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MEMORANDUM

FROM:
TO:
DATE: Tuesday, March 06, 2018
RE: Legal Analysis on Federal Resource Participation ADF

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(b)(5)

From: Greene,Richard A (BPA) - LP-7
Sent: Fri Sep 28 16:32:27 2018
To: Symonds,Mark C (BPA) - BD-3; Kerns,Steven R (BPA) - B-3; Mantifel,Russell (BPA) - B-3
Cc: Pettinger,Rebekah S (BPA) - LP-7
Subject: Question on System Sales and Scheduling
Importance: Normal

(b)(5)

From: Truong,Mai N (BPA) - PGST-5
Sent: Wed Mar 07 10:37:35 2018
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5; Stermer,Anna M (BPA) - PGSP-5; Eaton,Sara L (BPA) - PTM-5
Subject: RE: ADF on the number of generation points bid into the EIM
Importance: Normal
Attachments: FCRPS_Config_EIM.PPTX

Updated NGR illustration attached.

There's a week and a half left to complete a rough draft…..

3/7 Agenda:

1. Quick review of the curtailment risk analysis - Todd
    a. Is there a need for a 4th alternative based on this analysis - All
2. NGR functionality illustration – Elsa
3. Identify outstanding item /assign action items – All

<< File: FCRPS_Config_EIM.PPTX >>
-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:22 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5; Stermer,Anna M (BPA) - PGSP-5
Subject: ADF on the number of generation points bid into the EIM
When: Wednesday, March 07, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 470EW(40) x4000 ID: (b)(2)
Sensitivity: Private

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Mon Mar 05 14:02:47 2018
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Will,Garland L (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Hawkins,Robert E (BPA) - PGSD-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Cc: (b)(6) Stermer,Anna M (BPA) - PGSP-5
Subject: RE: ADF on the number of generation points bid into the EIM
Importance: Normal
Attachments: 20180305_Congestion_Risk_v01_Draft.pdf

Here is a quick curtailment risk analysis. I will go over it today.

Todd

Bonneville Power Administration | Transmission Operations
5411 NE Hwy 99 | TOK-DITT2 | Vancouver, WA 98663
Direct: (360) 418-8752 | **twkochheiser@bpa.gov**

-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:57 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Will,Garland L (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Hawkins,Robert E (BPA) - PGSD-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Cc: robhawkins1@gmail.com; Stermer,Anna M (BPA) - PGSP-5
Subject: ADF on the number of generation points bid into the EIM
When: Monday, March 05, 2018 2:00 PM-3:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 418 x4000 ID: (b)(2)
Sensitivity: Private

Rescheduling the 3/2 instance only. Moving to 3/5

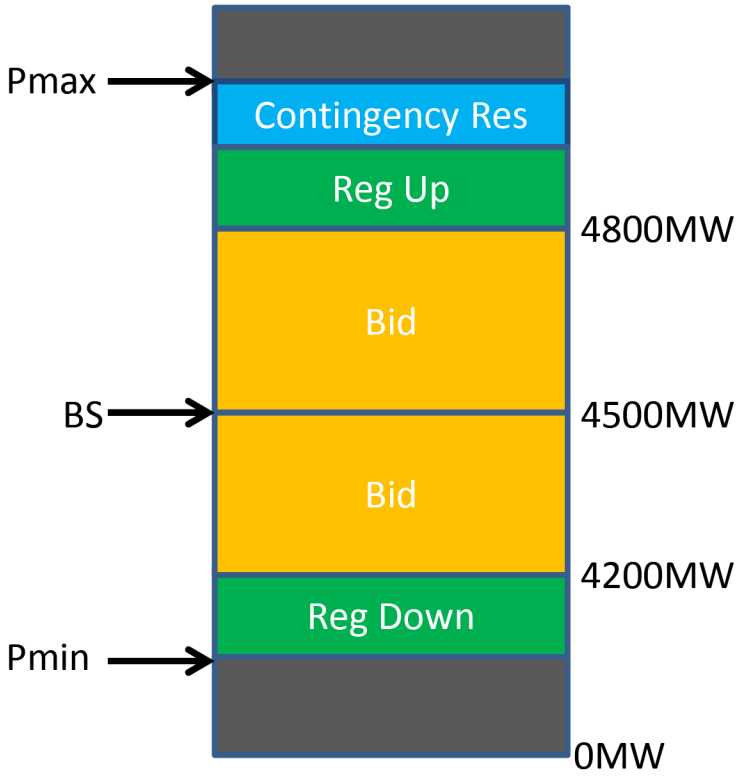
Traditional Setup:

APR
GCL + CHJ

GDF*:
GCL 0.67
CHJ 0.33

*GDF is calculated based on BP set by hydro scheduler. GDF here controls the distribution of MW for both BS and bid range.

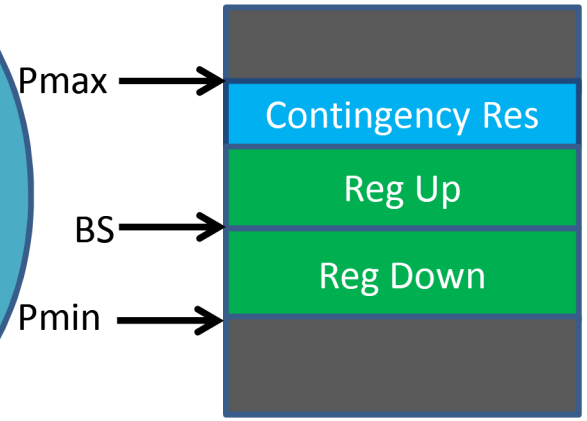
	BP (MW)	GDF
GCL	3000	3000/4500 = 0.67
CHJ	1500	1500/4500 = 0.33
SUM	4500	1



Powerex's Setup:

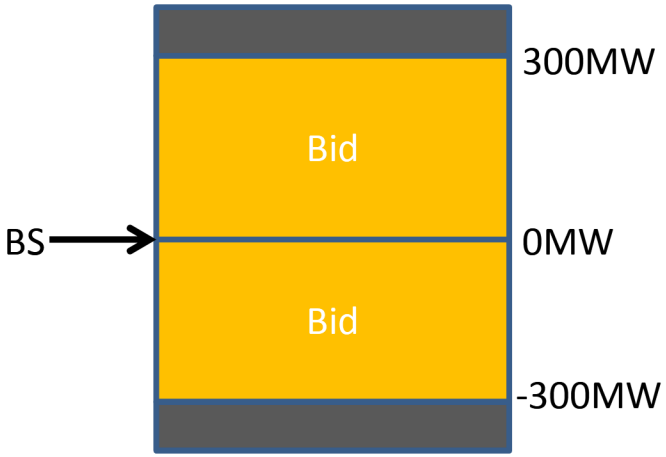
ANPR
GCL + CHJ

GDF**:
GCL 0.67
CHJ 0.33



APR (NGR)
GCL + CHJ

GDF***:
GCL 0.3
CHJ 0.7



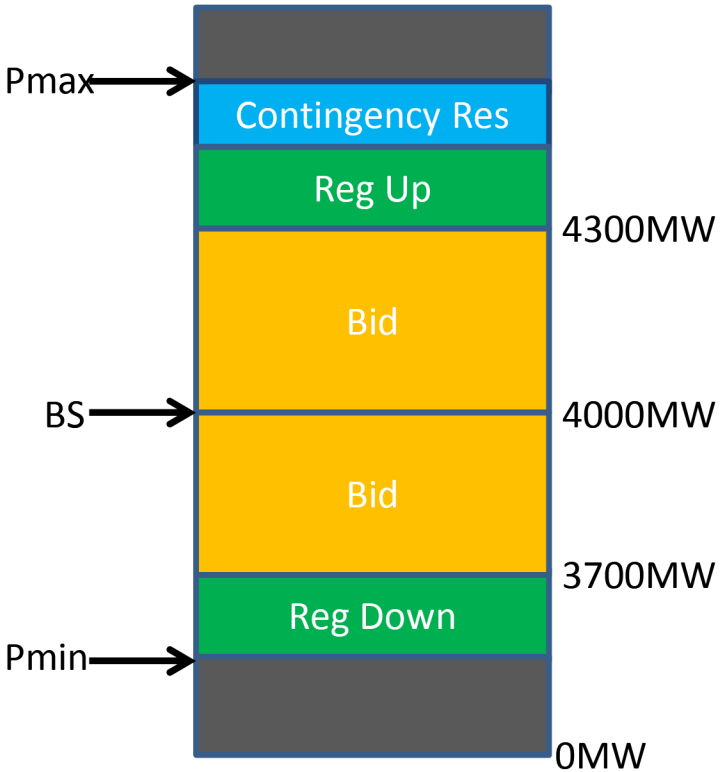
**Controls the distribution of MW for BS (input to CAISO's EIM network model)

***Controls the distribution of MW for bid range

Traditional Setup:

APR
GCL + CHJ

GDF*:
GCL 30%
CHJ 70%



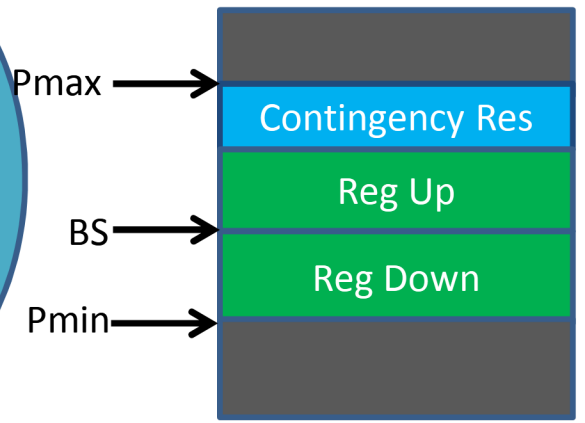
*Controls base schedule and bid rage

Powerex's Setup:

**Controls BS
***Controls bid range

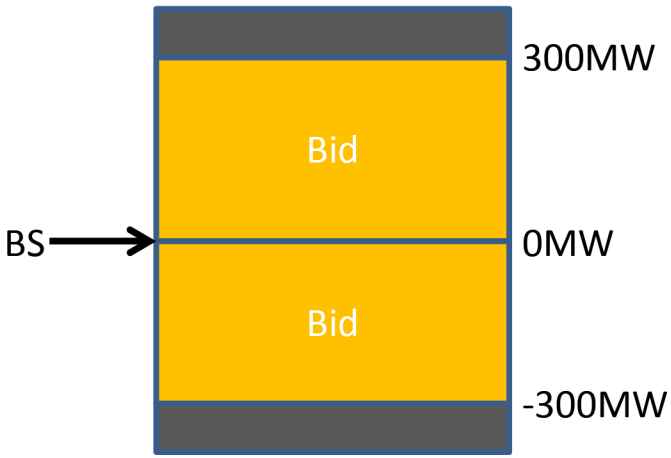
ANPR
GCL + CHJ

GDF**:
GCL 65%
CHJ 35%



APR (NGR)
GCL + CHJ

GDF***:
GCL 30%
CHJ 70%



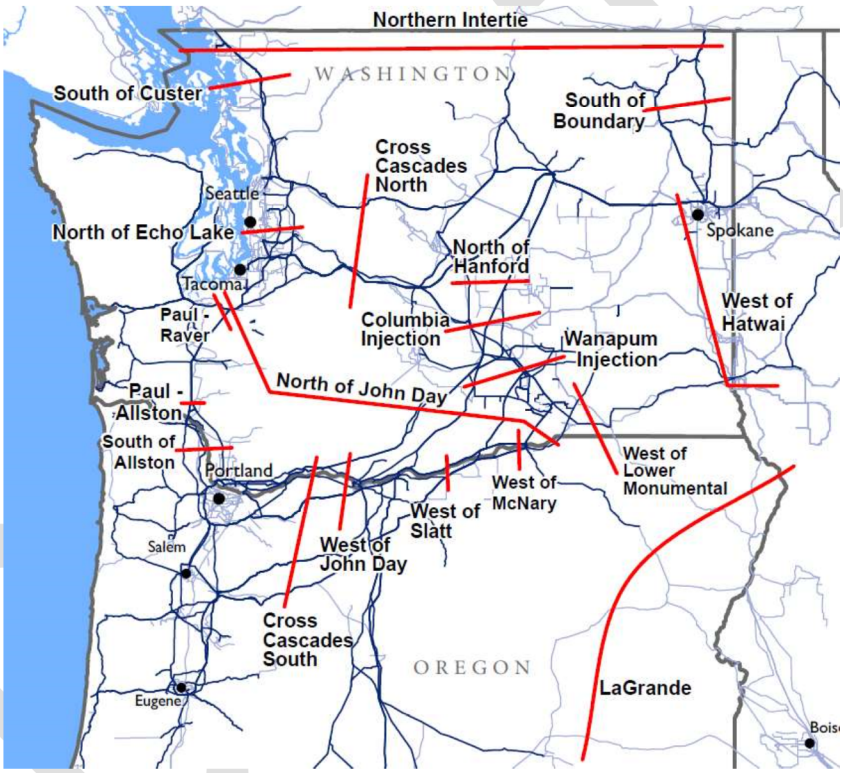
Objective & Approach:

Provide a high-level assessment of the risk of congestion on BPA internal flowgates

Methodology:

- Analyzed historical in-hour curtailments events between 2008 and present.
- Analyzed excursion minutes (flows > TTC) for CY2015 – FY2018 (YTD)
- Note: SOL Methodology changed 4/2017 where curtailments no longer occur when actual flows exceed the TTC
  - RTCA used as a real-time tool
  - Still curtail when MaxTTC is reached
- Results have not been peer reviewed – draft results!

Flowgates:



Summary:

- The number and duration of actual flows exceeding TTC has been increasing
- The number curtailments has been decreasing
- Trends are likely due to new SOL methodology that went into effect on 4/1/2017
- Overall risk of curtailments is fairly low on most flowgates
- These trends may or may not continue – hard to predict the future!

