



**IBC ADVANCED ALLOYS CORP.**

**MANAGEMENT'S DISCUSSION AND ANALYSIS**

**THREE MONTHS ENDED SEPTEMBER 30, 2015**

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**Management's Discussion and Analysis**  
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*The following is management's discussion and analysis ("MD&A") of IBC Advanced Alloys Corp., and its subsidiaries, prepared as of November 23, 2015. This MD&A should be read together with the unaudited interim condensed consolidated financial statements for the three months ended September 30, 2015 and the audited consolidated financial statements and related notes for the year ended June 30, 2015. Financial amounts, other than amounts per share or per pound, are presented in thousands of United States dollars ("\$\$") unless indicated otherwise. Canadian dollar amounts are denoted by "C\$".*

*The terms "IBC", "we", "us" and "our" refer to IBC Advanced Alloys Corp. and its subsidiaries, unless the context otherwise requires.*

*Certain information included in this MD&A may constitute forward-looking statements. Statements in this report that are not historical facts are forward-looking statements involving known and unknown risks and uncertainties, which could cause actual results to vary considerably from these statements. Readers are cautioned not to put undue reliance on forward-looking statements.*

*Our unaudited condensed consolidated interim financial statements for the three months ended September 30, 2015 have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") using accounting policies consistent with IFRS as issued by the IASB and interpretations of the International Financial Reporting Interpretations Committee.*

*Additional information relating to us is available for view on SEDAR at [www.sedar.com](http://www.sedar.com).*

## **Our Business**

We are primarily engaged in developing and manufacturing advanced alloys, in particular beryllium-aluminum alloys and specialty copper alloys. Our head office is located in Vancouver, Canada. We operate four plants in the United States ("US") that manufacture, heat-treat, machine or market copper-beryllium, beryllium-aluminum, copper-based master alloys and similar specialty alloy products including beryllium-aluminum castings. Our manufacturing operations currently employ 73 people. Our manufacturing operations comprise two divisions: Copper Alloys and Engineered Materials.

- Copper Alloys manufactures and distributes a wide variety of copper alloys as castings and forgings: beryllium copper, chrome copper and aluminum bronze in plate, block, bar, rings and specialty copper alloy forgings for plastic mold tooling and resistance welding parts.
- Engineered Materials supplies high-performance beryllium-aluminum components to the aerospace and high-tech manufacturing sectors.

In the past we have undertaken research initiatives with the goal of increasing demand for beryllium-related products. At present, we do not have any active research programs but intend to resume research in the future. Other than our VP nuclear fuels who is employed part-time, we do not have any employees directly engaged in research.

We were formed by an amalgamation under the laws of British Columbia on November 23, 2007 and our common shares are listed on the TSX Venture Exchange (the "TSX-V") under the symbol "IB" and on the OTCQX International under the symbol "IAALF".

## **Corporate Developments**

- In September 2015, Lockheed Martin awarded us a purchase order for design, manufacture and implementation of the hard tooling to be used as a part of the final

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qualification process to establish and qualify Beralcast® castings for the Sniper Advanced Targeting Pod.

- In September 2015, our EMC division received two new orders totalling more than \$1.2 million from an existing precision manufacturing customer.
- In September 2015, we received a second purchase order from Lockheed Martin to produce components for the F-35 Lightning II Electro-Optical Targeting System ("EOTS"). See *Engineered Materials* below.
- In August 2015, we granted stock options to directors, officers and employees to purchase 1,200,000 common shares of IBC at a price of C\$0.12 until August 25, 2020.
- In August 2015, we appointed Chris Huskamp as acting president of IBC Engineered Materials Corp. Mr. Huskamp is an advanced automotive and aerospace materials expert and has been with IBC since 2011, initially as a consultant, and since 2014, as vice president of business and technical development.
- In July 2015, we delivered our first completed Beralcast® azimuth gimbal housing components to Lockheed Martin. The first articles will be used in the Lockheed Martin F-35 Lightning II EOTS. See *Engineered Materials* below.

**Manufacturing Operations**

We currently have four manufacturing operations in the United States that employ 73 people.

