

### ATC Futures – Paddock-Rockdale Analysis

| Drivers                          | Load Growth within ATC (MWs) |      | Load Growth within ATC (MWh) |      | Load Growth outside ATC (MWs) |      | Load Growth outside ATC (MWh) |      | New low-cost generation within ATC <sup>1</sup> |      | % of Energy in ATC from Renewables |      | % of Renewables inside/outside Wis. <sup>2</sup> |      |
|----------------------------------|------------------------------|------|------------------------------|------|-------------------------------|------|-------------------------------|------|---|------|------------------------------------|------|--|------|
|                                  | 2011                         | 2016 | 2011                         | 2016 | 2011                          | 2016 | 2011                          | 2016 | 2011  | 2016 | 2011                               | 2016 | 2011   | 2016 |
| Lower                            | 0.5%                         | 0.5% | 0.5%                         | 0.5% | 0.5%                          | 0.5% | 0.5%                          | 0.5% | Retirements:                                    |      | 6%                                 | 6%   | Inside:  |      |
|                                  |                              |      |                              |      |                               |      |                               |      |   |      |                                    |      | 45%  | 45%  |
|                                  |                              |      |                              |      |                               |      |                               |      | 300 MW coal                                     |      |                                    |      | 950 MW coal, 500 MW nuclear, No NED              |      |
|                                  |                              |      |                              |      |                               |      |                               |      |   |      |                                    | 55%  | 55%  |      |
| Mid <sup>3</sup>                 | 2.0%                         | 2.0% | 2.0%                         | 2.0% | 2.0%                          | 2.0% | 2.0%                          | 2.0% | Retirements:                                    |      | 8%                                 | 10%  | Inside:  |      |
|                                  |                              |      |                              |      |                               |      |                               |      |   |      |                                    |      | 30%  | 25%  |
|                                  |                              |      |                              |      |                               |      |                               |      | 150 MW coal                                     |      |                                    |      | 475 MW coal, NED is built                        |      |
|                                  |                              |      |                              |      |                               |      |                               |      |   |      |                                    | 70%  | 75%  |      |
| Upper                            | 3.0%                         | 3.0% | 3.0%                         | 3.0% | 3.0%                          | 3.0% | 3.0%                          | 3.0% | Retirements:                                    |      | 10%                                | 15%  | Inside:  |      |
|                                  |                              |      |                              |      |                               |      |                               |      |   |      |                                    |      | 25%  | 15%  |
|                                  |                              |      |                              |      |                               |      |                               |      | None, NED is built                              |      |                                    |      | None, NED 280 MW plus 500 add'l MW               |      |
|                                  |                              |      |                              |      |                               |      |                               |      |   |      |                                    | 75%  | 85%  |      |
| <b>2011 Futures Descriptions</b> |                              |      |                              |      |                               |      |                               |      |   |      |                                    |      |  |      |
| Robust Economy                   | 3.0%                         |      | 3.0%                         |      | 3.0%                          |      | 3.0%                          |      | Upper   |      | Mid                                |      | Mid  |      |
| High retirements                 | 2.0%                         |      | 2.0%                         |      | 2.0%                          |      | 2.0%                          |      | Lower   |      | Mid                                |      | Mid  |      |
| High Environmental               | 1.2% <sup>4</sup>            |      | 1.2% <sup>4</sup>            |      | 1.2% <sup>4</sup>             |      | 1.2% <sup>4</sup>             |      | 225 MW coal retirements plus NED 280 MW built   |      | Upper                              |      | Upper  |      |
| Slow Growth                      | 0.5%                         |      | 0.5%                         |      | 0.5%                          |      | 0.5%                          |      | Mid   |      | Lower                              |      | Lower  |      |
| Fuel Supply Disruption           | 1.7%                         |      | 1.7%                         |      | 1.7%                          |      | 1.7%                          |      | Upper   |      | 9%                                 |      | Mid  |      |
| High Growth Wis.                 | 2.7%                         |      | 2.7%                         |      | 1.2%                          |      | 1.2%                          |      | Mid (not enough time to build anything)         |      | Mid                                |      | Mid  |      |
| <b>2016 Futures Descriptions</b> |                              |      |                              |      |                               |      |                               |      |   |      |                                    |      |  |      |
| Robust Economy                   | 3.0%                         |      | 3.0%                         |      | 3.0%                          |      | 3.0%                          |      | Upper   |      | Mid                                |      | Mid  |      |
| High retirements                 | 2.0%                         |      | 2.0%                         |      | 2.0%                          |      | 2.0%                          |      | Lower   |      | Mid                                |      | Mid  |      |
| High Environmental               | 1.2% <sup>4</sup>            |      | 1.2% <sup>4</sup>            |      | 1.2% <sup>4</sup>             |      | 1.2% <sup>4</sup>             |      | 950 MW coal retirements plus NED 280 MW built   |      | Upper                              |      | Upper  |      |
| Slow Growth                      | 0.5%                         |      | 0.5%                         |      | 0.5%                          |      | 0.5%                          |      | Mid   |      | Lower                              |      | Lower  |      |
| Fuel Supply Disruption           | 1.7%                         |      | 1.7%                         |      | 1.7%                          |      | 1.7%                          |      | 0 MW retirements, NED 280 MW                    |      | 12%                                |      | Mid  |      |
| High Growth Wis.                 | 2.7%                         |      | 2.7%                         |      | 1.2%                          |      | 1.2%                          |      | Mid   |      | Mid                                |      | Mid  |      |