Curtailment Trends:

CURTAILMENT EVENTS - ALL PRIORITIES (1,2,6,7)											
Row Labels	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
NJD			4	4	11		21		2	2	44
NOEL						12	5	17		3	37
NOH				3							3
NOH_SN		11		1	7	1					20
P-A		2									2
R-P			1	4	1				7		13
SOA	11	1		3		2	2				19
SOA_SN	3	2		1		3					9
SOC								1	21		22
WOCN		1	4			1					6
WOJD					4				6		10
WOM					5		3				8
WOM - MAIN-GRID									2		2
WOMSG								4			4
Grand Total	14	17	9	16	28	19	31	22	38	5	199

CURTAILMENT EVENTS - FIRM (7)											
Row Labels	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
NJD					11		21		2	2	36
NOEL						12	5	17		3	37
NOH											
NOH_SN					7	1					8
P-A											
R-P				2	1				7		10
SOA						2	2				4
SOA_SN						3					3
SOC								1	21		22
WOCN			2			1					3
WOJD					4				6		10
WOM					5		3				8
WOM - MAIN-GRID									2		2
WOMSG								4			4
Grand Total			2	2	28	19	31	22	38	5	147

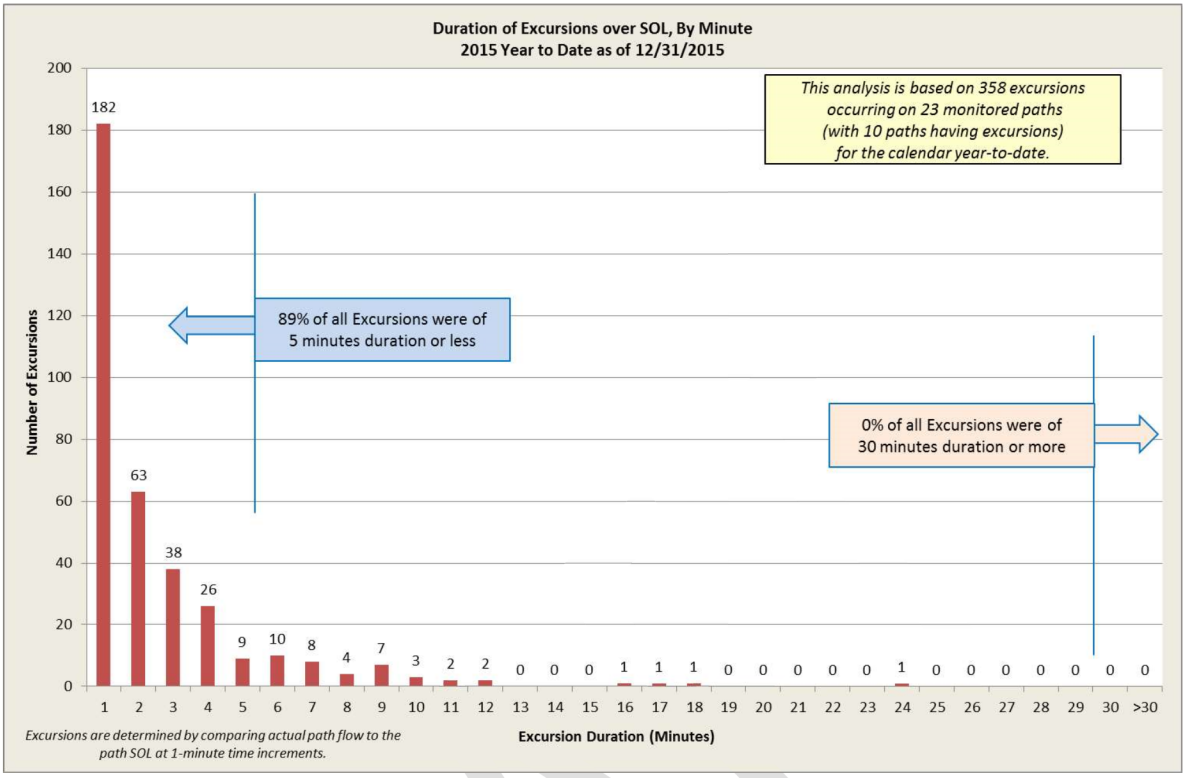
DRAFT

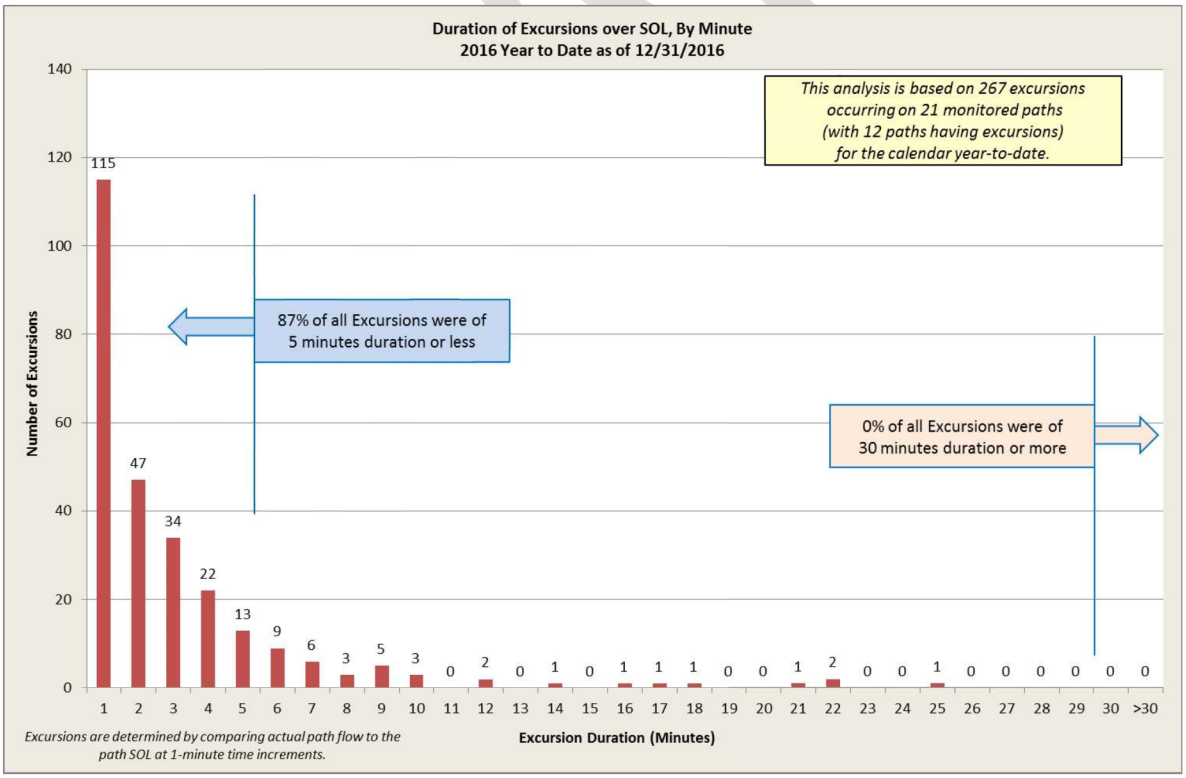
MWs CURTAILED - ALL PRIORITIES											
FLOWGATE	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Grand Total**
NJD			1814	930	2649		6862		632	318	**13205**
NOEL						2193	1468	4469		997	**9127**
NOH				1325							**1325**
NOH_SN		6612		215	4889	317					**12033**
P-A		1598									**1598**
R-P			709	4028	621				3232		**8590**
SOA	5369	739		1539		797	1683				**10127**
SOA_SN	1599	719		491		1830					**4639**
SOC								133	6720		**6853**
WOCN		346	2618			1298					**4262**
WOJD					1294				3388		**4682**
WOM					12590		468				**13058**
WOM - MAIN-GRID									3011		**3011**
WOMSG								1044			**1044**
Grand Total	**6968**	**10014**	**5141**	**8528**	**22043**	**6435**	**10481**	**5646**	**16983**	**1315**	**93554**

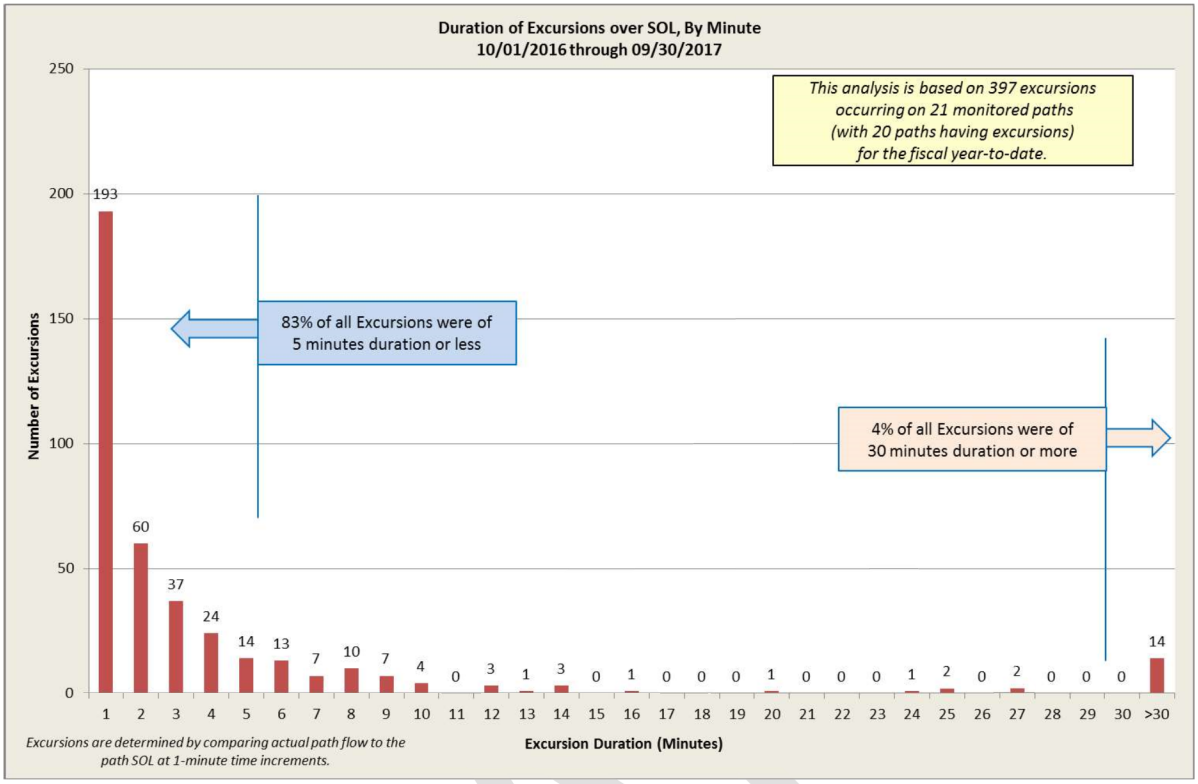
** In the graph above, this shows the total number of MWs that were requested during a curtailment. All curtailments are sub-hourly, but multiple curtailments could occur during the same hour.

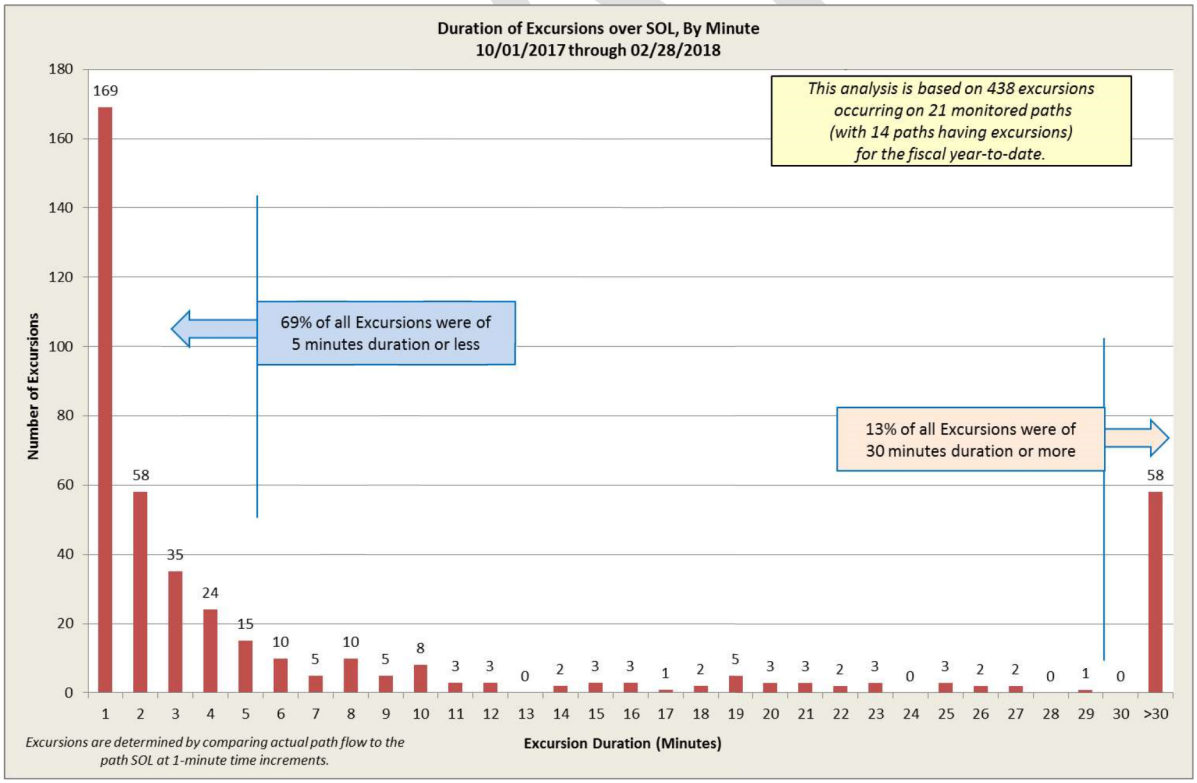
DRAFT

Duration of Excursions:






Duration of Excursions over SOL, By Minute
10/01/2016 through 09/30/2017
This analysis is based on 397 excursions occurring on 21 monitored paths (with 20 paths having excursions) for the fiscal year-to-date.
83% of all Excursions were of 5 minutes duration or less
4% of all Excursions were of 30 minutes duration or more
Number of Excursions
Excursion Duration (Minutes)
Excursions are determined by comparing actual path flow to the path SOL at 1-minute time increments.


Duration of Excursions over SOL, By Minute
10/01/2017 through 02/28/2018
This analysis is based on 438 excursions occurring on 21 monitored paths (with 14 paths having excursions) for the fiscal year-to-date.
69% of all Excursions were of 5 minutes duration or less
13% of all Excursions were of 30 minutes duration or more
Number of Excursions
Excursion Duration (Minutes)
Excursions are determined by comparing actual path flow to the path SOL at 1-minute time increments.

Excursion Minutes Trends:

Note: FY2018 numbers are YTD (~3/5/2018)

EXCURSION MINUTES (>TTC)					
PATH	CY2015	CY2016	FY2017	FY2018	Grand Total
AC INTERTIE (COI)	148	205	178	24	**555**
COLUMBIA INJECTION			14		**14**
DC INTERTIE (PDCI)	18				**18**
JOHN DAY WIND	16	2	3	6	**27**
MONTANA-NORTHWEST		1	1		**2**
NORTH-OF-ECHOLAKE	34	2	25	377	**438**
NORTH-OF-HANFORD	1	3	3		**7**
NORTH-OF-JOHN-DAY		8	25	1	**34**
NORTHWEST-BC	108	9	77	14	**208**
PAUL-ALLSTON			3	1	**4**
RAVER-PAUL	1	2	6	1	**10**
ROCK CREEK WIND			3		**3**
SOUTH-OF-ALLSTON	2		2		**4**
SOUTH-OF-BOUNDARY	14	9	15		**38**
SOUTH-OF-CUSTER	16	18	14	2	**50**
WEST-OF-CASCADES-NORTH			3	1	**4**
WEST-OF-CASCADES-SOUTH		2	2	1	**5**
WEST-OF-HATWAI			6	1	**7**
WEST-OF-JOHN-DAY		6	10	3	**19**
WEST-OF-LOWER-MONUMENTAL			3	2	**5**
WEST-OF-SLATT			4	4	**8**
Grand Total	**358**	**267**	**397**	**438**	**1460**

DRAFT

From: Truong,Mai N (BPA) - PGST-5
Sent: Thu Feb 15 14:32:16 2018
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Hawkins,Robert E (BPA) - PGSD-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: ADF on the number of generation points bid into the EIM
Importance: Normal

Here are the action items from yesterday afternoon's meeting.

(b)(5)

We have a meeting Friday morning. Link to the sharepoint site is here. We have started an ADF draft that we will review tomorrow.

Thank you!

