(68,653)	(66,128)
<b>Working capital<sup>1</sup></b>	<b>96,575</b>	<b>77,931</b>
<b>Working capital current ratio<sup>1</sup></b>	<b>2.41</b>	<b>2.18</b>

The increase in working capital<sup>1</sup> compared to December 31, 2016 was mainly attributable to increase in cash and cash equivalents, higher inventory, as the Company is protecting specific commercial positions combined with an increase in other current assets to participate in an equity swap agreement in order to reduce earnings volatility.

<sup>1</sup> See Non-IFRS Measures

## Net Debt

	As at December 31, 2017	As at December 31, 2016
	\$	\$
Bank indebtedness	-	-
Long-term debt including current portion	271	325
Convertible debentures	48,768	43,157
Cross-currency swap	(3,602)	(189)
<b>Total Debt</b>	<b>45,437</b>	<b>43,293</b>
Cash and cash equivalents	(34,024)	(24,301)
<b>Net Debt<sup>1</sup></b>	<b>11,413</b>	<b>18,992</b>

Total debt, including the cross-currency swap, increased by \$2.1 million to \$45.4 million as at December 31, 2017, compared to \$43.3 million as at December 31, 2016.

Net debt<sup>1</sup>, after considering cash and cash equivalents, decreased by \$7.6 million, from \$19.0 million as at December 31, 2016 to \$11.4 million as at December 31, 2017.

## Available Short-Term Capital Resources

	As at December 31, 2017	As at December 31, 2016
	\$	\$
Cash and cash equivalents	34,024	24,301
Available bank indebtedness	1,530	1,438
Available revolving credit facility (reduced on February 18, 2016 as explained below)	52,998	52,635
<b>Available short-term capital resources</b>	<b>88,552</b>	<b>78,374</b>

In August 2014, the Company signed a senior secured multi-currency revolving credit facility of \$125.0 million maturing in August 2018, which was reduced to \$100.0 million as at June 30, 2015 and subsequently to \$50.0 million as at February 18, 2016.

At any time, the Company has the option to request that the credit facility be expanded through the exercise of an additional \$50.0 million accordion feature, subject to review and approval by the lenders. This revolving credit facility can be drawn in US dollars, Canadian dollars or Hong Kong dollars. Drawings bear interest at either the Canadian prime rate, US base rate, Hong Kong base rate or LIBOR, plus a margin based on the Company's senior consolidated debt to EBITDA<sup>1</sup> ratio. Under the terms of its credit facility, the Company is required to satisfy certain restrictive covenants as to financial ratios. During the first quarter of 2016, an amount of deferred costs of \$0.9 million was expensed and recorded in imputed interest and other interest expense. As at December 31, 2017, the Company had met all covenants.

In August 2014, the Company's subsidiary in Belgium entered into a bi-lateral credit facility of 5.0 million Euros, which was reduced to 2.5 million Euros as at February 18, 2016. This credit facility is coterminous with the new senior secured multi-currency revolving credit facility, and guaranteed by the same security pool. This bi-lateral facility can be drawn in Euros or US dollars and bears interest at similar rates as the revolving credit facility. No amount was used as at December 31, 2017 and 2016.

<sup>1</sup> See Non-IFRS Measures

Share Information

	As at February 20, 2018	As at December 31, 2017
Issued and outstanding shares	83,904,791	83,901,041
Stock options potentially issuable	2,145,587	2,224,747
Convertible debentures potentially issuable	9,777,777	9,777,777

On February 21, 2017, the Toronto Stock Exchange (“TSX”) approved an amendment to the Company’s normal course issuer bid implemented on October 11, 2016. Under this normal course issuer bid amendment, the Company had the right to purchase for cancellation, from October 11, 2016 to October 10, 2017, a maximum of 2,100,000 (previously 600,000) common shares. The Company’s normal course issuer bid program that expired on October 10, 2017 was not renewed. For the year ended December 31, 2017, the Company repurchased and cancelled 475,016 common shares at an average price of \$1.38 for a total amount of \$0.7 million applied against the equity. In the year ended December 31, 2016, the Company repurchased and cancelled 201,100 common shares at an average price of \$1.26 for a total amount of \$0.3 million applied against the equity.

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 as at December 31, 2017 may be exercised during a period not exceeding six years from their date of grant. 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.

Restricted Share Unit and Performance Share Unit Plan

On November 4, 2015, the Company adopted a new Restricted Share Unit and Performance Share Unit (“PSU”) Plan (the “New RSU & PSU Plan”). The New 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 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.

For the year ended December 31, 2017, the Company granted 368,360 New RSUs (2016 – 1,245,000) and 37,500 New RSUs were cancelled (2016 – 20,000). As at December 31, 2017, 1,555,860 New RSUs were outstanding (2016 – 1,225,000).

For the year ended December 31, 2017, the Company granted nil PSUs (2016 – 500,000) and, as at December 31, 2017, 500,000 PSUs were outstanding (2016 – 500,000).

The following table presents information concerning all outstanding stock options:

	2017		2016	
	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
		CA\$		CA\$
Outstanding, beginning of year	2,860,648	2.63	1,558,345	3.74
Granted	288,000	1.75	1,445,000	1.65
Exercised	(597,500)	1.75	-	-
Cancelled	(116,476)	2.50	-	-
Expired	(209,925)	8.59	(142,697)	4.90
Outstanding, end of year	2,224,747	2.20	2,860,648	2.63
Exercisable, end of year	1,001,497	2.59	1,311,898	3.39

### Off-Balance Sheet Arrangements

The Company has certain off-balance sheet arrangements, consisting of leasing certain premises and equipment under the terms of operating leases and contractual obligations in the normal course of business.

The Company is exposed to currency risk on sales in Euro and other currencies and therefore periodically enters into foreign currency forward contracts to protect itself against currency fluctuation. The reader will find more details related to these contracts in Notes 16 and 24 of the audited consolidated financial statements for the year ended December 31, 2017.

The following table reflects the contractual maturity of the Company's financial liabilities as at December 31, 2017:

	Carrying amount	1 year	2 years	3 years	Total
	\$	\$	\$	\$	\$
Trade and accrued liabilities	57,043	57,043	-	-	57,043
Long-term debt	271	271	-	-	271
Convertible debentures	48,768	3,170	50,474	-	53,644
<b>Total</b>	<b>106,082</b>	<b>60,484</b>	<b>50,474</b>	<b>-</b>	<b>110,958</b>

### Commitments

The Company rents certain premises and equipment under the terms of operating leases. Future minimum payments excluding operating costs are as follows:

	2017	2016
	\$	\$
No later than 1 year	1,828	2,044
Later than 1 year but no later than 5 years	3,316	4,367
Later than 5 years	-	-
<b>Total</b>	<b>5,144</b>	<b>6,411</b>

As at December 31, 2017, in the normal course of business, the Company contracted letters of credit for an amount of \$0.4 million and \$0.7 million as at December 31, 2016.

### 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.

### 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.



## MANAGEMENT'S DISCUSSION AND ANALYSIS

An evaluation was carried out, under the supervision of the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the Company's disclosure controls and procedures. 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 our ICFR during the fiscal year ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

### Accounting Policies and Changes

The Company established its accounting policies and methods used in the preparation of its audited consolidated financial statements for the fiscal year 2017 in accordance with IFRS. The Company's significant accounting policies are described in Note 2 of the audited consolidated financial statements for the year ended December 31, 2017.

### Future Changes in Accounting Policies

The following standards have been issued but are not yet effective:

In May 2014, the IASB issued IFRS 15 "Revenues from Contracts with Customers", this new IFRS standard is applicable by the Company no later than January 1, 2018. IFRS 15 will supersede current revenue recognition guidance including IAS 18 "Revenue" and IAS 11 "Construction Contracts". It applies to new contracts at the effective date and to existing contracts that are not yet completed at the effective date, January 1, 2018.

IFRS 15 is currently under review by the Company assessing its impact on the consolidated financial statements of fiscal year 2017, the assessment extending through fiscal year 2018. 5N Plus will adopt the "modified approach", whereby the cumulative effect will be recorded as an adjustment to the opening balance sheet or retained earnings on the effective date, rather than a retroactive restatement of prior periods. At this point in time, we are still finalizing our review.

In July 2014, the IASB amended IFRS 9, "Financial Instruments", to bring together the classification and measurement, impairment and hedge accounting phases of the IASB's project to replace IAS 39, "Financial Instruments: Recognition and Measurement". The standard supersedes all previous versions of IFRS 9 and will be mandatory on January 1, 2018 for the Company with earlier application permitted. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In January 2016, IASB issued IFRS 16, "Leases", which specifies how an IFRS reporter will recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. Lessors continue to classify leases as operating or finance, with IFRS 16's approach to lessor accounting substantially unchanged from its predecessor, IAS 17. The standard will be mandatory for annual periods beginning on or after January 1, 2019. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In June 2017, the IFRS Interpretations Committee of the IASB issued IFRIC 23, Uncertainty over Income Tax Treatments (IFRIC 23). The interpretation provides guidance on the accounting for current and deferred tax liabilities and assets in circumstances in which there is uncertainty over income tax treatments. The interpretation is effective for the annual

period beginning on January 1, 2019. The Company has concluded that no impact will result from the application of IFRIC 23 on its 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 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 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 are tested for impairment at least annually, which also requires significant judgement. To determine the recoverable amount (fair value less cost to dispose of these assets), management estimates expected future cash flows from the asset 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, management makes assumptions about future operating results using the estimated forecasted prices obtained from various market sources including publically available metals information as at December 31, 2017. These key assumptions relate to future events and circumstances. The actual results will vary and may cause adjustments to the Company's intangible and tangible assets in future periods.

By their nature, assets not yet available for intended use have a higher estimation uncertainty, as they depend on future market development and the Company's ability to commercialize and manufacture new products to realize forecasted earnings. For example new manufacturing processes may not be scalable to industrial level within expected timeframe and new products might not receive sufficient market penetration. Management believes that the following assumptions are the most susceptible to change and impact the valuation of these assets in time: a) expected significant growth of the market for different metal products (demand), b) selling prices which have an impact on revenues and metal margins (pricing), and c) the discount rate associated with new processes and products (after considering a premium over the Company's weighted average cost of capital (WACC) to reflect the additional uncertainty).

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.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### Inventories

Inventories are measured 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.

### Debenture conversion option

The convertible debentures issued by the Company included conversion and early redemption options, which are considered as Level 3 financial instruments. The derivative is measured at fair value through profit or loss, and its fair value must be measured at each reporting period, with subsequent changes in fair value recorded in the consolidated statement of earnings (loss). A derivative valuation model is used, and includes assumptions to estimate the fair value. Detailed assumptions used in the model to determine the fair value of the embedded derivative, upon inception and as at December 31, 2017, are provided in note 12 of the 2017 consolidated financial statements of the Company.

### 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 15 of the 2017 consolidated financial statements of the Company.

### Related Party Transactions

The Company's related parties are its joint ventures, directors and executive members. Transactions with these related parties are described in Notes 8 and 23 in the 2017 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 financial instruments and their fair value are discussed in Note 16 – Fair Value of Financial Instruments in the 2017 consolidated financial statements of the Company.

The fair value of the derivative financial instruments was as follows:

	2017	2016
	\$	\$
Debenture conversion option	-	(68)
Cross-currency swap	3,602	189
Equity swap agreement	6,141	-

**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 24 of the 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 and convertible debentures are 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 not have a significant impact on the Company's net earnings.

*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.

On December 7, 2015, the Company entered into cross-currency swap to hedge cash flows under the CA\$ convertible debentures, applying hedge accounting principles to the transaction. In addition, the Company will occasionally enter into foreign exchange forward contracts to sell US 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 US dollars. As at December 31, 2017, the Company has no foreign exchange contracts outstanding.

The following table summarizes in US dollar equivalents the Company's major currency exposures as at December 31, 2017:

	CA\$	EUR	GBP	RMB	Other
	\$	\$	\$	\$	\$
Cash and cash equivalents	660	2,877	2,090	1,396	682
Accounts receivable	438	8,335	81	3,089	1,094
Other current assets	6,141	-	-	-	-
Trade and accrued liabilities	(10,600)	(8,369)	(775)	(2,298)	(1,289)
Long-term debt	(271)	-	-	-	-
Net financial assets (liabilities)	(3,632)	2,843	1,396	2,187	487

The following table shows the impact on earnings before income tax of a five-percentage point strengthening or weakening of foreign currencies against the US dollar as at December 31, 2017 for the Company's financial instruments denominated in non-functional currencies:

	CA\$	EUR	GBP	RMB	Other
	\$	\$	\$	\$	\$
5% Strengthening	(182)	142	70	109	24
5% Weakening	182	(142)	(70)	(109)	(24)

*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.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

The Company establishes an allowance for doubtful accounts as determined by management based on its assessment of recoverability; therefore, the carrying amount of accounts receivable generally represents the maximum credit exposure. As at December 31, 2017 and 2016, the Company had an allowance for doubtful accounts of \$0.1 million. The provision for doubtful accounts, if any, is included in selling, general and administrative expenses in the consolidated statement of earnings (loss), 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 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**

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. Management analyses these risks and implements strategies in order to minimize their impact on the Company's performance.

#### **Risks Associated with our Growth Strategy**

5N Plus' strategic plan is designed to enhance profitability while reducing earnings volatility and is founded on three pillars of growth: first, optimizing balance of contribution from upstream and downstream activities; second, extracting more value from core businesses and global asset; and third, 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.

#### **International Operations**

We operate in a number of 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 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.

#### **International Trade Regulations**

We do business in a number of countries from various locations, as such, face risks associated with changes to International trade regulations and policies. Such risks, included but are not limited to, barriers to or restrictions on free trade, changes in taxes, tariffs and other regulatory costs. Although we operate primarily in countries, with proximity to our clients and suppliers, and with relatively stable economic and political climates, there can be no assurance that our business will not be adversely affected by the risks inherent to the changing international political landscape and its impact on global trade.

#### **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. We have incurred and will continue to incur capital expenditures in order to



comply with these laws and regulations. In addition, violations of, or liabilities under, environmental laws or permits may result in restrictions being imposed on our operating activities or in our being subject to substantial fines, penalties, criminal proceedings, third party property damage or personal injury claims, clean-up costs or other costs. While we believe that we are currently in compliance with applicable environmental requirements, 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.

### **Competition**

We are the leading producer of specialty metal and chemical products and have 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 limitation 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 fluctuates due to numerous factors beyond our control, including economic conditions, currency exchange rates, global demand for metal products, 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. 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.

