

# Erdene Announces Positive Preliminary Economic Assessment for the Khundii Gold Project

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HALIFAX, Dec. 18, 2018 - [Erdene Resource Development Corp.](#) (TSX:ERD; MSE:ERDN) ("Erdene" or "Company"), is pleased to announce the results of an independent Preliminary Economic Assessment ("PEA") study for its 100%-owned Khundii Gold Project (the "Project") in southwest Mongolia. The PEA was prepared in accordance with National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") by RPMGlobal Asia Limited ("RPM"). The Company will be hosting a conference call today at 10:00 am EST to review these results. A presentation to accompany the conference call will be made available on the Company's website. Those wishing to join the call can do so using the telephone numbers listed below. The call will subsequently be made available on the Company's website at [www.erdene.com](http://www.erdene.com).

Conference call date and time: Tuesday, December 18, 2018 at 10:00 am EST  
Canada/US dial-in: 1-877-703-1560  
International dial-in: 1-647-689-5569

## PEA Highlights

- After-tax Net Present Value at a 5% discount rate ("NPV5%") and a US\$1,200/ounce ("oz") gold price of US\$99 million and Internal Rate of Return ("IRR") of 56%
- Pre-tax NPV5% of US\$135 million and IRR of 70%
- Initial capital expenditure of US\$32 million, using a contract mining fleet
- All-in sustaining cash cost ("AISC") of US\$714/oz of gold recovered
- Life of mine ("LOM") head grade of 3.42 g/t gold
- Average annual gold production of 51,200 oz and total LOM production of 412,000 oz
- Mine life of 8 years plus one-year pre-production and two year mine closure periods
- A payback of 2 years

"Today's PEA confirms that the Khundii Gold Project is a high-return, low-capital and low-operating cost project that will form the cornerstone development in the emerging Khundii Gold District," said Peter Akerley, Erdene's President and CEO. "The Project has the potential to provide strong returns to investors, bring industry and employment to a remote area of Mongolia and add to national gold reserves. We have a long history of operating responsibly in the Country and we look forward to creating value for all stakeholders as we continue to develop this exciting Project."

"Next steps include a Pre-Feasibility Study carried out in parallel with mining license, construction and operating permit applications in early 2019," continued Mr. Akerley. "In addition, we will continue efforts to add resources through follow-up drilling on the Khundii licenses and with further exploration in the highly prospective surrounding district. We will also opportunistically acquire additional licenses in the region as they become available."

## PEA Overview

The PEA incorporates the maiden resource estimate for Erdene's Bayan Khundii gold project ("Bayan Khundii") announced in September 2018 (see news release dated September 18, 2018), and the updated resource estimate, completed in May 2018, for the Company's Altan Nar gold project ("Altan Nar"), 16 kilometres northwest of Bayan Khundii (see news release dated May 10, 2018). The PEA includes 2.7 million mineable tonnes from the Bayan Khundii resource at an average head grade of 3.65 g/t gold, of which 98% are Measured and Indicated Resources. The Altan Nar deposit for

the PEA contributes 1.9 million mineable tonnes at an average head grade of 3.11 g/t gold, of which 70% are Measured and Indicated Resources. These deposits are being developed as a single project and are discussed herein as the Khundii Gold Project.

The PEA envisions a high-grade, open-pit mine beginning at the Bayan Khundii Striker Zone, expanding into adjacent zones within Bayan Khundii, prior to incorporating resources from the Altan Nar deposit. The development incorporates a conventional gravity separation circuit and a carbon in pulp plant with processing capacity of 1,800 tonnes per day.

The base case assumes a gold price of US\$1,200/oz. All references to dollars within this release are US Dollars (US\$) unless otherwise stated. The Technical Report, pursuant to NI 43-101 guidelines for the Preliminary Economic Assessment will be filed on SEDAR within 45 days.

The PEA is by nature, a preliminary economic study, based in part on Inferred Resources. Inferred Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves which is required for a prefeasibility or feasibility study. Mineral resources that are not mineral reserves do not have demonstrated economic viability and there is no certainty that the PEA will be realized.

Key Project metrics are presented in Table 1 below. A site layout plan map of the Khundii Gold Project is attached to this release for reference (to view the attached map please visit: <http://resource.globenewswire.com/Resource/Download/375a9fc8-1658-434f-b547-a405e243c2dc>).