Location	Building Area		Leased/ Owned
	m <sup>2</sup>	sq ft	
Copper Alloys			
Franklin, IN	4,800	48,800	Owned
Royersford, PA	1,500	16,000	Leased
New Madrid, MO	2,500	26,500	Owned
Engineered Materials			
Wilmington, MA	5,800	63,000	Leased

*COPPER ALLOYS*

We manufacture and distribute a wide variety of copper alloys as castings and forgings: beryllium copper, chrome copper and aluminum bronze in plate, block, bar, rings and specialty copper alloy forgings for plastic mold tooling and resistance welding parts. We sell directly to end users and serve some markets through a network of established dealers and distributors. Our copper alloys operations are based in Franklin, Indiana, where we maintain a forging (hammer, press and ring rolling), heat-treating and machining operation. We cast billets at plants in Royersford, Pennsylvania and New Madrid, Missouri. Our Franklin plant sits on 4.8 hectares (12.0 acres) of land that has considerable room for expansion.

We source copper alloys in cast billet, slab or ingot from mills in North America, Europe and Asia and convert these into usable industrial products serving the industrial welding, oil and gas, plastic mold, metal melting, marine defense, electronic and industrial equipment markets. We also provide tooling components for the North American automotive industry, the European and North American consumer plastic tooling producers, the global oil and gas service industry, the

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prime North American submarine and aircraft carrier producers and repair facilities including the US Navy, electronics industries and general equipment manufacturers. We produce material at two IBC-owned mills and buy other billet from independent third-party mills.

We have expertise in melting and casting beryllium copper and other beryllium containing alloys. Our casting operations are a primary producer-supplier of beryllium copper casting and master alloy ingot products in North America and markets around the world. Our copper alloys operations also manufacture beryllium nickel and low-beryllium-content beryllium-aluminum alloys. We offer our customers a full range of manufacturing and support services including casting and master alloy products, cast and forged billet products, semi-continuous cast input billets and wrought products. We manufacture our beryllium alloys utilizing either pure metallic beryllium or certified beryllium copper master alloy.

Our Royersford facility has three furnaces that have been adapted to meet the specialized requirements of beryllium alloy manufacturing. We have strong technical and manufacturing engineering resources in the highly specialized beryllium and beryllium containing alloy industry, which have allowed us to develop and integrate proprietary direct chill VLT (very low turbulence) semi-continuous casting technology into a highly autonomous billet manufacturing cell. This effort has resulted in the capability to manufacture large 21-inch diameter beryllium copper input billets weighing up to two tonnes. These large-scale as-cast billets exhibit consistently fine-grained, uniform micro-structures coupled with high purity, low carbide chemical compositions.

Our New Madrid plant is located on a 2.4-hectare (6.0 acres) site 265 kilometres (165 miles) south of St. Louis, Missouri. It has two furnaces and is capable of producing billets in a range of sizes and compositions. We are planning to upgrade this facility to make it suitable for beryllium alloy production when production volumes justify the investment. This facility is underutilized and as a result there is room for significant expansion of plant operations at this location.

#### *ENGINEERED MATERIALS*

Engineered Materials supplies high-performance beryllium-aluminum components to the aerospace and high-tech manufacturing sectors. We currently manufacture the Beralcast<sup>®</sup> and ABX<sup>™</sup> families of metal matrices that can be used in commercial and military applications requiring complex, lightweight or high-stiffness parts. We have additional, higher-performance products in development and plan to launch at least one new major product line in the next 12 months. Using our proprietary manufacturing techniques, we plan to make beryllium-aluminum components more accessible and cost-effective.

In general, Beralcast<sup>®</sup> and ABX<sup>™</sup> alloys serve as a higher-performance or lower-cost replacement materials for cast aluminum, magnesium, titanium, metal matrix composites, non-metallic composites, and pure beryllium or powder metallurgy beryllium-aluminum. Some of the varied applications include automotive braking and structural components and aerospace and satellite system components.

The principal Beralcast<sup>®</sup> metal matrix is more than three times stiffer than aluminum with 22% less weight and can be precision-cast to simple and complex configurations. This material is very lightweight with a high modulus of elasticity and can be precision cast for three-dimensional stability. Beralcast<sup>®</sup> is ideally suited for certain demanding semiconductor manufacturing equipment, computer components and other commercial and aerospace applications and allows for a near-net shape to be cast for maximum manufacturing efficiencies.

