ATC Futures

Drivers	Load Growth within ATC	Energy Growth within ATC	Load Growth outside ATC	Energy Growth outside ATC	Generation within ATC[1]			% Energy in ATC from Renewables		% Renewables inside/ outside WI[2]	
Bounds	2013, 2018, 2024	2013, 2018, 2024	2013, 2018, 2024	2013, 2018, 2024	2013	2018	2024	2013	2018, 2024	2013	2018, 2024
Lower	0.5%	0.5%	0.5%	0.5%	Small Capacity Coal Retirements:			8%	10%	Inside:	
					270 MW	880 MW	880 MW			50%	50%
					Generator Additions:					Out:	
					No NED[9]	No NED	No NED			50%	50%
Mid[3]	1.75%	1.75%	1.75%	1.75%	Small Capacity Coal Retirements:			8%	15%	Inside:	
					130 MW	440 MW	440 MW			50%	35%
					Generator Additions:					Outside:	
					NED[9]	NED	NED			50%	65%
Upper	3.0%	3.0%	3.0%	3.0%	Small Capacity Coal Retirements:			20%	25%	Inside:	
					None	None	None			45%	25%
					Generator Additions:					Outside:	
					NED[9], None	NED, 500 MW Coal	NED, 500 More Coal			55%	75%
2013 Futures Descriptions											
Robust Economy	3.0%	3.0%	3.0%	3.0%	Upper			Mid		Mid	
High re-tirements	1.5%	1.5%	1.5%	1.5%	Lower (with NED[9])			Mid		Mid	
High Environ.	1.2%[4]	1.2 %[4]	1.2%[4]	1.2%[4]	Lower			10%		Mid	
Slow Growth	0.5%	0.5%	0.5%	0.5%	Mid			Lower		Lower	
DOE 20% Wind	2.0%	2.0%	2.0%	2.0%	Lower			Upper		Upper	
Fuel&Reg. Limitations	1.3%	1.3%	1.3%	1.3%	Mid			Mid		Mid	
2018 Futures Descriptions											
Robust Economy	3.0%	3.0%	3.0%	3.0%	Upper			Mid		Mid	
High re-tirements	1.5%	1.5%	1.5%	1.5%	Lower			Mid		Mid	
High Environ.	1.0%[4]	0.8%[4]	1.1%[4]	1.1%[4]	Lower			20%		Upper	
Slow Growth	0.5%	0.5%	0.5%	0.5%	Mid			Lower		Lower	
DOE 20% Wind	2.0%	2.0%	2.0%	2.0%	Lower			Upper		Upper	
Fuel&Reg. Limitations	1.3%	1.3%	1.3%	1.3%	Mid			Mid		Mid	
2024 Futures Descriptions											
Robust Economy	3.0%	3.0%	3.0%	3.0%	Upper			Mid		Mid	
High re-tirements	1.5%	1.5%	1.5%	1.5%	Lower			Mid		Mid	
High Environ.	1.0%[4]	0.8%[4]	1.1%[4]	1.1%[4]	Lower			20%		Upper	
Slow Growth	0.5%	0.5%	0.5%	0.5%	Mid			Lower		Lower	
DOE 20% Wind	2.0%	2.0%	2.0%	2.0%	Lower			Upper		Upper	
Fuel&Reg. Limitations	1.3%	1.3%	1.3%	1.3%	Mid			Mid		Mid	

ATC Futures (cont.)

Drivers	Natural Gas price forecast	Coal Price Forecast for New Units[5]	Environmental Regulations[6]	Generation Portfolios outside ATC[7]
Bounds	2013, 2018, 2024	2013, 2018, 2024	2013, 2018, 2024	2013 2018, 2024
Lower	-40%	-10%	$0/ton for CO_2, 0% Higher Mercury Costs	N/A
Mid	NYMEX For 5 Years Followed by EIA Escalation Rate	MISO MAIN $2.00/MMBTU Delivered in 2010 & 2%/yr . ($2.34 in 2018, $2.59 in 2024)	$25/ton for CO_2, 25% Higher Mercury Costs	N/A
Upper	50%	20%	$44/ton for CO_2, 25% Higher Mercury Costs	N/A
2013 Futures Descriptions				
Robust Economy	Mid-Upper +25%	Upper	Mid	Reference
High re-tirements	Mid-Low -20%	Mid	Mid	Reference
High Environ.	Upper	Lower	Upper	Environmental
Slow Growth	Lower	Mid	Low	Reference
DOE 20% Wind	Mid	Lower	Mid	20% Wind
Fuel&Reg. Limitations	Mid-Upper +25%	Mid	Mid	Reg. Limitation
2018 Futures Descriptions				
Robust Economy	Mid-Upper +25%	Upper	Mid	Reference
High re-tirements	Mid-Low -20%	Mid	Mid	Reference
High Environ.	Upper	Lower	Upper	Environmental
Slow Growth	Lower	Mid	Low	Reference
DOE 20% Wind	Mid	Lower	Mid	20% Wind
Fuel&Reg. Limitations	Mid-Upper +25%	Mid	Mid	Reg. Limitation
2024 Futures Descriptions				
Robust Economy	Mid-Upper +25%	Upper	Mid	Reference
High re-tirements	Mid-Low -20%	Mid	Mid	Reference
High Environ.	Upper	Lower	Upper	Environmental
Slow Growth	Lower	Mid	Low	Reference
DOE 20% Wind	Mid	Lower	Mid	20% Wind
Fuel&Reg. Limitations	Mid-Upper +25%	Mid	Mid	Reg. Limitation

Notes:

1) All scenarios include Weston 4 and Elm Road 1 and 2 for a total of about 1,850 MWs. The amount and type of generation additions in ATC's Futures start with MISO's expansion plans and are adjusted based on the load forecast specified in each ATC Future.

   MISO MTEP09 Generator Additions Within ATC for Each MISO Future:

Model Year	Reference	20% Wind	Environmental	Regulatory[a]
2013	600 MW CT	600 MW CT		600 MW CT
2018	600 MW Coal	600 MW Coal		1,200 MW CT
2024	600 MW Coal	600 MW Coal	1,200 Nuclear	1,200 MW Coal

[a] 5 year delay on new Coal and Combustion Turbines (CTs) & Combined Cycle (CC) near loads.

2) Approach: Determine the number of MWh that could be produced from planned renewables in WI, all other comes from outside.
3) For ATC, the Mid load and energy growth rates are based on 2008 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. Conservation programs are assumed to impact the rate of energy growth inside ATC somewhat more than the peak demand growth in 2018 and 2024.
5) Most existing coal-fired generators have unit specific coal price forecasts from Ventyx (formerly NewEnergy Associates).
6) CAIR and CAMR regulations are assumed to be met in the mandated timeframes. This column means that the CO_2 tax affects the dispatch of the generators. The CO_2 tax can also affect the generation expansion plans. The starting point for the MISO expansion plan used in each ATC Future is specified in the next column.
7) The Reference, Environmental, 20% Wind and Regulatory Limitation refer to separate MISO MTEP09 Expansion plans.
8) CAPX Group 1 is assumed in place for 2018 and 2024 for all Futures. Also, all Futures include approved transmission upgrades from MTEP for 2013, 2018 & 2024.
9) NED is Alliant Energy's proposed 280 MW Nelson Dewey power plant.