-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:22 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Hawkins,Robert E (BPA) - PGSD-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5

Subject: ADF on the number of generation points bid into the EIM
When: Wednesday, February 14, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 470EW(40)
Sensitivity: Private

(b)(5)

[redacted]

From: Symonds,Mark C (BPA) - BD-3
Sent: Wed Feb 28 14:54:56 2018
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: ADF on the number of generation points bid into the EIM
Importance: Normal
Attachments: CAISO EIM Market Timing - 2018-02-28 (draft).pptx

If we would like to discuss, we can use the attached slides…

Thank you,
Mark

-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:22 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: ADF on the number of generation points bid into the EIM
When: Wednesday, February 28, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 470EW(40) x4000 ID: (b)(2)
Sensitivity: Private

(b)(5)

(b)(5)

From: Truong,Mai N (BPA) - PGST-5
Sent: Tue Feb 13 13:46:54 2018
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Hawkins,Robert E (BPA) - PGSD-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: ADF on the number of generation points bid into the EIM
Importance: Normal
Attachments: FCRPS EIM v5.docx

Please read the FCRPS participation in an EIM paper prior to tomorrow's meeting at 3pm.

Agenda: (Discussion does not need to be in this specific order)

1. Review the 3 alternatives – 1, 3 or 10
2. Expand on the pros/cons for each alternative
3. Identify assumptions
4. Identify what we don't know

Thanks!

-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:22 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Hawkins,Robert E (BPA) - PGSD-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: ADF on the number of generation points bid into the EIM
When: Wednesday, February 14, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 470EW(40)

(b)(5)

(b)(5)

From: Miller,Todd E (BPA) - LP-7
Sent: Monday, March 26, 2018 1:49 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSQM-TPP-2; Mantifel,Russell (BPA) - TSQM-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; HQ 470EW(40); Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5; Stermer,Anna M (BPA) - PGSP-5; Bermejo,Juergen M (BPA) - PGST-5
Cc: Eaton,Sara L (BPA) - PTM-5; Pompel,Marie A (BPA) - PTM-5; Kirsch,David J (BPA) - TOOC-DITT-2; 'jschaffroth@utilicast.com'; Symonds,Mark C (BPA) - BD-3; Lut,Agnes (BPA) - BE-3; Bentz,Roger E (BPA) - BE-3; Davis,Thomas E (BPA) - LT-7
Subject: RE: ADF on the number of generation points bid into the EIM

Thanks to all of you for your contribution to get this ADF moved forward.

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Monday, March 26, 2018 12:40 PM
To: Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSQM-TPP-2; Mantifel,Russell (BPA) - TSQM-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; HQ 470EW(40); Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5; Stermer,Anna M (BPA) - PGSP-5; Bermejo,Juergen M (BPA) - PGST-5
Cc: Eaton,Sara L (BPA) - PTM-5; Pompel,Marie A (BPA) - PTM-5; Kirsch,David J (BPA) - TOOC-DITT-2; 'jschaffroth@utilicast.com'; Miller,Todd E (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Lut,Agnes (BPA) - BE-3; Bentz,Roger E (BPA) - BE-3; Davis,Thomas E (BPA) - LT-7
Subject: ADF on the number of generation points bid into the EIM

We are cancelling the series of meetings on the FCRPS participation model ADF. There were no further questions from the Tier IIs. The ADF should go to Joel and Richard by the end of the week for a decision. We will reschedule the meeting if any further information is requested an we will certainly let everyone know of the decision when we hear it.

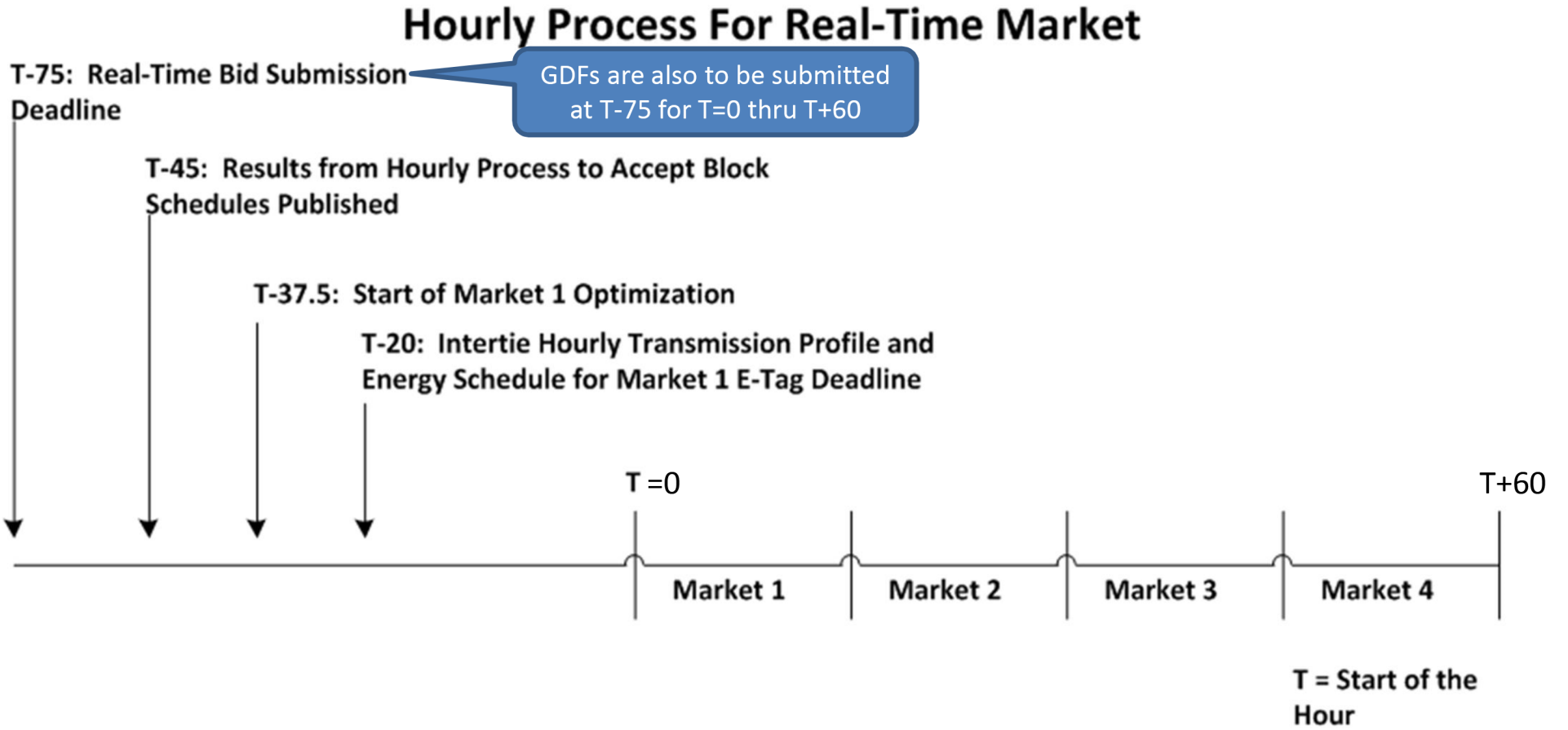
Clarisse Messemer
Supervisor, Generation Support (PGST)
Bonneville Power Administration
503-230-3324

From: Davis,Thomas E (BPA) - LT-7
Sent: Wed Feb 21 12:23:35 2018
To: Chong Tim,Marcus H (BPA) - LT-7; Pettinger,Rebekah S (BPA) - LP-7; Hulett,Jimmy D (BPA) - LT-7; Sigurdson,Ryan M (BPA) - LT-7; Johnson,Tim A (BPA) - LP-7; Greene,Richard A (BPA) - LP-7; Griffen,Christian W (BPA) - LT-7; Jensen,Mary K (BPA) - L-7; Miller,Todd E (BPA) - LP-7; Chan,Allen C (BPA) - LT-7; Schaeffer,Virginia K (BPA) - LG-7; Adams,Hub V (BPA) - LN-7; Cox,Tiffany L (BPA) - LP-7; HQ 761 VP(20); Eden,Vin A (CONTR) - LT-7
Subject: RE: EIM Legal Team Meeting
Importance: Normal

(b)(5)

From: Chong Tim,Marcus H (BPA) - LT-7
Sent: Friday, August 11, 2017 4:42 PM
To: Chong Tim,Marcus H (BPA) - LT-7; Davis,Thomas E (BPA) - LT-7; Pettinger,Rebekah S (BPA) - LP-7; Hulett,Jimmy D (BPA) - LT-7; Sigurdson,Ryan M (BPA) - LT-7; Johnson,Tim A (BPA) - LP-7; Greene,Richard A (BPA) - LP-7; Griffen,Christian W (BPA) - LT-7; Jensen,Mary K (BPA) - L-7; Miller,Todd E (BPA) - L-7; Chan,Allen C (BPA) - LT-7; Schaeffer,Virginia K (BPA) - LG-7; Adams,Hub V (BPA) - LN-7; Cox,Tiffany L (BPA) - LP-7; HQ 761 VP(20); Eden,Vin A (CONTR) - LT-7
Subject: EIM Legal Team Meeting
When: Wednesday, February 21, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 761/ Call-in: 503-230-4000 (b)(2)
Sensitivity: Private

CAISO BPM, Energy Imbalance Market, Section 11.3, page 44



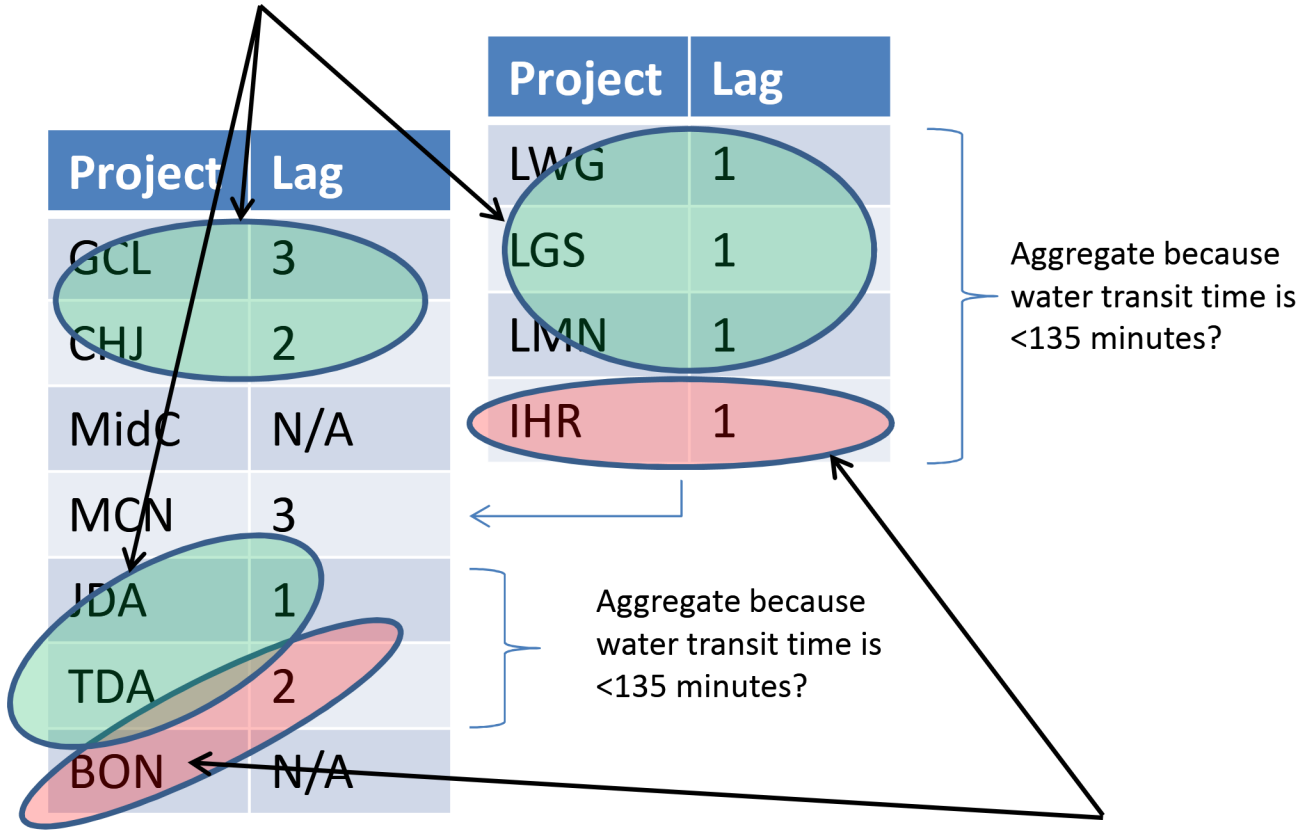
¶

Bid curves and GDFs are locked for
135 minutes
Or
2 hours and 15 minutes

Outage submissions or withdrawals can apparently alter bid range after T-75

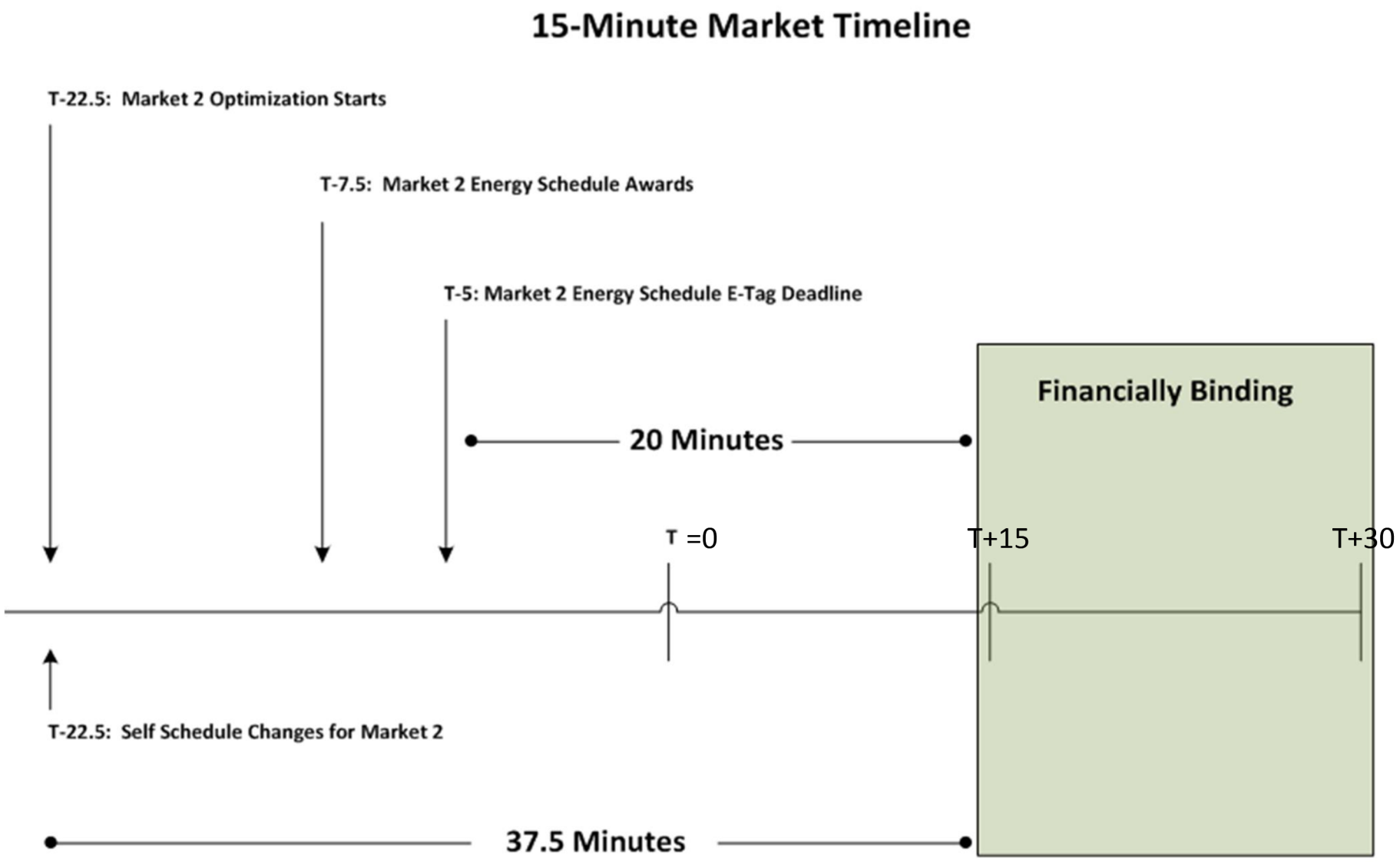
Water transit time may impact aggregation choice?

