

LONDON, UNITED KINGDOM--(Marketwired - Oct 3, 2016) - [Horizonte Minerals Plc](#) (AIM:HZM)(TSX:HZM) ('Horizonte' or 'the Company'), the London and Canadian listed nickel development company focussed in Brazil, is pleased to announce positive economic results from its new Pre-Feasibility Study ('PFS') prepared in accordance National Instrument 43-101 ('NI 43-101') on its 100%-owned Araguaia project ('Araguaia' or 'the Project'), which includes both the Araguaia Nickel project area ('HZMA') and the Glencore Araguaia project area ('GAP'). The Project is located south of the Carajás mining district in the State of Pará in northern Brazil.

## Highlights

- Robust economics based on a 28 year life of mine ('LOM') producing ~14,500 tonnes per annum ('TPA') nickel in ferronickel from a single line Rotary Kiln Electric Furnace Plant ('RKEF')
- Post tax NPV8 of US\$581 million at a nickel price of US\$14,000/t and an NPV8 of US\$328 million at US\$12,000/t Ni
- Post tax IRR of 26.4% at US\$14,000/t and 19.3% at US\$12,000/t Ni
- Project is expected to generate US\$1.3 billion in free cash flow over LOM at US\$12,000/t Ni
- High grade ore with average nickel grade of 1.96% for the first 10 years of production
- Project on the lower range of the global cost curve with C1 cash costs of US\$3.15/lb Ni (US\$6,948/t Ni)
- 43-101 Proven and Probable Mineral Reserve Estimate of 24.6 Mt grading 1.77% Ni

Commenting, Jeremy Martin, Horizonte's CEO said, "We are pleased with the positive results from the PFS delivering a post-tax NPV of US\$328M and IRR of 19.3% based on a long term nickel price of US\$12,000/t. If we use the bank's consensus mid-term nickel price of US\$14,000/t, the NPV increases to US\$581M with an IRR of 26.4% showing the significant gearing that is available with any future increase in nickel prices. Importantly the PFS demonstrates that the Project is cash flow positive at today's nickel prices which puts Araguaia within a limited group of global assets that are considered viable in the current low price nickel environment.

"Our low-cost acquisition of the adjacent nickel project from Glencore was a game-changer for Horizonte. The value is demonstrated in this new PFS which now has an overall grade for the first 10 years of mining averaging 1.96% nickel and the LOM grade over 28 years averaging 1.77% nickel which places the Project firmly in the upper quartile of the global grade curve for this type of deposit. The Project is expected to generate US\$1.3 billion in free cash flow over the LOM with the planned operation producing around 14,500 tonnes per year of nickel in ferronickel at a grade of 30% utilising the proven RKEF process.

"The next major milestone in the development of Araguaia is the Feasibility Study which we anticipate starting in 2017. In parallel with this we will be looking at the development funding options available as well as offtake partners. We believe that the timeline for the development of Araguaia is well aligned with the market's expectation of an increase in nickel price over the mid-term. Future demand looks robust with predicted growth running between 2% and 4% this year and demand is anticipated to outpace supply, ensuring that Araguaia is a compelling project to generate value for shareholders. This, combined with strong economic fundamentals, confirms that Araguaia is well positioned to be one of the next major nickel projects to be developed and we look forward to providing updates as we advance the Project through Feasibility."

The information communicated in this announcement includes inside information for the purposes of Article 7 of Regulation 596/2014 (MAR).

## Pre-Feasibility Study Details

### Summary of Key Results

Pre-Feasibility Study key Indicators	Value		
Nickel price	\$12,000/t	\$14,000/t	
NPV8 post tax	\$328M	\$581M	
IRR post tax	19.3	% 26.4	%
Initial mine life	28	28	
Capital costs - pre-production	\$354M	\$354M	
C1 costs	\$3.15/lb	\$3.15/lb	
	\$6,948/t	\$6,948/t	
Free cash flow over LOM (after capital payback)	\$1,259M	\$1,946M	
Payback period (After taxation)	4.5 years	3.4 years	
Breakeven Ni price on NPV8 post tax	\$9,426/t	\$9,426/t	
Average annual production of nickel	~14,500tpa	~14,500tpa	

Average Ni grade - Year 1 to 10	1.96	% 1.96	%
Product grade quality	30% Ni in FeNi	30% Ni in FeNi	

The PFS is summarized in a Technical Report ('the Report') prepared in accordance with NI 43-101 for the Project titled "Prefeasibility Study for the Araguaia Nickel Project, Federative Republic of Brazil" and prepared by Snowden Mining Industry Consultants Pty Ltd ('Snowden') under the guidance of the Qualified Persons. The PFS Report will be filed on SEDAR at [www.sedar.com](http://www.sedar.com) later today.

