

Status-Quo for Offering Dual Fuel Units

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Market Implementation Committee

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2.3.3.1 Capacity Resource Offer Rules:

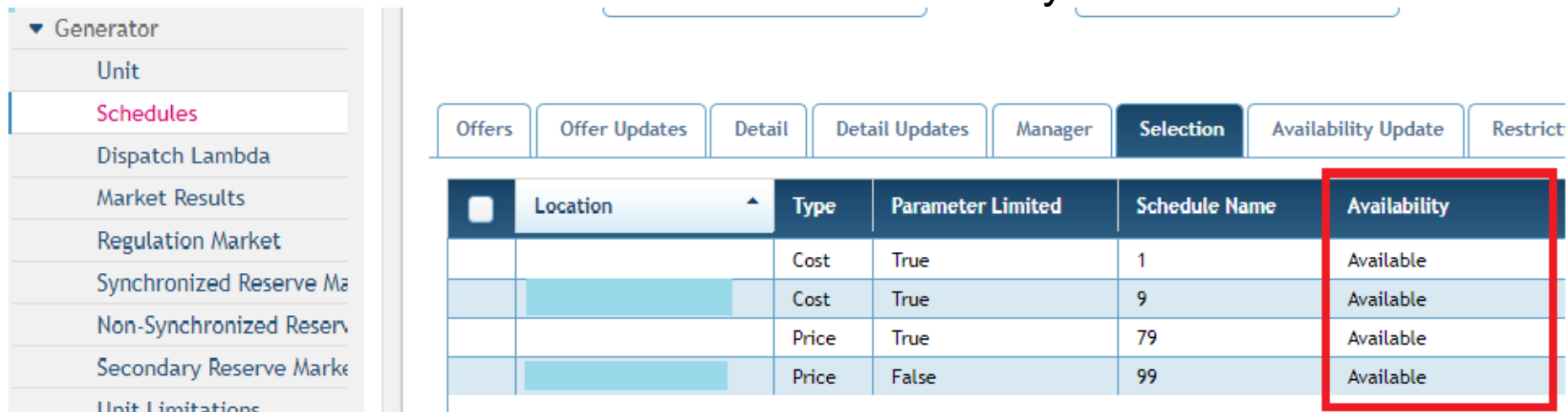
- Capacity Market Sellers that have provided an attestation of dual fuel capability during the winter season for their resources in the Gas Combustion Turbine Dual Fuel Class or Gas Combined Cycle Dual Fuel Class shall meet the must offer requirement by having an available schedule for the primary fuel and an available schedule for the alternative fuel for scheduling by PJM on such alternative fuel during the winter season, within operational limitations due to energy or environmental limitations imposed on the generating unit by Applicable Laws and Regulations. When the resource is not capable of operating on such alternative fuel during the winter season, the resource shall follow the requirements in M10, Section 2: Generation Outage Reporting.

- A resource cost schedule that is assigned through the Day-ahead market or a Real-time call on, is considered committed and cannot be switched through the duration of the assignment until either being released or taking a forced outage.
- For dual fuel units with a loss of the committed fuel that want or need to keep running on the secondary fuel, the committed cost schedule must be amended to reflect the price of the new fuel as switching a committed schedule is not allowed.

- There is currently no concept of a Market Seller transitioning schedules or a transition time parameter.
 - If a unit is committed in DA market on any schedule, unit will not be switched to a different schedule for those committed hours in the real-time market even if the original schedule's fuel is no longer available.
 - If a unit is committed in real-time and running on a price schedule, it is then subject to the TPS test after reaching minimum run time. If it fails, the unit will be placed on cheapest schedule which could be a cost schedule and/or a different fuel.

If natural gas becomes unavailable when previously expected to be available or vice versa (assuming gas is the cheaper fuel):

- Ensure daily availability of both (gas and oil) cost schedules are set to available* on the Generator > Schedules > Selection screen in Markets Gateway.



Generator							
Unit							
Schedules							
Dispatch Lambda							
Market Results							
Regulation Market							
Synchronized Reserve Ma							
Non-Synchronized Reserv							
Secondary Reserve Marke							
Unit Limitations							
Offers	Offer Updates	Detail	Detail Updates	Manager	Selection	Availability Update	Restrict
<input type="checkbox"/>	Location	Type	Parameter Limited	Schedule Name	Availability		
		Cost	True	1	Available		
		Cost	True	9	Available		
		Price	True	79	Available		
		Price	False	99	Available		

- Reflect hourly availability of both (gas and oil) cost schedules on the Generator > Schedules > Availability Update screen in Markets Gateway.

*This only applies if the participant intends to offer both fuel types. A fuel's schedule(s) should be made available if the fuel is available (for resources in the Gas Combustion Turbine Dual Fuel Class or Gas Combined Cycle Dual Fuel Class)

- Reflect price of oil on the gas cost schedule for hours where gas is not expected to be available on the Generator > Schedules > Offer Updates screen in Markets Gateway.

