

# GENERATION MINING

## Generation Mining Delivers Robust Independent PEA for Marathon Palladium Project

*After-Tax IRR of 30%, NPV C\$871M, Payback 2.5 years - Base Case*

**Toronto, Ontario – Jan. 6, 2020** – Generation Mining Limited (CSE:GENM) (“Gen Mining”, “Generation”, or the “Company”) is pleased to announce results of a positive independent Preliminary Economic Assessment study (“PEA”) prepared in accordance with National Instrument 43-101 on the Marathon Palladium and Copper Project (the “Project”) located in Northern Ontario. Generation acquired a 51% interest in the Project from Sibayne Stillwater in July, 2019, and has an option to earn up to an 80% interest by spending \$10 million within four years (see Gen Mining’s news release dated July 11, 2019). The PEA provides a compelling base case assessment for the development of the Marathon Palladium Mineral Resource by open pit mining.

**Highlights** (all dollar amounts in Canadian dollars on a 100% project ownership basis unless otherwise indicated)

- *The Project would produce an average of 194,000 palladium-equivalent ounces per year over a 14-year mine life (including credits for copper, platinum, gold and silver).*
- *The Project generates an after-tax internal rate of return (IRR) of 30.0% and an after-tax net present value (NPV) of \$871 million at a 5% discount rate at Nov 30/19 two-year trailing average metal prices (base case).*
- *The Project generates an after-tax net present value of \$1,541 million and an internal rate of return of 45.8% at a 5% discount rate at recent spot metal prices (final LBMA London price fix for precious metals; final LME bid price for copper, Dec 31, 2019)*
- *The Project would generate base case after-tax cashflows of \$520 million in years 1-3, resulting in a 2.5-year payback period.*
- *Actual palladium production will average 107,000 ounces annually over the mine life, at a Cash Cost Per Ounce of \$US504 and an All-In Sustaining Cost (AISC) of \$US586 per ounce, net of by-product credits.*
- *The PEA used only Measured and Indicated Mineral Resources in the Marathon Deposit in its calculations, and did not include the Geordie and Sally Deposits which are located on the same property (see News Release dated December 2, 2019). The Marathon Deposit has no outstanding royalties or financing streams registered against it.*

Gen Mining will host a conference call on Jan 7, 2020 at 11:00 am (EST) to discuss these results. Call-in information is provided at the end of this news release and on our website at [www.Genmining.com](http://www.Genmining.com).

**PEA BASE CASE FINANCIAL SUMMARY** (all dollar amounts in \$Canadian unless otherwise noted, presented on a 100% ownership basis)

<b>Pre-Tax Net Present Value (5% discount rate)</b>	<b>\$1,184 Million</b>
<b>After-Tax Net Present Value (5%)</b>	<b>\$871 Million</b>
<b>Pre-Tax Internal Rate of Return</b>	<b>35%</b>
<b>After-Tax Internal Rate of return</b>	<b>30%</b>
<b>After-Tax Payback</b>	<b>2.5 Years</b>
<b>Preproduction Capital</b>	<b>\$431 Million</b>
<b>Sustaining Capital</b>	<b>\$277 Million</b>
<b>Life-of-Mine Cash Cost per Oz PdEq*</b>	<b>\$504 USD</b>
<b>LOM All-In Sustaining Cost per Oz PdEq*</b>	<b>\$586 USD</b>
<b>Mine Life</b>	<b>14 Years</b>
<b>Throughput</b>	<b>Years 1-5: 14,000 tpd, Year 6-14: 22,000 tpd</b>
<i>Metal Prices</i>	
<b>Palladium</b>	<b>\$1,275/oz USD</b>
<b>Copper</b>	<b>\$3/lb USD</b>
<b>Platinum</b>	<b>\$900/oz USD</b>
<b>Gold</b>	<b>\$1,300/oz USD</b>
<b>Silver</b>	<b>\$16/oz USD</b>
<b>Exchange Rate \$CAD:\$USD</b>	<b>\$1.32</b>
<b>Avg. Net Smelter Return per Mineralized Tonne Processed (LOM)</b>	<b>\$48.39</b>

\*Net of by-product credits

Jamie Levy, President and CEO of Generation commented, “This study supports at a PEA level of confidence the Company’s opinion that a low-cost operation is possible at the Marathon Deposit. The Project has a very robust after-tax IRR of 30% and after-tax Net Present Value approaching \$900 million, with a pay-back of 2.5 years in a mining-friendly jurisdiction. The PEA doesn’t include potential feed from two additional deposits with NI 43-101 Mineral Resource Estimates located on the property which will require additional study.”