Table 1. PEA Project Metrics

Assumptions		
Gold Price	US\$/oz	1,200
Production Profile		
Average Head Grade Over Life of Mine <sup>1</sup>	g/t gold	3.42
Project Life <sup>2</sup>	years	11
Operating Life	years	8
Target Production Rate Per Day <sup>3</sup>	tpd	1,800
Average Annual Saleable Gold	oz	51,200
Peak Annual Saleable Gold	oz	68,100
Total Gold Production LOM	oz	412,000
Average Gold Recovery Rate Over Life of Mine	%	82%
Strip Ratio	tonne:tonne	10.5:1
LOM Cash Cost plus Sustaining Cost (AISC) <sup>4</sup>	US\$/oz	714
Project Economics		
Pre-Tax Net Present Value		
5% discount rate	US\$M	135
7.5% discount rate	US\$M	119
10% discount rate	US\$M	105
After-Tax Net Present Value		
5% discount rate	US\$M	99
7.5% discount rate	US\$M	86
10% discount rate	US\$M	76
Internal Rate of Return and Payback		
Pre-Tax Internal Rate of Return	%	70%
After-Tax Internal Rate of Return	%	56%
Payback Period Post-Construction <sup>5</sup>	years	2
Capital Requirements		
Pre-production Capital Cost, including contingency	US\$M	32
LOM Sustaining Capital Cost	US\$M	8

1. Average diluted head grade of mineralised rock fed to process plant.
2. Project life includes one year pre-production period, eight year operating life and a two year mine closure.
3. Assumes process plant operates for 8,000 hours per annum to achieve the target production rate of 600 ktpa.
4. Operating costs reported in terms of saleable gold ounces, including Royalty and Refining Charges of US\$62/oz.
5. Payback period calculated on an undiscounted, after-tax cash flow basis.

## PEA Sensitivities

The following table shows the change in the after-tax NPV and IRR over a range of gold prices and discount rates, demonstrating the impact of higher gold prices and the Project's resiliency to lower prices.

Table 2. PEA Sensitivities – After-Tax

Gold Price Sensitivity Analysis Units	US\$1,150	US\$1,200	US\$1,250	US\$1,300
NPV (5% discount rate)	US\$M 86	99	111	124
NPV (7.5% discount rate)	US\$M 75	86	98	110
NPV (10% discount rate)	US\$M 65	76	86	97
IRR	% 50%	56%	62%	68%

## Mining

The PEA is based on an open-pit mining operation targeting 600,000 tonnes per year of feed material for the process plant. The total mineable mineralised plant feed is 4.6 million tonnes at an average diluted head grade of 3.42 g/t gold and strip ratio of 10.5:1 (waste tonne: plant feed tonne).

Mineralisation starts at surface and 70% of mineable resources are located within 115 metres of surface. The deposit structure, grades and depth suggest selective open cut mining will be utilized. Underground mining below the current open cut pit is not within the PEA scope of work but will be examined in future study.

Mining will use hydraulic excavators in backhoe configuration. Drilled and blasted material will be loaded into haul trucks, with waste rock deposited in engineered dumps adjacent to the pits, and ore hauled to a crusher or run-of-mine ("ROM") pad adjacent to the processing plant. At Altan Nar the estimated 19 kilometre road distance to the processing plant means that ore hauled from the pit will need to be placed nearby and transferred into road-trains for haulage to Bayan Khundii.

## Processing

The PEA study assumes processing of ROM material via a conventional gravity separation circuit and a carbon in pulp plant. The ore-processing plant will be located adjacent to the Bayan Khundii open pit and throughput will target 600,000 tonnes per year, nominally 1,800 tonnes per day. Total mineralized material processed in the plant over the course of the mine life is 4.6 million tonnes at an average diluted head grade of 3.42 g/t gold. Using an estimated mill recovery of 82%, total recovered gold over the Project life is 412,000 ounces.

Ore from the Bayan Khundii deposit is free-milling with an average recovery of 92% while the Altan Nar deposit, which includes arsenopyritic ore locally with associated low recoveries, will only include the free-milling portions of the resource with an average recovery of 62%.

## Operating Costs

Operating costs are based on the mining and processing scenario outlined above and assumes contract mining. All other activities are assumed to be owner-operated. The contingency is estimated at 10% and

applied to all cost centres except “Royalty and Charges”. The all-in sustaining cost (operating cost and sustaining capital cost) is estimated at US\$714/oz.

Table 3. Operating Costs

Cost Centre	Life of Mine		
	(US\$millions)	US\$/oz	US\$/tonne
Mine Operating Cost	134	326	29
Processing Cost	76	183	16
Site G&A	30	73	7
Product Cost	2	6	1
Royalty (5% NSR) & Charges	26	62	6
Contingency	24	58	5
Total Operating Costs	292	708	64
Sustaining Capital	3	6	1
All-In Sustaining Cost	295	714	65

#### Capital Costs

The initial capital cost (Year 0), primarily comprising construction of the process plant and supporting infrastructure, is estimated at US\$32 million. The PEA incorporates the use of a mining contractor utilizing mining equipment which if purchased outright would add US\$38 million to capital costs for the life of the mine. All major facilities including the process plant are proposed to be located at the Bayan Khundii site. In Year 3 the supporting infrastructure for the Altan Nar site is constructed at an estimated cost of US\$1 million, including the upgrade of the road to Bayan Khundii. The infrastructure and process plant estimates include a 20% contingency.

