

**Testimony of  
Eric D. Baker, President & CEO  
Wolverine Power Cooperative  
Cadillac, Michigan  
Before the Michigan House of Representatives  
Energy Policy Committee  
Wednesday, May 20, 2015  
Lansing, Michigan**

Good morning. My name is Eric Baker and I am the President & Chief Executive Officer of Wolverine Power Cooperative<sup>1</sup> (Wolverine) located in Cadillac, Michigan. Thank you Chairman Nesbitt for inviting Wolverine to testify today regarding House Bill 4575 (H-1) introduced by Representative Cole entitled the “Michigan Electric Infrastructure Act to enhance the electrical connection of Michigan’s two peninsulas.”

Wolverine owns electric generation plants at six Michigan locations, with a seventh power plant (the 432 MW nameplate natural gas-fired Alpine Power Plant) presently under construction near Gaylord, Michigan. As a Michigan-based transmission owner, Wolverine is a member of the Midcontinent Independent System Operator, Inc. (MISO). Wolverine owns and operates a transmission system consisting of approximately 1,600 miles of 69 kV and 138 kV transmission lines and stations located in Michigan’s Lower Peninsula. These transmission facilities are part of the Michigan Joint Zone pursuant to MISO’s Tariff. It is on the subject of Michigan’s transmission

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<sup>1</sup> Wolverine is a Michigan-based, non-profit generation and transmission electric cooperative that provides wholesale service to its seven members and is subject to Federal Energy Regulatory Commission (FERC) jurisdiction under the Federal Power Act. Wolverine has five traditional distribution cooperative members operating exclusively in the Lower Peninsula: Cherryland Electric Cooperative, Great Lakes Energy Cooperative, HomeWorks Tri-County Electric Cooperative, Midwest Energy Cooperative, and Presque Isle Electric & Gas Co-op, (collectively, the Distribution Members). These Distribution Members purchase all-requirements wholesale power from Wolverine and resell that power at retail to approximately 268,000 members throughout Michigan. Wolverine’s other two members, Wolverine Power Marketing Cooperative, Inc. and Spartan Renewable Energy, Inc., are alternative electric suppliers in Michigan licensed by the Michigan Public Service Commission. Wolverine is a member of the Michigan Electric Cooperative Association.

infrastructure that I submit my testimony today. For the record, Wolverine's Distribution Members do not sell power at retail in Michigan's Upper Peninsula.

My comments regarding transmission will cover five principle areas: (1) Michigan operates as two distinct electric systems; (2) The lack of a robust transmission connection between the two peninsulas remains at the heart of the Upper Peninsula's reliability problems; (3) The weak transmission network in the eastern Upper Peninsula frustrates the development of renewables in the Upper Peninsula; (4) Michigan's citizens are paying millions of dollars annually in hidden taxes without this robust transmission connection; and (5) A historic perspective as to why this critically important link doesn't already exist.

A new high-voltage transmission link between the Upper and Lower Peninsulas is vital for Michigan's economic future. To understand why the link is vital, we must first examine what is missing. Today, although separated by fewer than ten miles, the two peninsulas behave as separate electric systems, effectively working in isolation of each other. In fact, the northern Lower Peninsula grid and the eastern Upper Peninsula grid behave as long radial networks, which is a problem because radial networks have the least robust and reliable configuration. This means that any problem along a long radial network results in power outages beyond that point—there is no alternative to bring power from elsewhere on the system. Looped transmission networks, in sharp contrast, automatically redirect power flows, allowing operators to correct system problems without any impact to the retail customer.

The 138 kV link that exists at the Straits of Mackinac, and the transmission grid in the central and eastern Upper Peninsula, were not designed to handle regional power flows. For example, on a mild, windy spring night, excess wind generation in the Plains States cannot flow

across the shortest path through the Upper Peninsula to supply the Ludington pumped storage facility. Almost every other region in the upper Midwest is capable of significant regional power transfers, yet in Michigan's backyard, our bifurcated transmission network hamstrings the market's ability to move power effectively.

The very robust transmission network in the Lower Peninsula presently cannot facilitate broader, cost-effective solutions to the transmission network concerns in the Upper Peninsula. In fact, the very basis of the problems in the Upper Peninsula can be traced back to the lack of robust transmission options coupled with the fact that nearly all of the utilities in the Upper Peninsula are net buyers from the market. The Upper Peninsula relies upon a single power plant in Marquette. Market fundamentals and environmental concerns render the plant unviable, yet grid operators have no choice but to preserve it. There are cleaner, more efficient options available to be a part of the Upper Peninsula solution that eastern Upper Peninsula transmission prevents.

