



# Combined Cycle Modeling Update

Operating Committee  
October 8, 2013

- Update the OC on PJM design review of implementing Combined Cycle Modeling
  - Large impact on CC owners & PJM
- New estimated cost of ~\$750K to \$1M
- Next steps
  - Cost benefit for implementation
  - Implementation schedule - Target 2015?

Internal PJM Combined Cycle Modeling meetings were held with:

- Dispatch
- Day Ahead Markets
- Real Time Markets
- Markets Coordination
- Reliability Eng
- Generation
- Real Time Data Mgmt
- Settlements

PJM has identified the following systems will be impacted by implementation:

- Day Ahead
- Dispatch (IT/RT SCED)
- Ancillary Services (ASO)
- Automatic Generation Control (AGC)
- Perfect Dispatch
- Data Management Tool (DMT)
- eDART
- Settlements

- MIC/EMUSTF – Make Whole/Lost Opportunity Cost rules for Combined Cycle configurations
- MIC – multiple price offers
- MSS – settlement of intra-hour configuration changes
- CDS – calculation of cost based offers

- All combined cycles will be **REQUIRED** to use the new Combined Cycle Model.
  - Currently units can offer as a steam unit or a combustion turbine
  - Market sellers must transition existing schedules to CC configuration offers (i.e. 1X1, 2X1, etc.)
  - Configurations must be offered for a minimum of three months

- All combined cycle units **MUST BE** aggregated under one unit ID.
  - No simple cycle CT IDs
  - Will require modeling change for some units in the markets and settlements databases
  - PJM will provide one economic base point for the aggregated unit

- Telemetry may be necessary for **ALL** CT and steam components
  - Needed for State Estimator
  - Needed for settlements and testing
  - However, eMTR submittals will be on an aggregated plant basis



- Each CC will receive two new ICCP points
  - Units will receive current and future desired configuration
  - Configuration changes will be considered dispatch instructions

- CC units picked up in Day Ahead start like steam units with 20 minutes notice to Generation Dispatcher.
- CC units not picked up in Day Ahead will be put on the CT Call List.
- PJM will provide CC units with an Economic Base Point for the current configuration via ICCP Link.

- Real Time configuration transition times are limited to 2 hours or less.
- CC units that have a configuration transition time greater than 2 hours must follow their Day Ahead commitment.

- Continue to work through Special OC Meetings
  - Develop cost benefit
  - Develop rules
  - Develop implementation timeline – 2015?
  - Request funding
  - Kick Off Discussions at other Committees