The Project, which is 100% owned by Horizonte, is located on the eastern margin of the State of Pará, north-eastern Brazil, to the north of the town of Conceição do Araguaia (population of 46,206), south of the main Carajás Mining District.

The Project has good regional infrastructure including a network of Federal highways and roads, with access to low tariff hydro-electric power. The Carajás Mining District, situated approximately 200km northwest of the Project, is host to a number of major iron and copper mines operated by mining major Vale SA.

The Report considers open pit mining for the exploitation of nickel laterite to establish the production of run of mine ('ROM') from eight open pits to supply a targeted 0.9 million tonnes per annum ('Mt/a') of ore to a processing and smelter facility. This facility will use the proven RKEF process with the product being sold at free on board ('FOB') at the selected port of export.

A Base Case of 0.9 Mt/a production throughput was selected because of the Company's objective to minimise the capital expenditure and overall capital intensity, and to optimise overall cash flow, payback, and the economics of the Project. Opportunity exists to increase production subject to further engineering and there is potential to increase the mineral reserve base.

## Mineral Resources

Mineral Resources reported for the Project deposits, which are included in the PFS, were prepared under the supervision of Mr. Andrew F. Ross BSc (Hons), MSc, FAusIMM, an Independent Qualified Person as defined in NI 43-101.

A total of 46,000 meters (1,786 holes) of core drilling have been completed to date on the HZMA and 28,860 meters (839 holes) of core drilling completed on the Vale dos Sonhos deposit in the GAP. Of this a total of 40,330 meters (1,494 holes) from HZMA and 28,860 meters (839 holes) from GAP were used in the Mineral Resource Estimation reported in the PFS.

Updated Mineral Resources for the Araguaia Project effective as at 30 September 2016 by material type (0.90% Ni cut-off grade)

Araguaia Category	Material type	Tonnage (kT)	Bulk density (t/m <sup>3</sup> )	Contained Ni metal (kT)					
					Ni (%)	Fe (%)	MgO (%)	SiO <sub>2</sub> (%)	
Subtotal	Measured	Limonite	1,232	1.39	15	1.2	37.43	2	17.15
Subtotal	Measured	Transition	6,645	1.26	116	1.75	18.89	10.2	42.06
Subtotal	Measured	Saprolite	10,291	1.4	130	1.27	12.03	24.08	41.24
Total	Measured	All	18,168	1.35	261	1.44	16.26	17.51	39.91
Subtotal	Indicated	Limonite	19,472	1.4	218	1.12	36.2	2.39	20.53
Subtotal	Indicated	Transition	31,143	1.2	444	1.43	21.39	11.24	38.92
Subtotal	Indicated	Saprolite	51,279	1.32	610	1.19	11.82	25.79	40.58
Total	Indicated	All	101,893	1.3	1,272	1.25	19.4	16.87	36.24
Total	Measured + Indicated	All	120,061	1.3	1,533	1.28	18.93	16.97	36.8
Subtotal	Inferred	Limonite	2,837	1.37	31	1.08	34.8	2.97	23.05
Subtotal	Inferred	Transition	4,955	1.2	65	1.31	21.2	11.11	39.05
Subtotal	Inferred	Saprolite	5,643	1.35	65	1.16	11.8	24.31	41.8
Total	Inferred	All	13,435	1.3	161	1.2	20.12	14.94	36.83

*Note: Totals may not add due to rounding. Mineral Resources are inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

## Mineral Reserves

Mineral Reserves reported for the Project deposits, which are included in the PFS were established by Snowden in accordance with the CIM Definition Standards using only Indicated and Measured Resources, under the supervision of Mr. Frank Blanchfield B.Eng, FAusIMM, an Independent Qualified Person as defined in NI 43-101.