All efficient markets need a few basic elements and the Upper Peninsula lacks two elements in particular: multiple sources (sellers) and a robust transportation network to ensure unfettered access between buyers and sellers. The Lower Peninsula has a number of different power selling entities – municipal utilities, cooperatives, investor-owned utilities, and independent power producers – none of which can supply to markets in the Upper Peninsula. This means that Lower Peninsula suppliers are shut out of broader-reaching solutions to the Upper Peninsula's reliability challenges.

In addition, vast potential exists in the Upper Peninsula for the development of renewable energy and energy storage. What is the primary impediment? Transmission. Michigan's renewable renaissance began a decade ago when Wolverine committed to the first commercial

scale wind project in the Thumb. Yet renewable energy development in the Upper Peninsula accounts for a tiny percentage of Michigan's renewable development, primarily because transmission constraints limit the size of projects and the deliverability to Lower Peninsula buyers. I would argue that renewable development in Michigan, and elsewhere, will significantly benefit if a more robust tie is constructed.

Opponents of a new high-voltage connection between Michigan's two peninsulas commonly use a shock tactic regarding cost, presumably to kill the idea in its infancy. A new connection between the two peninsulas may cost hundreds of millions of dollars—perhaps even \$1 billion. Until a project scope is determined and proper modeling is conducted, the industry can only speculate. Regardless, I offer two thoughts in response to the use of price shock tactics. First, utility infrastructure projects are, by their very nature, expensive. For example, Detroit Edison spent over \$2 billion retrofitting one power plant (Monroe) with modern environmental controls. The 345 kV Thumb Loop project cost more than \$500 million. Second, you must not consider cost in a vacuum. Instead, the most important consideration is how new transmission investment would impact the retail consumer—i.e., how would this investment help Michigan's electric customers? If a \$1 billion transmission investment was shared across all Michigan customers, I estimate that the cost impact would be less than \$1 per month for a typical residential customer. This seems like a small price to pay when compared to a typical \$100 monthly electric bill. Plus, that impact is reduced when weighed against the project's benefits. It is critical that we focus on the benefits this connection of the two peninsulas brings to Michigan when discussing the connection's potential costs. The eastern Upper Peninsula and the northern Lower Peninsula suffer from high transmission congestion charges in our regional market. Think of congestion as a measure of the robustness of the transportation network—high congestion translates to an

inefficient market. Wolverine customers, customers of Consumers Energy, and several Michigan municipals pay more than \$2.50 per month in congestion charges – *nearly 2.5 times larger than the cost impact of the new transmission investment to connect Michigan’s two peninsulas, even if that investment is \$1 billion.* These congestion charges are never seen on the customers’ bills, because they are typically buried in fuel clause adjustments. Make no mistake, these hidden taxes are real and they amount to millions of dollars in grid inefficiency every single year. The concept contemplated by HB 4575 (H-1) could eliminate these hidden taxes that many of your constituents pay each and every month without their knowledge or understanding.

The begged question is clearly, why doesn’t this link already exist today? My answer requires us to step back in time a bit. The reason is a simple function of legacy boundaries that existed between different utilities. Look at the marvelous looped robust transmission network we enjoy in the Lower Peninsula. Consumers Energy planned and built the system with incredible vision, and the Michigan Electric Transmission Company (METC/ITC) has perpetuated the legacy with continued investment in this network. Similarly, Wolverine’s network was developed with a 50 year vision, and upgrades we make today have a similar long-term view. I posit that if Consumers Energy had served customers in the Upper Peninsula, then a high-voltage looped transmission network would already exist. Instead, we have two peninsulas in one state, each in different MISO capacity zones and each in different MISO planning regions. These boundaries are nothing but a product of history, are arbitrary and capricious, and thwart long-term visionary planning.

I ask the Committee to consider House Bill 4575 (H-1) in front of us today, and support the long-term, far reaching positive implications of this bill for Michigan and its residents. In 1954, we had a similar vision to connect the two peninsulas with the Mackinac Bridge. It was

expensive, it took courage, and it created far reaching positive implications for Michigan's economy.

On behalf of Wolverine's member companies, I wish to thank Chairman Nesbitt and the members of the House Energy Policy Committee for your time today. I am happy to answer any questions that you might have.