ATC Futures[8]

Drivers	Load Growth within ATC	Energy Growth within ATC	Load Growth outside ATC	Energy Growth outside ATC	Total Small Capacity Coal Retirements (or conversions to natural gas) Within ATC[10]	Generator Additions Within ATC[1]	Percent Energy from Wind for Units Sited Inside ATC[13]	Natural Gas Price Forecast	Coal Price Forecast for New Units[5]	Environmental Regulations[6]	Wind Power from the RGOS/UMTDI Study Inside SD, ND, MN, IA and WI (GW)	RGOS/UMTDI Transmission Overlay & Generation Portfolio Outside ATC
Bounds	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Lower	0.2%	0.1%	N/A	N/A	907 MW	Planned Wind[9] Plus 2,250 MW	11%	-40%	-10%	$0/ton for CO_2, 0% higher mercury costs	15	See Below
Mid[3]	1.40%	1.10%	1.27%	1.13%	453 MW	Planned Wind[9] Plus 3,750 MW	16%	NYMEX for as many years as available followed by EIA escalation rate.	MISO Central & West $1.99/$2.24 & $1.67/$1.88 per MMBTU, respectively, for 2018/2024.[11]	$25/ton for CO_2, 25% higher mercury costs	25	See Below
Upper	2.5%	2.2%	N/A	N/A	Announced (289 MW)	Planned Wind[9] Plus 3,750 MW	16%	50%	20%	$44/ton for CO_2, 25% higher mercury costs	45[2]	See Below
2019 Futures Descriptions												
Robust Economy	2.50%	2.20%	1.27%	1.13%	Upper	Mid	Mid	Mid-Upper +25%	Upper	Low	25 GW	765KV Overlay Reference
High Retirements	1.20%	0.90%	1.27%	1.13%	Lower	Mid	Mid	Mid-Low -20%	Mid	Mid	25 GW	345kV Overlay Reference
High Environmental	0.7%[4]	0.5%[4]	1.27%	1.13%	Lower	Mid	Upper	Upper	Lower	Upper	45 GW	345kV Overlay Gas-only[12]
Slow Growth	0.20%	0.10%	1.27%	1.13%	Mid	Lower	Lower	Lower	Mid	Low	15 GW	345kV Overlay Reference
DOE 20% Wind	1.70%	1.40%	1.27%	1.13%	Lower	Upper	Upper	Mid	Lower	Mid	45 GW	765kV Overlay Reference[12]
Fuel & Inv. Limitations	1.00%	0.70%	1.27%	1.13%	Mid	Mid	Mid	Mid-Upper +25%	Mid	Mid	25 GW	345kV Overlay Gas-only

Notes:

1) Wind amounts within ATC will be updated when they are finalized by the Regional Generator Outlet Study (RGOS)/Upper Midwest Transmission Development Initiative (UMTDI).

MISO MTEP09 Generator Additions Within ATC (Coal replaced with Combined Cycle in MISO's Gas Only Future)

Model Year	Reference
2013	600 MW CT
2019	600 MW Coal

2) Corresponds to about a 20% Wind Renewable Portfolio Standard (RPS) MISO-wide.

3) For ATC, the Mid load and energy growth rates are based on 2009 customer-supplied forecasts.

4) A lower load growth percentage was selected for the High Environmental future due to increased Demand Side Management and Energy Efficiency, not because of low economic growth.

5) Most existing coal-fired generators have unit specific coal price forecasts from Ventyx (formerly NewEnergy Associates).

6) The generation expansion plan comes from MISO so the CO_2 tax only affects generation dispatch in ATC's PROMOD model. The CO_2 tax may be adjusted to conform to upcoming MISO or related studies if they come up with other plausible bounding values. CAIR's and CAMR's status is uncertain, but other air pollution regulations have an impact similar to these regulations.

7) Reference and Gas-Only refer to separate MISO generation expansion plans and futures.

8) CAPX Group 1 is assumed in place for 2019.

9) Wind power plants within ATC that have signed Interconnection Agreements (IAs) as of October 2008 that are not in suspension. Total capacity of these and existing wind units is 1,014 MW.

10) Some small coal-fired retirements have been publicly announced and/or have recently occurred and are included as basecase assumptions. Conversion of Blount 6 & 7 from coal to natural gas at the end of 2011 is included in the "Announced" coal-fired retirements total. Other, announced retirements include Blount Unit 4 (21 MW) by the end of 2011 and Presque Isle Units 3 & 4 (116 MWs) by the end of 2012. Pullium units 3 & 4 (~55 MW) were retired at the end of 2007.

11) Use "MISO Central" coal costs for MISO expansion plan generators added within ATC.

12) If the transmission overlay for the 45 GW case is unavailable in time, ATC's corresponding 2008 PROMOD case will be used.

13) For calculation purposes, wind plants within Wisconsin were assumed to have a 30% capacity factor. The total amount of ATC energy used to calculate the wind percentages was calculated based on a weather-normalized 2008 energy value escalated at the "Mid" ATC energy growth rate.