

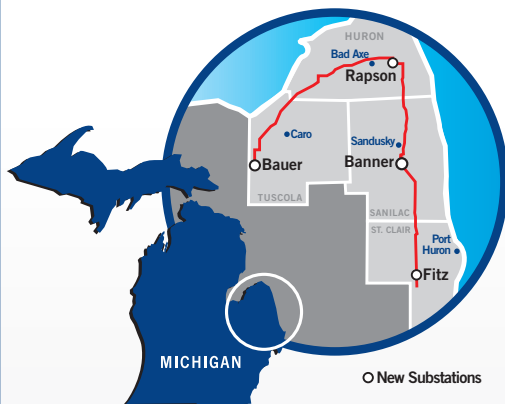


# Thumb Loop 345kV Transmission Line

## MICHIGAN'S PUBLIC POLICY INITIATIVE

In October 2008, Michigan passed the Clean, Renewable and Efficient Energy Act (Public Act 295), which created the Wind Energy Resource Zone Board to study and identify regions with the highest wind potential. The Board's final report identified four prospective regions. Region 4 located in the state's Thumb area displayed the highest potential for wind energy in the state. In accordance with Public Act 295, ITC Transmission submitted a plan for additional transmission lines needed to accommodate future wind development projects in Region 4.

In August 2010, ITC Transmission applied to the Michigan Public Service Commission (MPSC) for expedited siting approval of the project. On February 25, 2011, the MPSC granted an expedited siting certificate authorizing ITC Transmission to construct the line in the Thumb region's Wind Energy Resource Zone.



project area

## THE PROJECT

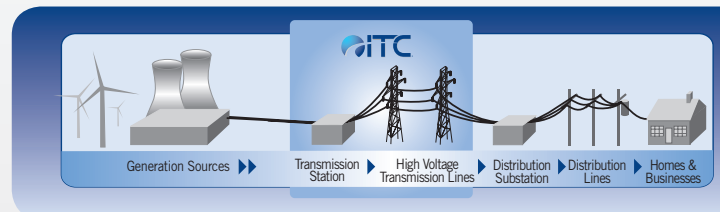
The Thumb Loop Project consists of approximately 140 miles of double-circuit 345,000 volt (345 kV) lines and four new substations that serve as the "backbone" of the system. Additional lines and facilities will be needed in the future as wind generators go into service and connect to the backbone system to fulfill the requirements of the state's Renewable Portfolio Standard. The system is designed to meet the identified minimum and maximum wind energy potential of the Thumb region (2,367 and 4,236 MW respectively) and is capable of supporting a maximum capacity of about 5,000 MW.

The new system was constructed in stages. The first segment, the western side of the loop from the Bauer substation in Tuscola County to the Rapson substation Huron County, went into service in September 2013. Phase two in St. Clair County, from the Fitz substation to Greenwood, went into service in May 2014. Phase 3, comprising 56 miles of line in Huron and Sanilac counties and the Banner substation near Sandusky, went into service in May 2015.

## ITC'S COMMITMENT

As the nation's largest independent electric transmission company, ITC Holdings Corp. focuses solely on electric transmission. Through subsidiaries ITC Transmission and Michigan Electric Transmission Company, LLC (METC), ITC owns and maintains more than 8,600 miles of high-voltage electric lines and 279 transmission stations throughout Michigan's Lower Peninsula. The company has invested more than \$2.8 billion in capital project maintenance and transmission infrastructure improvements in the state since 2003. These investments are improving the reliability and safety of the region's transmission grid while ensuring its ability to meet new energy demands. We invest in electric transmission to enhance reliability, relieve electric transmission congestion and connect all energy resources, including renewables, to customers in a non-discriminatory manner.

For more information on ITC's Thumb Loop project, visit <http://www.itctransco.com/projects/current/itctransmission.html> or email us at [ThumbLoop@itctransco.com](mailto:ThumbLoop@itctransco.com).



