

Testimony in support of House Bill 4227 to create the Committee on Michigan's Mining Future

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Mining plays a critically important role in advanced economies. Almost everything that we use comes from mines, including iron to make steel for cars, refrigerators and ships, aluminum for airplanes and cans, copper for wires and pipes, bromine and lithium for batteries and chemicals, limestone for cement, and aggregate (sand, gravel and crushed stone) for roads and buildings [1,2]. The saying that "if it cannot be grown, it has to be mined" summarizes our complete reliance on minerals to support modern society.

Development of green economies with non-carbon energy will not change this heavy reliance. The most advanced cell phones contain more than 75 elements, all of which must be mined. The average wind turbine contains 335 tons of steel, almost 5 tons of copper, 3 tons of aluminum, as well as zinc, molybdenum, and rare earth elements [3].

Recycling also fails to solve our heavy minerals reliance because: 1) despite best efforts only a few mineral commodities can be recycled at rates greater than about 25% even in the greenest economies, and 2) global mineral demand continues to grow because we are making more products, and more and more customers are entering the middle class to buy them [4,5].

Mineral supplies must come from ore deposits where nature has concentrated the minerals to a point that we can extract them with a minimum expenditure of energy. Numerous studies by the U.S. Geological Survey and other agencies have shown that known ore deposits are adequate to supply only a few decades of demand, at most, and many of the deposits that we know about require more evaluation before they can be produced [6]. Despite this alarming statistic, it is very likely that there are many undiscovered deposits [7]. But they must be found and developed. Evaluating known deposits and finding new ones is a long-term project of many years and even decades and requires planning and support on the part of state and federal governments.

Michigan has consistently ranked among the top 10 to 15 states in country in hard mineral production and will almost definitely continue to do so far into the future. Our favorable potential reflects three important facts: 1) we have a strong mining industry and history, 2) the geology of the state is complex with many different geologic environments that could have formed ore deposits, and 3) our state is relatively large with large areas that are government-controlled and available for mineral entry.

Efforts to keep Michigan in the forefront of U.S. mineral producers would be greatly improved by a coordinated regulatory and fiscal plan at the State level. We need to convince the public of the need for mineral production, review and possibly improve laws and regulations regarding mineral-related land access, environmental regulation of mineral activity, and fiscal treatment of mineral profits, all of which are complex issues that would benefit from coordinated study.

[1] National Research Council, 2008, *Minerals, Critical Minerals, and the U.S. Economy*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/12034>.

[2] Graedel, T.E., Harper, E.M., Nasser, N.T., Reck, B.K., 2013, On the materials basis of modern society. *Proceedings of the National Academy of Sciences of the United States*, doi: 10.1073/pnas.1312752110.

[3] Arrobas, D., Hund, K., McCormick, M.S., Ningthoujam, J., Drexhage, J.R., 2017. *The Growing Role of Minerals and Metals for a Low Carbon Future (English)*. Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/207371500386458722/The-Growing-Role-of-Minerals-and-Metals-for-a-Low-Carbon-Future>

[4] Sibley, S.F., 2011, Overview of flow studies for recycling metal commodities in the United States: U.S. Geological Survey Circular 1196-AA, 25 p.

[5] Graedel, T.E., Allwood J., Birat J.-P., Reck, B.K., Sibley, S.F., Sonnemann, G., 2011, Recycling Rates of Metals – A Status Report, A Report of the Working Group on the Global Metal Flows to the International Resource Panel - <http://www.resourcepanel.org/reports/recycling-rates-metals>

[6] U.S. Geological Survey Global Mineral Resource Assessments, <https://minerals.usgs.gov/global/>

[7] Arndt, N., Fontbote, L., Hedenquist, J.W., Kesler, S.E., Thompson, J.F.H., Wood, D.G., 2017, Future Global Mineral Resources: Geochemical Perspectives, v.6, n. 1, 171 p. - <http://www.geochemicalperspectives.org/wp-content/uploads/2017/04/v6n1.pdf>

**House Natural Resources and Outdoor Recreation Committee
Hearing on HB 4227 (Cambensy)**

March 19, 2018

Testimony of Patrick Bloom on behalf of Cleveland-Cliffs Inc.