Sustaining capital of US\$3 million is included in the mine plan and mine closure costs are estimated at US\$4 million. Total capital expenditures over the life of mine are estimated at US\$40 million.

Table 4. Capital Costs

Item	Bayan Khundii Altan Nar		Total
	(US \$millions)	(US \$millions)	(US \$millions)
Process Plant	16	-	16
Site Buildings	3	-	3
Accommodation Village	2	-	2
Airstrip	1	-	1
Roads	1	1	2
Engineering & Support	4	-	4
Engineering Contingency	5	-	5
Subtotal Plant & Infrastructure	32	1	33
Mine Closure	3	1	4
Sustaining Capital	2	1	3
Total	37	3	40

#### Opportunities to Enhance Project Value

The Company sees the following opportunities to increase value at the Khundii Gold Project:

- **Higher Grade Upside:** The very high-grade nature of the deposit provides upside should continuity of the ultra high-grade zones be established during mining. The highest gold values in the block model supporting the PEA are 55 g/t, while more than 40 intersections ranging from 50 g/t to 2200 g/t gold were encountered during drilling.

- Additional Resources at Bayan Khundii: Approximately 60,000 ounces of Indicated Resources and 70,000 ounces of Inferred Resources grading more than 4 g/t gold are located outside the designed mineable open pit for the PEA. The majority of these resources are contained within the West Striker Area, approximately 100 metres from the ultimate pit wall, situated at around 100 metres depth. Accessing these resources by underground methods will be considered in future study.
- Additional Resources at Altan Nar: The majority of the resource contained at the Altan Nar Project remains undeveloped in the current PEA. Further drilling and metallurgical work is required to incorporate this material into development scenarios.
- Exploration Potential: The Bayan Khundii and Altan Nar deposits are situated in a highly prospective region that has received minimal historical exploration. The Company, through its proprietary regional database and experience in the region, is well positioned to add resources through exploration.
- Recovery Upside: The Bayan Khundii mineralized material has an average recovery of 92% in the PEA. However, master composite sample testing indicates that recoveries of up to 99% are possible for high-grade material. For Altan Nar material, an average recovery of 62% has been applied in the PEA due to arsenopyrite content of the ore. Master composite testing of representative samples from the Discovery Zone pit has returned recoveries of up to 88%. Further metallurgical testing could support higher recoveries.
- Mine Planning: The PEA represents the first step toward addressing the viability of a mining operation at the Khundii Gold Project. Further work may identify cost saving opportunities such as improved pit sequencing through pit phasing, waste haul optimization including in-pit dumping, reduced dilution and loss through the application of more selective mining techniques and interim pit design targeting improved early grades.
- Mine Equipment Selection: There is opportunity to consider Tier 2 suppliers for non-critical equipment, reducing capital and operating costs.
- Land Acquisition: The Mongolian Ministry of Mining and Heavy Industry has recently reopened the tender licensing system, and the Company expects prospective licenses to be released in 2019. The Company has identified multiple priority targets within the surrounding regional district and will be an active participant in the tender processes for these properties.

#### Related Mineral Resource Estimate

The PEA is based on independent NI 43-101 mineral resource estimates for the Company's 100%-owned Bayan Khundii and Altan Nar gold resources, located 16 kilometres apart. These resources are considered a single project and are discussed herein as the Khundii Gold Project. These deposits are shallow and high-grade, consisting of 751,000 ounces gold at an average grade of 2.3 g/t gold (Measured and Indicated), and 291,000 ounces gold at an average grade of 1.8 g/t gold (Inferred). At a higher cut-off grade of 1.4 g/t gold, the Khundii Gold Project contains 642,000 ounces gold at an average grade of 3.7 g/t gold (Measured and Indicated), including, 250,000 ounces gold at an average grade of 2.3 g/t gold (Inferred).

The PEA includes 2.7 million minable tonnes from the Bayan Khundii resource at an average head grade of 3.65 g/t gold, of which 98% are Measured and Indicated Resources. The Altan Nar deposit for the PEA contributes 1.9 million minable tonnes at an average head grade of 3.11 g/t gold, of which 70% are Measured and Indicated Resources.

