

SWIFT

Wind Turbine

Michigan Wind Working Group

October 9, 2009



CASCADE
engineering

SWIFT



Product Info

- 1.0 kW
- 12 MPH average speed generates 2,000 kWh per year
- Appealing aesthetics
- Quiet
- Minimal Vibration



SWIFT



Flexible Mounting



SWIFT

 **CASCADE**
engineering

Michigan Market

- Interconnection to the grid
- Zoning/Ordinances
- Permitting

SWIFT



Zoning/Ordinances

- Siting requiring turbines to be at the back of the building
- Not road facing
- Many ordinances are addressing pole mounts only

SWIFT



Permitting

- State codes require going to the main panel vs. a sub panel
- Installations for schools require getting building and electrical permits from the State and this process seems to be very intensive, with paperwork and forms, and moves very slowly
- Building and electrical permitting fees are calculated differently based on city or township
- The State of Michigan is trying to implement the new UL outline prior to implementation of the standard – Currently generators that are separate from the inverters are not certified

Become Progressive

- Need to have incentives from the State to promote clean energy
- Have a quick and efficient way to get approval for school installations
- Allow wind turbines to be installed where they will work

SWIFT