Binary beryllium-aluminum composites were developed by a US corporation, which was originally a metallurgical laboratory affiliated with MIT, in cooperation with Lockheed Martin. We own the intellectual property relating to the more advanced development of this technology,

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which is a proprietary and patented castable metal matrix composite beryllium aluminum alloy now manufactured as Beralcast<sup>®</sup>. We believe that a competitor may be working towards the commercial launch of an alternative cast beryllium-aluminum product, which if commercially viable would be a direct competitor to Beralcast<sup>®</sup> and ABX<sup>™</sup>.

We have trade name rights to Beralcast<sup>®</sup> and ABX<sup>™</sup>; proprietary know-how; manufacturing equipment; marketing and supply agreements; and US beryllium stockpile bidding requirements and bona fides. Since the manufacturing process is different from that employed for Copper Alloys, we operate a separate manufacturing facility optimized for Beralcast<sup>®</sup> and ABX<sup>™</sup> alloys.

We are developing Engineered Materials' business by undertaking product-focused development initiatives with a heavy emphasis on defence applications. Generally, the process is as follows:

1. Memorandum of understanding – The first step is to assess the feasibility of using Beralcast<sup>®</sup> in the customer's application.
2. Non-recurring engineering – At various stages between the initial feasibility assessment and production, we and our customer engage in engineering work to tailor the part design to the material and assess its performance.
3. Hard tooling – Once production is likely, the customer asks us to design, manufacture and implement hard tooling to be included as part of final qualification process. Although not a guarantee that a production order will follow, a hard tooling contract is a very strong indication that the customer expects to enter volume production of the component.
4. LRIP (low-rate initial production) – New programs typically work through a start-up phase to iron out problems before production reaches long-term levels. As part of the first production run, we work with our customer on various quality assurance steps culminating in the first article inspection.
5. Volume production.

We are currently working on various initiatives at stages from memorandum of understanding to low-rate initial production ("LRIP").

In August 2015, we appointed Chris Huskamp as acting president of Engineered Materials, replacing Ray White who resigned his position.

*Recent Business Initiatives*

In September 2014, Lockheed Martin Missiles and Fire Control selected Engineered Materials to provide critical cast components for the EOTS system on the F-35 Lightning II. The first component covered by this contract is an EOTS azimuth gimbal housing being manufactured using Beralcast<sup>®</sup>, Engineered Material's proprietary beryllium-aluminum casting alloy.

Lockheed Martin has awarded us two contracts for production azimuth gimbal housings for OEM aircraft and spares. These contracts are for the ramp-up production period, or LRIP. The first contract, awarded in September 2013 was for LRIP lots 7 and 8 and the second contract awarded in August 2014 was for LRIP lots 9 and 10. We have completed casting production for LRIP lots 7 and 8, and have made all deliveries to the subcontracted machine shop. We have begun deliveries of castings for LRIP lots 9 and 10.

The value of the initial contract was just over \$2.0 million including machining, non-recurring engineering and hard tooling deliverables; the value of the second contract, which is for castings only, is for a similar amount. These contracts, with subsequent LRIP contract awards, have the potential to increase significantly over the life of the F-35 program. The EOTS assembly being produced by Lockheed Martin for all the F-35 variants and planned F-35 production quantities are estimated to be over 3,000 aircraft with deliveries through 2035.

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We are currently pursuing other sales opportunities with several defence companies and, in our fourth fiscal quarter, completed deliveries to UTC Aerospace Systems and Kaman Corporation.

While we are currently operating at much less than capacity and recently refurbished part of our vacuum furnace, we believe that increased production at our Wilmington, MA facility will require replacement of key parts of our furnace within the next 12 months at an expected cost of less than \$1 million. This upgrade will more than double our melt capacity. Since first highlighting the need for new furnace components, our ongoing preventive maintenance program has improved furnace performance over the last few months.

*ULBA METALLURGICAL PLANT*

We are dependent on Ulba Metallurgical Plant ("Ulba") for our supply of vacuum-cast beryllium and beryllium copper master alloy. Ulba operates a beryllium processing and manufacturing facility and is owned by Kazatomprom, the national atomic company of Kazakhstan. As we have done in the past, we may also be able to source beryllium from the US National Defense Stockpile and a third-party business from time to time. We have entered into long-term beryllium and beryllium copper master alloy supply agreements with Ulba. Ulba's ability to honour its supply obligations will depend on its ability to source raw materials. We are unable to obtain reliable information as to the extent and availability of Ulba's raw material supply, although we understand that production uses long-term stockpiles. Any disruptions in Ulba's ability to manufacture beryllium or CTMA to our specifications would have a materially adverse effect on our business.