#### Summary and Next Steps

The PEA demonstrates that the Khundii Gold Project is expected to be economically viable and RPM recommends that Erdene proceed to an independent NI 43-101 Pre-Feasibility Study. The Company has created a Mining Studies Group to carry out mining, geotechnical, metallurgy, waste management, environmental, social impact and hydrogeology work to support the Pre-Feasibility Study in 2019.

Erdene initiated the Mining License application process for Bayan Khundii earlier this year. Experts have been appointed by the Mineral Council to review and approve the application, and Erdene has provided the necessary information in support. Experts will complete a site visit prior to the Mineral Council meeting anticipated in Q1-2019. The Altan Nar filing will take place in early 2019.

It is estimated that the Project can advance through the final permitting approvals, feasibility and project finance by early 2020. At that stage, the Company anticipates being in a position to complete construction and commence production within a year.

## Background on the Khundii Gold Project

Erdene's deposits are located in the Edren Terrane, within the Central Asian Orogenic Belt, host to some of the world's largest gold and copper-gold deposits. Although epithermal gold and porphyry copper-gold deposits are well documented across the border in China and along the Belt's westward trend, exploration in Mongolia was limited until the mid-1990s, when the country returned to democracy and opened its doors to foreign exploration. Exploration since that time in southeast Mongolia led to the discovery of the world-class Oyu Tolgoi gold-copper deposit. Erdene has been the leader in exploration in southwestern Mongolia over the past decade and is responsible for the discovery of the Khundii Gold District. The Khundii Gold District is comprised of multiple high-grade gold and base metal prospects, two of which are being considered for development: Bayan Khundii and Altan Nar. The Company has to date invested US\$17 million in exploration and resource development on the Bayan Khundii and Altan Nar projects.

## Qualified Person and Sample Protocol

The information in this press release that relates to the Preliminary Economic Assessment of the Khundii Gold Project is based on information compiled and reviewed by Mr. Igor Bojanic, who is a Fellow of the Australasian Institute of Mining and Metallurgy, and is an employee of RPM Advisory Services Pty Limited. Mr. Igor Bojanic has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which, he has undertaken to qualify as a Qualified Person, as that term is defined by National Instrument 43-101.

Mr. Igor Bojanic is not aware of any potential for a conflict of interest in relation to this work for the Client.

Michael MacDonald, P.Geo. (Nova Scotia), Vice President Exploration for Erdene, is the Qualified Person as that term is defined in National Instrument 43-101 and has reviewed and approved the approved the non-PEA and Mineral Resource estimate technical information contained in this news release on behalf of Erdene. All samples have been assayed at SGS Laboratory in Ulaanbaatar, Mongolia. In addition to internal checks by SGS Laboratory, the Company incorporates a QA/QC sample protocol utilizing prepared standards, field and laboratory duplicates, and blanks.

## About Erdene

[Erdene Resource Development Corp.](http://www.erdene.com) is a Canada-based resource company focused on the acquisition, exploration, and development of precious and base metals in underexplored and highly prospective Mongolia. The Company has interests in four exploration licenses and a mining license in Southwest Mongolia, where exploration success has led to the discovery and definition of the Khundii Gold District. [Erdene Resource Development Corp.](http://www.erdene.com) is listed on the Toronto and Mongolia stock exchanges. Further information is available at [www.erdene.com](http://www.erdene.com). Important information may be disseminated exclusively via the website; investors should consult the site to access this information.

## Forward-Looking Statements

Certain information regarding Erdene contained herein may constitute forward-looking statements within the meaning of applicable securities laws. Forward-looking statements may include estimates, plans, expectations, opinions, forecasts, projections, guidance or other statements that are not statements of fact. Although Erdene believes that the expectations reflected in such forward-looking statements are reasonable, it can give no assurance that such expectations will prove to have been correct. Erdene cautions that actual performance will be affected by a number of factors, most of which are beyond its control, and that future events and results may vary substantially from what Erdene currently foresees. Factors that could cause actual results to differ materially from those in forward-looking statements include market prices, exploitation and exploration results, continued availability of capital and financing and general economic, market or business conditions. The forward-looking statements are expressly qualified in their entirety by this cautionary statement. The information contained herein is stated as of the current date and is subject to change after that date. The Company does not assume the obligation to revise or update these forward-looking statements, except as may be required under applicable securities laws.

NO REGULATORY AUTHORITY HAS APPROVED OR DISAPPROVED THE CONTENTS OF THIS

RELEASE.

Erdene Contact Information

Peter C. Akerley, President and CEO, or

Ken W. MacDonald, Vice President and CFO

Phone: (902) 423-6419

E-mail: [info@erdene.com](mailto:info@erdene.com)

Website: [www.erdene.com](http://www.erdene.com)

Twitter: <https://twitter.com/ErdeneRes>

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