Consistent with “electrically similar”?



Inconsistent with “electrically similar”?

CAISO BPM, Energy Imbalance Market, Section 11.3, page 45



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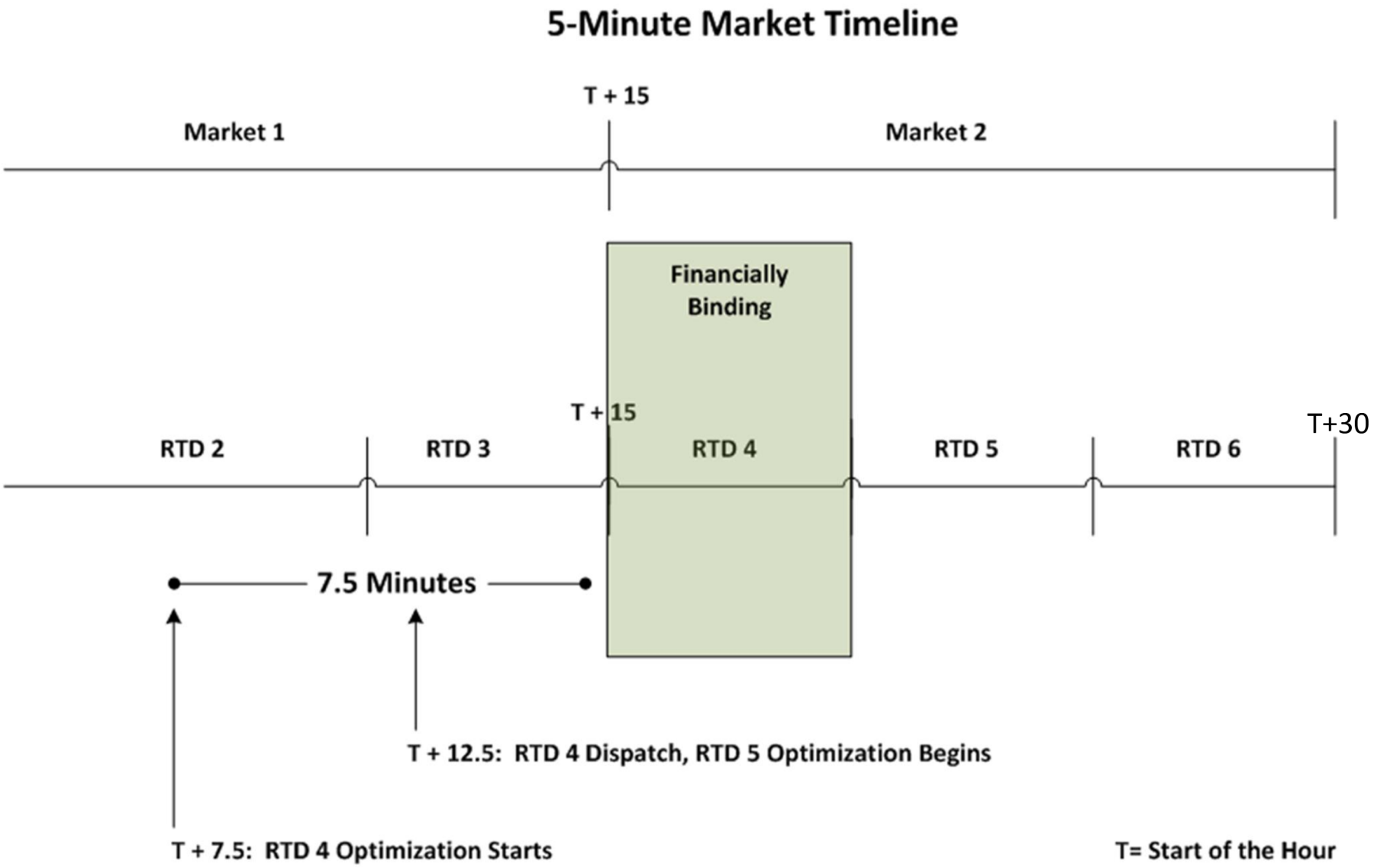
CAISO BPM, Energy Imbalance Market, Section 11.3, page 46



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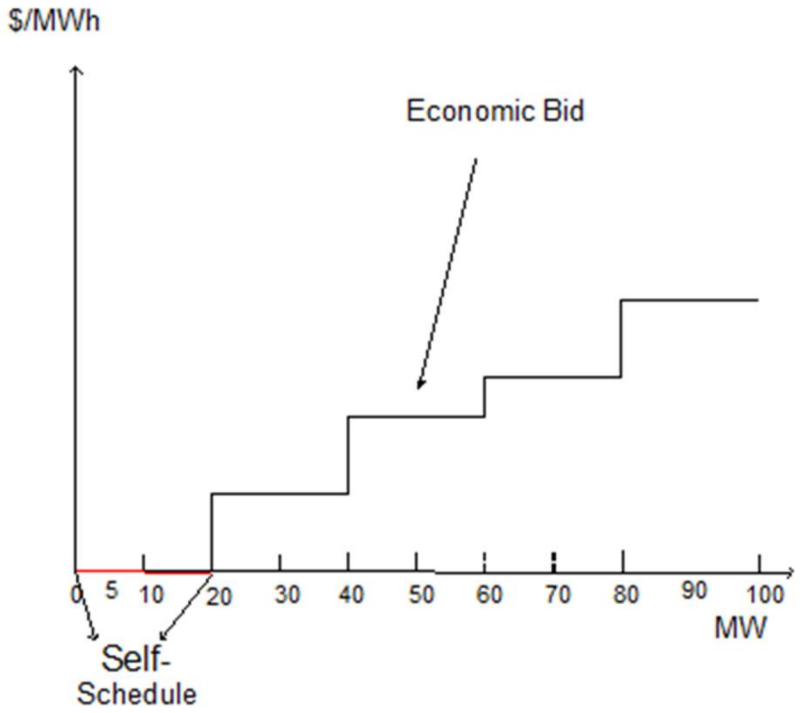
CAISO BPM, Market Instruments, Section 5, page 46

- **Exhibit 5–1: Example of Energy Bid with Self-Schedule & Economic Bid Components**



CAISO BPM, Market Instruments, Section 5, page 52

·The·Energy·Bid·Curve·component·contains:¶

An·Energy·Bid·Curve·of·up·to·10·segments·(defined·by·11·pairs)·of·Energy·offer·price·($/MWh)·and·operating·level·(MW)·for·each·of·the·10·segments.··The·Energy·Bid·Curve·begins·at·the·Minimum·Load·level·or·the·sum·of·its·Self-Schedules,·whichever·is·greater,·of·the·Generating·Unit.¶

Resources·which·have·had·their·market-based·rate·authority·suspended·per·CAISO·Tariff·Appendix·II·and·wish·to·submit·an·Energy·Bid·Curve·may·only·submit·at·a·price·of·$0/MWh,·or·the·Scheduling·Coordinator·may·submit·a·Self-Schedule.¶

Example·of·Energy·Bid·Curve·Component·for·a·Generating·Unit·with·a·PMin·of·70MW·and·a·PMax·of·500·MW¶

Segment¤	Operating·Level·(MW)¤	Energy·Price·$/MWh¤
1¤	70¤	25¤
2¤	150¤	30¤
3¤	200¤	35¤
4¤	250¤	40¤
5¤	300¤	45¤
6¤	340¤	50¤
7¤	375¤	55¤
8¤	400¤	60¤
9¤	450¤	65¤
10¤	475¤	75¤

CAISO BPM, Market Instruments, Sections 4 & 5, pages 42 & 47

Non-Generator Resources— NGRs are resources that have a continuous operating range from a negative to a positive power injection. NGRs are generally treated like Generating Units, but some bidding limitations apply due to their unique operating characteristics. See section 4.1.1 for more details.

Bidding limitations for NGRs

NGRs are resources that operate as either Generation or Load and that can be dispatched to any operating level within their entire capacity range but are also constrained by a MWh limit to (1) generate Energy, (2) curtail the consumption of Energy in the case of demand response, or (3) consume Energy.

More generally, NGRs are resources that have a continuous operating range from a negative to a positive power injection; i.e., these resources can operate continuously by either consuming energy or providing energy, and can seamlessly switch between generating and consuming electrical energy. An NGR functions like a generation resource and can provide energy and AS services. **Because of the continuous operating range, NGRs do not have minimum load operating points, state configurations, forbidden operating regions, or offline status (unless on outage). Therefore, they do not have startup, shutdown, minimum load, or transition costs.**

The regulation energy management (REM) option allows non-generator resources that require an offset of energy in the real time market to provide regulation. NGRs that select this option can only participate in the ISO's regulation markets.

The following table describes the special bidding limitations for NGR's.

(b)(5)

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(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Mantifel,Russell (BPA) - TS-DITT-2
Sent: Fri Mar 09 11:11:29 2018
To: Symonds,Mark C (BPA) - BD-3; Kochheiser,Todd W (BPA) - TOI-DITT-2; Truong,Mai N (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Importance: Normal

(b)(5)

From: Symonds,Mark C (BPA) - BD-3
Sent: Friday, March 09, 2018 10:14 AM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2; Truong,Mai N (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Thursday, March 08, 2018 3:11 PM

To: Truong,Mai N (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

[redacted]

From: Truong,Mai N (BPA) - PGST-5
Sent: Thursday, March 08, 2018 2:56 PM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

[redacted]

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Thursday, March 08, 2018 1:09 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) -

PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

[redacted]

-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:22 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: ADF on the number of generation points bid into the EIM

When: Wednesday, March 07, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 470EW(40) x4000 ID: (b)(2)
Sensitivity: Private

(b)(5)

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Friday, March 09, 2018 12:40 PM
To: Symonds,Mark C (BPA) - BD-3; Truong,Mai N (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs

(b)(5)

[redacted]

From: Symonds,Mark C (BPA) - BD-3
Sent: Friday, March 09, 2018 10:14 AM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2; Truong,Mai N (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

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From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Thursday, March 08, 2018 3:11 PM
To: Truong,Mai N (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

From: Truong,Mai N (BPA) - PGST-5
Sent: Thursday, March 08, 2018 2:56 PM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2; Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: RE: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Thursday, March 08, 2018 1:09 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) -

PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: Generation ADF: Conversation with CAISO Regarding GDFs
Sensitivity: Private

(b)(5)

-----Original Appointment-----
From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Thursday, February 08, 2018 12:22 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Polsky,Cynthia H (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5; Kerns,Steven R (BPA) - PGS-5; King,Eric V (BPA) - TSPP-TPP-2; Mantifel,Russell (BPA) - TS-DITT-2; Puyleart,Frank R (BPA) - TOOC-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Gaube,Stephen J (BPA) - PTF-5; Haraguchi,Kelii H (BPA) - PTM-5; Federovitch,Eric C (BPA) - PTM-5; Davis,Thomas E (BPA) - LT-7; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Dernovsek,David K (BPA) - PTKP-5; Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7; Symonds,Mark C (BPA) - BD-3; Will,Garland L (BPA) - PGST-5; Schaffroth,John T (CONTR) - PGL-5; Pedersen Mainzer,Margaret E (BPA) - PTL-5; Kitchen,Larry (BPA) - PTL-5
Subject: ADF on the number of generation points bid into the EIM
When: Wednesday, March 07, 2018 3:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 470EW(40) x4000 ID: (b)(2)
Sensitivity: Private

(b)(5)

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From: Pettinger,Rebekah S (BPA) - LP-7
Sent: Tue Mar 20 12:39:28 2018
To: Kerns,Steven R (BPA) - PGS-5; Greene,Richard A (BPA) - LP-7
Cc: Davis,Thomas E (BPA) - LT-7
Subject: RE: Legal Opinion fof the FRCPS Participation ADF
Importance: Normal

Hi Steve. We are still working on the legal opinion and Tim is providing input/edits, so we can't quite share it yet. We'll send you a copy as soon as possible. I'm not sure what the 3:00 meeting is, but if you want to discuss anything before then feel free to give Rich or me a call.

Rebekah

From: Kerns,Steven R (BPA) - PGS-5
Sent: Tuesday, March 20, 2018 10:54 AM
To: Greene,Richard A (BPA) - LP-7; Pettinger,Rebekah S (BPA) - LP-7
Cc: Davis,Thomas E (BPA) - LT-7
Subject: Legal Opinion fof the FRCPS Participation ADF

Is there a draft available that I can see before the 3PM meeting?

From: Davis,Thomas E (BPA) - LT-7
Sent: Tue Mar 27 17:43:12 2018
To: Herrin,Janet C (BPA) - K-7; Cathcart,Michelle M (BPA) - TO-DITT-2; Mantifel,Russell (BPA) - TSQM-DITT-2; Manary,Michelle L (BPA) - TS-DITT-2; Cooper,Suzanne B (BPA) - PT-5; Cook,Jeffrey W (BPA) - TP-DITT-2; Connolly,Kieran P (BPA) - PG-5; Symonds,Mark C (BPA) - BD-3; Federovitch,Eric C (BPA) - PTM-5; Kerns,Steven R (BPA) - PGS-5; Cook,Joel D (BPA) - P-6; Shaheen,Richard L (BPA) - T-DITT-2; Miller,Todd E (BPA) - LP-7; Zimmerman,Nita M (BPA) - B-3; Jensen,Mary K (BPA) - L-7
Subject: RE: Strategy Negotiations Documents for EIM IMPORTANT
Importance: Normal
Attachments: EIMTxADVv1.0clean.docx; 2018.03.26_Final Legal Advice_EIM Transmission.pdf

Here is the Transmission ADF and associated legal analysis. This completes the entire package when combined with documents sent below at 11:39 AM today.

From: Davis,Thomas E (BPA) - LT-7
Sent: Tuesday, March 27, 2018 11:39 AM
To: Herrin,Janet C (BPA) - K-7; Cathcart,Michelle M (BPA) - TO-DITT-2; Mantifel,Russell (BPA) - TSQM-DITT-2; Manary,Michelle L (BPA) - TS-DITT-2; Cooper,Suzanne B (BPA) - PT-5; Cook,Jeffrey W (BPA) - TP-DITT-2; Connolly,Kieran P (BPA) - PG-5; Symonds,Mark C (BPA) - BD-3; Federovitch,Eric C (BPA) - PTM-5; Kerns,Steven R (BPA) - PGS-5; Cook,Joel D (BPA) - P-6; Shaheen,Richard L (BPA) - T-DITT-2; Miller,Todd E (BPA) - LP-7; Zimmerman,Nita M (BPA) - B-3; Jensen,Mary K (BPA) - L-7
Subject: Strategy Negotiations Documents for EIM IMPORTANT
Importance: High

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[redacted]

(b)(5)

From: Davis,Thomas E (BPA) - LT-7
Sent: Friday, March 30, 2018 8:54 AM
To: Herrin,Janet C (BPA) - K-7; Cathcart,Michelle M (BPA) - TO-DITT-2; Mantifel,Russell (BPA) - TSQM-DITT-2; Manary,Michelle L (BPA) - TS-DITT-2; Cooper,Suzanne B (BPA) - PT-5; Cook,Jeffrey W (BPA) - TP-DITT-2; Connolly,Kieran P (BPA) - PG-5; Symonds,Mark C (BPA) - BD-3; Federovitch,Eric C (BPA) - PTM-5; Kerns,Steven R (BPA) - PGS-5; Cook,Joel D (BPA) - P-6; Shaheen,Richard L (BPA) - T-DITT-2; Miller,Todd E (BPA) - LP-7; Zimmerman,Nita M (BPA) - B-3; Jensen,Mary K (BPA) - L-7
Subject: RE: Strategy Negotiations for EIM

I noticed this morning that a document I emailed you a few days ago that included excerpts of OGC's legal analysis from last October regarding power issues had the "OUO" designation on it. That designation has been removed. Therefore, I ask that you delete that file and all paper copies and use the attached document of excerpts which does not include the OUO designation.