A Mineral Reserve estimate of 24,646.6 kt (dry) at an average grade of 1.77% Ni was estimated. The detailed breakdown of the Mineral Reserve allocated by deposit is presented in the following table:

#### Mineral Reserves for the Araguaia Project effective as at September 30, 2016

Class	Deposit	Ore dry mass (kt)	Ni (%)	Fe (%)	Al <sub>2</sub> O <sub>3</sub> (%)	SiO <sub>2</sub> /MgO (%)
Probable	Baião	2,381	1.8	18.7	4.93	2.52
Probable	Pequizeiro	11,828	1.73	16.8	5.91	2.83
Probable	Pequizeiro West	165	1.67	19.7	4.47	3.58
Probable	Jacutinga	1,198	1.82	16.7	3.16	2.16
Probable	Vila Oito East	1,190	1.64	15	3.74	1.99
Probable	Vila Oito	2,449	1.79	14.2	3.62	2.05
Probable	Vila Oito West	549	1.73	20.3	5.04	3.65
Probable	VDS	4,886	1.85	22.7	6.28	2.72
Total Probable		24,646	1.77	17.9	5.39	2.58
Proven		-	-	-	-	-
Total Proven and Probable		24,646	1.77	17.9	5.39	2.58

A nickel spot price of US\$12,000/tonne was used in the Mineral Reserve estimate. The Mineral Reserve estimate resulted in a marginal cut-off grade of 1.28% Ni.

#### Mining

Seven shallow open pits were designed for HZMA and one for GAP through a process of pit optimisation using costs and process recoveries. All eight pits are designed using smoothed pit shells with the removal of small satellite pits through a standard process of pit optimisation, waste dump design and pit design. To minimise capital, the Base Case also assumes contractor mining using typical truck and excavator fleet which includes ore haulage to the plant. This fleet is supported by the usual array of support and ancillary equipment. Grade and mineralogy will be closely monitored in the mining process using close spaced grade control drilling ahead of mining.

High grade nickel feed is targeted in the early years of production. The average nickel grade of the feed to the plants is as follows:

- Years 1 to 5 - average grade 2.0% Ni
- Years 6 to 10 - average grade 1.9% Ni
- Years 11 to 28 - average grade 1.7% Ni

A number of processing constraints were applied to the schedule. These included a 13-month processing feed quantity ramp-up period, and specific process feed grade constraints throughout the life of the Project:

- Fe grade between 15.0% and 18.0%
- Al<sub>2</sub>O<sub>3</sub> grade between 4.0% and 5.5%
- SiO<sub>2</sub>/MgO ratio between 2.2 and 2.6

#### Processing

The Company completed Laboratory scale test work between 2011 and 2013 which included batch smelting test, slag testing, agglomeration behaviour of the ore, Liquidus measurement of FeNi slag under conditions corresponding to electric furnace smelting, performance of the nickel laterite in rotary kiln processing and evaluation of briquetting behavior. These laboratory tests carried out showed that the ore was suitable for processing using the RKEF process.

Pilot plant testing of the drying and agglomeration step and piloting of the full RKEF process flowsheet (excluding refining) to confirm final operating characteristics were recommended in the 2014 PFS report. This pilot testing was carried out in the first and second quarters of 2015.

#### *Pilot plant*

A fully integrated pilot test of the RKEF process comprising ore preparation, drying and agglomeration, calcination and electric furnace smelting, including slag and metal granulation, was carried out in April/May 2015. The pilot test work facility at the Morro Azul plant in the State of Minas Gerais, Brazil was used for the test. A total of 160 wet tonnes of ore, representative of the planned operational feed, were processed. This ore was collected from selected sites within the Pequizeiro deposit in a bulk sampling

exercise in early 2015 using wide diameter auger drilling.

Highlights from the pilot plant campaign include:

- Production of high grade commercial FeNi from representative ore
- Drying and agglomeration produced excellent feed for calcination
- Good quality calcine continuously produced with very low dust generation and good pre-reduction of iron and nickel
- High quality FeNi produced over the target range of commercial Ni grades
- No critical flaws were identified in the process flow sheet
- A full set of technical data was produced and included in the PFS process study

*Main project features*

Item	Unit	Value
Ore throughput - Year 1 to Year 10	Mt/a (dry)	0.9
Ore grade - design (average first 10 years) % Ni	%	1.96
Overall nickel recovery	%	93
Final metal Ni production - design capacity t/a Ni		16,400
Furnace power (one furnace)	MW	50
Ni grade in the final product metal	%	30
Plant configuration		One RKEF line
Refining system		Ladle furnace
Final FeNi product		Granulated FeNi

Capital Cost Estimates

The Base Case for the study assumes an ore processing rate of 0.9 Mt/a after a two-year initial ramp up period. A plant construction period of two years has been assumed and the pre-production capital construction costs for the plant have been divided 30%, in Year 1, and 70%, in Year 2. In addition, sustaining capital has been provided for over the LOM and process plant. To minimise capital, the Base Case also assumes contractor mining which includes ore haulage to the plant. Supply chain factors have also been considered for inbound and outbound logistics for key consumables such as coal for smelter requirements.