*OPERATING PERFORMANCE AND OUTLOOK*

*Copper Alloys*

Our first and fourth fiscal quarters are usually stronger than our second and third fiscal quarters. This is due to seasonal factors such as the holiday season and our customers' production schedules. Copper Alloys sales have been unusually soft. This is partly due, we believe, to a general sector weakness resulting from lower resource activity, particularly oil and gas. There are also company-specific factors relating to purchasing activity by specific customers. One factor had been equipment downtime at one of our customers, resulting in a lapse in purchasing. That equipment is now working again but purchases have not yet returned to historical levels. This lower sales trend will continue into the second quarter of fiscal 2016. We are working to offset this decline with growth from other Copper Alloys product lines but expect to record an overall decline in Copper Alloys revenues in fiscal 2016.

Copper Alloys sales are also affected by changes in the underlying price of commodities, primarily copper. Indicative copper prices per pound are:

	<b>2015</b>	<b>2014</b>
June 30	\$2.64	\$3.15
September 30	\$2.29	\$3.03

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We pass the cost of copper through to our customers and do not hold large inventories of copper. Accordingly, our profitability is not, in the long term, affected by the price of copper except to the extent that high copper prices discourage consumption. In the short term, price fluctuations can have a bearing on our profitability as we realize gains or losses on our inventories.

### *Engineered Materials*

Engineered Materials sales increased in fiscal 2015 as a result of aerospace business and pre-production work on F-35 components, however most of the revenues from LRIP lots 7 and 8 will be recognized in fiscal 2016. We expect that fiscal 2016 sales at Engineered Materials will increase over 2015.

In the first quarter, Engineered Materials returned a positive gross profit for the first time in three years, although Engineered Materials gross margin is still adversely affected by our manufacturing costs being spread over a small sales volume; Engineered Materials has relatively high fixed costs and operates far below capacity.

We expect to complete delivery of LRIP lots 7 and 8 components in the third quarter of fiscal 2016 but began delivery of LRIP lots 9 and 10 castings in the second quarter of fiscal 2016, so there is an overlap in revenue recognition for these two contracts.

Our Engineered Materials division has typically generated 10% to 15% of our revenues but we expect Engineered Materials' proportion of total revenue to increase over the next few years as that segment grows. In the first quarter of fiscal 2016, Engineered Materials generated 24% of our sales.

### **Research Initiatives**

From time to time, we sponsor and assist in research initiatives with a view to increasing long-term demand and new market opportunities for beryllium and beryllium oxide. Our primary focus has been on enhanced nuclear fuels, however we are not actively engaged in research at present. We will be presenting a paper on our beryllium oxide ("BeO") nuclear fuels initiative at the Characterization and Quality Control of Nuclear Fuels ("CQCNF 2015") Conference in Hyderabad, India on December 1 to 3, 2015. The conference is sponsored by the Indian Nuclear Fuel Complex, a central industrial unit of India's Department of Atomic Energy which manages 21 nuclear power reactors in India.

Since 2008, we have sponsored collaborative research agreements with Purdue University and Texas A&M to develop a new type of BeO nuclear fuel that is longer lasting, more efficient and safer than current nuclear fuels. Previous work by Purdue nuclear engineers showed that an advanced  $UO_2 - BeO$  nuclear fuel could potentially save money by lasting longer and burning more efficiently than conventional nuclear fuels. In addition to cost savings, an advanced  $UO_2 - BeO$  nuclear fuel could also contribute significantly to the operational safety of both current and future nuclear reactors due to its superior thermal conductivity and associated decrease in risks of overheating and meltdown. In January 2011, we received reports on the 2008-2010 phase of research and initial testing which concluded that  $UO_2 - BeO$  fuel is longer lasting, more efficient and provides a larger safety margin than current nuclear fuels.

Under the terms of the collaborative research agreements, IBC has an option to enter into an exclusive royalty-bearing license for commercial application to the intellectual property relating to the development of an advanced BeO nuclear fuel (the "IP") with both Purdue and Texas A&M. Purdue has filed provisional patents covering the IBC-funded nuclear fuel research.