Thank you!

Tom

Excerpts from Oct 2017 Legal A...

-----Original Appointment-----
From: Herrin,Janet C (BPA) - K-7
Sent: Tuesday, March 13, 2018 1:43 PM
To: Herrin,Janet C (BPA) - K-7; Cathcart,Michelle M (BPA) - TO-DITT-2; Mantifel,Russell (BPA) - TSQM-DITT-2; Manary,Michelle L (BPA) - TS-DITT-2; Cooper,Suzanne B (BPA) - PT-5; Cook,Jeffrey W (BPA) - TP-DITT-2; Connolly,Kieran P (BPA) - PG-5; Symonds,Mark C (BPA) - BD-3; Federovitch,Eric C (BPA) - PTM-5; Kerns,Steven R (BPA) - PGS-5; Davis,Thomas E (BPA) - LT-7; Cook,Joel D (BPA) - P-6; Shaheen,Richard L (BPA) - T-DITT-2; Miller,Todd E (BPA) - LP-7; Zimmerman,Nita M (BPA) - B-3; Jensen,Mary K (BPA) - L-7
Subject: FW: Strategy Negotiations for EIM
When: Friday, March 30, 2018 9:30 AM-11:30 AM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 719 Exec VTC(25)

-----Original Appointment-----
From: Herrin,Janet C (BPA) - K-7
Sent: Tuesday, March 13, 2018 8:43 AM
To: Herrin,Janet C (BPA) - K-7; Cook,Joel D (BPA) - P-6; Shaheen,Richard L (BPA) - T-DITT-2; Miller,Todd E (BPA) - LP-7; Zimmerman,Nita M (BPA) - B-3
Subject: Strategy Negotiations for EIM
When: Friday, March 30, 2018 9:30 AM-11:30 AM (UTC-08:00) Pacific Time (US & Canada).
Where: HQ 719 Exec VTC(25)

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LEGAL ANALYSIS

WESTERN ENERGY IMBALANCE MARKET DECISION FRAMEWORK

BONNEVILLE POWER ADMINISTRATION

OFFICE OF GENERAL COUNSEL

OCTOBER 2017

Attorney-Client Communication that may be protected from disclosure.
Please contact the Office of General Counsel prior to sending this communication outside of Bonneville.

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Office of General Counsel

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Office of General Counsel

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Office of General Counsel

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Official Legal Advice
Office of General Counsel

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From: Chang,Elsa (BPA) - PGST-5
Sent: Tue Feb 27 16:04:54 2018
To: ADL_PGST_ALL; Van Calcar, Pamela M (BPA) - PGSP-5; Symonds,Mark C (BPA) - BD-3; Kerns,Steven R (BPA) - PGS-5
Subject: ANPR, APR, and NGR
Importance: Normal

I found two presentations about Powerex's EIM participation. How Pwerex set up NAPR, APR, and NGR are explained.
https://www.caiso.com/Documents/PowerexPresentation-PowerexEIMImplementationAgreementOverview.pdf

https://www.caiso.com/Documents/Agenda_Presentation_PowerexEnergyImbalanceMarketImplementation.pdf

- NGR's are a subset of APR's that have non-zero GDF's.
- A same plant can be both ANPR and APR.
- ANPR's (meet load and cover BR & CR): a base schedule and base GDF's are submitted.
- APR's (provide energy to market in EIM): a base schedule of zero, Pmin & Pmax, GDF's for NGR's, and a bid curve are submitted.

Elsa Chang
Operations Research Analyst, Generation Support (PGST)
Bonneville Power Administration
(503) 230-3748

From: Kerns,Steven R (BPA) - B-3
Sent: Mon Jan 27 09:41:07 2020
To: Messemer,Clarisse M (BPA) - PGST-5
Subject: APR/ANPR
Importance: Normal
Attachments: Musings on FCPRS Aggregations in the EIM.docx

FYI – please don't circulate very broadly since it is still draft

Steve Kerns
Director, Grid Modernization
Bonneville Power Administration

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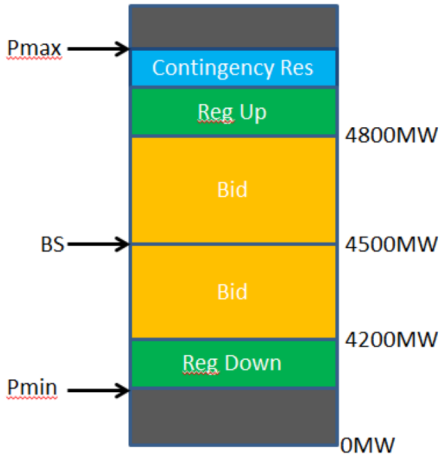
Traditional Setup:

APR
GCL + CHJ

GDF*:
GCL 0.67
CHJ 0.33

*GDF is calculated based on BP set by hydro scheduler. GDF here controls the distribution of MW for both BS and bid range.

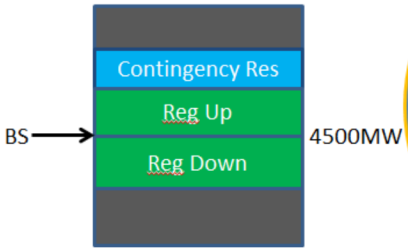
	BP (MW)	GDF
GCL	3000	3000/4500 = 0.67
CHJ	1500	1500/4500 = 0.33
SUM	4500	1



Powerex's Setup:

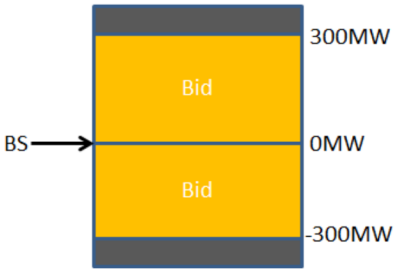
ANPR
GCL + CHJ

GDF**:
GCL 0.67
CHJ 0.33



APR (NGR)
GCL + CHJ

GDF***:
GCL 0.3
CHJ 0.7



**Controls the distribution of MW for BS (input to CAISO's EIM network model)

***Controls the distribution of MW for bid range

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From: Mezzatesta,Mariano (BPA) - PGST-5
Sent: Mon Mar 18 10:23:22 2019
To: Messemer,Clarisse M (BPA) - PGST-5
Cc: Truong,Mai N (BPA) - PGST-5
Subject: RE: Possible apporach to BR in EIM
Importance: Normal

(b)(5)

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Friday, March 15, 2019 6:48 PM
To: Mezzatesta,Mariano (BPA) - PGST-5
Cc: Truong,Mai N (BPA) - PGST-5
Subject: RE: Possible apporach to BR in EIM

Thanks Mariano. I just got around to reading this. Including Mai too.

From: Mezzatesta,Mariano (BPA) - PGST-5
Sent: Thursday, March 07, 2019 2:21 PM
To: Hayes,Matthew C (BPA) - PGST-5; Messemer,Clarisse M (BPA) - PGST-5; Mosier,Shane W (BPA) - PGSP-5
Cc: Siewert,Christopher W (BPA) - PGSD-5
Subject: Possible apporach to BR in EIM

(b)(5)

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Tue Feb 27 08:00:12 2018
To: Simpson,Mark C (BPA) - PGSD-5; Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Cc: Siewert,Christopher W (BPA) - PGSD-5; Van Calcar, Pamela M (BPA) - PGSP-5
Subject: RE: APR alternatives for ADF
Importance: Normal

(b)(5)

From: Simpson,Mark C (BPA) - PGSD-5
Sent: Sunday, February 25, 2018 10:57 AM
To: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5; Kerns,Steven R (BPA) - PGS-5
Cc: Siewert,Christopher W (BPA) - PGSD-5
Subject: RE: APR alternatives for ADF

(b)(5)

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Friday, February 23, 2018 6:03 PM
To: Truong,Mai N (BPA) - PGST-5; Kerns,Steven R (BPA) - PGS-5
Cc: Siewert,Christopher W (BPA) - PGSD-5; Simpson,Mark C (BPA) - PGSD-5
Subject: RE: APR alternatives for ADF

(b)(5)

(b)(5)

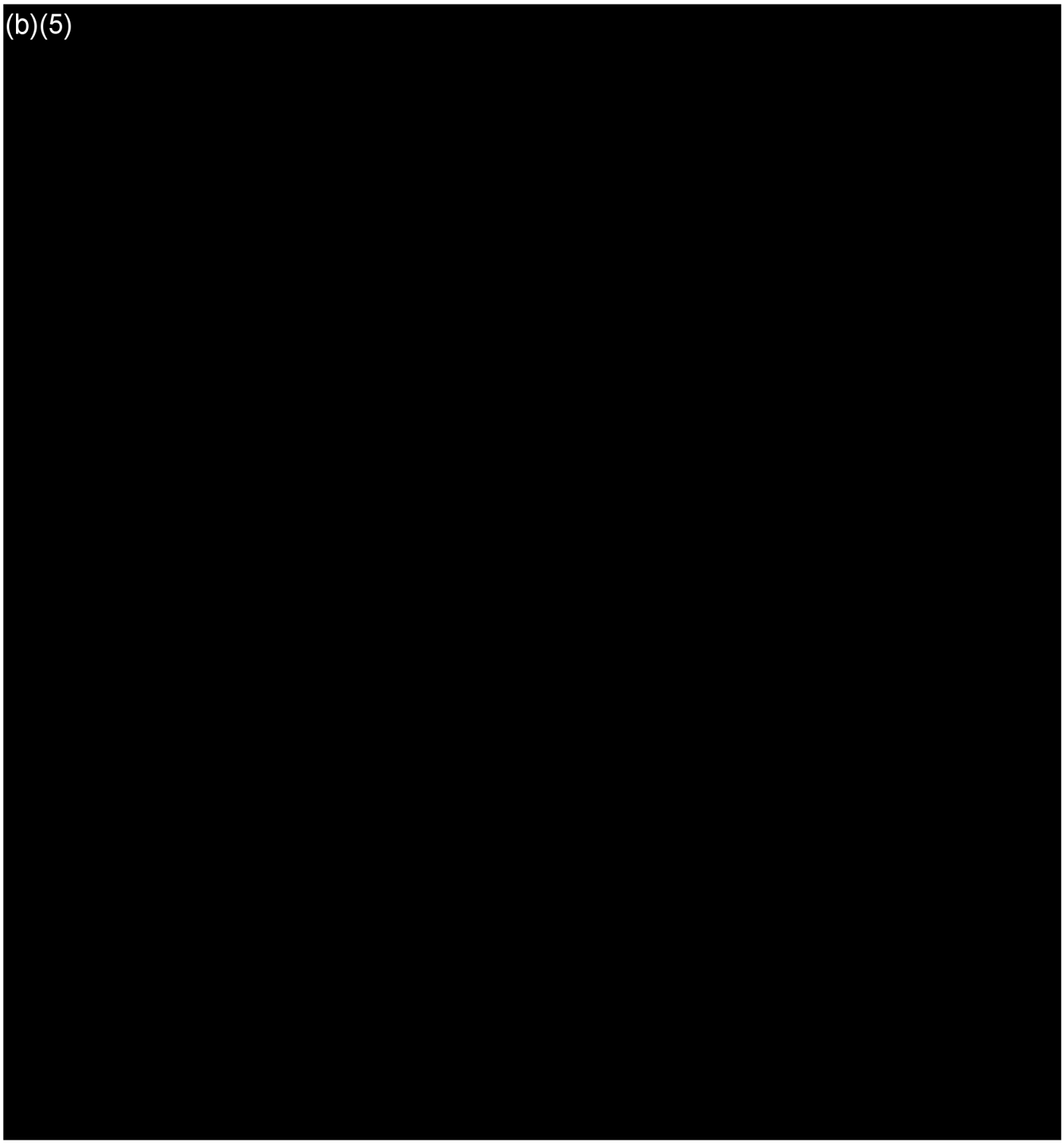
From: Truong,Mai N (BPA) - PGST-5
Sent: Friday, February 23, 2018 11:36 AM
To: Kerns,Steven R (BPA) - PGS-5
Cc: Messemer,Clarisse M (BPA) - PGST-5
Subject: APR alternatives for ADF

(b)(5)

(b)(5)

From: Will,Garland L (BPA) - PGST-5
Sent: Thu Feb 15 11:23:43 2018
To: Messemer,Clarisse M (BPA) - PGST-5
Cc: Truong,Mai N (BPA) - PGST-5; Bermejo,Juergen M (BPA) - PGST-5; Chang,Elsa (BPA) - PGST-5
Subject: Project Groupings based on reserves question
Importance: Normal
Attachments: image001.gif

(b)(5)



From: Sanford,Chris T (BPA) - TOR-DITT-1
Sent: Friday, March 16, 2018 9:23 AM
To: Kerns,Steven R (BPA) - PGS-5; Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Mantifel,Russell (BPA) - TS-DITT-2
Cc: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Subject: RE: FCRPS Participation ADF Recommendation

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Friday, March 16, 2018 8:20 AM
To: Simpson,Troy D (BPA) - TOI-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Mantifel,Russell (BPA) - TS-DITT-2
Cc: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Subject: RE: FCRPS Participation ADF Recommendation

(b)(5)

From: Simpson,Troy D (BPA) - TOI-DITT-2
Sent: Friday, March 16, 2018 8:06 AM
To: Kerns,Steven R (BPA) - PGS-5; Kochheiser,Todd W (BPA) - TOI-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Mantifel,Russell (BPA) - TS-DITT-2
Cc: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Subject: RE: FCRPS Participation ADF Recommendation

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Friday, March 16, 2018 8:01 AM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2; Sanford,Chris T (BPA) - TOR-DITT-1; Mantifel,Russell (BPA) - TS-DITT-2; Simpson,Troy D (BPA) - TOI-DITT-2
Cc: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Subject: RE: FCRPS Participation ADF Recommendation

(b)(5)

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Wednesday, March 14, 2018 3:27 PM

To: Kerns,Steven R (BPA) - PGS-5; Sanford,Chris T (BPA) - TOR-DITT-1; Mantifel,Russell (BPA) - TS-DITT-2; Simpson,Troy D (BPA) - TOI-DITT-2
Cc: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Subject: RE: FCRPS Participation ADF Recommendation

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Wednesday, March 14, 2018 1:18 PM
To: Sanford,Chris T (BPA) - TOR-DITT-1; Kochheiser,Todd W (BPA) - TOI-DITT-2; Mantifel,Russell (BPA) - TS-DITT-2
Cc: Messemer,Clarisse M (BPA) - PGST-5; Truong,Mai N (BPA) - PGST-5
Subject: FCRPS Participation ADF Recommendation
Importance: High

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Wed May 09 16:29:21 2018
To: Messemer,Clarisse M (BPA) - PGST-5
Subject: RE: NonFed Participation
Importance: Normal

(b)(5)

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Tuesday, May 08, 2018 4:46 PM
To: Kerns,Steven R (BPA) - PGS-5
Subject: RE: NonFed Participation

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Tuesday, May 08, 2018 2:37 PM
To: Messemer,Clarisse M (BPA) - PGST-5
Subject: RE: NonFed Participation

(b)(5)

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Tuesday, May 08, 2018 12:09 PM
To: Kerns,Steven R (BPA) - PGS-5
Subject: RE: NonFed Participation

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Thursday, May 03, 2018 7:42 AM
To: Messemer,Clarisse M (BPA) - PGST-5; Davis,Thomas E (BPA) - LT-7; Mantifel,Russell (BPA) - TSQM-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Federovitch,Eric C (BPA) - PTM-5
Subject: RE: NonFed Participation

(b)(5)

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Tuesday, April 24, 2018 10:36 AM
To: Kerns,Steven R (BPA) - PGS-5; Davis,Thomas E (BPA) - LT-7; Mantifel,Russell (BPA) - TSQM-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Federovitch,Eric C (BPA) - PTM-5
Subject: RE: NonFed Participation

(b)(5)

From: Kerns,Steven R (BPA) - PGS-5
Sent: Monday, April 23, 2018 3:43 PM
To: Davis,Thomas E (BPA) - LT-7; Messemer,Clarisse M (BPA) - PGST-5; Mantifel,Russell (BPA) - TSQM-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Federovitch,Eric C (BPA) - PTM-5
Subject: RE: NonFed Participation

Much improved over my initial version – thanks. This version has one small tweak (adds a "%" after 10).

