



## **Problem Statement: Combined Cycle Modeling**

### ***Issue:***

Combined cycle units are a unique unit type in PJM, and have a unique incremental heat input curve. Various components of combined cycle operation are not defined clearly in Manual 15.

Currently, combined cycles are modeled similarly to other unit types in PJM, but may not be the same in terms of physical parameters. Due to different unit setups (various combustion turbine combinations), combined cycle units may be offered inconsistently by various participants due to the lack of clarity in Manual 15.

### ***Issue Source:***

The MMU is bringing this issue forward for consideration by the Cost Development Subcommittee (CDS). After reviewing Manual 15, it became clear that combined cycles were modeled and offered inconsistently in PJM, and was requested by CDS stakeholders for review and discussion by the CDS.

### ***Background***

Manual 15 details the standards recognized by PJM for determining cost components for markets where products or services are provided to PJM at cost-based rates, as referenced in Schedule 1, Section 6 of the Operating Agreement of PJM Interconnection, L.L.C. Generation Owners use Manual 15 to develop their cost based offers. This manual was not written with certain combined cycle modeling issues in consideration.

### ***Assignment of Responsibility:***

Governance of Manual 15 is the primary scope of responsibility for the CDS and is therefore the appropriate stakeholder body to address this issue. This lies directly within the existing CDS charter and no charter modifications are needed. Further as CDS is a standing Subcommittee, no charge is required from the Markets and Reliability Committee (MRC).

### ***Objectives and Expected Activity:***

1. Using the proposal matrix developed by the CDS members (Appendix 1, Proposal Matrix), the CDS will create a preferred, clear definition of the of the appropriate method to model combined cycle unit cost based offers in energy markets, and define any terms needed in order to do so.
2. The CDS will use the proposal matrix to craft appropriate manual language for Manual 15 reflecting this definition.

### ***Areas defined as out-of-scope:***

This problem statement is not intended to alter dispatch methodology of combined cycles, and will not do so.

### ***Expected Deliverables:***

A proposal with the CDS preferred modifications to Manual 15 that address combined cycle modeling issues will be presented to the MRC and the MC.

### ***Expected Milestones and Deadlines:***

Meeting	Activity
CDS: January 31, 2011	Review Problem Statement
CDS: February 28, 2011	Education and Fact Finding
CDS: March 21, 2011	Identify and Explore Interest
CDS: April 25, 2011	Develop Options for Each Component
CDS: May 23, 2011	Develop Comprehensive Changes
CDS: June 20, 2011	Develop Recommendations (including consensus and multiple options)
MRC: June 22, 2011	Report to Senior Committee
MRC: July 20, 2011	Endorsement vote at MRC
MC: August 25, 2011	Endorsement vote by MC

Approval by the PJM Board of Managers will follow the endorsement of the MC.