The next step in this research initiative will be to have an industrial assembly of the BeO-enhanced fuel approved for irradiation in a test reactor. We have not allocated funds to this initiative but are seeking a partner to jointly fund the next development step.



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**Financial**

Except as noted, all financial amounts are determined in accordance with IFRS and expressed in thousands of US dollars, except per-share amount.

*SELECTED QUARTERLY INFORMATION*

During our most recent eight quarters, we have not incurred any loss from discontinued operations or extraordinary items.

Quarter Ended	Revenue	Loss for the period	Basic and diluted loss per share <sup>1</sup>
	\$000	\$000	\$
December 31, 2013	3,869	(866)	(0.01)
March 31, 2014	3,867	(587)	(0.01)
June 30, 2014	4,323	(792)	(0.01)
September 30, 2014	4,646	(519)	(0.01)
December 31, 2014	5,087	(706)	(0.01)
March 31, 2015	4,479	(582)	(0.01)
June 30, 2015	3,572	(996)	(0.01)
September 2015	4,232	(721)	(0.01)

<sup>1</sup> The sum of quarterly loss per share may not add to year-to-date totals due to rounding

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Factors affecting quarterly losses include:

- June 30, 2014 – our Copper Alloys operations had a weak quarter, although this was partly offset by improved Engineered Materials sales. The Copper Alloys weakness was not due to any single factor but had a variety of causes that were not attributable to a long-term trend.
- June 30, 2015 – while Engineered Materials enjoyed a strong quarter, Copper Alloys operations experienced a weak quarter that reflected a trend towards lower order intake.

*RESULTS OF OPERATIONS FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2015*

We incurred a loss of \$721 for the three months ended September 30, 2015 compared to a loss of \$519 in the comparative 2014 period. Most of the difference in the loss for the period is attributable to a 2014 deferred tax provision rather than to operating results. Engineered Materials performance improved significantly in the quarter but the improvement was not sufficient to offset the decline in Copper Alloys activity. A summary of our results of operations to income before other income (loss) (“operating income”) follows:

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	Three Months Ended September 30, 2015				Three Months Ended September 30, 2014			
	Copper Alloys	Eng. Mat.	Corp.	Consol- idated	Copper Alloys	Eng. Mat.	Corp.	Consol- idated
Sales	3,202	1,030	-	4,232	3,984	662	-	4,646
Cost of sales								
Materials	1,908	(8)	-	1,900	2,578	247	-	2,825
Labour	638	475	-	1,113	451	347	-	798
Overhead	250	450	-	700	316	334	-	650
Depreciation	116	87	-	203	88	87	-	175
Change in finished goods	3	(10)	-	(7)	(178)	-	-	(178)
	2,915	994	-	3,909	3,255	1,015	-	4,270
Gross profit (loss)	287	36	-	323	729	(353)	-	376
SG&A expenses	464	249	354	1,067	435	313	315	1,063
Operating income (loss)	(177)	(213)	(354)	(744)	294	(666)	(315)	(687)
<i>Gross margin</i>	9%	3%		8%	18%	(53%)		8%

*Segment Analysis*

A discussion about the significant components of the segment operating loss and net loss follows.

*Copper Alloys*

- Copper Alloys gross profit was adversely affected by the combination of declining sales and significant fixed operating costs. Gross margin dropped from 18% to 9% as a result.
- A decline in the price of copper reduced our sales by \$106 and a decline in production volume decreased sales by \$141 in the period ended September 30, 2015 compared to the same period in 2014. Changes in by product sales (\$228 decline) and sales mix (\$307 decline) accounted for the remainder of the difference. We try to pass price changes (favourable or unfavourable) through to our customers but sharp declines in price adversely affect our profitability due to holding losses on inventory. We were able to offset the effect of lower copper prices and production volumes by improving our sales mix and with increased shipments of by-products.
- Interest expense, shown below the operating income line, relates to line of credit and term loan facilities for our Copper Alloys operations.

*Engineered Materials*

- Engineered Materials gross profit margin is adversely affected by fixed costs being spread over a small sales volume. In the short term, material and supplies costs are the only significant variable expense. We expect that if Engineered Materials sales increase, gross margin will improve as the fixed costs will be spread over a larger sales volume.
- During the first quarter, Engineered Materials recognized sales of LRIP 7 / 8 production which significantly improved the operating results.
- Our manufacturing overhead decreased in the current fiscal period as a result of staffing changes.