From: Davis,Thomas E (BPA) - LT-7
Sent: Monday, April 23, 2018 1:06 PM
To: Kerns,Steven R (BPA) - PGS-5; Messemer,Clarisse M (BPA) - PGST-5; Mantifel,Russell (BPA) - TSQM-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Federovitch,Eric C (BPA) - PTM-5
Subject: RE: NonFed Participation

I didn't redline my edits. I made quite a few. Take'em or leave'em. Revert back to old version if these don't work.

I would like to have a draft to share Wednesday morning.

From: Kerns,Steven R (BPA) - PGS-5
Sent: Wednesday, April 18, 2018 4:32 PM
To: Messemer,Clarisse M (BPA) - PGST-5; Davis,Thomas E (BPA) - LT-7; Mantifel,Russell (BPA) - TSQM-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Federovitch,Eric C (BPA) - PTM-5
Subject: NonFed Participation

I think this could use a bit more help, but here is what I have so far

From: Schaffroth,John T (CONTR) - PGL-5
Sent: Thu Feb 15 06:46:54 2018
To: Federovitch,Eric C (BPA) - PTM-5; Kerns,Steven R (BPA) - PGS-5; Messemer,Clarisse M (BPA) - PGST-5
Cc: Haraguchi,Kelii H (BPA) - PTM-5
Subject: RE: Notes for today's ADF meeting
Importance: Normal

(b)(5)

[redacted]

From: Federovitch,Eric C (BPA) - PTM-5
Sent: Thursday, February 15, 2018 6:37 AM
To: Schaffroth,John T (CONTR) - PGL-5; Kerns,Steven R (BPA) - PGS-5; Messemer,Clarisse M (BPA) - PGST-5
Cc: Haraguchi,Kelii H (BPA) - PTM-5
Subject: RE: Notes for today's ADF meeting

Thanks.
See below

From: Schaffroth,John T (CONTR) - PGL-5
Sent: Wednesday, February 14, 2018 2:48 PM
To: Kerns,Steven R (BPA) - PGS-5; Messemer,Clarisse M (BPA) - PGST-5; Federovitch,Eric C (BPA) - PTM-5
Subject: Notes for today's ADF meeting

(b)(5)

[redacted]

(b)(5)

From: Kochheiser,Todd W (BPA) - TOI-DITT-2
Sent: Fri Feb 28 08:52:15 2020
To: Van Calcar, Pamela M (BPA) - PGS-5; Messemer,Clarisse M (BPA) - PGST-5; Bentz,Roger E (BPA) - B-3
Subject: RE: Thoughts for EIM-ORA discussion
Importance: Normal

Hi Pam,

Sorry for the tardy reply – it has been a whirlwind of meetings this week. See comments below in green. Let me know if a face-to-face meeting is in order; I'm happy to set something up.

Todd

From: Van Calcar, Pamela M (BPA) - PGS-5 <pmvancalcar@bpa.gov>
Sent: Tuesday, February 25, 2020 7:57 AM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2 <twkochheiser@bpa.gov>; Messemer,Clarisse M (BPA) - PGST-5 <cmmessemer@bpa.gov>; Bentz,Roger E (BPA) - B-3 <rebentz@bpa.gov>
Subject: RE: Thoughts for EIM-ORA discussion

Thanks for the answers Todd - A couple of follow ups:

(b)(5)

From: Kochheiser,Todd W (BPA) - TOI-DITT-2 < twkochheiser@bpa.gov>

Sent: Tuesday, February 25, 2020 7:39 AM
To: Messemer,Clarisse M (BPA) - PGST-5 < cmmessemer@bpa.gov>; Bentz,Roger E (BPA) - B-3 < rebentz@bpa.gov>
Cc: Van Calcar, Pamela M (BPA) - PGS-5 < pmvancalcar@bpa.gov>
Subject: RE: Thoughts for EIM-ORA discussion

Great questions. Not sure I have answers to all of them…yet, but we'll get there. Below are some quick replies in red.

Todd

From: Messemer,Clarisse M (BPA) - PGST-5 < cmmessemer@bpa.gov>
Sent: Monday, February 24, 2020 2:35 PM
To: Kochheiser,Todd W (BPA) - TOI-DITT-2 < twkochheiser@bpa.gov>; Bentz,Roger E (BPA) - B-3 < rebentz@bpa.gov>
Cc: Van Calcar, Pamela M (BPA) - PGS-5 < pmvancalcar@bpa.gov>
Subject: FW: Thoughts for EIM-ORA discussion

(b)(5)

[redacted]

From: Van Calcar, Pamela M (BPA) - PGS-5 < pmvancalcar@bpa.gov>
Sent: Monday, February 24, 2020 9:29 AM
To: Messemer,Clarisse M (BPA) - PGST-5 < cmmessemer@bpa.gov>
Subject: Thoughts for EIM-ORA discussion

(b)(5)

[redacted]

(b)(5)

From: McManus,Bart (BPA) - TOOC-DITT-2

To: Kerns,Steven R (BPA) - B-3; Van Calcar, Pamela M (BPA) - PGS-5; Messemer,Clarisse M (BPA) - PGST-5; Pellicori,Damon A (BPA) - PGST-5; Siewert,Christopher W (BPA) - PGSD-5; Hawkins,Robert E (BPA) - PGSP-5; Chang,Elsa (BPA) - PGST-5; Brown,David R (BPA) - TOOC-DITT-2; Kirsch,David J (TFE)(BPA) - TOOC-DITT-2; Womack,Kristopher J (TFE)(BPA) - TOOC-DITT-2; Kochheiser,Todd W (BPA) - TOI-DITT-2; Sackett,Rian R (TFE)(BPA) - TOOC-DITT-2; Schoenberg,Judith L (TFE)(BPA) - TOOC-DITT-2

Subject: Simple spreadsheet on balancing authority area response factors and how they would be reported as GDFs to CAISO for ANPR

Date: Monday, January 27, 2020 4:13:37 PM

Attachments: Book1.xlsx

Here is a very simple spreadsheet showing the ANPR GDF values while still running the FCRPS as a single system for INC/DEC/CR allocation. Two different scenarios, first is if we persuade CAISO to have separate GDF values for INC, DEC and CR, other if they want just one. For the last one, assumed we would use the summation of the response factors for INC and CR.

Bart

Zone		BA Responses			EIM GDFs			EIM GDFs if only one set allowed per zone
	Plant	INC	DEC	CR	INC	DEC	CR	If Only one GDF for inc/dec/cr, assume we would use INC
Upper	GCL	50%	40%	50%	67%	57%	71%	69%
Columbia	CHJ	25%	30%	20%	33%	43%	29%	31%
	LMN	1%	1%	1%	20%	20%	20%	20%
Upper	LGS	2%	2%	2%	40%	40%	40%	40%
Snake	LWG	2%	2%	2%	40%	40%	40%	40%
	IHR	0%	0%	0%	0%	0%	0%	0%
	MCN	0%	0%	0%	0%	0%	0%	0%
Lower	JDA	10%	10%	15%	50%	40%	60%	56%
Columbia	TDA	10%	15%	10%	50%	60%	40%	44%
	BON	0%	0%	0%	0%	0%	0%	0%

: + CR)

From: Van Calcar, Pamela M (BPA) - PGSP-5
Sent: Fri Feb 23 11:01:58 2018
To: Haraguchi,Kelii H (BPA) - PTM-5; Messemer,Clarisse M (BPA) - PGST-5; Kerns,Steven R (BPA) - PGS-5
Subject: Thoughts on PWX implementation
Importance: Normal

(b)(5)

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Mon Mar 26 12:58:31 2018
To: Lut,Agnes (BPA) - SR-3 (axlut@bpa.gov)
Subject: FW: ADF- Federal Resource Participation
Importance: Normal
Attachments: Pages from 2018.01.24 Proposal For Grid Modernization and EIM Participat....pdf

From: Messemer,Clarisse M (BPA) - PGST-5
Sent: Friday, March 16, 2018 3:21 PM
To: Miller,Todd E (BPA) - LP-7; Davis,Thomas E (BPA) - LT-7; Lut,Agnes (BPA) - SR-3 (axlut@bpa.gov); Bentz,Roger E (BPA) - BE-3; Symonds,Mark C (BPA) - BD-3
Cc: Connolly,Kieran P (BPA) - PG-5; Manary,Michelle L (BPA) - TS-DITT-2; Cathcart,Michelle M (BPA) - TO-DITT-2; Cooper,Suzanne B (BPA) - PT-5
Subject: ADF- Federal Resource Participation

(b)(5)

[redacted]

Hourly Base Schedule - GEN	1500
Updated Based Schedule - GEN	1475
Time of Update	-20

Bonneville	Resource Plan
	Scheduled
Load Forecast	**1000**
Net Interchange	**500**
Gen Base Sched	**1500**
RS Bid Req	**600**
Bid (+/-)	**600**

Resource name	APR
Capacity	3000
Base Point	0
Interchange	0
Bid Range	600
LMP	

Resource name	ANPR
Capacity	10000
Base Point	1500
Interchange	500
Bid (+/-)	NA
LMP	

Interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
FMM Market Runs	-37.5	-22.5	-7.5	7.5								
RTD Market Runs	-7.5	-2.5	2.5	7.5	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5

NPR1

	Base	200										÷ 4
	-											
	FMM RTUC (15 min)	200				200				200		
	X											
	FMM LMP	$25				$27				$30		
	=											÷ 12
64600	**FMM IIE**	$0				$0				$0		
	-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	
	-											
	Metered Actuals	200	200	200	200	200	200	200	200	200	200	
	X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25
	=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD LIIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)

BA Resource Plan	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
5% Bid Req	300
Bid (+/-)	300

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
LMP	

$0
$0

NPR2

	Base	50										÷ 4
	-											
	FMM RTUC (15 min)	50				50				50		
	X											
	FMM LMP	$25				$27				$30		
	=											÷ 12
64600	**FMM IIE**	$0				$0				$0		
	-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	
	-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	
	X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25
	=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD LIIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Resource name	NPR1
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	NA
LMP	

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
LMP	

$0
$0

PR1

	Base	1250										÷ 4
	-											
	FMM RTUC (15 min)	1250				1250				1250		
	x											
	FMM LMP	$22				$22				$23		
	=											÷ 12
64600	**FMM IIE**	$0				$0				$0		
	-											
	RTD (5 min)	1250	1250	1250	1250	1175	1175	1175	1175	1175	1175	1175
	-											
	Metered Actuals	1250	1250	1225	1200	1175	1175	1175	1175	1175	1175	1175
	X											
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
	=											
64700	**RTD IIE**	$0	$0	$0	$0	$156	$156	$156	$156	$156	$156	$156
64750	**RTD LIIE**	$0	$0	$52.08	$104	$0	$0	$0	$0	$0	$0	$0

$0
$1,250
$156
$1,406 $1,406
1

Interchange

	Base	500										÷ 4
	-											
	FMM RTUC (15 min)	500				500				500		
	x											
	FMM LMP	$25				$27				$30		
	=											÷ 12
64600	**FMM IIE**	$0				$0				$0		
	-											
	RTD (5 min)	500	500	500	500	425	425	425	425	425	425	425
	-											
	Metered Actuals	500	500	500	500	425	425	425	425	425	425	425
	X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25
	=											
64700	**RTD IIE**	$0	$0	$0	$0	($156)	($156)	($156)	($156)	($156)	($156)	($156)

$0
($149) what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed fo
x (-1)
($1,250)

Load

	Hourly Load Base Schedule	1000										
	Submitted Hourly Load Value	994										
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	-											÷ 12
	5 min Load "Metered Actuals"	994	994	994	994	994	994	994	994	994	994	994
	X											
	LAP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
	=											
	RTD LIIE	($12)	($12)	($12)	($12)	($12)	($12)	($12)	($12)	($12)	($12)	($12)

This should be a calculation (sum Net Gen - sum Net Interchange - Losses), but that calc isn't working out for me here...what am I missing? See interval 1.
x (-1) the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).
($149)
($1,399)

STATUS QUO

Load	250	250	255	265	275	275	275	275	275	275	275	275
						-						
Gen	250	250	250	250	260	275	275	275	275	275	275	275
						X						
Load - Gen	0	0	5	15	15	0	0	0	0	0	0	0

Total Load
268

Total Gen	schedule	inc ops	inc op cost
265	250	15.41666667	$323.75

Total Imb
3

Mid C	$26
Gen $	$21

El MW	3
El $	$76

Inc Ops	15.41667
Inc Ops $	$323.75

Total $	$400

Imbalance Price	$26	Gen Ops Price	$21
Imbalance Cost	$76	Gen Ops Cost	$324
Net BA Cost	$76	Net Cust Cost	$400

	Rate	Total
Imbalance Price	26	
Imbalance Cost		

NPR1

	Base	200										÷ 4	18440 6000 update for a change at T-0 (top of the trade hour) 12440 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)
	FMM RTUC (15 min)	200		200		200		200					1036.66667
	FMM LMP	$25		$25		$25		$25					
64600	**FMM IIE**	$0		$0		$0		$0				÷ 12	
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	($42)	($52)	($52)	($52)	($52)	($52)	($52)	($52)	($52)
	LAP contribution												

BA Resource Plan	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid (+/-)	300

Resource name	FR1
Capacity	5000
Base Point	1250
Interchange	500
Bid Range	800
Bid $	$26
Market Award	25

$0

($458)

NPR2

	Base	50										÷ 4	
	FMM RTUC (15 min)	50		50		50		50					
	FMM LMP	$25		$25		$25		$25					
64600	**FMM IIE**	$0		$0		$0		$0				÷ 12	
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Resource name	NPR1
Capacity	500
Base Point	225
Interchange	0
Bid (+/-)	NA
Bid/Op $	$21
Market Award	NA