### **Protection of Intellectual Property**

Protection of our proprietary processes, methods and other technologies is important to our business. We rely almost exclusively on a combination of trade secrets and employee confidentiality agreements to safeguard our intellectual property. We have deliberately chosen to limit our patent position 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.

### **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.

### Dependence on Key Personnel

We rely on the expertise and know-how of its personnel to conduct our operations. The loss of any member of our senior management team could have a material adverse effect on us. Our future success also depends on our ability to retain and attract our 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.

### 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 lock-outs, potentially affecting our performance.

### Risks Associated with Public Issuer Status

Our shares are publicly traded and, as such, we are subject to all of the obligations imposed on "reporting issuers" under applicable securities laws in Canada and all of the obligations applicable to a listed company under stock exchange rules. Another risk associated with a public issuer status is the disclosure of key Company information as compared to privately owned competitors.

### Non-IFRS Measures

In this Management's Report, the Company's management uses certain measures which are not in accordance with IFRS. Non-IFRS measures are useful supplemental information but may not have a standardized meaning according to IFRS.

Backlog represents the expected orders we have received but have 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 days, and is calculated by adding revenues to the increase or decrease in backlog for the period considered divided by annualized year revenues. We use backlog to provide an indication of expected future revenues in days, and bookings to determine our ability to sustain and increase our revenues.

EBITDA means net earnings (loss) before interest expenses (revenues), income taxes, depreciation and amortization. We use EBITDA because we believe it is a meaningful measure of the operating performance of our 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 margin is defined as EBITDA divided by revenues.

Adjusted EBITDA means EBITDA as defined above before impairment of inventories, impairment of non-current assets, litigation and restructuring costs (income), gain on disposal of property, plant and equipment, change in fair value of debenture conversion option, foreign exchange and derivatives loss (gain). We use adjusted EBITDA because we believe it is a meaningful measure of the operating performance of our ongoing business without the effects of inventory write-downs. 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 Operating expenses means Operating charges before litigation and restructuring costs (income), gain on disposal on property, plant and equipment and depreciation and amortization. We use adjusted operating expenses to calculate the Adjusted EBITDA. We believe it is a meaningful measure of the operating performance of our ongoing business. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

Adjusted net earnings (loss) means the net earnings (loss) before the effect of charge of impairment related to inventory, PPE and intangible assets, impairment of goodwill, allowance for doubtful of a note receivable from a related party, litigation and restructuring costs, change in fair value of debenture conversion option net of the related income tax. We use adjusted net earnings (loss) because we believe it is a meaningful measure of the operating performance of our ongoing business without the effects of unusual inventory write-downs and property plant and equipment, intangible asset impairment charges, allowance for doubtful of a receivable from a related party, litigation and restructuring costs and change in fair value of debenture conversion option. 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. We use basic adjusted net earnings (loss) per share because we believe it is a meaningful measure of the operating performance of our ongoing business without the effects of unusual inventory write-downs and property plant and equipment and intangible asset impairment charges, allowance for doubtful of a receivable from a related party, litigation and restructuring costs and change in fair value of debenture conversion option per share. The definition of this non-IFRS measure used by the Company may differ from that used by other companies.

Funds (used in) from operations means the amount of cash generated from operating activities before changes in non-cash working capital balances related to operations. This amount appears directly in the consolidated statements of cash flows of the Company. We consider funds (used in) from operations to be a key measure as it demonstrates the Company's ability to generate cash necessary for future growth and debt repayment.

Gross margin is a measure we use to monitor the sales contribution after paying cost of sales excluding depreciation of property, plant and equipment. We also expressed this measure in percentage of revenues by dividing the gross margin value by the total revenue.

Net debt or net cash is a measure we use to monitor how much debt we have after taking into account cash and cash equivalents. We use it as an indicator of our overall financial position, and calculate it by taking our total debt, including the current portion and the cross-currency swap related to the convertible debenture, and subtracting cash and cash equivalents.

Return on Capital Employed (ROCE) is a non-IFRS financial measure, calculated by dividing the annualized Adjusted EBIT by capital employed at the end of the period. Adjusted EBIT is calculated as the Adjusted EBITDA less depreciation and amortization (adjusted for accelerated depreciation charge, if any). Capital employed is the sum of the accounts receivable, the inventory, the PPE, the goodwill and intangibles less trade and accrued liabilities (adjusted for exceptional items). We use ROCE to measure the return on capital employed, whether the financing is through equity or debt. In our view, this measure provides useful information to determine if capital invested in the Company yields competitive returns. The usefulness of ROCE is limited by the fact that it is a ratio and not providing information as to the absolute amount of our net income, debt or equity. It also excludes certain items from the calculation and other companies may use a similar measure but calculate it differently.

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, we use it as an indicator of our financial efficiency and aim to maintain it at the lowest possible level.

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

### Additional Information

Our 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](http://www.sedar.com).

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### Selected Quarterly Financial Information

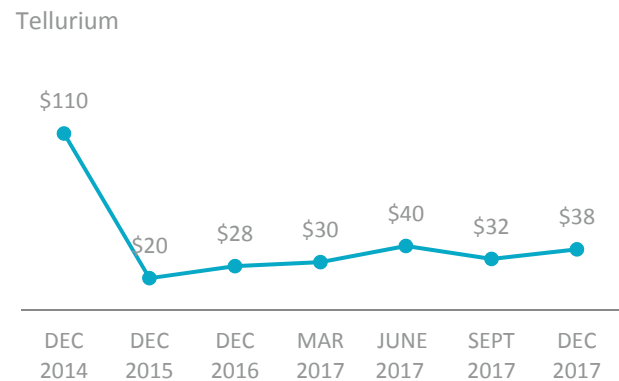
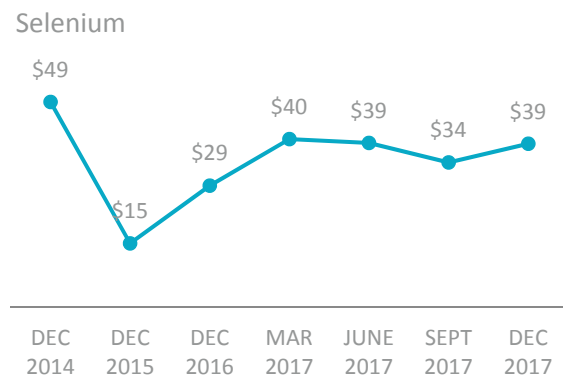
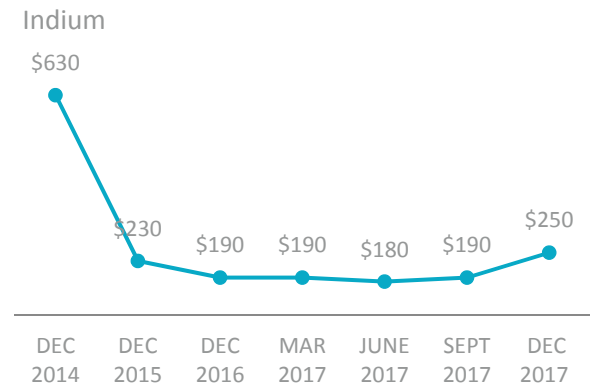
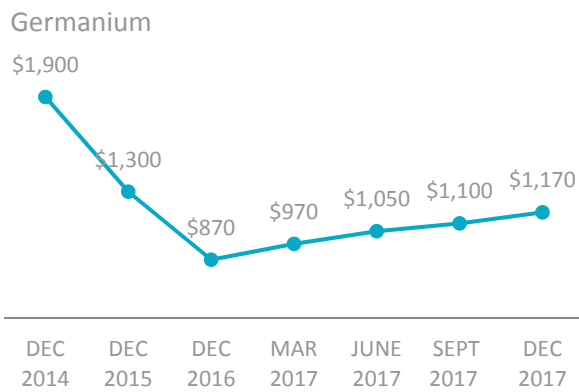
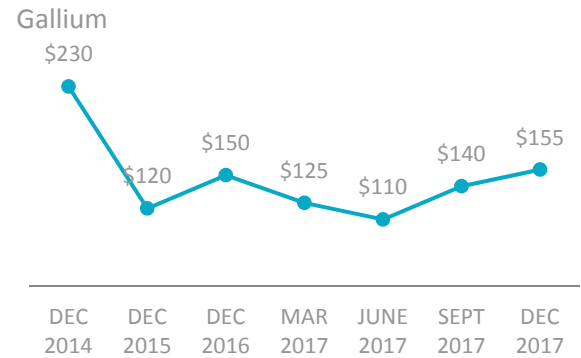
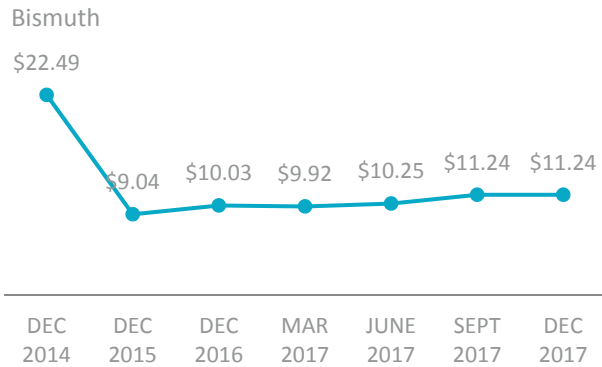
(in thousands of United States dollars except per share amounts)	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017	Dec. 31, 2016	Sept. 30, 2016	June 30, 2016	Mar. 31, 2016
	\$	\$	\$	\$	\$	\$	\$	\$
Revenue	52,492	50,325	56,229	60,870	54,704	55,491	57,435	63,868
EBITDA <sup>1</sup>	4,420	6,427	6,341	9,675	4,803	2,066	5,358	2,884
Adjusted EBITDA <sup>1</sup>	6,051	6,155	6,839	6,072	4,331	6,816	4,714	4,250
Net earnings (loss) attributable to equity holders of 5N Plus	2,229	2,224	3,416	4,154	158	(4,232)	86	(1,907)
Basic earnings (loss) per share attributable to equity holders of 5N Plus	\$0.03	\$0.03	\$0.04	\$0.05	\$-	(\$0.05)	\$-	(\$0.02)
Net earnings (loss)	2,222	2,223	3,415	4,153	158	(4,232)	87	(1,909)
Basic earnings (loss) per share	\$0.03	\$0.03	\$0.04	\$0.05	\$-	(\$0.05)	\$-	(\$0.02)
Diluted earnings (loss) per share	\$0.03	\$0.03	\$0.04	\$0.05	\$-	(\$0.05)	\$-	(\$0.02)
Adjusted net earnings (loss) <sup>1</sup>	3,361	1,994	3,647	1,602	148	2,298	45	(653)
Basic adjusted net earnings (loss) per share <sup>1</sup>	\$0.04	\$0.02	\$0.04	\$0.02	\$-	\$0.03	\$-	(\$0.01)
Funds from operations <sup>1</sup>	5,398	4,263	7,945	8,730	5,256	238	4,521	2,471
Backlog <sup>1</sup>	187 days	178 days	135 days	128 days	136 days	148 days	157 days	145 days

### Selected Yearly Financial Information

As at and for the years ended December 31 (in thousands of United States dollars except per share amounts)	2017	2016	2015
	\$	\$	\$
Revenue	219,916	231,498	311,012
EBITDA	26,863	15,111	(54,696)
Adjusted EBITDA	25,117	20,011	3,959
Net earnings (loss) attributable to equity holders of 5N Plus	12,023	(5,895)	(97,198)
Basic earnings(loss) per share attributable to equity holders of 5N Plus	\$0.14	(\$0.07)	(\$1.16)
Net earnings (loss)	12,013	(5,896)	(97,201)
Basic earnings (loss) per share	\$0.14	(\$0.07)	(\$1.16)
Diluted earnings (loss) per share	\$0.14	(\$0.07)	(\$1.16)
Adjusted net earnings (loss)	10,604	1,838	(27,215)
Basic adjusted net earnings (loss) per share	\$0.13	\$0.02	(\$0.32)
Funds from (used in) operations	26,336	12,486	(9,851)
Backlog	187 days	136 days	158 days
Balance Sheet			
Total assets	244,932	219,057	220,737
Total non-current liabilities	70,851	64,415	78,335
Net debt <sup>1</sup>	11,413	18,992	34,862
Shareholders' equity	105,446	88,522	96,632

<sup>1</sup> See Non-IFRS Measures

**Metal Prices**  
(in U.S. dollars per kilo)



Source : Low Metal Bulletin



# Management's Report to the Shareholders of 5N Plus Inc.

The consolidated financial statements and related notes have been prepared by management in conformity with generally accepted accounting principles in Canada which incorporates International Financial Reporting Standards. Management is responsible for the selection of accounting policies and making significant accounting judgements and estimates.

Management is also responsible for all other information included in the management's discussion and analysis and for ensuring that this information is consistent with the information contained in the consolidated financial statements.

Management is responsible for establishing and maintaining adequate internal control over financial reporting which includes those policies and procedures that provide reasonable assurance over the safeguarding of assets and over the completeness, fairness and accuracy of the consolidated financial statements.

The Audit and Risk Management Committee, which is comprised entirely of independent directors, reviews the quality and integrity of the Corporation's financial reporting and provides its recommendations, in respect of the approval of the financial statements, to the Board of Directors; oversees management's responsibilities as to the adequacy of the supporting systems of internal controls; provides oversight of the independence, qualifications, and appointment of the external auditor; and, review audit, audit-related, and non-audit fees and expenses. The Board of Directors approves the Corporation's consolidated financial statements and management's discussion and analysis disclosures prior to their release. The Audit and Risk Management Committee meets with management, the internal auditors and external auditors at least four times each year to review and discuss financial reporting, disclosures, auditing and other matters.

The external auditors, PricewaterhouseCoopers LLP, conduct an independent audit of the consolidated financial statements in accordance with Canadian generally accepted auditing standards and express their opinion thereon. Those standards require that the audit is planned and performed to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. The external auditors have unlimited access to the Audit and Risk Management Committee and meet with the Committee on a regular basis.

*(signed) Arjang J. Roshan*  
\_\_\_\_\_  
Arjang J. Roshan  
President and Chief Executive Officer

*(signed) Richard Perron*  
\_\_\_\_\_  
Richard Perron  
Chief Financial Officer

Montréal, Canada  
February 20, 2018



**February 20, 2018**

## **Independent Auditor's Report**

**To the Shareholders of  
5N Plus Inc.**

We have audited the accompanying consolidated financial statements of 5N Plus Inc. and its subsidiaries, which comprise the consolidated statements of financial position as at December 31, 2017 and 2016 and the consolidated statements of earnings (loss), comprehensive income (loss), changes in equity and cash flows for the years then ended, and the related notes, which comprise a summary of significant accounting policies and other explanatory information.