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- Depreciation charges are a significant proportion of operating costs, so while we report an operating loss, the cash flow performance of Engineered Materials is better. We expect that most of Engineered Materials' plant and equipment will be substantially depreciated by the end of fiscal 2016.

*Corporate*

- Corporate expenses relates to expenses incurred to manage the overall group, including senior management, fundraising initiatives, business development activities, public company costs and any expenses not directly related to manufacturing or research.
- Investor relations expense largely comprises consulting fees paid to communicate information about us to current and prospective investors. As a result of new initiatives, particularly regarding our Engineered Materials operations, we increased our investor relations activities and expect they will remain at the current level for the foreseeable future.
- We include corporate-related personnel costs in salaries, wages, and management fees expense. Our CEO and CFO have at various time-deferred payment of some or all of their compensation and are currently deferring 20% of their salary until our finances improve. Accordingly, the cash operating costs were less than the accrued costs reflected in our financial statements.
- Professional fees comprise corporate audit and legal and related fees, other than legal fees incurred to acquire properties or for financings, which are capitalized.
- Other income primarily represents receipts from the sublease of our premises.

*CHANGES IN FINANCIAL POSITION SINCE JUNE 30, 2015*

Changes in our financial position since June 30, 2015 relate to operations in the ordinary course.

*LIQUIDITY AND CAPITAL RESOURCES*

At September 30, 2015, we had working capital of \$2,422 including cash and equivalents of \$443, as compared to working capital of \$2,904 at June 30, 2015. Factors affecting our liquidity include:

- Copper Alloys generates enough cash independently to support its operations, but Engineered Materials will have to generate additional business to generate positive cash flow. We continue to support Engineered Materials' operations, primarily to acquire beryllium inventory.
- The main limitation on our cash position is the cost of maintaining our corporate office and corporate development initiatives. Related to this are restrictions imposed by our banks that currently prevent us from transferring funds from Copper Alloys to our other segments. Consequently, at present, our corporate office, research and corporate development activities are entirely dependent on our ability to raise equity funds.
- To support our cash position, directors and officers have deferred \$424 of compensation to September 30, 2015. Most of this balance is denominated in Canadian dollars and so this obligation has been favourably affected by changes in exchange rate.
- We have materials purchase commitments that may exceed our operational needs with the result that we over-invest in inventory. While we currently have more inventory than we need, we expect that increases in production will restore inventory to a normal level.

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- Resource prices, particularly for copper, have a bearing on our manufacturing costs and selling prices, as copper is a large component of most of our products.
- We may be obliged to incur material expenditures on purchases of property, plant and equipment to maintain our productive capacity or service customers. In particular, based on sales initiatives under way, we are contemplating the purchase of equipment to expand our capacity to produce Beralcast<sup>®</sup> products. We will need to raise further capital in order to complete such an expansion.

We may be able to generate additional cash by expanding our bank facilities but we will need to raise additional funds to complete our business plan. There can be no assurance that we will be successful in obtaining such funds.

*COMMITMENTS*

At September 30, 2015, we had commitments to lease premises over the next five years with an aggregate payment obligation of \$2,503. We were also committed to raw materials purchases over the next two years aggregating \$6,763.

In November 2015, we entered into a 10-month office lease with an aggregate obligation of \$71.

*RELATED PARTY TRANSACTIONS*

We do not have any contractual relationships with directors or officers other than employment contracts in the ordinary course of business. The contracts are not financially material to our business except that our CEO, CFO and executive vice president of business and technical development are eligible to receive payments of up to C\$675, C\$360 and \$405 respectively in the event of a change of control of IBC, if certain conditions are met. Our directors were paid \$36 per year, but agreed in October 2012 to reduce annual director compensation to \$18 temporarily as part of a broader initiative to reduce overhead expenses. Furthermore, our board, CEO and CFO have agreed to reduce or defer part of their compensation until IBC's finances improve as described in *Liquidity and Capital Resources* above.

*FINANCIAL INSTRUMENTS AND OTHER INSTRUMENTS*

Our activities expose us to a variety of financial risks, including foreign exchange risk, interest rate risk, commodity price risk and credit risk. We do not have a practice of trading derivatives. We attempt to employ a natural hedge for foreign currency by holding funds in the currency in which we expect to spend the monies.