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Bid/Op $	?
Market Award	NA

$0

$0

PR1

	Base	1250										÷ 4	
	FMM RTUC (15 min)	1250		1250		1250		1250					
	FMM LMP	$25		$25		$25		$25					
64600	**FMM IIE**	$0		$0		$0		$0				÷ 12	$0
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
64700	**RTD IIE**	$0	$0	$0	$0	($52)	($52)	($52)	($52)	($52)	($52)	($52)	($52)
64750	**RTD UIE**	$0	$0	$0	($42)	$0	$0	$0	$0	$0	$0	$0	$0

($417)

($42)

($458)

($458)

	FMM LAP Contribution	0		0		0		0 $0				#DIV/0!	
		0	0	0	0	25	25	25	25	25	25	25	200
	RTD LAP Contribution	$0	$0	$0	$0	$625	$625	$625	$625	$625	$625	$625	$25

1

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) ÷

Interchange

	Base	500										÷ 4	
	FMM RTUC (15 min)	500		500		500		500					
	FMM LMP	$25		$25		$25		$25					
64600	**FMM IIE**	$0		$0		$0		$0				÷ 12	$0
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed for the IIE settlement on it

x (-1)

Load

	Hourly Load Base Schedule	1000											
	Submitted Hourly Load Value	1037											$917
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	5 min Load "Metered Actuals"	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037
	LAP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
	RTD UIE	$76	$76	$76	$76	$76	$76	$76	$76	$76	$76	$76	$76

÷ 12

the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

x (-1)

Total Load	Total BA Gen	Net Leaving	Net Net
$912	($458)	($458)	($51)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

NPR1

	Base	200										÷ 4	
		-											
	FMM RTUC (15 min)	200				200				200			1018.33333
		X											
	FMM LMP	$25				$27				$30			
		=										÷ 12	
64600	FMM IIE	$0				$0				$0			
		-											
	RTD (5 min)	200	200	200	200	225	225	225	225	225	225	225	
		-											
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	
		=											
64700	RTD IIE	$0	$0	$0	$0	($44)	($44)	($44)	($44)	($44)	($44)	($44)	($350)
64750	RTD LIIE	$0	$0	$0	($35)	$0	$0	$0	$0	$0	$0	$0	($35)
													($387)

18220
6000 update for a change at T-0 (top of the trade hour)
12220 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)

BA Resource Plan	
	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
5% Bid Req	300
Bid (+/-)	300

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	500
Bid Range	600
Market Award	25

NPR2

	Base	50										÷ 4	
		-											
	FMM RTUC (15 min)	50				50				50			
		X											
	FMM LMP	$22				$22				$22			
		=										÷ 12	
64600	FMM IIE	$0				$0				$0			
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	
		X											
	RTD LMP	$22	$22	$22	$22	$22	$22	$22	$22	$22	$22	$22	
		=											
64700	RTD IIE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	RTD LIIE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Resource name	NPR1
Capacity	500
Base Point	225
Interchange	0
Bid (+/-)	NA
Market Award	NA

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

PR1

	Base	1250										÷ 4	
		-											
	FMM RTUC (15 min)	1250				1250				1250			
		x											
	FMM LMP	$25				$25				$25			
		=										÷ 12	
64600	FMM IIE	$0				$0				$0			$0
		-											
	RTD (5 min)	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	
		-											
	Metered Actuals	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	
		X											
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	
		=											
64700	RTD IIE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	RTD LIIE	$0	$0	$0.00	$0	$0	$0	$0	$0	$0	$0	$0	$0
													$0
													1

Interchange

	Base	500										÷ 4	
		-											
	FMM RTUC (15 min)	500				500				500			
		x											
	FMM LMP	$24				$24				$24			
		=										÷ 12	
64600	FMM IIE	$0				$0				$0			$0
		-											
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	
		-											
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	$478 what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't neede
		X											
	RTD LMP	$24	$24	$24	$24	$24	$24	$24	$24	$24	$24	$24	x (-1)
		=											
64700	RTD IIE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Load

	Hourly Load Base Schedule	1000											
	Submitted Hourly Load Value	1018											
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
		-										÷ 12	
	5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).
		X											
	LAP	$26	$26	$26	$26	$26	$26	$26	$26	$26	$26	$26	x (-1)
		=											
	RTD LIIE	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40

Total Load	Total BA Gen	Total PR Gen	Net
$480	($387)	$0	$93

NPR1

	Base	200												÷ 4	
		-													
	FMM RTUC (15 min)	200				200				200					1018.33333
		X													
	FMM LMP	$25				$25				$25					
64600	**FMM IIE**	= $0				$0				$0				÷ 12	
		-													
	RTD (5 min)	200	200	200	200	225	225	225	225	225	225	225	225		
	Metered Actuals	- 200	200	200	220	225	225	225	225	225	225	225	225		
		X													
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25		
64700	**RTD IIE**	= $0	$0	$0	$0	($52)	($52)	($52)	($52)	($52)	($52)	($52)	($52)		($417)
64750	**RTD UIE**	$0	$0	$0	($42)	$0	$0	$0	$0	$0	$0	$0	$0		($42)
	LAP contribution														

18230
6000 update for a change at T-0 (top of the trade hour)
12230 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5

BA Resource Plan

	Scheduled
Load Forecast	-1800
Net Interchange	-500
Gen Base Sched	1100
Hr Bal Req	100
Bal (+/-)	300

	PR1
Capacity	1000
Base Point	-1250
Interchange	700
Bid Range	600
Market Award	0

Resource name	PR1
Capacity	1000
Base Point	1250
Interchange	700
Bid Range	600
Bid $	$28
Market Award	0

NPR2

	Base	50												÷ 4	
		-													
	FMM RTUC (15 min)	50				50				50					
		X													
	FMM LMP	$25				$25				$25					
64600	**FMM IIE**	= $0				$0				$0				÷ 12	
		-													
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50		
	Metered Actuals	- 50	50	50	50	50	50	50	50	50	50	50	50		
		X													
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25		
64700	**RTD IIE**	= $0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0

	NPR1
Capacity	500
Base Point	100
Interchange	0
Bid (+/-)	NA
Market Award	NA

Resource name	PR2
Capacity	500
Base Point	100
Interchange	0
Bid (+/-)	NA
Bid Qty $	225
Market Award	25

	NPR2
Capacity	100
Base Point	50
Interchange	0
Bid (+/-)	NA

Resource name	NPR2
Capacity	100
Base Point	50
Interchange	0
Bid (+/-)	NA
Bid Qty $	?
Market Award	NA

PR1

	Base	1250												÷ 4	
		-													
	FMM RTUC (15 min)	1250				1250				1250					
		X													
	FMM LMP	$25				$25				$25					
64600	**FMM IIE**	= $0				$0				$0				÷ 12	$0
		-													
	RTD (5 min)	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250		
	Metered Actuals	- 1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250		
		X													
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25		$25
64700	**RTD IIE**	= $0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0
	FMM LAP Contribution	0			0			0		0 $0				#DIV/0!	$0 $0
		0	0	0	0	0	0	0	0	0	0	0	0		1
	RTD LAP Contribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	#DIV/0!	

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) +

Interchange

	Base	500												÷ 4	
		-													
	FMM RTUC (15 min)	500				500				500					
		X													
	FMM LMP	$25				$25				$25					
64600	**FMM IIE**	= $0				$0				$0				÷ 12	$0
		-													
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500		
	Metered Actuals	- 500	500	500	500	500	500	500	500	500	500	500	500		
		X													
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	x (-1)	
64700	**RTD IIE**	= $0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed for the IIE settlement on interchange

Load

	Hourly Load Base Schedule	1000													
	Submitted Hourly Load Value	1018													
	5 min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		$468
		-												÷ 12	
	5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018		
		X													
	LAP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	x (-1)	
	RTD UIE	= $38	$38	$38	$38	$38	$38	$38	$38	$38	$38	$38	$38		

the LAP should be the weighted hourly average of the LMPs at the Proxies above (was $48). See formula (not sure if it's entirely correct).

Total Load	Total BA Gen	Net Leaving	Net Net
$456	($458)	($458)	($2)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

From 2a (2b) scenario

Total Load	Total BA Gen	Net Leaving	Net Net
$893	($385)	($385)	$50

What results from communicating the manual dispatch to the market operator is that load is now only charged half the amount of imbalance energy compared to not communicating it because the PR was not dispatched to try to meet the 25 MW INC in load in addition to the NPR INCing to meet the load.
The "Net net" amount is $12 higher due to not having the difference between the $458 payment to PR1 that is no longer occuring at the $25 LMP rate (compared to the NPR $21 LMP rate) and the additional $447 charge (double charge for the INC) to load that is no longer occuring.
This "Net Net" amount would likely show up in the different offset charge codes to the EESC.

a the reason you would do the manual dispatch in this case to the NPR is because the LMP is more economical than the LMP at the PR to meet the additional demand

PR2

	Base	200										÷ 4	
		-											
	FMM RTUC (15 min)	200				200				200			
						X							
	FMM LMP	$21				$21				$35			
		=										÷ 12	
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
		-											
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	($35)	($44)	($44)	($44)	($44)	($44)	($44)	($44)	($44)

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)

What is happening here? Is a LSE PR(2) being dispatched mid market run to meet INC load?

BA Resource Plan

	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid Range	50

Resource name	PR1
Capacity	1000
Base Point	1250
Interchange	0
Bid Range	600
Market Award	0

NPR2

	Base	50										÷ 4	
		-											
	FMM RTUC (15 min)	50				50				50			
						X							
	FMM LMP	$25				$27				$30			
		=										÷ 12	
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

$0
$0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	25

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

PR1

	Base	1250										÷ 4	
		-											
	FMM RTUC (15 min)	1250				1250				1250			
		x											
	FMM LMP	$22				$22				$23			
		=										÷ 12	
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275
		-											
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275
		X											
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
64700	**RTD IIE**	$0	$0	$0	$0	($42)	($42)	($42)	($42)	($42)	($42)	($42)	($42)
64750	**RTD UIE**	$0	$0	$0.00	($33)	$0	$0	$0	$0	$0	$0	$0	$0

$0

($333)
($33)
($369) ($367)
1

Interchange

	Base	500										÷ 4	
		-											
	FMM RTUC (15 min)	500				500				500			
		x											
	FMM LMP	$25				$27				$30			
		=										÷ 12	
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500
		-											
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500
		X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

$0

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed for the IIE settle

x (-1)

Load

	Hourly Load Base Schedule	1000											
	Submitted Hourly Load Value	994											
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
		-										÷ 12	
	5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018
		X											
	LAP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
	RTD UIE	$31	$31	$31	$31	$31	$31	$31	$31	$31	$31	$31	$31

150

x (-1)

the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

Total Load	Total BA Gen	Total PR Gen	net
$468		($369)	$99

Total Load	Total BA Gen	Total PR Gen	net
$468		($369)	$99

PR2

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200				200				200			
						X							
	FMM LMP	$21				$21				$21			
		=											÷ 12
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	200	200	200	200	225	225	225	225	225	225	225	
		-											
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	
		=											
64700	**RTD IIE**	$0	$0	$0	$0	($44)	($44)	($44)	($44)	($44)	($44)	($44)	
64750	**RTD UIE**	$0	$0	$0	($35.00)	$0	$0	$0	$0	$0	$0	$0	

LAP contribution

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)

What is happening here? Is a LSE PR(2) being dispatched mid-market run to meet INC load?

BA Resource Plan

	Scheduled
Load Forecast	1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid Range	650

Resource name	PR1
Capacity	1000
Base Point	1250
Interchange	0
Bid Range	600
Market Award	0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid(s/-)	50
Market Award	25

Resource name	NPR2
Capacity	100
Base Point	50
Interchange	0
Bid(s/-)	NA
Market Award	NA

NPR1

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50				50				50			
		X											
	FMM LMP	$21				$21				$21			
		=											÷ 12
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	

PR1

	Base	1250											÷ 4
		-											
	FMM RTUC (15 min)	1250				1250				1250			
		X											
	FMM LMP	$21				$21				$21			
		=											÷ 12
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	
		-											
	Metered Actuals	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) ÷

Interchange

	Base	500											÷ 4
		-											
	FMM RTUC (15 min)	500				500				500			
		X											
	FMM LMP	$21				$21				$21			
		=											÷ 12
64600	**FMM IIE**	$0				$0				$0			
		-											
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	
		-											
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	x (-1)
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed for the IIE settlement on interchange

Load

	Hourly Load Base Schedule	1000											
	Submitted Hourly Load Value	1018											
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	÷ 12
		-											
	5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	
		X											
	LAP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	x (-1)
		=											
	RTD UIE	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	

the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

Total Load	Total BA Gen	Net Leaving	Net Net
$384	($187)	($387)	($3)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

From 2a (2b) scenario

Total Load	Total BA Gen	Total PR Ge	Net Leaving	Net Net
$893	($385)	($458)	($385)	$50

What results from communicating the manual dispatch to the market operator is that load is now only charged half the amount of imbalance energy compared to not communicating it because the PR was not dispatched to try to meet the 25 MW INC in load in addition to the NPR INCing to meet the load.
The "Net net" amount is $12 higher due to not having the difference between the $458 payment to PR1 that is no longer occuring at the $25 LMP rate (compared to the NPR $21 LMP rate) and the additional $447 charge (double charge for the INC) to load that is no longer occuring.
This "Net Net" amount would likely show up in the different offset charge codes to the EESC.

& the reason you would do the manual dispatch in this case to the NPR is because the LMP is more economical than the LMP at the PR to meet the additional demand

PR2

		1	2	3	4								
	Base	200				÷ 4							
	FMM RTUC (15 min)	200	200	200	200								
	FMM LMP	$20	$20	$20	$20	÷ 12							
64600	**FMM IIE**	$0	$0	$0	$0								
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
	Metered Actuals	200	200	200	200	200	200	200	200	200	200	200	200
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD LIIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

18220
6000 update for a change at T-0 (top of the trade hour)
12220 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)
1018.33333

BA Resource Plan	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
BA Bid Req	500
Bid (+/-)	650

$0
$0

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
Market Award	25

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
Bid $	$20
Market Award	25

NPR2

		1	2	3	4								
	Base	50				÷ 4							
	FMM RTUC (15 min)	50	50	50	50								
	FMM LMP	$20	$20	$20	$20	÷ 12							
64600	**FMM IIE**	$0	$0	$0	$0								
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD LIIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

$0
$0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Bid $	$21
Market Award	0

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

PR1

		1	2	3	4								
	Base	1250				÷ 4							
	FMM RTUC (15 min)	1250	1250	1250	1250								
	FMM LMP	$20	$20	$20	$20	÷ 12							
64600	**FMM IIE**	$0	$0	$0	$0								
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
64700	**RTD IIE**	$0	$0	$0	$0	($42)	($42)	($42)	($42)	($42)	($42)	($42)	($42)
64750	**RTD LIIE**	$0	$0	$0.00	($33)	$0	$0	$0	$0	$0	$0	$0	$0

$0
($333)
($33)
($367) ($367)
1

Interchange

		1	2	3	4								
	Base	500				÷ 4							
	FMM RTUC (15 min)	500	500	500	500								
	FMM LMP	$20	$20	$20	$20	÷ 12							
64600	**FMM IIE**	$0	$0	$0	$0								
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

$0
$380 what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed
x (-1)
$0

Load

		1	2	3	4								
	Hourly Load Base Schedule	1000											
	Submitted Hourly Load Value	994											
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	5 min Load "Metered Actuals"	1019	1019	1019	1019	1019	1019	1019	1019	1019	1019	1019	1019
	LAP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
	RTD LIIE	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32

÷ 12

This should be a calculation (sum Net Gen - sum Net Interchange - Losses), but that calc isn't working out for me here...what am I missing? See interval 1.

x (-1) the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

$380
$380

Total Lo	Total BA Gen	Net Leaving	Net Net
$369	($387)	($387)	($18)

PR2

Base	200												÷ 4
	-												
FMM RTUC (15 min)	200				200				200				
	X												
FMM LMP	$20				$20				$20				
	=												÷ 12
64600 **FMM IIE**	$0				$0				$0				
	-												
RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200	
	-												
Metered Actuals	200	200	200	200	200	200	200	200	200	200	200	200	
	X												
RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	
	=												
64700 **RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
64750 **RTD UIE**	$0	$0	$0	$0.00	$0	$0	$0	$0	$0	$0	$0	$0	

LAP contribution

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5

What is happening here? Is a LSE PR(2) being dispatched mid market run to meet INC load?

