

# MMU CDS Problem Statements

Cost Development  
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# 1 Incremental Cost

- **Variable Operation and Maintenance Costs** should include only *short run incremental costs*
- **PJM Operating Agreement – Schedule 2B** provides for generators to include the following components of cost:
  - **Incremental fuel cost**
  - **Incremental maintenance cost**
  - **Incremental labor cost; and**
  - **Other incremental operating costs**



# 1 Incremental Cost

- **Definition of incremental, or short-run marginal cost, needs to be clarified**
- **Cost development guidelines do not clearly delineate what components of variable operations and maintenance (VOM) are incremental and should be included in energy offers**
- **Some components of VOM may currently be not recovered in the appropriate market (RPM vs. energy)**



## 2 Cyclic Peaking Factor

- **Many newly built combustion turbines do not require additional maintenance per start**
- **The cyclic peaking factor requiring additional maintenance dollars per start should be reviewed and updated, as these numbers are outdated and may have no clear basis for current cost development**



# 3 Missing Cost Development Guidelines Issue

- **Currently, only Nuclear, Fossil Steam, Combustion Turbine, Diesel, and Combined Cycle units have defined cost development guidelines**
- **Pumped storage hydroelectric units are partially, but not fully developed**
- **There are no cost development guidelines for:**
  - **Non-Fossil steam units, such as biomass or solid waste**
  - **Run-of-river hydroelectric units**
  - **Wind units**
  - **Solar units, or**
  - **Energy Storage units**



# 3 Missing Cost Development Guidelines Issue

- **Many units of this type are entering the PJM footprint and becoming more significant in dispatch and generation profile**
- **There is no adequate basis currently to evaluate the cost based offers of these units**
- **This process can clearly delineate the actual components of cost for these unit types**



# 4 DSR Offers in the Energy Market

- **There are currently no guidelines defined for demand side resources to make offers in the PJM energy market**
- **There is no definition of cost**



## 5 Immature Unit Definition

- **There is currently no clear definition of an “immature unit”**
- **There is currently no approved method to determine VOM without appropriate history.**
- **New units may have no way of determining VOM when initially entering market**





# 6 Combined Cycle Modeling

- **The incremental heat input of a combined cycle unit is unique among unit types**
- **Combined cycle unit offers are modeled similarly to other unit types in PJM, but are not necessarily similar in physical parameters**
- **Combined cycle units may be offered inconsistently by various participants**

# 7 Time Frame

- **Issues should be addressed in order of importance**
  - **Issue of incremental cost should be addressed as soon as possible**
  - **Issue of cyclic peaking factor should be addressed as soon as possible**
  - **Other issues should be addressed when possible**



# 8 Objectives

- **To ensure that CDS cost development guidelines are adequately reviewed and defined**
- **To ensure that units are able to offer and recover incremental costs in the energy market**
- **To ensure that cost development guidelines remain consistent and up to date**



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