▼ Generator

Unit

Schedules

Dispatch Lambda

Market Results

Regulation Market

Synchronized Reserve Ma

Non-Synchronized Reserv

Secondary Reserve Marke

Unit Limitations

Interface Pricing

Opportunity Cost Calculator

Offers
Offer Updates
Detail
Detail Updates
Manager
Selection
Availability Update
Res

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	Hour ▲	MW	Price	Capped Price	Exception Exists
▼	1				
		1.0	131.06		
		50.0	169.26		
		85.0	196.54		
		92.0	202.00		

*MW breakpoints cannot be changed.

- Under the gas cost schedule, set the reference schedule to the oil cost schedule in the Generator > Schedules > Details Updates screen in Markets Gateway for hours where oil price is reflected in the gas schedule.

Markets Gateway

Market Day: 11/24/2021 | Portfolio: PJM TEST PORTFOLIO | Location: PJM TEST UNIT | Schedule: COSTGAS (01)

Refresh | Save

Offers | Offer Updates | Detail | **Detail Updates** | Manager | Selection | Availability Update | Restriction Information | TPS Schedule Switch | Fuel Price Exceptions | Composite Offer Verification

PJMST>> 2021-11-24 >> PJM TEST UNIT (UnitID) >> COSTGAS(01)

Switch To Cost Schedule | Start Hour: 1 | Last Updated Date/Time: No Updates

Hour	No Load Cost	Cold Startup Cost	Intermediate Startup Cost	Hot Startup Cost	Minimum Runtime	Notification Time	Status	Reference Schedule
1							Not Committed	
2							Not Committed	
3							Not Committed	
4							Not Committed	
5							Not Committed	
6							Not Committed	
7							Not Committed	
8							Not Committed	
9							Not Committed	
10							Not Committed	
11							Not Committed	COSTOIL(02)
12							Not Committed	COSTOIL(02)
13							Not Committed	COSTOIL(02)
14							Not Committed	COSTOIL(02)
15							Not Committed	COSTOIL(02)
16							Not Committed	COSTOIL(02)
17							Not Committed	COSTOIL(02)
18							Not Committed	COSTOIL(02)
19							Not Committed	COSTOIL(02)
20							Not Committed	COSTOIL(02)
21							Not Committed	COSTOIL(02)
22							Not Committed	COSTOIL(02)
23							Not Committed	COSTOIL(02)
24							Not Committed	COSTOIL(02)

No Load and Startup Cost would be updated to reflect the cost of the available fuel type. In this example, HE11-23 would be updated to reflect the cost of oil.

Scenario: The unit is not committed in the Day-Ahead Market. The unit is dispatched in Real-time on its Gas Cost Schedule at HE 0100, with Min Run time of 4 hours. Gas becomes unavailable at HE 1100 (after Min Run would be met).

Market Participant Actions:

- Gas Cost Schedule should be updated to reflect the price of the Oil Cost Schedule for hours ending 1100 through 2300
- The incremental offer curve and No Load on the committed (Gas Cost) schedule should be updated to reflect the cost of the available fuel type (oil) via the Offers Update screen in Markets Gateway.
- The “Reference Schedule” field in the Schedule Detail Updates screen should be updated to report the Cost Schedule ID of the fuel that is the basis of the hourly offer. For this scenario, that means reflecting the oil fuel cost in the incremental energy offer on the Cost-Gas schedule during hours ending 1100 – 2300, and the “Reference Schedule” should be set to “Cost-Oil” on the Schedule Detail Updates screen for the same hours.

- [Offering Dual Fuel Generation with Intraday Offers FAQ](#)
 - After review of FAQ, please send any questions to your client manager or custsvc@pjm.com
- [Markets Gateway User Guide](#)

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Status Quo for Offering Dual Fuel Units



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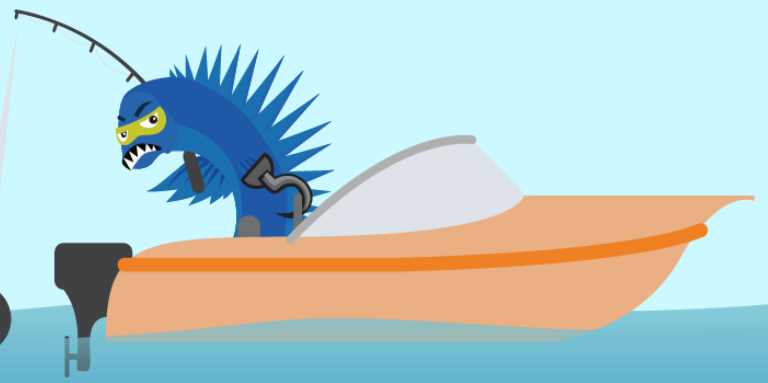
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**PROTECT THE
POWER GRID**

**THINK BEFORE
YOU CLICK!**



**BE ALERT TO
MALICIOUS PHISHING
EMAILS**



**Report suspicious email activity to PJM.
Call (610) 666-2244 or email it_ops_ctr_shift@pjm.com**