



## Zone 2 Overview

Zone 2 includes the counties of:

- ❑ Alger, Mich.
- ❑ Baraga, Mich.
- ❑ Chippewa, Mich.
- ❑ Delta, Mich.
- ❑ Dickinson, Mich.
- ❑ Florence, Wis.
- ❑ Forest, Wis. (northern portion)
- ❑ Gogebic, Mich. (eastern portion)
- ❑ Houghton, Mich.
- ❑ Iron, Mich.
- ❑ Keweenaw, Mich.
- ❑ Luce, Mich.
- ❑ Mackinac, Mich.
- ❑ Marinette, Wis. (northern portion)
- ❑ Marquette, Mich.
- ❑ Menominee, Mich. (northern portion)
- ❑ Ontonagon, Mich. (eastern portion)
- ❑ Schoolcraft, Mich.
- ❑ Vilas, Wis. (northern portion)

The physical boundaries of Zone 2 and transmission facilities located in Zone 2 are shown in [Figure ZS-18](#).

Land use in Zone 2 is largely rural and heavily forested.

Zone 2 typically experiences peak electric demands during the winter months. Ore mining and paper mills are the largest electricity users in the zone.

### Zone 2 demographics

The population of the counties in Zone 2 experienced no overall growth from 1995 to 2005. The highest growth rate occurred in Luce County (1.8 percent), while the largest increase in population over the period occurred in Vilas County, which increased by 2,500 people.

During the same period, the annual employment growth rate was 0.7 percent. The highest growth rate occurred in Keeweenaw County, while the highest increase in employment occurred in Marquette County.



### **Zone 2 future population and employment projections**

Population in Zone 2 grew slightly between 2001 and 2006 (0.1 percent) and is projected to grow only 0.3 percent from 2006 through 2011. From 2001 to 2006, Vilas County realized the largest increase in population and the highest growth rate.

Employment in Zone 2 grew at 1.0 percent annually between 2001 and 2006 and is projected to grow at 1.4 percent from 2006 through 2011. From 2001 to 2006, Marquette County realized the largest increase in employment, while Forest County had the highest growth rate.

### **Zone 2 environmental considerations**

Zone 2 includes a small part of the far northeast portion of Wisconsin and approximately the eastern two-thirds of the Upper Peninsula of Michigan. The Wisconsin portions of the zone fall into the Northeast Sands and North Central Forest ecological landscape regions. The portions of the zone located in Michigan are part of the Eastern Upper Peninsula eco-region. A description of the characteristics of the Eastern Upper Peninsula eco-region may be found on the Michigan Department of Environmental Quality Web page at [http://www.michigan.gov/dnr/0,1607,7-153-10366\\_11865-31471--,00.html](http://www.michigan.gov/dnr/0,1607,7-153-10366_11865-31471--,00.html).

Large expanses of this zone are forested and there are large numbers of streams, lakes and wetlands throughout the zone. The Niagara Escarpment is situated in the Eastern Upper Peninsula. Lakes Superior, Huron and Michigan form the northern and eastern boundaries of the zone. Two Michigan State Natural Rivers (Fox and Two-Hearted) and nine National Wild and Scenic Rivers (Tahquamenon, Indian, Sturgeon, Whitefish, Yellow Dog, Ontonagon, Paint, Carp and North Sturgeon) are found in this zone. Portions of the Nicolet, Ottawa, and Hiawatha national forests, and numerous state forests and parks are found in this zone. Several Indian reservations are found in this zone. The Seney National Wildlife Area, Pictured Rocks National Lakeshore and numerous federal wilderness areas also are found in this zone.

### **Zone 2 electricity demand and generation**

The coincident peak load forecasts for Zone 2 for 2007, 2011 and 2015 are shown in Table ZS-8. Existing generation along with proposed generation based on projected in-service year also are shown. The resultant capacity margins, with or without the proposed generation, are shown as well.

This table shows that load is projected to grow at roughly 0.4 percent annually from 2007 through 2015. Comparing load with generation (at maximum output) within the zone indicates that Zone 2 has more generation than peak load, though actual operating experience indicates that during most periods, Zone 2 is a net importer of power.



# 10-Year Assessment

An annual report summarizing proposed additions and expansions to the transmission system to ensure electric system reliability.

# 2006

**November 2006 10-Year Assessment**  
[www.atc10yearplan.com](http://www.atc10yearplan.com)

## **Zone 2 transmission system issues**

Key transmission facilities in Zone 2 include:

- ❑ the Morgan-Plains and Plains-Dead River 345-kV lines,
- ❑ the Plains-Stiles 138-kV double-circuit line and
- ❑ the 138-kV facilities tying the Upper Peninsula of Michigan to the Lower Peninsula.

Key system performance issues in Zone 2 include:

- ❑ limited import and export capability,
- ❑ aging 69-kV and 138-kV infrastructure throughout the Upper Peninsula,
- ❑ generator stability at the Presque Isle Power Plant,
- ❑ parallel path flow around Lake Michigan that contributes to heavy loading on the 138-kV and 69-kV systems, and results in the need for transmission loading relief incidents and reconfiguration of the system, and
- ❑ low voltages, most pronounced in the western and eastern Upper Peninsula.