ATC Futures – Paddock-Rockdale Analysis (cont.)

| Drivers                          | CapX 2020 Transmission <sup>5</sup> |   | Natural Gas price forecast       |                                  | Coal Price Forecast                                 |   | Coal Availability in Wisconsin                  |   | Environmental Regulations                                      |  | Generation Portfolios outside ATC |   |
|----------------------------------|-------------------------------------|---|----------------------------------|----------------------------------|---|---|---|---|--|--|-----------------------------------|---|
| Bounds                           | 2011                                | 2016                                    | 2011                             | 2016                             | 2011  | 2016  | 2011  | 2016  | 2011   | 2016   | 2011                              | 2016  |
| Lower                            | None                                | CapX Phase 1                            | -30%                             | -30%                             | -10%  | -10%  | Shortage reduces coal plant availability by 15% | Shortage reduces coal plant availability by 15% | Status Quo-CAIR & CAMR Regulations enforced                    | Status Quo-CAIR & CAMR Regulations enforced                    | Status Quo-CAIR & CAMR            | Status Quo-CAIR & CAMR                                |
| Mid                              | None                                | CapX Phase 1                            | Nominal Henry Hub Price - \$7.72 | Nominal Henry Hub Price - \$8.41 | MISO MRO \$1.38; MISO MAIN \$1.63; MISO ECAR \$2.05 | MISO MRO \$1.25; MISO MAIN \$1.51; MISO ECAR \$1.92 | Normal Availability                             | Normal Availability                             | Status Quo-CAIR & CAMR Regulations enforced                    | Status Quo-CAIR & CAMR Regulations enforced                    | Status Quo-CAIR & CAMR            | Central Illinois Coal Campus Case – 4,500 – 6,000 MWs |
| Upper                            | None                                | CapX Phase 1 + LaCrosse-Columbia 345 kV | 40%                              | 40%                              | 10%   | 10%   | Normal Availability                             | Normal Availability                             | Status Quo-CAIR & CAMR Regulations enforced & \$44/ton for CO2 | Status Quo-CAIR & CAMR Regulations enforced & \$44/ton for CO2 | Status Quo – CAIR & CAMR          | Kyoto Generation Portfolio                            |
| <b>2011 Futures Descriptions</b> |                                     |   |                                  |                                  |   |   |   |   |  |  |                                   |   |
| Robust Economy                   | None                                |   | Mid-Upper – 20%                  |                                  | Mid-Upper – 5%                                      |   | Mid   |   | Status Quo   |  | 26,133 MW (1,500 MW coal campus)  |   |
| High retirements                 | None                                |   | Mid-Upper                        |                                  | Lower   |   | Mid   |   | Status Quo   |  | 13,339 MW (1,500 MW coal campus)  |   |
| High Environmental               | None                                |   | Upper                            |                                  | Lower   |   | Mid   |   | Kyoto - \$44/ton CO2 Tax                                       |  | 1,330 MW (0 MW coal campus)       |   |
| Slow Growth                      | None                                |   | Lower                            |                                  | Mid   |   | Mid   |   | Status Quo   |  | 0 MW (0 MW coal campus)           |   |
| Fuel Supply Disruption           | None                                |   | Upper                            |                                  | Upper   |   | Lower   |   | Status Quo   |  | 8,850 MW (1,500 MW coal campus)   |   |
| High Growth Wis.                 | None                                |   | Mid                              |                                  | Mid   |   | Mid   |   | Status Quo   |  | 1,700 MW (750 MW coal campus)     |   |
| <b>2016 Futures Descriptions</b> |                                     |   |                                  |                                  |   |   |   |   |  |  |                                   |   |
| Robust Economy                   | Upper                               |   | Mid-Upper                        |                                  | Mid-Upper   |   | Mid   |   | Status Quo   |  | 46,063 MW (6,000 MW coal campus)  |   |
| High retirements                 | Mid                                 |   | Mid-Upper                        |                                  | Lower   |   | Lower –Mid - 7.5%                               |   | Status Quo   |  | 26,883 MW (1,500 MW coal campus)  |   |
| High Environmental               | Mid                                 |   | Upper                            |                                  | Lower   |   | Mid   |   | Kyoto - \$44/ton CO2 Tax                                       |  | 14,227 MW (0 MW coal campus)      |   |
| Slow Growth                      | Mid                                 |   | Lower                            |                                  | Mid   |   | Mid   |   | Status Quo   |  | 0 MW (0 MW coal campus)           |   |
| Fuel Supply Disruption           | Mid                                 |   | Upper                            |                                  | Upper   |   | Lower   |   | Status Quo   |  | 21,279 MW (3,750 MW coal campus)  |   |
| High Growth Wis.                 | Mid                                 |   | Mid                              |                                  | Mid   |   | Mid   |   | Status Quo   |  | 12,689 (1,500 MW coal campus)     |   |

Notes:

- 1) All scenarios include Weston 4 and Elm Road 1&2 for a total of 1,800 MWs
- 2) Approach: Determine # of MWh that could be produced from planned renewables in WI, all other comes from outside
- 3) Mid load growth was changed to reflect the draft Strategic Energy Assessment available at the time.
- 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) Includes transmission upgrades from MTEP for 2011; Includes transmission upgrades from NERC in 2016