“With the consensus outlook for palladium and copper strong for the next several years,” commented Executive Chairman Kerry Knoll, “this is a project whose time has come. As governments world-wide continue to mandate a higher palladium load for environmental reasons in most automobiles and little new mine capacity being scheduled to come on stream, Generation Mining plans to fast-track a Feasibility Study and permitting, and expects 2020 to be a pivotal year in the Company’s growth.”

The PEA examined several mining scenarios with varying rates of production and cut-off grades, and determined that a 14-year project life mining 89.4 million mineralized tonnes provided the best financial

return at Nov 30, 2019 two-year trailing average metal prices. The Project is expected to employ an average of 312 local workers over the life of the mine.

To maintain preproduction capital costs to a minimum, the PEA recommends starting the project at 14,000 tonnes of process plant feed per day and increasing to 22,000 tonnes per day in the sixth year of operations. The operation is designed to produce a single copper concentrate containing palladium, platinum, gold and silver with minimal deleterious elements. One of the reasons for the relatively low capital costs is that the Marathon Project is located near the established mining town of Marathon, Ontario, as well as an airport and the CPR main rail line. Both the Trans-Canada Highway #17 and the new 230 Kilovolt East-West Tie power line cross the property.

The PEA was prepared by P&E Mining Consultants Inc. of Brampton, Ontario, which has been involved in the Marathon project for the past 13 years and previously prepared the Mineral Resource Estimate for the Marathon Deposit on behalf of Gen Mining.

#### PEA TECHNICAL SUMMARY

<b>Mine Life</b>	<b>14 years</b>
<b>Mine Plan Tonnage</b>	<b>89.4 million tonnes</b>
<i>Process Plant Feed Grade</i>	
<b>Pd</b>	<b>0.69 g/t</b>
<b>Pt</b>	<b>0.21 g/t</b>
<b>Au</b>	<b>0.07 g/t</b>
<b>Ag</b>	<b>1.5 g/t</b>
<b>Cu</b>	<b>0.22%</b>
<b>PdEq Grade</b>	<b>1.26 g/t</b>
<b>Strip Ratio (Waste:Process Plant Feed)</b>	<b>3.0:1</b>
<b>Operating Cost (tonne)</b>	<b>\$19.12</b>

#### PAYABLE METAL RECOVERIES (presented on a 100% ownership basis)

<b>Metal</b>	<b>Process Plant Recovery</b>	<b>On-Site Recovered Metal to Concentrate</b>	<b>Payable Metal</b>
<b>LOM Palladium</b>	<b>82.90%</b>	<b>1.63 million ozs</b>	<b>1.41 million ozs</b>
<b>LOM Copper</b>	<b>90.00%</b>	<b>401.3 million lbs</b>	<b>340.3 million lbs</b>
<b>LOM Platinum</b>	<b>74.50%</b>	<b>0.45 million ozs</b>	<b>0.32 million ozs</b>
<b>LOM Gold</b>	<b>73.20%</b>	<b>0.16 million ozs</b>	<b>0.12 million ozs</b>
<b>LOM Silver</b>	<b>71.50%</b>	<b>3.12 million ozs</b>	<b>2.01 million ozs</b>

### Pit Constrained Mineral Resource Estimate at C\$13/tonne NSR Cut-Off <sup>(1-7)</sup>

Classification	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
Measured	103,337	0.64	0.21	0.20	0.07	1.5	1.34	2,123	688	463	239	4,964	4,445
Indicated	75,911	0.46	0.15	0.20	0.06	1.8	1.10	1,115	376	333	151	4,371	2,685
Meas & Ind	179,248	0.56	0.18	0.20	0.07	1.6	1.24	3,238	1,064	796	390	9,335	7,130
Inferred	668	0.37	0.12	0.19	0.05	1.4	0.95	8	3	3	1	31	21

1. Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.
2. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
3. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
4. The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
5. The Mineral Resource Estimate was based on US\$ metal prices of \$1,100/oz Pd, \$900/oz Pt, \$3/lb Cu, \$1,300/oz Au and \$16/oz Ag. The US\$:CDN\$ exchange rate used was 0.77.
6. The NSR estimates use flotation recoveries of 93% for Cu, 82% for Pd, 80% for Pt, 80% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 88% for Pt, 90% for Au, 90% for Ag.
7. The pit optimization used a mining cost of C\$2 per tonne, combined processing, G&A and off-site concentrate costs of C\$13/tonne and pit slopes of 50°.