### **Management's responsibility for the consolidated financial statements**

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's responsibility**

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a basis for our audit opinion.

---

*PricewaterhouseCoopers LLP/s.r.l./s.e.n.c.r.l.  
1250 René-Lévesque Boulevard West, Suite 2500, Montréal, Quebec, Canada H3B 4Y1  
T: +1 514 205 5000, F: +1 514 876 1502*

"PwC" refers to PricewaterhouseCoopers LLP, an Ontario limited liability partnership.



**Opinion**

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of 5N Plus Inc. and its subsidiaries as at December 31, 2017 and 2016 and their financial performance and their cash flows for the years then ended in accordance with International Financial Reporting Standards.

*PricewaterhouseCoopers LLP<sup>1</sup>*

---

CPA auditor, CA, public accountancy permit No. A123642

## CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(in thousands of United States dollars)

	Notes	December 31 2017	December 31 2016
		\$	\$
<b>Assets</b>			
<b>Current</b>			
Cash and cash equivalents		34,024	24,301
Accounts receivable	4	25,639	29,799
Inventories	5	90,647	80,309
Income tax receivable	15	6,145	6,819
Other current assets	16	8,773	2,831
<b>Total current assets</b>		<b>165,228</b>	<b>144,059</b>
Property, plant and equipment	6,26	56,607	59,945
Intangible assets	7,26	10,856	11,109
Deferred tax assets	15	6,891	1,883
Investment accounted for using the equity method	8	718	779
Derivative financial assets	16	3,602	189
Other assets	9	1,030	1,093
<b>Total non-current assets</b>		<b>79,704</b>	<b>74,998</b>
<b>Total assets</b>		<b>244,932</b>	<b>219,057</b>
<b>Liabilities</b>			
<b>Current</b>			
Trade and accrued liabilities	10	57,043	57,381
Income tax payable	15	11,339	8,422
Current portion of long-term debt	11	271	325
<b>Total current liabilities</b>		<b>68,653</b>	<b>66,128</b>
Convertible debentures	12	48,768	43,157
Deferred tax liabilities	15	251	715
Employee benefit plan obligation	13	15,396	14,813
Derivative financial liabilities	16	-	68
Other liabilities	14,18	6,436	5,662
<b>Total non-current liabilities</b>		<b>70,851</b>	<b>64,415</b>
<b>Total liabilities</b>		<b>139,504</b>	<b>130,543</b>
<b>Equity</b>			
Equity holders of 5N Plus Inc.		105,446	88,522
Non-controlling interest		(18)	(8)
<b>Total equity</b>		<b>105,428</b>	<b>88,514</b>
<b>Total liabilities and equity</b>		<b>244,932</b>	<b>219,057</b>

Commitments and contingencies (Note 22)

The accompanying notes are an integral part of these consolidated financial statements.

## CONSOLIDATED STATEMENTS OF EARNINGS (LOSS)

Years ended December 31  
(in thousands of United States dollars, except per share information)

	Notes	2017	2016
		\$	\$
<b>Revenue</b>		<b>219,916</b>	231,498
Cost of sales	26	170,514	190,036
Selling, general and administrative expenses	26	26,220	25,986
Other expenses, net	26	4,441	12,072
Share of loss (gain) from joint ventures	8	110	(23)
		<b>201,285</b>	228,071
<b>Operating earnings</b>		<b>18,631</b>	3,427
<b>Financial expenses</b>			
Interest on long-term debt		3,261	3,429
Imputed interest and other interest expense		2,836	4,812
Changes in fair value of debenture conversion option	16	(85)	(20)
Foreign exchange and derivative loss (gain)		79	(925)
		<b>6,091</b>	7,296
<b>Earnings (loss) before income taxes</b>		<b>12,540</b>	(3,869)
Income tax expense (recovery)			
Current	15	3,595	440
Deferred	15	(3,068)	1,587
		<b>527</b>	2,027
<b>Net earnings (loss)</b>		<b>12,013</b>	(5,896)
<b>Attributable to:</b>			
Equity holders of 5N Plus Inc.		12,023	(5,895)
Non-controlling interest		(10)	(1)
		<b>12,013</b>	(5,896)
<b>Earnings (loss) per share attributable to equity holders of 5N Plus Inc.</b>	20	<b>0.14</b>	(0.07)
<b>Basic earnings (loss) per share</b>	20	<b>0.14</b>	(0.07)
<b>Diluted earnings (loss) per share</b>	20	<b>0.14</b>	(0.07)

The accompanying notes are an integral part of these consolidated financial statements.



## CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

Years ended December 31  
(Figures in thousands of United States dollars)

	Notes	2017	2016
		\$	\$
<b>Net earnings (loss)</b>		<b>12,013</b>	(5,896)
<b>Other comprehensive income (loss)</b>			
<b>Items that may be reclassified subsequently to net earnings (loss)</b>			
Net changes in cash flow hedges			
Effective portion of changes in fair value of cash flow hedges	16	3,413	1,632
Reclassification to net earnings (loss)		(3,643)	(1,221)
Income taxes		30	(55)
		(200)	356
Currency translation adjustment		1,121	(1,193)
		921	(837)
<b>Items that will not be reclassified subsequently to net earnings (loss)</b>			
Remeasurement of employee benefit plan obligation	13	1,062	(1,643)
Income taxes		2,374	-
		3,436	(1,643)
<b>Other comprehensive income (loss)</b>		<b>4,357</b>	(2,480)
<b>Comprehensive income (loss)</b>		<b>16,370</b>	(8,376)
Attributable to equity holders of 5N Plus Inc.		16,380	(8,375)
Attributable to non-controlling interest		(10)	(1)

The accompanying notes are an integral part of these consolidated financial statements.

## CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

Years ended December 31  
(in thousands of United States dollars, except per share information)

	Attributable to equity holders of the Company							
	Number of shares	Share Capital	Contributed surplus	Accumulated other comprehensive loss	Deficit	Total shareholders' equity	Non-controlling interest	Total Equity
<b>2017</b>								
<b>Balances at beginning of year</b>	83,778,557	\$ 342,684	\$ 4,596	\$ (8,927)	\$ (249,831)	\$ 88,522	\$ (8)	\$ 88,514
Net earnings (loss) for the year	-	-	-	-	12,023	12,023	(10)	12,013
Other comprehensive income (loss)								
Net changes in cash flow hedges	-	-	-	(200)	-	(200)	-	(200)
Currency translation adjustment	-	-	-	1,121	-	1,121	-	1,121
Remeasurement of employee benefit plan obligation	-	-	-	3,436	-	3,436	-	3,436
<b>Total comprehensive income (loss)</b>	-	-	-	4,357	12,023	16,380	(10)	16,370
Common shares repurchased and cancelled (Note 19)	(475,016)	(1,943)	-	-	1,289	(654)	-	(654)
Exercise of stocks options (Note 21)	597,500	1,208	(396)	-	-	812	-	812
Share-based compensation	-	-	386	-	-	386	-	386
<b>Balances at end of year</b>	<b>83,901,041</b>	<b>341,949</b>	<b>4,586</b>	<b>(4,570)</b>	<b>(236,519)</b>	<b>105,446</b>	<b>(18)</b>	<b>105,428</b>
	Attributable to equity holders of the Company							
2016	Number of shares	Share Capital	Contributed Surplus	Accumulated other comprehensive loss	Deficit	Total shareholders' equity	Non-controlling interest	Total equity
Balances at beginning of year	83,979,657	\$ 343,506	\$ 4,079	\$ (6,447)	\$ (244,506)	\$ 96,632	\$ (7)	\$ 96,625
Net loss for the year	-	-	-	-	(5,895)	(5,895)	(1)	(5,896)
Other comprehensive loss								
Net changes in cash flow hedges	-	-	-	356	-	356	-	356
Currency translation adjustment	-	-	-	(1,193)	-	(1,193)	-	(1,193)
Remeasurement of employee benefit plan obligation	-	-	-	(1,643)	-	(1,643)	-	(1,643)
<b>Total comprehensive loss</b>	-	-	-	(2,480)	(5,895)	(8,375)	(1)	(8,376)
Common shares repurchased and cancelled (Note 19)	(201,100)	(822)	-	-	570	(252)	-	(252)
Share-based compensation (Note 21)	-	-	517	-	-	517	-	517
<b>Balances at end of year</b>	<b>83,778,557</b>	<b>342,684</b>	<b>4,596</b>	<b>(8,927)</b>	<b>(249,831)</b>	<b>88,522</b>	<b>(8)</b>	<b>88,514</b>

The accompanying notes are an integral part of these consolidated financial statements.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

Years ended December 31  
(Figures in thousands of United States dollars)

	Notes	2017 \$	2016 \$
<b>Operating activities</b>			
Net earnings (loss)		12,013	(5,896)
Adjustments to reconcile net earnings (loss) to cash flows			
Depreciation of property, plant and equipment and amortization of intangible assets		8,226	10,739
Impairment of non-current assets	26	3,100	-
Amortization of other assets		221	1,277
Amortization of deferred revenues	14	-	(187)
Reversal for doubtful accounts receivable	4, 24	-	(362)
Share-based compensation expense	21	4,390	2,246
Deferred income taxes	15	(3,068)	1,587
Share of loss (gain) from joint ventures	8	110	(23)
Imputed interest		2,541	3,266
Employee benefit plan obligation	13	(312)	(252)
Change in fair value of debenture conversion option	16	(85)	(20)
(Gain) loss on disposal of property, plant and equipment		(1,887)	142
Unrealized loss on non-hedge financial instruments		80	-
Unrealized foreign exchange loss (gain) on assets and liabilities		1,007	(31)
<b>Funds from operations before the following :</b>		<b>26,336</b>	<b>12,486</b>
Net change in non-cash working capital balances	18	(13,226)	10,978
<b>Cash from operating activities</b>		<b>13,110</b>	<b>23,464</b>
<b>Investing activities</b>			
Additions to property, plant and equipment	6, 18	(6,769)	(3,510)
Additions of intangible assets	7	(2,006)	(4,183)
Proceed on disposal of property, plant and equipment	6	3,987	-
Investment in a joint venture	8	-	(100)
<b>Cash used in investing activities</b>		<b>(4,788)</b>	<b>(7,793)</b>
<b>Financing activities</b>			
Repayment of long-term debt		(74)	(3,143)
Proceeds from issuing long-term debt		-	1,505
Long-term debt issuance costs		-	(111)
Common shares repurchased	19	(654)	(252)
Issuance of common shares	19	812	-
Increase in other liabilities		800	2,000
<b>Cash from (used in) financing activities</b>		<b>884</b>	<b>(1)</b>
<b>Effect of foreign exchange rate changes on cash and cash equivalents</b>		<b>517</b>	<b>(185)</b>
<b>Net increase in cash and cash equivalents</b>		<b>9,723</b>	<b>15,485</b>
Cash and cash equivalents, beginning of year		24,301	8,816
<b>Cash and cash equivalents, end of year</b>		<b>34,024</b>	<b>24,301</b>
<b>Supplemental information<sup>(1)</sup></b>			
Income tax paid		280	2,433
Interest paid		3,094	3,285

<sup>(1)</sup> Amounts paid for income tax and interest were reflected as cash flows from operating activities in the consolidated statements of cash flows.

The accompanying notes are an integral part of these consolidated financial statements.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 1. Nature of Activities

5N Plus Inc. (“5N Plus” or the “Company”) is a Canadian-based international company. 5N Plus is a producer of specialty metal and chemical products. Fully integrated with closed-loop recycling facilities, the Company’s head office is located at 4385 Garand Street, Saint-Laurent, Quebec (Canada) H4R 2B4. The Company operates manufacturing facilities and sales offices in several locations in Europe, the Americas and Asia. The Company’s shares are listed on the Toronto Stock Exchange (“TSX”). 5N Plus and its subsidiaries represent the “Company” mentioned throughout these consolidated financial statements. The Company has two reportable business segments, namely Electronic Materials and Eco-Friendly Materials.

These consolidated financial statements were approved by the Board of Directors on February 20, 2018.

### 2. Summary of Principal Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all periods presented, unless otherwise stated.

#### Basis of preparation

The consolidated financial statements have been prepared in accordance with Canadian generally accepted accounting principles as set forth in Part 1 of the *Chartered Professional Accountants of Canada Handbook – Accounting*, which incorporates International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”). The consolidated financial statements have been prepared under the historical cost convention, except for derivative financial instruments which are recorded at fair value.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in the process of applying the Company’s accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements, are also further disclosed in this note, in the “Significant management estimation and judgment in applying accounting policies” section.

#### a) Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Company has control. Control exists when the Company is exposed to, or has the rights to, variable returns from its involvement with the entity and has the ability to affect those returns through the power over the entity.

The subsidiaries are fully consolidated from the date on which control is transferred to the Company. They are deconsolidated from the date that control ceases.

The following table includes the principal subsidiaries which significantly impact the results or assets of the Company:

	Country of incorporation	% Equity interest	
		2017	2016
5N Plus Inc.	Canada	100%	100%
5N PV GmbH	Germany	100%	100%
5N Plus Lübeck GmbH	Germany	100%	100%
5N Plus Belgium SA	Belgium	100%	100%
5N Plus Asia Limited	Hong Kong	100%	100%
5N Plus Wisconsin Inc	United States	100%	100%

The US dollar is the functional currency of all those subsidiaries.

Intercompany transactions, balances, income and expenses on transactions between group companies are eliminated. Profits and losses resulting from intercompany transactions that are recognized in assets are also eliminated. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Company.

b) Joint ventures

A joint venture is a contractual agreement whereby the Company agrees with other parties to undertake an economic activity that is subject to joint control, i.e. strategic financial and operating decisions relating to the joint venture's activities require the unanimous consent of the parties sharing control. Investments in joint ventures are accounted for using the equity method. The share of earnings (loss) of joint ventures is recognized in the consolidated statement of earnings (loss) and the share of other comprehensive income (loss) of joint ventures is included in other comprehensive (loss) income.

**Foreign currency translation**

a) Functional and presentation currency

The Company's functional and presentation currency is the US dollar. Functional currency is determined for each of the Company's entities, and items included in the financial statements of each entity are measured using that functional currency.

b) Transactions and balances

Monetary assets and liabilities denominated in foreign currencies are translated at the prevailing exchange rate at the reporting date. Non-monetary assets and liabilities, and revenue and expense items denominated in foreign currencies are translated into the functional currency using the exchange rate prevailing at the date of the respective transactions. Foreign exchange gains and losses resulting from the settlement of such transactions are recognized in the consolidated statement of earnings (loss).