Good afternoon, Chairman Howell and members of the Committee. My name is Patrick Bloom. I serve as the Director of Government Relations for Cleveland-Cliffs Inc. I am here to testify in support of HB 4227, sponsored by Representative Cambensy. By way of background, Cleveland-Cliffs traces its corporate roots to 1847, when the Company's forbearers began exploring iron ore deposits in Michigan's Upper Peninsula. The Company has been operating mines in Michigan ever since.

Today, Cleveland-Cliffs operates the 8 million-ton capacity Tilden Mine on the West end of Marquette County. Tilden employs nearly 850 workers, with our hourly workforce represented by United Steelworkers. In addition, Cliffs operates the LS&I railroad and Marquette ore dock, which employ 112 workers and a research lab in Ishpeming employing 18 workers. Tilden has an estimated annual economic impact totaling \$452 million.

The Tilden Mine produces iron ore pellets that are shipped to integrated steelmaking customers in Michigan, Ohio and Ontario, Canada, enabling the production of high-quality steel products most commonly used in auto and appliance manufacturing.

The Tilden Mine has been operating continuously since 1974. An adjacent iron ore mine, the Empire Mine, opened in 1963 and operated until August 2016, when Empire exhausted its economically available ore reserves and the mine was indefinitely idled. In early 2018, Cleveland-Cliffs announced that it is seeking additive pellet capacity to address an anticipated shortfall of blast furnace pellets in the North American market. Cliffs continues to actively consider an investment in the reactivation of the Empire Mine, as well as other supply alternatives, pending requisite customer commitments.

The pellets produced at the Tilden Mine and Cliffs' other U.S. facilities are manufactured products, specifically designed for consumption in our customers' blast furnaces. These pellets can be sharply contrasted with lump and fine iron ore that is abundant globally but must be further processed in polluting, emission-intensive sinter plants - a model that is pervasive in China, the world's largest steel producer. In short, the use of iron ore pellets allows the American steel industry to be the most environmentally friendly in the world.

Cliffs has a long history civic leadership in our mining communities. In 2018 alone, the Cleveland-Cliffs Foundation issued grants totaling over \$240,000 to educational and non-profit institutions in Marquette County, including significant gifts to Negaunee Public Schools, Ishpeming High School and the Iron Ore Industry Museum. In 2019, the Cleveland-Cliffs Foundation committed to a five-year, 250,000 multi-year pledge to Beacon House, an organization that provides lodging and care for families traveling

from around the UP to Marquette for specialized medical care. This foundation grant will support construction of a Beacon House facility in proximity to the new Marquette LifePoint Hospital.

In 2014 and 2015, when the Upper Peninsula faced an electric power crisis that threatened to impose tens of millions of dollars of added cost on UP ratepayers, Cliffs partnered with the State of Michigan and electric utilities to negotiate an alternative electric power solution. This solution was designed to hold down costs, end punitive System Support Resource charges and, importantly, provide for a generation-based electric power solution following the planned closure of the Presque-Isle Power Plant. I am pleased to report that UMEREC, a newly created, Michigan-only electric utility, will commission two state-of-the-art natural gas-fired generating facilities in the Upper Peninsula in the coming weeks.

Cliffs' engagement with the State of Michigan, our elected officials and community stakeholders in response to the electric power crisis stands as evidence of good outcomes that can be achieved when various interests unite behind a common goal. With that experience in mind, we view Representative Cambensy's Committee on Michigan's Mining Future as an excellent forum to address the challenges and opportunities confronting Michigan's mining sector.

Cliffs' long and successful history in Michigan is due in great part to our supportive mining communities, responsive government officials and Michigan's stringent, but reasonable regulatory environment. We appreciated Representative Cambensy's leadership and we wish to thank her for her initiative in proposing the creation of this mining-focused committee. Cleveland-Cliffs stands ready to offer its technical and practical knowledge of the iron ore industry in support of the committee's mission.

With that, I would be happy to answer any questions. Thank you once again for the opportunity to testify today.