### Pit Constrained Mineral Resource Estimate Sensitivity at C\$25/tonne NSR Cut-Off

Classification	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
Measured	70,792	0.82	0.25	0.25	0.09	1.5	1.67	1,864	578	387	194	3,510	3,794
Indicated	45,279	0.60	0.19	0.25	0.07	1.9	1.40	871	272	252	106	2,817	2,032
Meas & Ind	116,071	0.73	0.23	0.25	0.08	1.7	1.56	2,735	850	639	300	6,326	5,826
Inferred	144	0.62	0.16	0.28	0.05	0.9	1.41	3	1	1	0	4	7

The mining plan uses conventional truck/shovel open pit methods employing 221-tonne capacity haulage trucks and shovels equipped with 29 cubic metre buckets. Three pit areas will be mined over a period of 14 production years and one year of pre-stripping. Mineralized material will be transported by haulage trucks to a nearby process plant, and waste rock will be stored at a facility located 100 metres east of the open pits. Mining will be conducted at an initial rate of 24 million total tonnes per annum (Mtpa), and will reach a peak of 36 Mtpa based on process plant feed and waste rock removal requirements.

The process plant feed is contained within an optimized subset of the Mineral Resource set out in the table above. Collectively, the three pits contain 89.4 Mt of process plant feed (inclusive of mining dilution and loss factors) averaging 1.26 g/t PdEq (0.69 g/t Pd, 0.22% Cu, 0.07 g/t Au, 0.21 g/t Pt and 1.52 g/t Ag). The process plant feed is associated with 270 Mt waste rock resulting in an overall life-of-mine strip

ratio of 3:1. It is notable that all Mineral Resources considered for mining are only within the Measured and Indicated classifications.

Approximately 25 Mt of process plant feed will be stockpiled and reclaimed from stockpiles over the mine life. No backfilling of mined-out open pits with either waste rock or tailings is planned, which will allow potential open pit wall pushbacks and future mining if economic conditions become favourable.

Extensive metallurgical testing was carried out at various reputable laboratories by several past owners including Stillwater Canada, a subsidiary of Sibayne Stillwater and Gen Mining’s partner in the project. The test work has indicated process recoveries of platinum group metals (“PGM”) and copper to be reasonably high and relatively consistent. The most recent tests focused on circuit stability and maximizing concentrate grade. For the first five years, the Marathon process plant will treat 5Mtpa of mineralized material by using the following major components and processes:

- crushing and grinding to a moderate grain size;
- froth flotation of a copper rougher concentrate which is reground and re-floated several times for copper grade improvement;
- regrinding of the copper flotation tails and a PGM rougher flotation concentrate is recovered;
- the PGM concentrate is reground and refloated to improve PGM grade;
- the Cu and PGM concentrates are combined, thickened, filtered and prepared for shipment to a smelter.

From year 6 onwards, the process plant will treat 8Mtpa after incorporating the following components:

- increased crushing and grinding capacity - second stage crushing and an additional ball mill;
- additional flotation capacity.

The expansion of process plant capacity from 5 Mtpa to 8 Mtpa at year 6 is expected to benefit from the first five years’ operational experience, providing opportunities for process efficiencies.

Tailings and waste rock management is designed for closure and the elimination of concerns for acid drainage or metal leaching.

**Initial Capital Costs (\$C Millions)**

<b>Pre-Stripping</b>	<b>15.3</b>
<b>Mining</b>	<b>40.6</b>
<b>Processing Plant</b>	<b>272.8</b>
<b>Tailings Management Facility</b>	<b>14.3</b>
<b>Site Infrastructure</b>	<b>54.0</b>
<b>Contingency</b>	<b>34.1</b>
<b>Total Initial Capital</b>	<b>431.0</b>

**Sustaining Capital (\$C Millions)**

<b>Mining</b>	<b>128.1</b>
<b>Processing Plant</b>	<b>38.3</b>
<b>Tailings Management Facility</b>	<b>67.0</b>
<b>Closure</b>	<b>30.0</b>
<b>Contingency</b>	<b>13.5</b>
<b>Total Sustaining Capital</b>	<b>277.0</b>