Foreign exchange gains and losses are presented in the consolidated statement of earnings (loss) within "foreign exchange and derivative loss (gain)".

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### c) Foreign operations

Assets and liabilities of subsidiaries that have a functional currency other than US dollar are translated from their functional currency to US dollars at exchange rates in effect at the reporting date. The resulting translation adjustments are included in the currency translation adjustment in other comprehensive income (loss). Revenue and expenses are translated at the average exchange rates for the period.

### Segment reporting

The Company operates two principal segments: Electronic Materials and Eco-Friendly Materials. Distinct operating and financial information are available for these segments and are used to determine the operating performance of each segment and to allocate resources.

The Electronic Materials segment is associated with the following metals: cadmium, gallium, germanium, indium and tellurium. These are sold as elements, alloys, chemicals, compounds and wafers.

The Eco-Friendly Materials segment mainly manufactures and sells refined bismuth and bismuth chemicals, low melting-point alloys as well as refined selenium and selenium chemicals.

Corporate expenses associated with the head office and unallocated selling, general and administrative expenses together with financing expenses (revenues) have been regrouped under the heading "Corporate and unallocated".

Each operating segment is managed separately as each of these service lines requires different technologies, resources and marketing approaches. The financial information of the recycling and trading of complex material is allocated to the two main segments. All intersegment transactions between the Electronic Materials and the Eco-Friendly Materials segments have been eliminated on consolidation.

### Revenue recognition

Revenue comprises the sale of manufactured products and the rendering of services and is measured at the fair value of the sale of manufactured products, net of value-added tax, estimated customer returns and allowances at the time of recognition. The estimates of fair value are based on the Company's historical experience with each customer and the specifics of each arrangement.

Revenue from the sale of manufactured products is recognized when the risks and rewards of ownership have been transferred to the buyer (which generally occurs upon shipment) and collectibility of the related receivables is reasonably assured. Revenue is recognized when (i) it can be measured reliably; (ii) it is probable that the economic benefits associated with the transaction will flow to the Company; and (iii) the costs incurred or to be incurred can be measured reliably. Revenue from custom refining activities is recognized when services are rendered. Cash payments received or advances due pursuant to contractual arrangements are recorded as deferred revenue until all of the foregoing conditions of revenue recognition have been met.



**Property, plant and equipment**

Property, plant and equipment are recorded at cost, net of accumulated depreciation, accumulated impairment losses and subsequent reversals, if applicable. Property, plant and equipment are depreciated using the straight-line method over their estimated useful lives, taking into account any residual values. Useful lives are as follows:

	Period
Land	Not depreciated
Building	25 years
Production equipment	Up to 15 years
Furniture	3 to 10 years
Office equipment	3 to 10 years
Rolling stock	3 to 10 years
Leasehold improvements	Over the term of the lease

Major overhaul and replacement are capitalized in the consolidated statement of financial position as a separate component, with the replaced part or previous overhaul derecognized from the statement. Maintenance and repairs are charged to expense as incurred.

Construction in progress is not depreciated until the assets are put into use. Costs are only capitalized if they are directly attributable to the construction or development of the assets.

Residual values, method of depreciation and useful life of the assets are reviewed annually and adjusted if appropriate.

**Leases**

Leases are classified as finance leases if the Company bears substantially all risks and rewards of ownership of the leased asset. At inception of the lease, the related asset is recognized at the lower of the fair value and the present value of the minimum lease payments, and a corresponding amount is recognized as a finance lease obligation. Lease payments are split between finance charges and the reduction of the finance lease obligation to achieve a constant proportion of the capital balance outstanding. Finance charges are charged to net earnings (loss) over the lease term.

All other leases are classified as operating leases. Operating lease payments are recognized as an expense on a straight-line basis over the lease term.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### Intangible assets

Intangible assets acquired separately are recorded at cost, net of accumulated amortization, accumulated impairment losses and reversals, if applicable. Intangible assets acquired through a business combination are recognized at fair value at the date of acquisition. Intangible assets are amortized on a straight-line basis over their useful lives according to the following annual terms:

	Period
Technology	5 years
Software	5 years
Intellectual property	10 years
Development costs	Not exceeding 10 years

### Impairment of non-financial assets

The carrying amounts of the Company's non-financial assets subject to amortization are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Assets that are not yet available for use are tested for impairment annually or at any time if an indicator of impairment exists.

An impairment loss is recognized if the carrying amount of an asset or a cash-generating unit ("CGU") exceeds its recoverable amount. The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less cost of disposal. The recoverable amount is determined for an individual asset; unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. In such case, the CGU's belonging asset is used to determine the recoverable amount. Impairment losses are recognized in statement of earnings (loss).

The Company evaluates impairment losses for potential reversals at each reporting date. An impairment loss is reversed if there is any indication that the loss has decreased or no longer exists due to changes in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized. Such reversal is recognized in statement of earnings (loss).

### Financial instruments

Financial assets and liabilities are recognized when the Company becomes a party to the contractual provisions of the instrument. Financial assets are derecognized when the rights to receive cash flows from the assets have expired or have been transferred and the Company has transferred substantially all risks and rewards of ownership.

Financial assets and liabilities are offset and the net amount is reported in the consolidated statement of financial position when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or realize the asset and settle the liability simultaneously.

All financial instruments are required to be measured at fair value on initial recognition. Measurement in subsequent periods depends on the classification of the financial instrument. At initial recognition, the Company classifies its financial instruments in the following categories depending on the purpose for which the instruments were acquired:

a) Financial assets at fair value through profit or loss

A financial asset is classified in this category if acquired principally for the purpose of selling or repurchasing in the short term.

Financial instruments in this category are recognized initially and subsequently at fair value. Transaction costs are expensed in the consolidated statement of earnings (loss). Financial assets at fair value through profit or loss are classified as current assets except for the portion expected to be realized or paid beyond twelve months of the consolidated statements of financial position date, which is classified as non-current asset.

b) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market.

Loans and receivables are recognized initially at the amount expected to be received, less, when material, a discount to reduce the loans and receivables to fair value. Subsequently, loans and receivables are measured at amortized cost using the effective interest method less a provision for impairment. Loans and receivables are included in current assets, except for instruments with maturities greater than twelve months after the end of the reporting period, which are classified as non-current assets.

c) Available-for-sale financial assets

Available-for-sale financial assets are non-derivatives that are either designated in this category or not classified in any of the other categories.

Available-for-sale financial assets are recognized initially at fair value plus transaction costs and are subsequently carried at fair value. Gains or losses arising from changes in fair value are recognized in other comprehensive income (loss). When an available-for-sale asset is sold or impaired, the accumulated gains or losses are moved from accumulated other comprehensive income (loss) to the consolidated statement of earnings (loss).

Available-for-sale financial assets are classified as non-current assets, unless the investment matures within twelve months, or management expects to dispose of them within twelve months.

d) Financial liabilities at amortized cost

Financial liabilities at amortized cost are initially recognized at the amount required to be paid, less, when material, a discount to reduce the liabilities to fair value. Subsequently, they are measured at amortized cost using the effective interest method.

Financial liabilities are classified as current liabilities if payment is due within twelve months. Otherwise, they are presented as non-current liabilities.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The Company has classified its financial instruments as follows:

Category	Financial instrument
Financial assets and liabilities at fair value through profit and loss	Other current assets Derivative financial assets Derivative financial liabilities
Loans and receivables	Cash and cash equivalents Accounts receivable Loan receivable from a related party
Financial liabilities at amortized cost	Bank indebtedness Trade and accrued liabilities Long-term debt Convertible debentures Long-term payable

### Transaction costs

Transaction costs related to financial instruments that are not classified as assets and liabilities at fair value through profit or loss, are recognized in consolidated statement of financial position as an adjustment to the cost of the financial instrument upon initial recognition and amortized using the effective interest rate method. Fees paid on the establishment of loan facilities are recognized as deferred costs under non-current assets and are amortized over the term of the facility.

### Impairment of financial assets

At each reporting date, the Company assesses whether there is objective evidence that a financial asset is impaired. A financial asset is impaired and impairment losses are incurred only if there is objective evidence of impairment as a result of one or more events that occurred after initial recognition (a "loss event") and that loss event has an impact on the estimated cash flows of the financial assets that can be reliably estimated. If such evidence exists, the Company recognizes an impairment loss, as follows:

#### a) Financial assets carried at amortized cost

The impairment loss is the difference between the amortized cost of the loan or receivable and the present value of the estimated future cash flows, discounted using the instrument's original effective interest rate. The carrying amount of the asset is reduced by this amount either directly or indirectly through the use of an allowance account.

Impairment losses on financial assets carried at amortized cost are reversed in subsequent periods if the amount of the loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized.

Impairment losses as well as reversals are recognized in the consolidated statement of earnings (loss).

b) Available-for-sale financial assets

The impairment loss is the difference between the original cost of the asset and its fair value at the measurement date, less any impairment losses previously recognized in the consolidated statement of earnings (loss). This amount represents the cumulative loss in accumulated other comprehensive income that is reclassified to the consolidated statement of earnings (loss). Impairment losses on available-for-sale financial assets may not be reversed.

**Derivative financial instruments and hedging activities**

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently remeasured at their fair value. The method of recognizing the resulting gain or loss depends on whether the derivative is designated as a hedging instrument and, if so, the nature of the item being hedged. The Company designates certain derivatives as hedges of a particular risk associated with a recognized asset or liability or a highly probable forecast transaction (cash flow hedge).

The fair values of various derivative instruments used for hedging purposes are disclosed in Note 16.

The full fair value of a hedging derivative is classified as a non-current asset or liability when the remaining maturity of the hedged item is more than twelve months and as a current asset or liability when the remaining maturity of the hedged item is less than twelve months. Trading derivatives are classified as a current asset or liability.

The Company applies cash flow hedge accounting to certain foreign exchange forward contracts and cross-currency swap entered into to hedge forecasted transactions. In a cash flow hedge relationship, the portion of gains or losses on the hedging item that is determined to be an effective hedge is recognized in other comprehensive income (loss), while the ineffective portion is recorded in consolidated statement of earnings (loss). The amounts recognized in other comprehensive income (loss) are reclassified in consolidated statement of earnings (loss) as a reclassification adjustment when the hedged item affects net earnings.

**Embedded derivatives**

Embedded derivatives, which include the debenture conversion option, are recorded at fair value separately from the host contract when their economic characteristics and risks are not clearly and closely related to those of the host contract. Subsequent changes in fair value are recorded in financial expenses in the consolidated statement of earnings (loss).

**Cash and cash equivalents**

Cash and cash equivalents comprise cash on hand.

**Inventories**

Inventories are stated at the lower of cost and net realizable value. Cost includes all expenditures directly attributable to the manufacturing process as well as suitable portions of related production overheads based on normal operating capacity. Costs of ordinarily interchangeable items are assigned using weighted average cost. Net realizable value is the estimated selling price in the ordinary course of business less costs of completion and any applicable selling expenses. When the circumstances that previously caused inventories to be written down below cost no longer exist or when there is clear evidence of an increase in net realizable value because of changed economic circumstances, the amount of the impairment is reversed (i.e. the reversal is limited to the amount of the original impairment) so that the new carrying amount is the lower of the cost and the revised net realizable value.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

From time to time, when substantially all required raw materials are in inventory, the Company may choose to enter into long-term fixed-price sales contracts. The quantity of raw materials required to fulfill these contracts is specifically assigned, and the average cost of these raw materials is accounted for separately throughout the duration of the contract.

### Income taxes

The tax expense for the year comprises current and deferred tax is recognized in the consolidated statement of earnings (loss), except to the extent that it relates to items recognized in other comprehensive income (loss) or directly in equity. In which case, the tax expense is also recognized in other comprehensive income (loss) or directly in equity, respectively.

#### a) Current tax

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the date of the consolidated statement of financial position in the countries where the Company and its subsidiaries operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

#### b) Deferred tax

Deferred income tax is recognized using the liability method on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred tax liabilities are not recognized if they arise from the initial recognition of goodwill; deferred income tax is not accounted for, if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred income tax is determined using tax rates (and laws) that are enacted or substantively enacted at the date of the consolidated statement of financial position and are expected to apply when the related deferred income tax asset is realized or the deferred income tax liability is settled.

Deferred income tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be used.

Deferred income tax is presented to provide impact of temporary differences arising on investments in subsidiaries and joint ventures, except for deferred income tax liability where the timing of the reversal of the temporary difference is controlled by the Company and it is probable that the temporary difference will not be reversed in the foreseeable future.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities, and when the deferred income tax assets and liabilities relate to income taxes levied by the same taxation authority, on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.



## Provisions

A provision is recognized when the Company has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated. Restructuring provisions comprise mainly employee termination payments. Provisions are not recognized for future operating losses.

Where there are a number of similar obligations, the likelihood that an outflow will be required in settlement is determined by considering the class of obligations as a whole. A provision is recognized even if the likelihood of an outflow with respect to any one item included in the same class of obligations may be small.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessment of the time value of money and the risks specific to the obligation. The increase in the provision due to passage of time is recognized as interest expense.

Restructuring provisions, consisting of severance and other related costs to sites closure, are recognized when a detailed formal plan identifies the business or part of the business concerned, the location and number of employees affected, detailed estimates of the associated costs, and an appropriate timelines which has been communicated to those affected by it.

## Research and development expenses

Research expenses are charged to the consolidated statement of earnings (loss) in the period they are incurred and are included under other expenses. Development expenses which are directly attributable expenses, either internal or external, are charged to the consolidated statement of earnings (loss), except if the Company can demonstrate all of the following (in that case capitalised as an intangible assets – development costs):

- The technical feasibility of completing the intangible asset so that it will be available for use or sale;
- Its intention to complete the intangible asset and use or sell it;
- Its ability to use or sell the intangible asset;
- How the intangible asset will generate probable future economic benefits. Among other things, the Company can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- Its ability to measure reliably the expenditure attributable to the intangible asset during its development.