*Foreign Exchange Risk*

While most of our activities are in the United States, we maintain a corporate office in Canada and raise money in Canadian dollars. We manage exchange risk on equity capital by converting expected United States expenditures to United States dollars at the time the money is raised.

*Interest Rate Risk*

Our interest rate risk mainly arises from the interest rate impact on cash and cash equivalents and interest expense on the BMO Harris Bank line of credit. Our term loan has a fixed interest rate and is not exposed to short-term interest rate risk.

*Commodity Price Risk*

Our profitability and long-term viability depend, in large part, on the market prices of copper, aluminum and beryllium. The market prices for metals can be volatile and are affected by factors beyond our control, including: global or regional consumption patterns; the supply of, and

demand for, these metals; speculative activities; the availability and costs of metal substitutes; expectations for inflation; and political and economic conditions, including interest rates and currency values. We cannot predict the effect of these factors on metal prices. We do not engage in hedging but, where possible, structures selling arrangements in a way that passes commodity price risk through to the customer.

#### *Credit Risk*

We manage credit risk by trading with recognized creditworthy third parties and insuring trade receivables. In addition, we monitor receivable balances with the result that the Company's exposure to bad debt is generally not significant.

We also manage our credit risk by investing surplus cash in low-risk, liquid securities, typically short-term deposits with large financial institutions.

### **Environmental and Occupational Safety Issues**

We melt and machine materials that have the potential, if not controlled and handled appropriately, to have a negative effect on health and the environment. In addition, our operations use materials such as cutting and hydraulic fluids, which have the capacity to cause environmental contamination if left uncontained.

To mitigate these potential risks we:

- employ manufacturing practices to minimize and eliminate dispersal of fumes and dust;
- use trap basins and fluid reservoirs to capture and retrieve possible overages;
- use of active exhaust vents/hoods located in equipment areas to capture and filter air;
- regularly scheduled assessment and maintenance of in-house ventilation systems;
- require our employees to use appropriate personal protective equipment (respirators, outer garments, gloves, etc.) selected to limit and protect them from any potential exposures;
- conduct beryllium lymphocyte proliferation tests (BeLPT) to determine employees' potential for sensitivity to beryllium prior to possible exposure;
- undertake ongoing air quality monitoring and perform periodic employee health exams as per occupational health guidelines; and
- limit access to areas that may have a potential exposure to beryllium dust particles.

In spite of these procedures, we remain subject to risk in this regard.

As with all industry, we are subject to periodic inspection by state and local safety, health and environmental authorities. If during an inspection a failing was noted in our system, the potential for the temporary or permanent closure of the facilities could exist. If during the periodic employee health screening, an employee displays elevated exposure to metals, it could require us to place the employee on sick leave, which would have the potential to impact both our direct and indirect costs and cause a disruption of production. There is also the potential that an inherent safety or environmental exposure, if uncontrolled, could initialize a suit by employees or neighbours.

To minimize the risks arising from pre-acquisition activities, we commissioned phase one environmental reviews prior to acquiring our copper alloys businesses. It may be possible that environmental problems remain at our facilities that these phase one assessments did not uncover.

## **Shareholders' Equity**

### *SHARE ISSUANCES*

Our board and the TSX-V have approved the issuance of 33,334 shares to settle a contingent liability of \$30 with a supplier but we have not yet issued the shares.

### *SHARE OPTIONS*

We have a rolling 10% share option plan that allows for the issuance of options equal to 10% of the number of issued shares. Shareholders approved our 2014 share option plan at our annual general meeting held in December 2014.

In August 2015, we granted incentive stock options to directors, officers, management and certain key employees and consultants, to purchase up to 1,200,000 common shares. The options have an exercise price of C\$0.12, are exercisable until August 25, 2020 and vest in stages over a three-year period.

In August 2015, an option holder forfeited 65,000 options and, in November 2015, an option holder forfeited 500,000 options.

### *OUTSTANDING SHARE DATA*

As at the date of this MD&A, we have issued:

- A total of 98,085,813 common shares. In addition, we plan to issue 33,334 common shares to settle a contingent liability to a supplier.
- Warrants to purchase 33,508,286 common shares.
- Share options to purchase 8,449,999 common shares.

The maximum number of shares potentially issuable is therefore 140,077,432.