**LOM Operating Costs (\$C per tonne)**

<b>Mining Cost per tonne mined material (waste and mineralized material)</b>	<b>2.34</b>
<b>Mining Cost per tonne plant feed</b>	<b>9.23</b>
<b>Processing Cost per tonne plant feed</b>	<b>8.92</b>
<b>G &amp; A per tonne plant feed</b>	<b>0.97</b>
<b>Total Cost per tonne plant feed</b>	<b>19.12</b>

**ECONOMIC SENSITIVITIES** (presented on a 100% ownership basis)

US\$/oz Pd	700	900	1,100	<b>1,275</b>	1,500	1,700	1,900
NPV (5% discount after-tax C\$M)	255	469	684	<b>871</b>	1,112	1,326	1,540
IRR %	13.4	19.6	25.3	<b>30.0</b>	35.8	40.8	45.7
Payback (years)	6.4	4.0	2.9	<b>2.5</b>	2.1	1.8	1.6

<b>NPV at 5% Discount Rate Sensitivity After-Tax (C\$M)</b>					
%	-20	-10	<b>0</b>	+10	+20
OPEX	973	922	<b>871</b>	820	769
CAPEX	1,048	960	<b>871</b>	782	694

<b>IRR Sensitivity After-Tax (%)</b>					
%	-20	-10	<b>0</b>	+10	+20
OPEX	38.1	33.7	<b>30.0</b>	26.9	24.3
CAPEX	33.9	32.0	<b>30.0</b>	27.9	25.8

<b>Discount Rate Sensitivity After-Tax (C\$M)</b>	
0%	1,427
<b>5%</b>	<b>871</b>
6%	790
8%	648
10%	531

The Project site is within the Robinson-Superior Treaty, which confers certain rights to aboriginal peoples in the area. Generation recognizes the traditional rights of Indigenous people and acknowledges the exercising of Treaty rights to preserve their cultural identity and customs. As such, upon acquisition of the Marathon Project, Generation has continued to regularly meet with communities to get feedback and incorporate the feedback into the Company's decision-making process. Generation is striving to ensure these partnerships have mutually beneficial outcome and to maintain strong and long-lasting relationships. Generation and its' predecessors have been engaged in consultation and negotiations with a number of Aboriginal communities with respect to the Project since 2004.

### **About the Marathon Palladium Project**

The Marathon Deposit is the largest undeveloped platinum group metal Mineral Resource in North America. The Marathon Property covers a land package of approximately 22,000 hectares or 220 square kilometres. Gen Mining acquired a 51% interest in the Marathon Property from Sibanye Stillwater on July 10, 2019 and can increase its interest to 80% by spending \$10 million over a period of four years. More than \$3 million of this has already been spent. Sibanye Stillwater has certain back-in rights that can bring its interest in the Property back to 51% after such time as Gen Mining has earned its 80% interest (see the Company's press release of July 11, 2019, for more details).

### **Qualified Persons**

Rod Thomas, P.Geo., Company Vice-President, Exploration and a Director, and Eugene Puritch, P.Eng. FEC, CET President of P&E Mining Consultants Inc., have reviewed and approved the scientific and technical information contained in this news release. Messrs. Thomas and Puritch are Qualified Persons

### **Technical Report**

An NI 43-101 Technical Report to support this PEA press release will be filed on SEDAR within 45 days.

### **Conference Call**

An audio conference call will be held with members of Generation Mining management and representatives from P&E on Tuesday, January 7 at 11 a.m. EST. Participants toll-free dial-in number (U.S. and Canada) is 1-833-753-7228. International callers can dial 769-208-9284. The conference ID number is 9977613. There will be a short presentation followed by a question period.

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## **Forward-Looking Information**

*This news release includes certain information that may be deemed “forward-looking information” under applicable securities laws. All statements in this release, other than statements of historical facts, that address acquisition of the Property and future work thereon, Mineral Resource and Reserve potential, exploration activities and events or developments that the Company expects is forward-looking information. Although the Company believes the expectations expressed in such statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the statements. There are certain factors that could cause actual results to differ materially from those in the forward-looking information. These include the results of the Company’s due diligence investigations, market prices, exploration successes, continued availability of capital and financing, and general economic, market or business conditions.*

*Investors are cautioned that any such statements are not guarantees of future performance and actual results or developments may differ materially from those projected in the forward-looking information. For more information on the Company, investors are encouraged to review the Company’s public filings at [www.sedar.com](http://www.sedar.com). The Company disclaims any intention or obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, other than as required by law.*