## Employee future benefits

The Company contributes to a defined benefit pension plan. The significant policies related to employee future benefits are as follows:

- The cost of pension and other post-retirement benefits earned by employees is actuarially determined using the projected benefit method prorated on service, market interest rates and management's best estimate of expected plan investment performance, retirement age of employees and expected health care costs;
- Fair value is used to value the plan assets for the purpose of calculating the expected return on plan assets; and
- Actuarial gains and losses arising from experience adjustment and change in actuarial assumptions are charged or credited to equity in other comprehensive income (loss) in the period in which they arise.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### Share-based payments

The fair value of the equity-settled share-based payment plan is determined using the Black-Scholes model on the grant date. Measurement inputs include the share price on the measurement date, the exercise price of the instrument, expected volatility, weighted average expected life of the instrument, expected dividends, expected forfeiture rate, and the risk-free interest rate. The impact of service and non-market vesting conditions is not taken into account in determining fair value. The compensation expense of the equity-settled awards is recognized in the consolidated statement of earnings (loss) over the graded vesting period, where the fair value of each tranche is recognized over its respective vesting period.

For cash-settled share-based payment plans, the compensation expense is determined based on the fair value of the liability incurred at each reporting date until the award is settled. The fair value of compensation expense is calculated by multiplying the number of units expected to vest with the fair value of one unit as of grant date based on the market price of the Company's common shares. Until the liability is settled, the Company re-measures the fair value of the liability at the end of each reporting period and at the date of settlement, with any changes in fair value recognized in income for the period.

### Earnings (loss) per share

Basic earnings (loss) per share is calculated by dividing net earnings (loss) for the year attributable to equity owners of the Company by the weighted average number of common shares outstanding during the year.

Diluted earnings (loss) per share assume the conversion, exercise or contingent issuance of securities only when such conversion, exercise or issuance would have a dilutive effect on the income per share. The treasury stock method is used to determine the dilutive effect of share options and the if-converted method is used for convertible debentures.

### 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 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 CGU's 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 are tested for impairment at least annually, which also requires significant judgement. To determine the recoverable amount (fair value less cost to dispose of these assets), management estimates expected future cash flows from the asset 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, management makes assumptions about future operating results using the estimated forecasted prices obtained from various market sources including publically available metals information as at December 31, 2017. These key assumptions relate to future events and circumstances. The actual results will vary and may cause adjustments to the Company's intangible and tangible 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.

By their nature, assets not yet available for intended use have a higher estimation uncertainty, as they depend on future market development and the Company's ability to commercialize and manufacture new products to realize forecasted earnings. For example new manufacturing processes may not be scalable to industrial level within expected timeframe and new products might not receive sufficient market penetration. Management believes that the following assumptions are the most susceptible to change and impact the valuation of these assets in time: a) expected significant growth of the market for different metal products (demand), b) selling prices which have an impact on revenues and metal margins (pricing), and c) the discount rate associated with new processes and products (after considering a premium over the Company's weighted average cost of capital (WACC) to reflect the additional uncertainty).

### ***Inventories***

Inventories are measured 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.

### ***Debenture conversion option***

The convertible debentures issued by the Company included conversion and early redemption options, which are considered as Level 3 financial instruments. The derivative is measured at fair value through profit or loss, and its fair value must be measured at each reporting period, with subsequent changes in fair value recorded in the consolidated statement of earnings (loss). A derivative valuation model is used, and includes assumptions, to estimate the fair value. Detailed assumptions used in the model to determine the fair value of the embedded derivative, upon inception and as at December 31, 2017, are provided in note 12.

### ***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.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

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 (Note 15).

### 3. Changes in Accounting Policies and Futures Changes in Accounting Policies

#### Future changes in accounting policies

The following standards have been issued but are not yet effective:

In May 2014, the IASB issued IFRS 15 "Revenues from Contracts with Customers", this new IFRS standard is applicable by the Company no later than January 1, 2018. IFRS 15 will supersede current revenue recognition guidance including IAS 18 "Revenue" and IAS 11 "Construction Contracts". It applies to new contracts at the effective date and to existing contracts that are not yet completed at the effective date, January 1, 2018.

IFRS 15 is currently under review by the Company assessing its impact on the consolidated financial statements of fiscal year 2017, the assessment extending through fiscal year 2018. 5N Plus will adopt the "modified approach", whereby the cumulative effect will be recorded as an adjustment to the opening balance sheet or retained earnings on the effective date, rather than a retroactive restatement of prior periods. At this point in time, we are still finalizing our review.

In July 2014, the IASB amended IFRS 9, "Financial Instruments", to bring together the classification and measurement, impairment and hedge accounting phases of the IASB's project to replace IAS 39, "Financial Instruments: Recognition and Measurement". The standard supersedes all previous versions of IFRS 9 and will be mandatory on January 1, 2018 for the Company with earlier application permitted. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In January 2016, IASB issued IFRS 16, "Leases", which specifies how an IFRS reporter will recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognise assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. Lessors continue to classify leases as operating or finance, with IFRS 16's approach to lessor accounting substantially unchanged from its predecessor, IAS 17. The standard will be mandatory for annual periods beginning on or after January 1, 2019. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In June 2017, the IFRS Interpretations Committee of the IASB issued IFRIC 23, Uncertainty over Income Tax Treatments (IFRIC 23). The interpretation provides guidance on the accounting for current and deferred tax liabilities and assets in circumstances in which there is uncertainty over income tax treatments. The interpretation is effective for the annual period beginning on January 1, 2019. The Company has concluded that no impact will result from the application of IFRIC 23 on its financial statements.

4. Accounts Receivable

	2017	2016
	\$	\$
Gross trade receivables	21,673	25,095
Allowance for doubtful accounts (Note 24)	(126)	(126)
Trade receivables	21,547	24,969
Sales taxes receivable	3,104	3,643
Other receivables	988	1,187
<b>Total accounts receivable</b>	<b>25,639</b>	<b>29,799</b>

All of the Company's accounts receivable are short term. The net carrying value of accounts receivable is considered a reasonable approximation of fair value. The Company reviews all amounts periodically for indications of impairment and the amounts impaired have been provided for as an allowance for doubtful accounts.

The Company's exposure to credit risks and impairment losses related to accounts receivable is disclosed in Note 24.

Most of the accounts receivable are pledged as security for the revolving credit facility (Note 11).

5. Inventories

	2017	2016
	\$	\$
Raw materials	27,924	24,436
Finished goods	62,723	55,873
<b>Total inventories</b>	<b>90,647</b>	<b>80,309</b>

For the year ended December 31, 2017, a total of \$111,661 of inventories was included as an expense in cost of sales (2016 – \$150,400).

For the year ended December 31, 2017, a total of \$7,532 previously written down was recognized as a reduction of expenses in cost of sales concurrently with the related inventories being sold (\$890 for the Eco-Friendly Materials segment and \$6,642 for the Electronic Materials segment) (2016 – \$23,642 [\$8,089 for the Eco-Friendly Materials segment and \$15,553 for the Electronic Materials segment]).

The majority of inventories are pledged as security for the revolving credit facility (Note 11).

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 6. Property, Plant and Equipment

	Land and buildings	Production equipment	Furniture, office equipment and rolling stock	Leasehold improvements	Total
	\$	\$	\$	\$	\$
Net book value as at December 31, 2015	21,406	42,105	2,219	1,916	67,646
Additions	738	1,409	516	407	3,070
Disposals	-	(96)	(46)	-	(142)
Depreciation	(1,459)	(7,812)	(947)	(135)	(10,353)
Effect of foreign exchange and others	(194)	(20)	(20)	(42)	(276)
Net book value as at December 31, 2016	20,491	35,586	1,722	2,146	59,945
Additions	765	5,903	665	78	7,411
Disposals	(2,100)	-	-	-	(2,100)
Depreciation	(1,147)	(5,997)	(467)	(297)	(7,908)
Impairment (Note 26)	-	(1,116)	-	-	(1,116)
Effect of foreign exchange and others	441	(123)	56	1	375
<b>Net book value as at December 31, 2017</b>	<b>18,450</b>	<b>34,253</b>	<b>1,976</b>	<b>1,928</b>	<b>56,607</b>
As at December 31, 2016					
Cost	27,526	57,775	2,307	3,185	90,793
Accumulated depreciation	(7,035)	(22,189)	(585)	(1,039)	(30,848)
Net book value	20,491	35,586	1,722	2,146	59,945
As at December 31, 2017					
Cost	23,888	54,951	2,234	3,264	84,337
Accumulated depreciation	(5,438)	(20,698)	(258)	(1,336)	(27,730)
<b>Net book value</b>	<b>18,450</b>	<b>34,253</b>	<b>1,976</b>	<b>1,928</b>	<b>56,607</b>

As at December 31, 2017, property, plant and equipment that were not depreciated until ready for their intended use amounted to \$4,315 (2016 – \$5,874) (mainly production equipment).

Most of the property, plant and equipment are pledged as security for the revolving credit facility (Note 11).



7. Intangible Assets

	Technology	Software, intellectual property and development costs	Total
	\$	\$	\$
Net book value as at December 31, 2015	3,026	4,289	7,315
Additions	-	4,183	4,183
Disposals and others	-	(3)	(3)
Amortization	-	(386)	(386)
Net book value as at December 31, 2016	3,026	8,083	11,109
Additions	-	2,006	2,006
Disposals and others	-	43	43
Impairment (Note 26)	(837)	(1,147)	(1,984)
Amortization	-	(318)	(318)
<b>Net book value as at December 31, 2017</b>	<b>2,189</b>	<b>8,667</b>	<b>10,856</b>
As at December 31, 2016			
Cost	3,026	10,267	13,293
Accumulated amortization	-	(2,184)	(2,184)
Net book value	3,026	8,083	11,109
As at December 31, 2017			
Cost	2,189	10,983	13,172
Accumulated amortization	-	(2,316)	(2,316)
<b>Net book value</b>	<b>2,189</b>	<b>8,667</b>	<b>10,856</b>

As at December 31, 2017, intangible assets that were not depreciated until ready for their intended use amounted to \$10,020 (2016 – \$10,401). The category of development costs which includes capitalized costs of \$8,951 (2016 - \$7,350), primarily consist of internally generated intangible assets.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 8. Investments Accounted for Using the Equity Method

	2017	2016
	\$	\$
<b>Beginning of year</b>	<b>779</b>	<b>310</b>
Share of (loss) gain from joint ventures	(110)	23
New investment	49	446
<b>End of year</b>	<b>718</b>	<b>779</b>

The following summarizes financial information of Ingal Stade GmbH (“Ingal”) and Zhuhai Gallium Industry Co., Ltd. (Zhuhai), in which the Company holds a 50% and 49% interest respectively.

	2017	2016
	\$	\$
Total current assets	1,118	1,568
Total non-current assets	353	625
Total current liabilities	45	560
Total non-current liabilities due to venturers	-	5,651
Total revenues	2,794	2,474
Total net earnings (loss)	190	(5,170)

On December 31, 2016, following the closure of its manufacturing activities earlier that year, Ingal sold its assets. In 2017, the unrecognized share of loss of this joint venture for which the Company ceased to recognize when applying the equity method is \$2,666 (2016 – \$2,873).

### 9. Other Assets

	2017	2016
	\$	\$
Deferred costs	132	353
Other	898	740
<b>Total other assets</b>	<b>1,030</b>	<b>1,093</b>

### 10. Trade and Accrued Liabilities

	2017	2016
	\$	\$
Trade payables	38,834	41,266
Accrued liabilities	18,209	16,115
<b>Total trade and accrued liabilities</b>	<b>57,043</b>	<b>57,381</b>

## 11. Bank Indebtedness and Long-Term Debt

### a) Bank indebtedness

The Company has a Chinese renminbi (“RMB”) credit line with a financial institution in China. This credit line is guaranteed by certain assets of the Company in China. The credit line bears interest at RMB base rate plus 2% to 4%.

	2017		2016	
	Contractual Currency RMB	Reporting Currency US\$	Contractual Currency RMB	Reporting Currency US\$
Facility available	10,000	1,530	10,000	1,438
Amount drawn	-	-	-	-

### b) Long-term debt

	2017	2016
	\$	\$
Senior secured revolving facility of \$50,000 with a syndicate of banks, maturing in August 2018 <sup>(1)</sup>	-	-
Term loan, non-interest bearing, repayable under certain conditions, maturing in 2023. If the loan has not been repaid in full by the end of 2023, the balance will be forgiven <sup>(2)</sup>	271	325
	271	325
Less current portion of long-term debt	271	325
	-	-

<sup>(1)</sup> In August 2014, the Company signed a senior secured multi-currency revolving credit facility of \$125,000 maturing in August 2018, which was reduced to \$100,000 as at June 30, 2015 and subsequently to \$50,000 as at February 18, 2016. At any time, the Company has the option to request that the credit facility be expanded through the exercise of an additional \$50,000 accordion feature, subject to review and approval by the lenders. This revolving credit facility can be drawn in US dollars, Canadian dollars or Hong Kong dollars. Drawings bear interest at either the Canadian prime rate, US base rate, Hong Kong base rate or LIBOR, plus a margin based on the Company’s senior consolidated debt to EBITDA ratio. Under the terms of its credit facility, the Company is required to satisfy certain restrictive covenants as to financial ratios. During the first quarter of 2016, an amount of deferred costs of \$897 was expensed and recorded in Imputed interest and other interest expense. As at December 31, 2017, the Company has met all covenants.

In addition, in August 2014, the Company’s subsidiary in Belgium entered into a bi-lateral credit facility of 5,000 Euros, which was reduced to 2,500 Euros as at February 18, 2016. This credit facility is coterminous with the new senior secured multi-currency revolving credit facility, and guaranteed by the same security pool. This bi-lateral facility can be drawn in Euros or US dollars and bears interest at similar rates as the revolving credit facility. No amount was used as at December 31, 2017 and 2016.

<sup>(2)</sup> The term loan is classified as short-term debt since these amounts could become payable on demand.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 12. Convertible Debentures

In June 2014, the Company issued convertible unsecured subordinated debentures for CA\$60,000 (US\$55,266) and an additional over-allotment option for CA\$6,000 (US\$5,580) for a total of CA\$66,000 (US\$60,846). The convertible unsecured subordinated debentures bear interest at a rate of 5.75% per annum, payable semi-annually on June 30 and December 31, commencing on December 31, 2014. The convertible debentures are convertible at the holder's option into the Company's common shares at a conversion price of CA\$6.75 per share, representing a conversion rate of 148.1 common shares per CA\$1,000 principal amount of convertible debentures. The convertible debentures will mature on June 30, 2019 and may be redeemed by the Company, in certain circumstances, after June 30, 2017.

The debenture conversion option was recorded as a derivative liability (Note 16). In accordance with IFRS, an obligation to issue shares for a price that is not fixed in the Company's functional currency must be classified as a derivative liability and measured at fair value, with changes recognized in change in fair value of debenture conversion option in the consolidated statement of earnings (loss).

