

Example 2

Estimating the annual electrical cost of operating circulation fans in Madison, Wisconsin

Assumptions:

- 40 circulation fans with 1 hp motors in naturally ventilated barn
- 1 hp motor consumes 1 kW of power
- Electricity costs \$0.11/kWh
- Set point temperature is 68 °F
- In typical meteorological year, Madison has 1,682 hours with a temperature at or above 68 °F

(note: from Table 1, with a THI set point of 68, fans would only run 1,486 hours)

Annual electrical costs [\$] = (hours over set point [hours/yr]) * (number of fans) * (electrical use per fan [kW/fan]) * (cost of electricity [\$/kWh]) = 1,682 hours/year * 40 fans * 1 kW/fan * \$0.11/kWh = \$7,400.80/year