



# Cost & Price Schedules

September 4, 2014  
GUCC Education



## Generation Offer Types

- Price-based offers
  - Cost-based offers
- 
- Price Based offers and Cost Based offers consist of the following:
    - Incremental - Offers for Energy (\$/MWh)
    - Start-up Cost (\$/start)
    - No-load Cost(\$/hr)



- Price Based offers
  - Incremental, start-up, and no-load offers are not limited to cost.
- Cost Based offers
  - Based on Cost Development Guidelines (Manual 15) plus 10% adder
- All Incremental offers (Price and Cost) are capped at \$1000 per the Operating Agreement



## Offer Components

	<b>Incremental Offers</b>	<b>Production Costs</b>	<b>Operation Parameters</b>
Price Offer	No Limits *Capped at \$1000/MWh	No Limits	No Limits
Cost Offers	Cost plus 10% adder	Cost plus 10% adder	Parameter Limited Schedule
PLS Offer (HWA, CWA, MaxE)	No Limits *Capped at \$1000/MWh	No Limits	Parameter Limited Schedule



Units must have at least one Cost-Based Schedule available

1. Cost-based Schedule must be Parameter Limited

2. Two Price-based Schedules, one of which must be Available

- a) Non Parameter Limited
- b) Parameter Limited



- Generation resources shall submit and be subject to pre-determined limits on non-price offer parameters (“parameter limited schedules”)
- Parameter-Limited Schedules are **limitations** that **could be imposed** on the parameters that generators submit as part of their offer
- PJM posts unit class specific parameter limits in Section 6.6 of Schedule 1 in the **Operating Agreement**



## Changing Offer Components

	Cost Based Offer	Price Based Offer
Start-up (hot, intermediate, and cold) (\$/start)	Can be changed daily	Optional – Can be changed once every 6 months (on or before March 31 and September 30)
No Load (\$/hr)	Can be changed daily	Optional – Can be changed once every 6 months (on or before March 31 and September 30)
Incremental Cost (\$/MWh)	Can be changed daily - Energy from min to max	Can be changed daily - Energy from 0 to max



## Changing between Cost and Price Offers

- The choice between using cost-based and price-based startup and no-load fees can be made twice a year during the same open enrollment window (on or before 1200 hours March 31 for the period April 1 through September 30 and on or before 1200 hours September 30 for the period October 1 through March 31).
- If a price based unit chooses the cost-based Startup and no-load fees option, the decision cannot be changed until the next open enrollment period takes place.





# Parameter Limited Schedules

Unit Schedules Dispatch Lambda Market Results Regulation Market Synchronized Reserve Market Nonsynchronized Reserve Market DA Scheduling Reserve Market Con Ed **Parameter Limits** Interface Pricing Opportunity Cost Calculator

Participant Parameter Limits Exception Parameter Limits Approve Parameter Limits

**Parameter Limits**

Portfolio:  Unit: ALL LOCATIONS Date: 12/27/2013 (mm/dd/yyyy)

Pages: 1 2 3 4 5 Next

Records: 1 - 10 of 43 matches.

Location	Description	Minimum Runtime	Minimum Downtime	Maximum Daily Starts	Maximum Weekly Starts	Turndown Ratio
Steamer 1	Steamer 1	24	48	1	1	2.00
Steamer 2	Steamer 2	24	84	1	1	1.39
Steamer 3	AEP CARDINAL 2	24	84	1	1	1.39
Steamer 4						8
Steamer 5						0
Steamer 6						0
Big CC 1						0
Big CC 2						0
Big CT 1						0
Big CT 2						0

**Parameter Limits:**

Parameters limits are determined on a unit-class basis and are assigned to each unit for the following schedule parameters:

- Minimum Downtime
- Minimum Runtime
- Maximum Daily Starts
- Maximum Weekly Starts
- Turn Down Ratio - ratio of economic maximum MW to economic minimum MW

**Unit Hourly Updates Search**

Portfolio:  Unit:  Date: 12/27/2013

Hourly Values Apply To: 08-23

Defaults 211.0 211.0 330.0 330.0 Not Available No

Emergency Min 211.0 Economic Min 211.0 Economic Max 330.0 Emergency Max 330.0 Commit Status Not Available Fixed Gen No

**Unit Hourly Updates for on 12/27/2013**

Hour Ending	Em. Min. Def.	Em. Min. MW	Ec. Min. Def.	Ec. Min. MW	CIR	Ec. Max. Def.	Ec. Max. MW	Em. Max. Def.	Em. Max. MW	Commit Status	Fixed Gen.	Notification Time.
01	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
02	211.0										No	(null)
03	211.0										No	(null)
04	211.0										No	(null)
05	211.0										No	(null)
06	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
07	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
08	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
09	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
10	211.0										No	(null)
11	211.0										No	(null)
12	211.0										No	(null)
13	211.0										No	(null)
14	211.0										No	(null)
15	211.0										No	(null)
16	211.0										No	(null)
17	211.0										No	(null)

The Unit Hourly Updates page is used to submit real-time changes to unit statuses and MW operating limits

Changes made to the unit data using the Unit Hourly Updates web page supersede all schedule data (Schedule Detail web page), weather curve data (Unit Detail web page), and unit limits (Unit Detail web page)

## Operating Scenario

***Normal Operations***

***Generator fails the Three Pivotal Supplier Test (TPS)***

***Max Emergency Alert, loading, etc.***



## PJM Selected Schedule

*Generators continue on their Price Schedule and non-limited parameters*

*Generators are placed on the lower production cost of the cost schedule or price schedule*

*Generators are committed on their price based parameter limited schedules*