The fair value of the debenture conversion option, which consists of the holder's conversion option subject to the Company's early redemption options, was estimated based on a methodology for pricing convertible bonds using an approach based on partial differential equations or binomial lattices, with the following assumptions: average expected volatility of 40%; expected dividend per share of nil; entity-specific credit spread, and expected life of 5 years. As a result, the initial fair value of the liability representing the debenture conversion option for the two tranches of the issuance of the debenture was estimated at CA\$10,484 (US\$9,666). Assumptions were reviewed in the valuation as at December 31, 2017 and 2016, and have not changed substantially. On December 7, 2015, the Company entered into a cross-currency swap to hedge the convertible debenture denominated in Canadian dollars to US dollars (Note 16).

### 13. Employee Benefit Plan Obligation

The Company operates a defined pension plan in Germany based on employee pensionable earnings and length of service. Former general and senior managers had been provided with direct benefit commitments. Employees had been provided with indirect benefit commitments via the Unterstützungseinrichtung der HEK GmbH e.V. Such promises had been made for employees with entry date of December 31, 1993 or earlier.

	2017	2016
	\$	\$
Present value of unfunded obligations	15,396	14,813

Movement in the defined benefit obligation is as follows:

	2017	2016
	\$	\$
<b>Beginning of year</b>	14,813	13,934
Current service cost	87	70
Interest cost	266	331
Effect of foreign exchange	1,957	(512)
Benefits paid	(665)	(653)
Actuarial (gains) losses	(1,062)	1,643
<b>End of year</b>	15,396	14,813

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The principal actuarial assumptions as at year ended were as follows:

	2017	2016
Discount rate	1.9%	1.7%
Salary growth rate	2.0%	2.0%
Pension growth rate	1.8%	1.8%

Assumptions regarding mortality are based on mortality tables "Richttafeln 2005 G" by Prof. Dr. Klaus Heubeck as biometrical basis in accordance with age of earliest retirement by law *RV-Altersgrenzenanpassungsgesetz*, dated April 20, 2007.

The sensitivity of the defined benefit obligation to changes in assumptions is set out below. The effects on each plan of a change in an assumption are weighted proportionately to the total plan obligations to determine the total impact for each assumption presented.

	Impact on defined benefit obligation		
	Change in assumption	Increase in assumption	Decrease in assumption
Discount rate	0.50%	(6.39%)	7.13%
Salary growth rate	0.50%	0.56%	(0.54%)
Pension growth rate	0.50%	6.07%	(5.56%)
		Increase by 1 year in assumption	Decrease by 1 year in assumption
Life expectancy		4.15%	(3.68%)

The weighted average duration of the defined benefit obligation is 13.45 years (2016 – 14 years).

Expected maturity analysis of undiscounted pension liability:

	2017	2016
	\$	\$
Less than a year	687	628
Between 1 and 5 years	2,925	2,649
Over 5 years	16,734	15,882
<b>Total</b>	<b>20,346</b>	<b>19,159</b>

Expected contributions to pension benefit plans for year ending December 31, 2018 are \$687.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 14. Other Liabilities

	Long-term payable	Deferred revenues	Other	Total
	\$	\$	\$	\$
As at December 31, 2015	15,021	5,135	247	20,403
Additions	1,017	471	-	1,488
Utilized	-	(187)	(4)	(191)
Reclassified to current liabilities (Note 18)	(16,038)	-	-	(16,038)
As at December 31, 2016	-	5,419	243	5,662
Additions	-	800	-	800
Utilized	-	(9)	(17)	(26)
<b>As at December 31, 2017</b>	<b>-</b>	<b>6,210</b>	<b>226</b>	<b>6,436</b>

### 15. Income Taxes

	2017	2016
	\$	\$
Current tax:		
Current tax for the year	3,306	175
Adjustment in respect of prior years	289	265
<b>Total current tax</b>	<b>3,595</b>	<b>440</b>
Deferred tax:		
Recognition and reversal of temporary differences	(3,068)	1,538
Change in tax rate	-	49
Write down of deferred tax assets	-	-
<b>Total deferred tax</b>	<b>(3,068)</b>	<b>1,587</b>
<b>Income tax expense</b>	<b>527</b>	<b>2,027</b>

A reconciliation of income taxes at Canadian statutory rates with the reported income taxes is as follows:

	2017	2016
	\$	\$
Earnings (loss) before income tax	12,540	(3,869)
Canadian statutory income tax rates	26.8%	26.9%
Income tax on earnings (loss) at Canadian statutory rate	3,361	(1,041)
Increase (decrease) resulting from:		
Unrecorded losses carried forward	(2,298)	2,408
Write down of deferred tax assets	-	-
Non-taxable gain for tax purposes	(163)	(478)
Benefits arising from a financing structure	-	(773)
Non-deductible (taxable) foreign exchange	(1,099)	510
Effect of difference of foreign tax rates compared to Canadian tax	265	855
Prior year adjustments	289	265
Other	172	281
<b>Income tax expense</b>	<b>527</b>	<b>2,027</b>

The Company's applicable tax rate is the Canadian combined rates applicable in the jurisdiction in which the Company operates.



## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The analysis of deferred tax assets and deferred tax liabilities is as follows:

	2017	2016
	\$	\$
Deferred tax assets:		
To be recovered within 12 months	3,380	1,016
To be recovered after 12 months	3,511	867
Deferred tax liabilities:		
To be settled within 12 months	(90)	(90)
To be settled after 12 months	(161)	(625)
<b>Deferred tax assets, net</b>	<b>6,640</b>	<b>1,168</b>

Movement in the deferred income tax amounts is as follows:

	2017	2016
	\$	\$
<b>Beginning of year</b>	<b>1,168</b>	2,810
Tax charge relating to components of other comprehensive income (loss)	2,404	(55)
Credited to consolidated statement of earnings (loss)	3,068	(1,587)
<b>End of year</b>	<b>6,640</b>	<b>1,168</b>

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The movement in deferred income tax assets and liabilities during the year, without taking into consideration the offsetting of balances within the same jurisdiction, is as follows:

Deferred tax assets	Property, plant and equipment	Inventories	Intangible assets	Loss carry forward	Retirement benefit obligation	Others	Total	Offset by jurisdiction	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
As at December 31, 2015	2,675	1,702	595	3,724	-	4,509	13,205	(9,727)	3,478
(Charged) credited to consolidated statements of earnings (loss)	(1,458)	138	68	435	-	(3,821)	(4,638)		
Credited (charged) to comprehensive income (loss)	-	-	-	-	-	(55)	(55)		
As at December 31, 2016	1,217	1,840	663	4,159	-	633	8,512	(6,629)	1,883
(Charged) credited to consolidated statements	787	117	(43)	(2,690)	667	1,648	486		
Credited (charged) to comprehensive income (loss)	-	-	-	-	2,374	30	2,404		
<b>As at December 31, 2017</b>	<b>2,004</b>	<b>1,957</b>	<b>620</b>	<b>1,469</b>	<b>3,041</b>	<b>2,311</b>	<b>11,402</b>	<b>(4,511)</b>	<b>6,891</b>
<b>Deferred tax liabilities</b>	<b>Property, plant and equipment</b>	<b>Inventories</b>	<b>Intangible assets</b>	<b>Convertible debentures</b>	<b>Others</b>	<b>Total</b>	<b>Offset by jurisdiction</b>	<b>Total</b>	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
As at December 31, 2015	5,644	218	814	2,970	749	10,395	(9,727)	668	
Charged (credited) to consolidated statements of earnings (loss)	(3,738)	132	-	135	420	(3,051)			
As at December 31, 2016	1,906	350	814	3,105	1,169	7,344	(6,629)	715	
Charged (credited) to consolidated statements of earnings (loss)	(875)	(275)	59	(388)	(1,103)	(2,582)			
<b>As at December 31, 2017</b>	<b>1,031</b>	<b>75</b>	<b>873</b>	<b>2,717</b>	<b>66</b>	<b>4,762</b>	<b>(4,511)</b>	<b>251</b>	

Deferred tax assets of \$2,060 (2016 – \$1,883), included in the consolidated statements of financial position, are dependent on projection of future taxable profits for entities that have suffered a loss in the current period.

Deferred income tax liabilities have not been recognized for the withholding tax and taxes that would be payable on the unremitted earnings of certain subsidiaries. Such amounts are permanently reinvested. Unremitted earnings totalled \$1,285 as at December 31, 2017 (2016 - \$Nil).

As at December 31, 2017, the Company had the following operating tax losses available for carry forward for which no deferred tax benefit has been recorded in the accounts.

	\$	Expiry
United Kingdom	51,700	No limit
Belgium	48,265	No limit
United States	28,163	No limit
Hong Kong	17,196	No limit
Korea	1,849	2023-2027
China	5,534	2018-2022

As at December 31, 2017, the Company had other deductible temporary differences of \$451 for which no deferred tax benefit has been recorded (2016 – \$10,508).

## 16. Fair Value of Financial Instruments

The fair value of a financial instrument is determined by reference to the available market information at the reporting date. When no active market exists for a financial instrument, the Company determines the fair value of that instrument based on valuation methodologies as discussed below. In determining assumptions required under a valuation model, the Company primarily uses external, readily observable market data inputs. Assumptions or inputs that are not based on observable market data incorporate the Company's best estimates of market participant assumptions, and are used when external data is not available. Counterparty credit risk and the Company's own credit risk are taken into account in estimating the fair value of all financial assets and financial liabilities.

The following assumptions and valuation methodologies have been used to measure fair value of financial instruments:

- (i) The fair value of its short-term financial assets and financial liabilities, including cash and cash equivalents, accounts receivable and trade and accrued liabilities approximates their carrying value due to the short-term maturities of these instruments;
- (ii) The fair value of derivative instruments, which include cross-currency swap and the equity swap agreement, is calculated as the present value of the estimated future cash flows using an appropriate interest rate yield curve and foreign exchange rate. Assumptions are based on market conditions prevailing at each reporting date. Derivative instrument reflect the estimated amount that the Company would receive or pay to settle the contracts at the reporting date;
- (iii) The fair value of the debenture conversion option, included in derivative financial liabilities, is described in Note 12;
- (iv) The fair value of long-term debt and a long-term payable is estimated based on discounted cash flows using current interest rate for instruments with similar terms and remaining maturities; and
- (v) The fair value of the convertible debentures is based on quoted prices observed in active markets.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The carrying values and fair values of financial instruments, by class, are as follows as at December 31, 2017 and December 31, 2016:

As at December 31, 2017					Carrying Value	Fair value
	At fair value through profit or loss	Loans and receivables	Financial liabilities at amortized cost	Derivative designated in a hedge relationship	Total	Total
	\$	\$	\$	\$	\$	\$
<b>Financial assets</b>						
Cash and cash equivalents	-	34,024	-	-	34,024	34,024
Accounts receivable	-	25,639	-	-	25,639	25,639
Other current assets	6,141	-	-	-	6,141	6,141
Derivative financial assets	-	-	-	3,602	3,602	3,602
<b>Total</b>	<b>6,141</b>	<b>59,663</b>	<b>-</b>	<b>3,602</b>	<b>69,406</b>	<b>69,406</b>
<b>Financial liabilities</b>						
Trade and accrued liabilities	-	-	57,043	-	57,043	57,043
Current portion of long-term debt	-	-	271	-	271	271
Convertible debentures and debenture conversion option (included in derivative financial liabilities)	-	-	48,768	-	48,768	52,766
<b>Total</b>	<b>-</b>	<b>-</b>	<b>106,082</b>	<b>-</b>	<b>106,082</b>	<b>110,080</b>

As at December 31, 2016					Carrying value	Fair value
	At fair value through profit or loss	Loans and Receivables	Financial liabilities at amortized cost	Derivative designated in a hedge relationship	Total	Total
	\$	\$	\$	\$	\$	\$
<b>Financial assets</b>						
Cash and cash equivalents	-	24,301	-	-	24,301	24,301
Accounts receivable	-	29,799	-	-	29,799	29,799
Derivative financial assets	-	-	-	189	189	189
<b>Total</b>	<b>-</b>	<b>54,100</b>	<b>-</b>	<b>189</b>	<b>54,289</b>	<b>54,289</b>
<b>Financial liabilities</b>						
Trade and accrued liabilities	-	-	57,381	-	57,381	57,381
Current portion of long-term debt	-	-	325	-	325	325
Convertible debentures and debenture conversion option (included in derivative financial liabilities)	68	-	43,157	-	43,225	44,421
<b>Total</b>	<b>68</b>	<b>-</b>	<b>100,863</b>	<b>-</b>	<b>100,931</b>	<b>102,127</b>

**Fair value hierarchy**

The fair value hierarchy reflects the significance of the inputs used in making the measurements and has the following levels:

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: Inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The following table presents the financial instruments, by level, which are recognized at fair value in the consolidated statements of financial position:

As at December 31, 2017	Level 1	Level 2	Level 3
	\$	\$	\$
Financial assets (liabilities)			
At fair value through profit or loss			
Debenture conversion option (Note 12) <sup>(1)</sup>	-	-	-
Equity swap agreement (Note 21) <sup>(2)</sup>	-	6,141	-
Derivatives designated in a hedge relationship			
Cross-currency swap <sup>(3)</sup>	-	3,602	-
<b>Total</b>	-	9,743	-

As at December 31, 2016	Level 1	Level 2	Level 3
	\$	\$	\$
Financial assets (liabilities)			
At fair value through profit or loss			
Debenture conversion option (Note 12) <sup>(1)</sup>	-	-	(68)
Derivatives designated in a hedge relationship			
Cross-currency swap <sup>(3)</sup>	-	189	-
<b>Total</b>	-	189	(68)

<sup>(1)</sup> This instrument is classified as a Level 3 financial instrument, since the implied volatility is an unobservable input. The change in fair value of debenture conversion option of \$85 and \$20 was recognized in the consolidated statement of earnings (loss) for the year ended December 31, 2017 and 2016, respectively. An increase or a decrease of 5% in the volatility would have no significant impact on the fair value of the debenture conversion option.

<sup>(2)</sup> In June 2017, the Company has entered into swap agreement with a major Canadian financial institution to reduce its income exposure to fluctuations in its share price relating to the DSU, PSU, RSU and SAR programs. Pursuant to the agreement, the Company receives the economic benefit of share price appreciation while providing payments to the financial institution for the institution's cost of funds and any share price depreciation. The net effect of the equity swaps partly offset movements in the Company's share price impacting the cost of the DSU, PSU, RSU and SAR programs. As at December 31, 2017, the equity swap agreement covered 2,571,569 common shares of the Company. The fair value of this embedded derivative is recorded under other current assets with the related host deposit for a total amount of \$6,141.

