

Narrow Constrained Area Mitigation Thresholds

Effective June 1, 2017

	Thresholds (\$/MWh)
WUMS NCA	\$28.42
North WUMS NCA	\$25.88
SE Minnesota/N Iowa/SW Wisconsin NCA	\$46.64
Amite South NCA	\$100.00
WOTAB NCA	\$62.49

Notes:

1. These NCA thresholds are calculated based on the annual fixed costs of a new peaking generator, the net revenue such a generator would likely earn in the NCA, and the number of hours in which constraints are binding in the NCA per the formula in Section 64.1.2 of the Midcontinent Independent System Operator (MISO) FERC Electric Tariff.
2. Annual fixed cost: Threshold calculation assumes an annual fixed cost for an advanced combustion turbine of \$88.48 per KW-year. This annualized cost is calculated using: a) overnight capital costs of 676 \$/kW adjusted for inflation from EIA's 672 \$/kW for an advanced combustion turbine estimated by the Energy Information Administration and used in the EIA 2017 Annual Energy Outlook; and b) most of the financing and other assumptions proposed by the MISO for use in the Resource Adequacy financial settlements, which are described on p. 6 of the Midwest ISO compliance filing dated November 19, 2008 (Docket No. ER08-394-003). The assumed corporate interest rate was adjusted to 4.4 percent based on prevailing market conditions and future inflation was assumed to be 2.0 percent.
3. Net Revenue: Net revenue is estimated assuming: a) a heat rate of 9,750 BTU/KWh; b) a gas price basis differential from the Chicago LDC of \$0.61 per MMBTU for WUMS and North WUMS, and of \$0.38 per MMBTU for SE Minnesota and from Henry Hub of \$0.38 for Amite South and WOTAB; c) a forced outage rate of five percent; d) a minimum runtime of one hour, and e) capacity revenues equal to annualized zonal clearing prices from the 2017-2018 PRA. Based on these assumptions, the net revenue estimated for the NCAs over the past 12 months were: \$31.64 for WUMS, \$36.72 per KW-year for North WUMS, \$17.59 per KW-year for SE Minnesota, \$27.65 per KW-year for Amite South, and \$26.12 per KW-year for WOTAB.
4. Constrained Hours: One or more constraints into Minnesota NCA bound in 1,520 hours. The number of binding constraints into the WUMS and North WUMS NCA were 2,499 and 2692, respectively, which exceeds the Tariff cap of 2,000 hours in the NCA threshold calculation. Constraints into Amite South and WOTAB were binding in 593 and 998 hours, respectively.