

5. What transmission upgrade costs and back-up capacity / integration costs have Michiganders absorbed as part of the current renewables standard? Are any of those offset by other benefits of those investments?

Approved by the MISO Board of Directors as part of a transmission project portfolio was an ITC transmission project needed in part to develop Michigan renewable resources per the renewable energy standards enacted under PA 295 of 2008. This Thumb Loop project is a 120 mile double-loop 345 kV transmission facility that runs through Tuscola, Sanilac, Huron, and St. Clair counties to support wind farm build-outs and system reliability in the Thumb Region of Michigan.

This project has an estimated cost of \$510 million and is projected to yield an economic benefit to Michigan of 1.7 to 3.0 times this cost, or a \$23 annual return on an \$11 per year investment for an average residential customer. In addition to supporting wind integration; the project improves reliability; provides additional construction, supplier, and downstream jobs; and enables lower-cost generation to displace higher-cost generation to lower energy bills. Additional benefits are outlined in the MVP one-pager link below. There are no back-up capacity or renewable energy grid integration costs allocated to Michigan customers that can be specifically attributed to PA 295 projects.

The Thumb Loop Project was designated by MISO as a Multi-Value Project (MVP) for which 100% of costs are allocated to all MISO load because the benefits are spread MISO-wide. Michigan's share of the energy load in MISO is about 20%, so Michigan utilities will pay about 20% of the Thumb Loop Project costs in their transmission rates. Utility transmission costs are ultimately passed on to Michiganders in their utility bills. The MVP costs will begin to show up in rates as MVP projects are constructed and go into service over the next 20 years.

Sources:

ITC Thumb Loop Presentation: <http://efile.mpsc.state.mi.us/efile/docs/16200/0219.pdf>

MISO MVP Discussion: <https://www.midwestiso.org/Planning/Pages/MVPAnalysis.aspx>

MISO MVP One-Pager:

<https://www.midwestiso.org/Library/Repository/Communication%20Material/Power%20Up/MV%20Benefits%20-%20Total%20Footprint.pdf>

NREL Integration of Variable Generation and Cost-Causation Fact Sheet:

<http://www.nrel.gov/docs/fy12osti/56235.pdf>