<sup>(3)</sup> On December 7, 2015, the Company entered into a cross-currency swap to hedge the convertible debenture denominated in Canadian dollars with a notional amount of CA\$66,000 and bearing interest at a rate of 5.75% per annum, payable semi-annually on June 30 and December 31. Under this cross-currency swap, the Company exchange interest payments and principal redemption on the same terms and designates the cross-currency as a cash flow hedge of the variability of the \$US functional currency equivalent cash flows on the debt. The terms are such that on each interest payment date, the Company will receive 5.75% on a notional of CA\$66,000 and pay 6.485% based on a notional of US\$48,889.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 17. Operating Segments

The following tables summarize the information reviewed by the Company's management when measuring performance:

For the year ended December 31, 2017	Eco-Friendly Materials	Electronic Materials	Corporate and unallocated	Total
	\$	\$	\$	\$
Segment revenues <sup>(1)</sup>	146,468	73,448	-	219,916
Adjusted EBITDA <sup>(2) (3)</sup>	14,976	24,835	(14,694) <sup>(4)</sup>	25,117
Interest on long-term debt, imputed interest and other interest expense	-	-	6,097	6,097
Litigation and restructuring costs (Note 26)	733	(3,695)	9	(2,953)
Change in fair value of debenture conversion option	-	-	(85)	(85)
Foreign exchange and derivative loss	-	-	79	79
Gain on disposal of property, plant and equipment	(748)	(1,139)	-	(1,887)
Impairment of non-current assets (Note 26)	-	3,100	-	3,100
Depreciation and amortization	3,168	4,978	80	8,226
Earnings (loss) before income tax	11,823	21,591	(20,874)	12,540
Capital expenditures	4,091	2,678	-	6,769

For the year ended December 31, 2016	Eco-Friendly Materials	Electronic Materials	Corporate and unallocated	Total
	\$	\$	\$	\$
Segment revenues <sup>(1)</sup>	152,460	79,038	-	231,498
Adjusted EBITDA <sup>(2) (3)</sup>	13,467	19,824	(13,180) <sup>(4)</sup>	20,111
Interest on long-term debt, imputed interest and other interest expense	-	-	8,241	8,241
Litigation and restructuring costs (Note 26)	2,628	1,309	2,008	5,945
Change in fair value of debenture conversion option	-	-	(20)	(20)
Foreign exchange and derivative gain	-	-	(925)	(925)
Depreciation and amortization	4,778	5,711	250	10,739
Earnings (loss) before income tax	6,061	12,804	(22,734)	(3,869)
Capital expenditures	1,557	1,953	-	3,510

<sup>(1)</sup> The total revenues of \$16,931 (2016 – \$14,422) from the recycling and trading of complex materials is allocated to the Eco-Friendly materials and Electronic materials segments.

<sup>(2)</sup> Earnings (loss) before income tax, depreciation and amortization, impairment of non-current assets, litigation and restructuring costs and financial expense (revenues).

<sup>(3)</sup> The total adjusted EBITDA of \$3,790 (2016 – of \$1,641) from the recycling and trading of complex materials is allocated to the Eco-Friendly materials and Electronic materials segments.

<sup>(4)</sup> The total share-based compensation expense is included in Corporate and unallocated (Note 26).

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

As at December 31, 2017	Eco-Friendly Materials	Electronic Materials	Corporate and unallocated	Total
	\$	\$	\$	\$
Total assets excluding the deferred tax asset:	106,631	104,945	26,465	238,041

As at December 31, 2016	Eco-Friendly Materials	Electronic Materials	Corporate and unallocated	Total
	\$	\$	\$	\$
Total assets excluding the deferred tax asset:	95,835	109,013	12,326	217,174

The geographic distribution of the Company's revenues based on the location of the customers for the years ended December 31, 2017 and 2016, and the identifiable non-current assets as at December 31, 2017 and 2016 are summarized as follows:

Revenues	2017	2016
	\$	\$
Asia		
China	10,754	11,551
Japan	4,450	4,563
Other <sup>(1)</sup>	47,856	53,180
Americas		
United States	43,934	46,502
Other	12,626	12,165
Europe		
France	9,705	14,837
Germany	33,713	29,954
United Kingdom	8,285	8,327
Other <sup>(1)</sup>	37,940	44,105
Other	10,653	6,314
<b>Total</b>	<b>219,916</b>	<b>231,498</b>

Non-current assets (other than deferred tax assets)	2017	2016
	\$	\$
Asia <sup>(1)</sup>	16,166	15,721
United States	8,180	5,496
Canada	21,609	22,028
Europe		
Belgium	8,454	9,017
Germany	18,404	18,937
Other	-	1,916
<b>Total</b>	<b>72,813</b>	<b>73,115</b>

<sup>(1)</sup> None exceeding 10%

For the year ended December 31, 2017, one customer represented approximately 12 % (2016 – 16%) of the revenues, and is included in the Electronic Materials revenues.



## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 18. Supplemental Cash Flow Information

Net change in non-cash working capital balances related to operations consists of the following:

	2017	2016
	\$	\$
Decrease (increase) in assets:		
Accounts receivable	4,134	6,238
Inventories	(10,338)	9,226
Income tax receivable	674	(4,187)
Other current assets	(6,177)	(927)
(Decrease) increase in liabilities:		
Trade and accrued liabilities	(4,436)	(1,196)
Income tax payable	2,917	1,824
<b>Net change</b>	<b>(13,226)</b>	<b>10,978</b>

The reconciliation of assets/liabilities arising from financing activities consists of the following:

	December 31 2016	Cash Flows	Non-Cash changes			December 31 2017
			Imputed interest	Foreign Exchange movement	Fair value changes	
	\$	\$	\$	\$	\$	\$
Long-term debt	325	(74)	-	20	-	271
Convertible debenture <sup>(1)</sup>	43,157	-	2,171	3,440	-	48,768
Debenture conversion option	68	-	-	17	(85)	-
Cross-currency swap <sup>(1)</sup>	(189)	-	-	-	(3,413)	(3,602)
Deferred revenues	5,419	791	-	-	-	6,210
<b>Total net liabilities from financing liabilities</b>	<b>48,780</b>	<b>717</b>	<b>2,171</b>	<b>3,477</b>	<b>(3,498)</b>	<b>51,647</b>

<sup>(1)</sup> Interest settlement were reflected as cash flows from operating activities in the consolidated statements of cash flows.

The consolidated statements of cash flows exclude or include the following transactions:

	2017	2016
	\$	\$
a) Excluded additions unpaid at end of year: Additions to property, plant and equipment	<b>1,050<sup>(1)</sup></b>	3,741
b) Included additions unpaid at beginning of year: Additions to property, plant and equipment	<b>3,741</b>	4,181
c) Excluded a reclassification from other liabilities to trade and accrued liabilities for which final settlement and payment were due in April 2017	-	16,038 <sup>(2)</sup>

<sup>(1)</sup> During the second quarter, the Company agreed with a customer to net a trade receivable against a payable for the purchase of property, plant and equipment.

<sup>(2)</sup> In 2016, the Company proceeded with a reclassification of \$16,038 from other liabilities to trade and accrued liabilities.

## 19. Share Capital

Authorized:

- An unlimited number of common shares, participating, with no par value, entitling the holder to one vote per share; and
- An unlimited number of preferred shares, issuable in one or more series with specific terms, privileges and restrictions to be determined for each class by the Board of Directors. As at December 31, 2017 and 2016, no preferred shares were issued.

On February 21, 2017, the TSX approved an amendment to the Company's normal course issuer bid implemented on October 11, 2016. Under this normal course issuer bid amendment, the Company had the right to purchase for cancellation, from October 11, 2016 to October 10, 2017, a maximum of 2,100,000 (previously 600,000) common shares. The Company's normal course issuer bid program expired on October 10, 2017 and has not been renewed.

At the end of December 31, 2017, the Company had repurchased and cancelled 475,016 (2016 – 202,101) common shares at an average price of \$1.38 (2016 - \$1.26) for a total amount of \$654 (2016 – \$252). An amount of \$1,943 (2016 – \$822) has been applied against share capital, and a negative amount of \$1,289 (2016 - \$570) has been applied against the deficit.

## 20. Earnings (Loss) per Share

The following table reconciles the numerators and denominators used for the computation of basic and diluted earnings (loss) per share:

Numerators	2017	2016
	\$	\$
Net earnings (loss) attributable to equity holders of 5N Plus	12,023	(5,895)
Net earnings (loss) for the period	12,013	(5,896)
Denominators	2017	2016
Basic weighted average number of shares	83,676,315	83,977,281
Dilutive effect:		
Stock options	336,979	-
Diluted weighted average number of shares	84,013,294	83,977,281

As at December 31, 2017, a total number of 501,747 stock options were excluded from the diluted weighted average number of shares due to their anti-dilutive effect because of the Company's stock price. The same applies to the convertible debentures and to the 1,555,860 new restricted share units.

As at December 31, 2016, a total number of 2,860,648 stock options were excluded from the diluted weighted average number of shares due to their anti-dilutive effect because of the Company's stock price. The same applies to the convertible debentures.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 21. Share-Based Compensation

#### Restricted Share Unit Plan

On June 7, 2010, the Company adopted a Restricted Share Unit (“RSU”) Plan (the “Old RSU Plan”) to complement the stock option plan. Minor amendments to the Old RSU Plan were adopted by the Board of Directors in May 2013. However, on November 4, 2015, the Board of Directors terminated the Old RSU Plan and replaced it with the New RSU & PSU Plan (as defined hereinafter), thus no additional RSUs shall be credited to the accounts of participants under the Old RSU Plan. Only previously granted RSUs shall continue to vest and be settled as per the terms of the Old RSU Plan. The Old RSU Plan enabled the Company to award to eligible participants phantom share units that vest after a three-year period. The RSU is settled in cash and is recorded as a liability. The measurement of the compensation expense and corresponding liability for these awards is based on the fair value of the award, and is recorded as a charge to selling, general and administrative (“SG&A”) expenses over the vesting period of 3 years.

At the end of each financial period, changes in the Company’s payment obligation due to changes in the market value of the common shares on the TSX are recorded as a charge to SG&A expenses. For the year ended December 31, 2017, the Company granted nil RSUs (2016 – nil), 171,000 of RSUs were paid (2016 – 148,950) and 53,000 RSUs were cancelled (2016 – 17,550). As at December 31, 2017, 216,000 RSUs were outstanding (2016 – 440,000).

#### 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 “New RSU & PSU Plan”) to replace the Old RSU Plan, for the purpose of enhancing the Company's ability to attract and retain talented individuals to serve as employees, officers and executives of the Company and its affiliates and promoting a greater alignment of interests between such employees, officers and executives and the shareholders of the Company. The New 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 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 the case of a participant’s termination by the Company for cause or as a result of a voluntary resignation by the participant before the end of a performance cycle, all RSUs and PSUs will be cancelled immediately as of the date on which the participant is advised of his termination or resigns.

In the case of a participant’s termination by the Company other than for cause, if such participant is deemed to be on long-term disability or if such participant retires before the end of a performance cycle, the number of RSUs which will vest at such event will be pro-rated based on the number of months worked at the end of the performance cycle and all PSUs will be cancelled immediately.

In the case of a participant’s death before the end of a performance cycle, the number of RSUs which will vest will be pro-rated based on the number of months worked at the end of the fiscal year preceding the participant’s death and all PSUs will be cancelled immediately.

The maximum number of common shares which may be issued under the New RSU & PSU Plan is 5,000,000. Common shares in respect of RSUs or PSUs to be settled through the issuance of common shares but that have been forfeited, cancelled or settled in cash shall be available for RSUs or PSUs to be granted thereafter pursuant to this plan. No RSUs or PSUs to be settled through the issuance of common shares may be granted to any participant unless the number of common shares: (a) issued to "Insiders" within any one-year period; and (b) issuable to "Insiders" at any time, under the plan, or when combined with all of the Company's other security-based compensation arrangements, could not exceed 10% of the total number of issued and outstanding common shares, respectively.

For the year ended December 31, 2017, the Company granted 368,360 New RSUs (2016 – 1,245,000) and 37,500 New RSUs were cancelled (2016 – 20,000). As at December 31, 2017, 1,555,860 New RSUs were outstanding (2016 – 1,225,000).

For the year ended December 31, 2017, the Company granted nil PSUs (2016 – 500,000) and, as at December 31, 2017, 500,000 PSUs were outstanding (2016 – 500,000).

#### **Stock Appreciation Rights Plan**

On June 7, 2010, the Company adopted a Restricted Share Unit for Foreign Employees Plan (the "RSUFE Plan") which was slightly amended on November 7, 2012 by the Company to become the Stock Appreciation Rights plan (the "SAR Plan") which replaced the RSUFE Plan. The SAR Plan enables the Company to award eligible participants phantom stock options to foreign directors, officers and employees. SARs usually have a six-year term and vest equally over a four-year period at an annual rate of 25% per year beginning one year following the SARs grant date. The amount of cash payout is equal to the sum of the positive differences between the volume weighted average trading price of the common shares of the Company on the TSX in the last twenty (20) trading days immediately preceding the exercise date and the grant price of each SAR redeemed.

At the end of each financial period, changes in the Company's payment obligations due to changes in the market value of the common shares on the TSX are recorded as an expense. For the year ended December 31, 2017, the Company granted 542,700 SARs (2016 – 35,000), 25,000 of SARs were paid (2016 – nil), 30,156 SARs were expired (2016 – 4,519) and 30,000 SARs were cancelled (2016 – 95,000). As at December 31, 2017, 722,695 SARs were outstanding (2016 – 265,151).

#### **Deferred Share Unit Plan**

On May 7, 2014, the Company adopted a Deferred Share Unit ("DSU") Plan (the "DSU Plan") which enables the Company to provide Board directors and key officers and employees designated by the Board with phantom share units to enhance the Company's ability to attract and retain individuals with the right combination of skills and experience to serve on the Company's Board or as Company's executives. DSUs vest entirely at their date of grant (with the exception of the 400,000 DSUs granted to the Company's CEO on March 2, 2016 which will vest on March 2, 2019) and become payable in cash upon termination of services of a director, designated officer or employee with the Company. The amount of cash payout is equal to the volume weighted average trading price of the common shares of the Company on the TSX of the twenty (20) trading days immediately preceding the date of payment of the DSU. For the year ended December 31, 2017, the Company granted 290,408 DSUs (2016 – 745,503) and nil DSUs were paid (2016 – 109,060). As at December 31, 2017, 1,304,572 DSUs were outstanding (2016 – 1,014,164).