The economic analysis contained in the Report is based on Probable Mineral Reserve estimates. All dollar values are in United States Dollars (US\$).

Item	\$ million
Plant direct	202.4
Plant indirect	22.5
Owners costs	21.4
Infrastructure	35.3
Slag storage facility	5.2
Social	1.9
Mining	2.9
Environmental	2.9
Land Acquisition & Resettlement	11.5
Contingency at 15%	46.3
First fills and spares	1.2
Total pre-production capital costs	353.5

The capital cost estimates have been complied with an accuracy level of ±25%.

Operating Cost Estimates

Item	\$ million	\$/tonne - ore
Mining (contractor)	815.3	33.1
Processing	2,187.1	88.7
Total operating costs	3,002.4	121.8

Economic Analysis and Sensitivities

Base Case economic model headline results before taxation

Item	Unit	Value - \$14,000/t	Value - \$12,000/t
Net Cashflow	\$M	2,293.4	1,482.7
NVP <sub>8</sub>	\$M	699.3	400.6
IRR	%	28.9	21.0
Production payback period years		3.1	4.2

Base Case economic model headline results after taxation

Item	Unit	Value - \$14,000/t	Value - \$12,000/t
Net Cashflow	\$M	1,945.8	1,258.7
NVP <sub>8</sub>	\$M	581.3	328.0
IRR	%	26.4	19.3
Production year payback years		3.4	4.5

Base Case economic model inputs

Item	Unit	Value
Pre-Production period	Years	2.0
Life of project production	Years	27.6
LOM ore mined and processed	kt	24,646
LOM waste mined	kt	59,061
LOM Average Ni grade	%	1.77
LOM Average Fe grade	%	17.90
LOM Average Ni recovery	%	93.0
LOM Average Fe recovery	%	21.4
LOM Average product Ni grade	%	30.0
LOM Average product Fe grade	%	70.0
Plant throughput	Mtpa	0.9
LOM Ni Price	\$/t	14,000 & 12,000
LOM Fe price	\$/t	85

The LOM Ni price of US\$12,000 (Base Case) and US\$14,000 (Consensus Case) were adopted following a review of multiple information sources including; price forecasts from Consensus Economics together with analysis of average nickel prices over the past 10 years combined with industry benchmarking.

Pre Tax Sensitivity table for NVP<sub>8</sub>

The sensitivity analysis determines how the NVP<sub>8</sub> is affected with changes to one variable at a time while holding the other variables constant. The pre-tax results of the Base Case sensitivity analysis are presented in the table below.

	-20%	-10%	-5%	0%	5%	10%	20%
Grade Ni	36	182	255	328	401	474	619
Grade Fe	323	326	327	328	329	330	333
Mining reserves	303	315	327	328	336	346	363
Recovery Ni	36	182	255	328	401	438	438
Recovery Fe	323	326	327	328	329	330	333
Price Ni	23	176	252	328	404	480	632
Price Fe	323	326	327	328	329	330	333
Pre-production capital	386	357	342	328	314	299	270
Production capital	333	330	329	328	327	326	323
Mining cost	378	353	340	328	302	277	225
Processing cost	430	379	354	328	302	277	225
Overhead cost	361	345	336	328	319	310	292

All figures in the table above are expressed in US\$M

Social and Environmental

The areas within the Project are located 100% within the Pará State, therefore the Project will continue to be permitted by the State Environmental Agency. The Brazilian mine permitting process with environmental agencies has three key stages:

1. The recently obtained preliminary licence ('LP');

2. The installation licence ('LI'), which permits the start of construction;
3. Finally the licence to operate once construction is complete ('LO').

The granting of the LP is often regarded as the most important licence as it outlines the parameters of the Project as agreed upon by all stakeholders and is the only environmental licensing process that requires approval of the State Government Environmental Council. The LP was awarded to Horizonte Minerals for HZMA earlier in 2016.

The Company will now focus on obtaining the LI, which once awarded, in parallel with the mining concession, allows construction to start. The Company will also work in partnership with the State Government of Pará to undertake studies identifying possibilities for use of the slag product from Araguaia and potential local industries, which could benefit from the final ferronickel product.