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## FREQUENTLY ASKED QUESTIONS

### **Q: *How did you determine the routes?***

**A.** ITC hosted open house events in July 2010 to present potential routes, discuss project details and receive feedback from affected landowners along each potential route. We then developed two routes, a proposed route and an alternate route. The proposed route minimizes the direct project impacts to the human and natural environment while providing a constructible and cost-efficient route. It also minimizes the potential indirect future impacts associated with construction of transmission lines to connect wind farms to the backbone transmission line. The alternate route would require construction of longer transmission lines to connect wind farms to the backbone transmission line because it is located more to the inner edge of the wind zone and follows an alignment through the more central area of the Thumb, rather than along the outer periphery where the highest potential for wind exists. Both routes attempt to avoid developed and municipal areas, state and public lands, center pivot irrigation systems, airports and landing strips. We tried to maximize distance from residences and minimize wetlands within the right-of-way. We also attempted to use existing ITC rights-of-way in areas where there are suitable and available adjacent lands for the additional right-of-way this project will require. When crossing cropland, we looked to locate the line along field borders, fence rows, non-tilled borders or waterways. We also attempted to span across fields where possible, thus avoiding the need to place a structure within a tilled area. The MPSC approved the preferred route on February 25, 2011.

### **Q. *How does ITC work with landowners?***

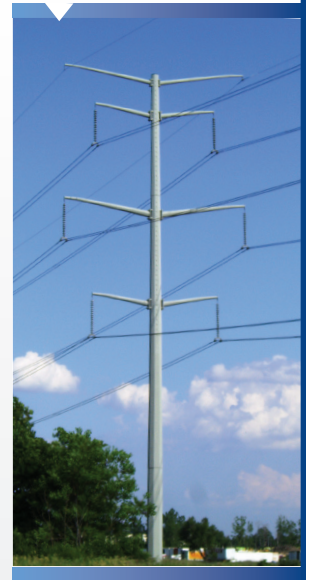
**A.** ITC works respectfully with landowners throughout the siting, design, and construction process to minimize impacts to their properties.

### **Q: *Will I be restricted on what activities I can perform on my land?***

**A.** ITC expects that in most cases land can be used for the same purposes for which it was used prior to the construction of the transmission line. Farming activities can continue under the line, with only the pole structure, a tubular steel monopole approximately every 900 feet, affecting agricultural activities.

### **Q. *What will the transmission line look like?***

**A.** The Thumb Loop project is being built primarily with tubular steel monopoles in a double-circuit arrangement with three double-bundled conductor phases for each circuit on either side of the pole (see photo at right). Steel lattice towers are being used for large angle applications. Overhead ground wires will be located at the top of the structures to protect the conductors from lightning strikes. The height of the structures varies based on terrain, clearances to the ground, objects under the line and structure spacing, but typically range between 130 and 180 feet. The span lengths between structures is approximately 800 to 1,100 feet, with an average span of 900 feet.



### **Q. *Will the Thumb Loop 345-kilovolt transmission line be safe?***

**A.** 345-kV transmission lines have operated safely in Michigan and across the entire country, around people and animals, since the 1950's. ITC owns and safely operates 2,939 miles of 345-kV lines in Michigan. The Thumb Loop 345-kV project is being built to meet and/or exceed all applicable safety standards.

### **Q. *Will this line emit electro-magnetic fields (EMF)?***

**A.** Yes, EMF exist wherever there is a flow of electricity, including around power distribution and transmission lines, as well as around electrical wiring in homes and businesses, and electric appliances and equipment. Over the past 30 years, many scientific studies have been conducted on EMF and health. This research has been reviewed by leading public health agencies, such as the World Health Organization (WHO), which currently finds that "despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health." If you have additional EMF questions, please contact ITC's Customer Toll-Free Line at 877.ITC.ITC9 (877.482.4829).

## NEXT STEPS & PROJECTED TIMELINE:

**February 25, 2011**

Michigan Public Service Commission grants expedited siting certificate

**April 2011**

Right-of-way negotiations with landowners begin.

**First Quarter 2012**

Construction begins on first segment.

**Third Quarter 2013**

First segment enters service (Bauer to Rapson)

**Second Quarter 2014**

Second segment enters service (Fitz to Greenwood)

**MAY 2015**

Complete line enters service.