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### Stock Option Plan

On April 11, 2011, the Company adopted a new stock option plan replacing the previous plan (the “Old Plan”), in place since October 2007, with the same features as the Old Plan with the exception of a maximum number of options granted which cannot exceed 5,000,000. The aggregate number of shares which could be issued upon the exercise of options granted under the Old Plan could not exceed 10% of the issued shares of the Company at the time of granting the options. 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 as at December 31, 2017 may be exercised during a period not exceeding six years from their date of grant. 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 a 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:

	2017		2016	
	Number of options	Weighted average exercise price	Number of options	Weighted average Exercise price
Outstanding, beginning of year	2,860,648	CA\$ 2.63	1,558,345	CA\$ 3.74
Granted	288,000	1.75	1,445,000	1.65
Exercised	(597,500)	1.75	-	-
Cancelled	(116,476)	2.50	-	-
Expired	(209,925)	8.59	(142,697)	4.90
Outstanding, end of year	2,224,747	2.20	2,860,648	2.63
Exercisable, end of year	1,001,497	2.59	1,311,898	3.39

The outstanding stock options as at December 31, 2017 are as follows:

Maturity	Exercise price		Number of options
	Low	High	
April and November 2018	CA\$ 2.22	CA\$ 3.61	313,997
May 2019	2.20	2.20	287,500
March to August 2020	3.33	4.29	282,000
March 2021	2.40	2.40	180,750
March 2022	1.65	1.65	872,500
February 2023	1.75	1.75	288,000
			2,224,747

The fair value of stock options at the grant date was measured using the Black-Scholes option pricing model. The historical share price of the Company’s common shares is used to estimate expected volatility, and government bond rates are used to estimate the risk-free interest rate.

The following table illustrates the inputs used in the average measurement of the fair values of the stock options at the grant date granted during the years ended December 31, 2017 and 2016:

	2017	2016
Expected stock price volatility	59%	70%
Dividend	None	None
Risk-free interest rate	0.98%	0.63%
Expected option life	4 years	4 years
Fair value – weighted average of options issued	CA\$0.79	CA\$0.86

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The following table shows the share-based compensation expense recorded in the consolidated statements of earnings for the years ended December 31, 2017 and 2016:

Expense	2017	2016
	\$	\$
RSUs	1,709	854
PSUs	356	117
SARs	322	54
DSUs	1,617	704
Stock options	386	517
Equity swap	80	-
<b>Total</b>	<b>4,470</b>	<b>2,246</b>

In June 2017, the Company entered into an equity swap agreement to reduce its earnings exposure on the fluctuation in the Company's share price since this has an effect on the evaluation of the DSU, PSU, RSU and SAR plans. The fair value of the embedded derivative is recorded under other current assets with the related host deposit. Any further change in the fair value is recorded against the share-based compensation expense (note 16).

The following amounts were recorded:

Liability	2017	2016
	\$	\$
RSUs	2,475	886
PSUs	485	113
SARs	418	90
DSUs	2,748	960
<b>Total</b>	<b>6,126</b>	<b>2,049</b>

## 22. Commitments and Contingencies

### Commitments

The Company rents certain premises and equipment under the terms of operating leases. Future minimum payments excluding operating costs are as follows:

	2017	2016
	\$	\$
No later than 1 year	1,828	2,044
Later than 1 year but no later than 5 years	3,316	4,367
Later than 5 years	-	-
<b>Total</b>	<b>5,144</b>	<b>6,411</b>

As at December 31, 2017, in the normal course of business, the Company contracted letters of credit for an amount of \$432 (2016 – \$741).

### 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.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

### 23. Related Party Transactions

The Company's related parties are its joint ventures, directors and executive members.

Unless otherwise stated, none of the transactions incorporated special terms and conditions and no guarantees were given or received. Outstanding balances are settled in cash.

On December 31, 2016, following the closure of its manufacturing activities earlier that year, Ingal sold its assets. During the year ended December 31, 2016, the Company purchased \$496 worth of gallium from Ingal.

#### Key management compensation

Key management includes directors (executive and non-executive) and certain senior management. The compensation expense paid or payable to key management for employee services is as follows:

	2017	2016
	\$	\$
Wages and salaries	3,016	2,649
Share-based compensation	4,027	2,005
<b>Total</b>	<b>7,043</b>	<b>4,654</b>

### 24. Financial Risk Management

In the normal course of operations, the Company is exposed to various financial risks. These risk factors include market risk (foreign currency risk, interest rate risk and other price risk), credit risk and liquidity risk.

#### Market risk

Market risk is the risk that changes in market price, such as foreign exchange rates, equity prices and interest rates, will affect the Company's net earnings or the value of financial instruments.

The objective of market risk management is to mitigate exposures within acceptable limits, while maximizing returns.

#### (i) Foreign currency risk

Foreign currency risk is defined as the Company's exposure to a gain or a loss in the value of its financial instruments as a result of fluctuations in foreign exchange rates. The Company is exposed to foreign exchange rate variability primarily in relation to certain sale commitments, expected purchase transactions, certain local operating expenses and debt denominated in a foreign currency. In addition, these operations have exposure to foreign exchange rates primarily through cash and cash equivalents and other working capital accounts denominated in currencies other than their functional currencies.



The following table summarizes in US dollar equivalents the Company's major currency exposures as at December 31, 2017:

					2017
	CA\$	EUR	GBP	RMB	Other
	\$	\$	\$	\$	\$
Cash and cash equivalents	660	2,877	2,090	1,396	682
Accounts receivable	438	8,335	81	3,089	1,094
Other current assets	6,141	-	-	-	-
Trade and accrued liabilities	(10,600)	(8,369)	(775)	(2,298)	(1,289)
Long-term debt	(271)	-	-	-	-
<b>Net financial assets (liabilities)</b>	<b>(3,632)</b>	<b>2,843</b>	<b>1,396</b>	<b>2,187</b>	<b>487</b>

The following table shows the impact on earnings before income tax of a five-percentage point strengthening or weakening of foreign currencies against the US dollar as at December 31, 2017 for the Company's financial instruments denominated in non-functional currencies:

	CA\$	EUR	GBP	RMB	Other
	\$	\$	\$	\$	\$
5% Strengthening	(182)	142	70	109	24
5% Weakening	182	(142)	(70)	(109)	(24)

The Company entered into a cross-currency swap to hedge cash flows under the CA\$ convertible debentures. In addition, the Company will occasionally enter into foreign exchange forward contracts to sell US 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 US dollars. As at December 31, 2017, the Company has no foreign exchange contracts outstanding.

(ii) Interest rate risk

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 fluctuation by ensuring that a reasonable portion of its long-term debt and convertible debentures are 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 not have a significant impact on the Company's net earnings.

(iii) Other price risk

Other price risk is the risk that fair value or future cash flows will fluctuate because of changes in market prices, other than those arising from interest rate risk or currency risk.

**Credit risk**

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.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31  
(in thousands of United States dollars, unless otherwise indicated)

The Company establishes an allowance for doubtful accounts as determined by management based on its assessment of recoverability; therefore, the carrying amount of accounts receivable generally represents the maximum credit exposure. As at December 31, 2017 and 2016, the Company has an allowance for doubtful accounts of \$126. The provision for doubtful accounts, if any, is included in selling, general and administrative expenses in the consolidated statement of earnings (loss), and is net of any recoveries that were provided for in prior periods.

Counterparties to financial instruments may expose the Company to credit losses in the event of non-performance. Counterparties for derivative and cash transactions are limited to high credit quality financial institutions, which are monitored on an ongoing basis. Counterparty credit assessments are based on the financial health of the institutions and their credit ratings from external agencies. As at December 31, 2017, no financial assets were past due except for trade receivables. The aging analysis of trade receivables is as follows:

	2017	2016
	\$	\$
Up to 3 months	3,123	3,414
More than 3 months	189	91
<b>Total</b>	<b>3,312</b>	<b>3,505</b>

The following table summarizes the changes in the allowance for doubtful accounts for trade receivables:

	2017	2016
	\$	\$
<b>Beginning of year</b>	<b>126</b>	<b>488</b>
Provision for impairment	50	73
Trade receivables written off during the year as uncollectible	(38)	-
Unused amounts reversed	(12)	(435)
<b>End of year</b>	<b>126</b>	<b>126</b>

Amounts charged to the allowance account are generally written off when there is no expectation of recovering additional cash.

### Liquidity risk

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.

The following table reflects the contractual maturity of the Company's financial liabilities as at December 31, 2017:

					2017
	Carrying amount	1 year	2 year	3 year	Total
	\$	\$	\$	\$	\$
Trade and accrued liabilities (Note 10)	57,043	57,043	-	-	57,043
Long-term debt	271	271	-	-	271
Convertible debentures	48,768	3,170	50,474	-	53,644
<b>Total</b>	<b>106,082</b>	<b>60,484</b>	<b>50,474</b>	<b>-</b>	<b>110,958</b>

## 25. Capital Management

The Company's objective when managing capital is to safeguard its ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Company may amend the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt.

The Company requires the approval of its lenders on some of the capital transactions such as the payment of dividends and capital expenditures over a certain level.

The Company monitors capital on the basis of the debt-to-equity ratio. This ratio is calculated as net debt divided by total equity. Net debt is calculated as total borrowings (comprising long-term debt, convertible debentures and cross-currency swap in the consolidated statement of financial position) less cash and cash equivalents. Total equity is the equity attributable to equity holders of 5N Plus Inc. in the consolidated statement of financial position.

Debt-to-equity ratios as at December 31, 2017 and 2016 are as follows:

	2017	2016
	\$	\$
Long-term debt including current portion	271	325
Convertible debentures	48,768	43,157
Cross-currency swap (Note 16)	(3,602)	(189)
<b>Total debt</b>	<b>45,437</b>	43,293
Less: Cash and cash equivalents	(34,024)	(24,301)
<b>Net debt</b>	<b>11,413</b>	18,992
Shareholders' equity	105,446	88,522
<b>Debt-to-equity ratio</b>	<b>11%</b>	21%

## 26. Expenses by Nature

Expenses by nature	2017	2016
	\$	\$
Wages and salaries	38,388	37,383
Share-based compensation expense (included in Corporate and unallocated) (Note 21)	4,470	2,246
Depreciation of property, plant and equipment and amortization of intangible assets (Notes 6 and 7)	8,226	10,739 <sup>(1)</sup>
Impairment of non-current assets	3,100 <sup>(1)</sup>	-
Amortization of other assets	221	1,277
Gain on disposal of property, plant and equipment	(1,887)	-
Research and development, net of tax credit	1,761	3,212
Litigation and restructuring costs	(2,953) <sup>(2)</sup>	5,945 <sup>(3)</sup>

(1) During the fourth quarter of 2017, the Company recorded an impairment charge on non-current assets of \$3,100 (\$1,116 for Production equipment, \$837 for Technology and \$1,147 for Development costs), included in Electronic materials segment, reflecting recent development to assumptions used in assessing the carrying value of specific product development assets. The change in assumptions is from an active decision to alter the market penetration strategy, other factors remaining constant. It is motivated by intentional delays in increasing production levels in order to prioritize products with higher premiums in niche applications, requiring longer market development cycle compared to other products. The discount rate of 17.5% was used to determine the recoverable amount of these non-current assets.

(2) Including an income resulting from an amendment to optimize commercial agreements mitigated by cost related to termination of a non-core activity.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years ended December 31

(in thousands of United States dollars, unless otherwise indicated)

- (3) On September 29, 2016, the Company announced its intention to consolidate the Company's operations at Wellingborough, U.K. with other sites within the Group, as well as consolidate the operations of DeForest-Wisconsin, U.S.A. and Fairfield-Connecticut, U.S.A. during the first half of 2017 into a newly updated and scaled facility, located in the state of Connecticut, more precisely in the City of Trumbull. Therefore, during the third quarter of 2016, the Company recorded a provision for restructuring costs in accordance with IAS 37 "Provision, contingent liabilities and contingent assets" for an amount of \$3,500 which consisted mainly of severances and other related costs to closures sites. As at December 31, 2016, an amount of \$155 was paid. During 2017, an additional amount of \$406 was recorded and as at December 31, 2017, the outstanding provision is of \$225. In addition, the Company recorded an accelerated depreciation of \$1,804 following the review of the economic life and carrying value of its property, plant and equipment of these sites.

## BOARD OF DIRECTORS

### Luc Bertrand

Chairman of the Board

### Jean-Marie Bourassa

Chairman of the Audit and Risk Management Committee

### James T. Fahey

Member of the Governance and Compensation Committee - Member Audit and Risk Management

### Jennie S. Hwang

Member of the Governance and Compensation Committee - Member Audit and Risk Management

### Nathalie Le Prohon

Chair of the Governance and Compensation Committee

### Arjang J. (AJ) Roshan

President and Chief Executive Officer

## EXECUTIVE COMMITTEE

### Arjang J. (AJ) Roshan

President and Chief Executive Officer

### Richard Perron

Chief Financial Officer

### Nicholas Audet

Executive Vice President,  
Electronic Materials

### Paul Tancell

Executive Vice President,  
Eco-Friendly Materials

### Evelyne Bundock

Vice President,  
Human Resources

### Pascal Coursol

Vice President,  
Recycling, Refining and  
Corporate R&D

## CORPORATE INFORMATION

### STOCK EXCHANGE

5N Plus is listed on the Toronto Stock Exchange, under the symbol VNP.

### TRANSFER AGENT AND REGISTRAR

Computershare Investor Services Inc.

### AUDITORS

PricewaterhouseCoopers LLP

### HEAD OFFICE

4385 Garand Street  
Montreal, Quebec  
H4R 2B4

### ANNUAL MEETING

The annual shareholders meeting will be held on Wednesday, May 2, 2018 at 9:30 a.m.

Club Saint-James  
1145 Union Avenue  
Montreal, Quebec

For more information, please contact:

### INVESTOR RELATIONS

5N Plus Inc.  
4385 Garand Street  
Montreal, Quebec  
H4R 2B4

T: 514-856-0644  
F: 514-856-9611  
invest@5nplus.com

Si vous souhaitez obtenir une copie en français de ce rapport annuel, communiquez avec :

### RELATIONS AVEC LES INVESTISSEURS

5N Plus inc.  
4385, rue Garand  
Montréal (Québec)  
H4R 2B4

Aussi disponible à l'adresse :  
www.5nplus.com



100%







5N Plus Inc.  
4385 Garand Street  
Montreal, Quebec  
H4R 2B4  
Canada

[www.5nplus.com](http://www.5nplus.com)