The objective of the Company's Sustainability Department in 2016 and 2017 will be to collect new baseline data, particularly for the recently acquired GAP project area, and integrate the environmental and social data for the project, to provide one holistic analysis of combined social and environmental impacts. The Feasibility Study will be conducted to international standards, such as the International Finance Corporations Environmental and Social Performance Standards.

#### Report Filing

The Report will be filed on SEDAR at [www.sedar.com](http://www.sedar.com) later today.

For further information visit [www.horizonteminerals.com](http://www.horizonteminerals.com).

#### About Horizonte Minerals:

[Horizonte Minerals Plc](#) is an AIM and TSX-listed nickel development company focused in Brazil, which wholly owns the advanced Araguaia nickel laterite project located to the south of the Carajás mineral district of northern Brazil. The Company is developing Araguaia as the next major nickel mine in Brazil, with targeted production by 2019.

Horizonte has a strong shareholder structure including [Teck Resources Ltd.](#) 26.1%, Henderson Global Investors 15.7% and Glencore 10.3%.

#### Qualified Persons

Mr Frank Blanchfield, B.Eng, FAusIMM,

Mr Andrew Ross, BSc (Hons), MSc, FAusIMM,

Mr Francis Roger Billington, BSc (Hons), P.Geo. (APGO), and

Mr Nicholas Barcza, BSc (Eng.), MSc (Eng.), PhD, Pr.Eng. (ECSA), HLFSAIMM

are the Qualified Persons under NI 43-101, and have reviewed, approved and verified the technical content of this press release.

For readers to fully understand the information in this press release, they should read the Report in its entirety when it is available on SEDAR later today, including all qualifications, assumptions and exclusions that relate to the PFS. The Report is intended to be read as a whole, and sections should not be read or relied upon out of context.

#### CAUTIONARY STATEMENT REGARDING FORWARD LOOKING INFORMATION

*Except for statements of historical fact relating to the Company, certain information contained in this press release constitutes "forward-looking information" under Canadian securities legislation. Forward-looking information includes, but is not limited to, statements derived from the PFS, including, without limitation: estimated capital costs, operating costs, and other various other costs, estimated net present value (NPV), initial rate of return (IRR), anticipated construction period, expected life of mine (LOM), production schedule, recoveries, estimated reserves and resources, expected sensitivity to prices, expected production and other economic and operational parameters inherent to a pre-feasibility study for a mineral project; statements with respect to targeted milestones going forward, including, without limitation, the expected timing for a definitive feasibility study, commencement of construction, potential to extend LOM and the timing of exploration activities. In addition, this press release includes forward-looking statements with respect to the potential of the Company's current or future property mineral projects; the success of exploration and mining activities; and cost and timing of future exploration, production and development. Generally,*

forward-looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or statements that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved".

Forward-looking information is based on the reasonable assumptions, estimates, analysis and opinions of management made in light of its experience and its perception of trends, current conditions and expected developments, as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made, and are inherently subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: exploration and mining risks, competition from competitors with greater capital; the Company's lack of experience with respect to development-stage mining operations; fluctuations in metal prices; uninsured risks; environmental and other regulatory requirements; exploration, mining and other licences; the Company's future payment obligations; potential disputes with respect to the Company's title to, and the area of, its mining concessions; the Company's dependence on its ability to obtain sufficient financing in the future; the Company's dependence on its relationships with third parties; the Company's joint ventures; the potential of currency fluctuations and political or economic instability in countries in which the Company operates; currency exchange fluctuations; the Company's ability to manage its growth effectively; the trading market for the ordinary shares of the Company; uncertainty with respect to the Company's plans to continue to develop its operations and new projects; the Company's dependence on key personnel; possible conflicts of interest of directors and officers of the Company, and various risks associated with the legal and regulatory framework within which the Company operates. Although management of the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements.

The Company undertakes no obligation to update forward-looking information except as required by applicable law. Such forward-looking information represents management's and/or its Qualified Persons best judgment based on information currently available. No forward-looking statement can be guaranteed and actual future results may vary materially. Accordingly, readers are advised not to place undue reliance on forward-looking statements or information.

## NON-IFRS MEASURES

This press release refers to expected cash cost, free cash flow, and certain other non-IFRS measures. These measurements have no standardized meaning under IFRS and may not be comparable to similar measures presented by other companies. These measurements are intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS.

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