BA Resource Plan	
	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
FD Bid Req	100
Bid Range	650

Resource name	PR1
Capacity	1800
Base Point	1250
Interchange	0
Bid Range	650
Market Award	0

NPR1

Base	50												÷ 4
	-												
FMM RTUC (15 min)	50				50				50				
	X												
FMM LMP	$20				$20				$20				
	=												÷ 12
64600 **FMM IIE**	$0				$0				$0				
	-												
RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50	
	-												
Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50	
	X												
RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	
	=												
64700 **RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
64750 **RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	

Resource name	PR2
Capacity	700
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	25

Resource name	NPR2
Capacity	100
Base Point	75
Interchange	0
Bid (+/-)	NA
Market Award	NA

PR1

Base	1250												÷ 4
	-												
FMM RTUC (15 min)	1250				1250				1250				
	X												
FMM LMP	$20				$20				$20				
	=												÷ 12
64600 **FMM IIE**	$0				$0				$0				
	-												
RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275	
	-												
Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275	
	X												
RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	
	=												
64700 **RTD IIE**	$0	$0	$0	$0	($43)	($42)	($42)	($42)	($42)	($42)	($42)	($42)	
64750 **RTD UIE**	$0	$0	$0	($33)	$0	$0	$0	$0	$0	$0	$0	$0	

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) ÷

Interchange

Base	500												÷ 4
	-												
FMM RTUC (15 min)	500				500				500				
	X												
FMM LMP	$21				$21				$21				
	=												÷ 12
64600 **FMM IIE**	$0				$0				$0				
	-												
RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500	
	-												
Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500	
	X												
RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	x (-1)
	=												
64700 **RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you want to show they aren't needed for the IIE settlement on interchange

Load

Hourly Load Base Schedule	1000												
Submitted Hourly Load Value	1018												
5 min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
	-												÷ 12
5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	
	X												
LAP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	x (-1)
	=												
RTD UIE	$31	$31	$31	$33	$31	$31	$31	$31	$31	$33	$31		

the LAP should be the weighted hourly average of the LMPs at the Prodes above (was $48). See formula (not sure if it's entirely correct).

Total Load	Total BA Gen	Net Leaving	Net Net
$369	($372)	($372)	($3)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

From 2a (2b) scenario

Total Load	Total BA Gen	Total PR Gen	Net Leaving	Net Net
$893	($385)	($458)	($385)	$50

What results from communicating the manual dispatch to the market operator is that load is now only charged half the amount of imbalance energy compared to not communicating it because the PR was not dispatched to try to meet the 25 MW INC in load in addition to the NPR INCing to meet the load.
The "Net net" amount is $12 higher due to not having the difference between the $458 payment to PR1 that is no longer occuring at the $25 LMP rate (compared to the NPR $21 LMP rate) and the additional $447 charge (double charge for the INC) to load that is no longer occuring.
This "Net Net" amount would likely show up in the different offset charge codes to the EESC.

& the reason you would do the manual dispatch in this case to the NPR is because the LMP is more economical than the LMP at the PR to meet the additional demand

Total Load	Total BA Gen	Net Leaving	Net Net
$477	($477)	$0	$0

Hourly Base Schedule - GEN	1500
Updated Based Schedule - GEN	1475
Time of Update	-20

Bonneville	Resource Plan
	Scheduled
Load Forecast	**1000**
Net Interchange	**500**
Gen Base Sched	**1500**
RS Bid Req	**600**
Bid (+/-)	**600**

Resource name	APR
Capacity	3000
Base Point	0
Interchange	0
Bid Range	600
LMP	

Resource name	ANPR
Capacity	10000
Base Point	1500
Interchange	500
Bid (+/-)	NA
LMP	

Interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
FMM Market Runs	-37.5	-22.5	-7.5	7.5								
RTD Market Runs	-7.5	-2.5	2.5	7.5	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5

NPR1

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200			200			200		
		X											
	FMM LMP	$25			$27			$30			$35		
		=											÷ 12
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**		
		-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
		-											
	Metered Actuals	200	200	200	200	200	200	200	200	200	200	200	200
		X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
64750	**RTD UIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

$0

$0

NPR2

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50			50			50		
		X											
	FMM LMP	$25			$27			$30			$35		
		=											÷ 12
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**		
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		X											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
64750	**RTD UIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

$0

$0

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5

BA Resource Plan	
	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid (+/-)	300

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
LMP	

Resource name	NPR1
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	NA
LMP	

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
LMP	

PR1

	Base	1250											÷ 4		
		-													
	FMM RTUC (15 min)	1250				1250				1250				1250			
		x													
	FMM LMP	$22				$22				$23				$25			
		=											÷ 12		
64600	**FMM IIE**	**$0**				**$0**				**$0**				**$0**			$0
		-															
	RTD (5 min)	1250	1250	1250	1250	1175	1175	1175	1175	1175	1175	1175	1175				
		-															
	Metered Actuals	1250	1250	1225	1200	1175	1175	1175	1175	1175	1175	1175	1175				
		X															
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25				
		=															
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$156**	**$156**	**$156**	**$156**	**$156**	**$156**	**$156**	**$156**				$1,250
64750	**RTD UIE**	**$0**	**$0**	**$52.08**	**$104**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**				$156
																	$1,406
																	1

Interchange

	Base	500											÷ 4		
		-													
	FMM RTUC (15 min)	500				500				500				500			
		x													
	FMM LMP	$25				$27				$30				$35			
		=											÷ 12		
64600	**FMM IIE**	**$0**				**$0**				**$0**				**$0**			$0
		-															
	RTD (5 min)	500	500	500	500	425	425	425	425	425	425	425	425				
		-															
	Metered Actuals	500	500	500	500	425	425	425	425	425	425	425	425				($149) **what do you want the interchange metered actuals to be? They are needed to**
		X															
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25	$25	**x (-1)**			
		=															
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**($156)**	**($156)**	**($156)**	**($156)**	**($156)**	**($156)**	**($156)**	**($156)**				($1,250)

STATUS QUO

Load	250	250	255	265	275	275	275	275	275	275	275	275	Total Load
													268
						-							
Gen	250	250	250	250	260	275	275	275	275	275	275	275	Total Gen
													265
						X							Total Imb
Load - Gen	0	0	5	15	15	0	0	0	0	0	0	0	3

schedule	inc ops	inc op cost
250	15.41666667	$323.75

Mid C	$26
Gen $	$21

EI MW	3
EI $	$76

Inc Ops	15.41667
Inc Ops $	$323.75

Total $	$400

Imbalance Price	$26	Gen Ops Price	$21
Imbalance Cost	$76	Gen Ops Cost	$324
Net BA Cost	$76	Net Cust Cost	$400

	Rate	Total
Imbalance Price	26	
Imbalance Cost		

NPR1

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200			200			200		
		x											
	FMM LMP	$25			$25			$25			$25		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
		-											
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225
		X											
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	($42)	($52)	($52)	($52)	($52)	($52)	($52)	($52)	($52)
	LAP contribution												

18440
6000 update for a change at T-0 (top of the trade hour)
12440 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)
1036.66667

BA Resource Plan

	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid (+/-)	300

$0
($458)

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	500
Bid Range	600
Bid $	$26
Market Award	25

NPR2

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50			50			50		
		x											
	FMM LMP	$25			$25			$25			$25		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		X											
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Resource name	NPR1
Capacity	500
Base Point	225
Interchange	0
Bid (+/-)	NA
Bid/Op $	$21
Market Award	NA

$0
$0

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Bid/Op $	?
Market Award	NA

PR1

	Base	1250											÷ 4
		-											
	FMM RTUC (15 min)	1250			1250			1250			1250		
		x											
	FMM LMP	$25			$25			$25			$25		

							=							÷ 12	
64600	**FMM IIE**	$0			$0			$0			$0				$0
							-								
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275		
							-								
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275		
							X								
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25		$25
							=								
64700	**RTD IIE**	$0	$0	$0	$0	($52)	($52)	($52)	($52)	($52)	($52)	($52)	($52)		($417)
64750	**RTD UIE**	$0	$0	$0	($42)	$0	$0	$0	$0	$0	$0	$0	$0		($42)
															($458)
	FMM LAP Contribution	0			0			0			0				
											$0			#DIV/0!	
		0	0	0	0	25	25	25	25	25	25	25	25	200	1
	RTD LAP Contribution	$0	$0	$0	$0	$625	$625	$625	$625	$625	$625	$625	$625	$25	

($458)

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) +

Interchange

	Base	500												÷ 4	
							-								
	FMM RTUC (15 min)	500			500			500			500				
							x								
	FMM LMP	$25			$25			$25			$25				
							=							÷ 12	
64600	**FMM IIE**	$0			$0			$0			$0				$0
							-								
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500		
							-								
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500		
							X								
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	x (-1)	
							=								
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide then

Load

	Hourly Load Base Schedule	1000													
	Submitted Hourly Load Value	1037													
															$917
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		
							-							÷ 12	
	5 min Load	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037		

"Metered Actuals"	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037	1037		
						X								
LAP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	x (-1)	
						=								
RTD UIE	$76	$76	$76	$76	$76	$76	$76	$76	$76	$76	$76	$76		

the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

Total Load	Total BA Gen	Net Leaving	Net Net
$912	($458)	($458)	($5)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

n if you want to show they aren't needed for the IIE settlement on interchange

NPR1

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200				200				200			200
		X											
	FMM LMP	$25				$27				$30			$35
		=											÷ 12
64600	**FMM IIE**	**$0**				**$0**				**$0**			**$0**
		-											
	RTD (5 min)	200	200	200	200	225	225	225	225	225	225	225	225
		-											
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**($44)**	**($44)**	**($44)**	**($44)**	**($44)**	**($44)**	**($44)**	**($44)**
64750	**RTD UIE**	**$0**	**$0**	**$0**	**($35)**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

NPR2

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50				50				50			50
		X											
	FMM LMP	$22				$22				$22			$22
		=											÷ 12
64600	**FMM IIE**	**$0**				**$0**				**$0**			**$0**
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		X											
	RTD LMP	$22	$22	$22	$22	$22	$22	$22	$22	$22	$22	$22	$22
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
64750	**RTD UIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

18220
6000 update for a change at T-0 (top of the trade hour)
12220 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2

1018.33333

BA Resource Plan

	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid (+/-)	300

	Resource name	PR1
($350)	Capacity	3000
	Base Point	1250
($35)	Interchange	500
($387)	Bid Range	600
	Market Award	25

Resource name	NPR1
Capacity	500
Base Point	225
Interchange	0
Bid (+/-)	NA
Market Award	NA

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

$0

$0

PR1

	Base	1250											÷ 4
		-											
	FMM RTUC (15 min)	1250			1250			1250			1250		
		X											
	FMM LMP	$25			$25			$25			$25		
		=											÷ 12
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**		$0
		-											
	RTD (5 min)	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
		-											
	Metered Actuals	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
		X											
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	$0
64750	**RTD UIE**	**$0**	**$0**	**$0.00**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	$0
														$0

$0
1

Interchange

	Base	500											÷ 4
		-											
	FMM RTUC (15 min)	500			500			500			500		
		X											
	FMM LMP	$24			$24			$24			$24		
		=											÷ 12
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**		$0
		-											
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500
		-											
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500
		X											
	RTD LMP	$24	$24	$24	$24	$24	$24	$24	$24	$24	$24	$24	$24

$478 what do you want the interchange metered actuals to be? They are neede

x (-1)

NPR1

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200				200				200				200				÷ 12
		x																			
	FMM LMP	$25			$25				$25				$25				$25				
		=																			
64600	**FMM IIE**	$0			$0				$0				$0				$0				
		-																			
	RTD (5 min)	200	200	200	200	225	225	225	225	225	225	225	225								
		-																			
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225								
		X																			
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25								
		=																			
64700	**RTD IIE**	$0	$0	$0	$0	($52)	($52)	($52)	($52)	($52)	($52)	($52)	($52)								
64750	**RTD UIE**	$0	$0	$0	($42)	$0	$0	$0	$0	$0	$0	$0	$0								
	LAP contribution																				

18220
6000 update for a change at T-0 (top of the trade hour)
12220 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)
1018.33333

BA Resource Plan

	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid (+/-)	300

($417)
($42)

	PR1
Capacity	3000
Base Point	1250
Interchange	500
Bid Range	600
Market Award	0

	PR1
Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	500
Bid Range	600
Bid $	$26
Market Award	0

NPR2

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50				50				50				50				÷ 12
		x																			
	FMM LMP	$25			$25				$25				$25				$25				
		=																			
64600	**FMM IIE**	$0			$0				$0				$0				$0				
		-																			
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50								
		-																			
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50								
		X																			
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25								
		=																			
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0								
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0								

$0
$0

	NPR1
Resource name	NPR1
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	NA
Market Award	NA

	PR2
Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	NA
Bid/Op $	$21
Market Award	25

	NPR2
Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

	NPR2
Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Bid/Op $	?
Market Award	NA

PR1

	Base	1250											÷ 4
		-											
	FMM RTUC (15 min)	1250			1250				1250				1250				÷ 12
		x																			
	FMM LMP	$25			$25				$25				$25								
		=																			
64600	**FMM IIE**	$0			$0				$0				$0								

$0

	RTD (5 min)	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250		
	Metered Actuals	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250		
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25		$25
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		$0
64750	**RTD UIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		$0
															$0 $0
	FMM LAP Contribution	0			0			0			0				
											$0			#DIV/0!	
		0	0	0	0	0	0	0	0	0	0	0	0	0	1
	RTD LAP Contribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	#DIV/0!	

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) +

Interchange

	Base	500											÷ 4	
	FMM RTUC (15 min)	500			500			500			500			
	FMM LMP	$25			$25			$25			$25		÷ 12	
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**			$0
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500		
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500		
	RTD LMP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	x (-1)	
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		$0

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if y

Load

	Hourly Load Base Schedule	1000												
	Submitted Hourly Load Value	1018												
														$458
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
													÷ 12	
	5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	
	LAP	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	x (-1)

the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

=

RTD UIE												
	$38	$38	$38	$38	$38	$38	$38	$38	$38	$38	$38	$38

Total Load	Total BA Gen	Net Leaving	Net Net
$456	($458)	($458)	($2)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

From 2a (2b) scenario

Total Load	Total BA Gen	Net Leaving	Net Net
$893	($385)	($385)	$50

What results from communicating the manual dispatch to the market operator is that load is now only charged half the amount of imbalance energy compared to not communicating it because the PR was not dispatched to try to meet the 25 MW INC in load in addition to the NPR INCing to meet the load.
The "Net net" amount is $12 higher due to not having the difference between the $458 payment to PR1 that is no longer occuring at the $25 LMP rate (compared to the NPR $21 LMP rate) and the additional $447 charge (double charge for the INC) to load that is no longer occuring.
This "Net Net" amount would likely show up in the different offset charge codes to the EESC.

& the reason you would do the manual dispatch in this case to the NPR is because the LMP is more economical than the LMP at the PR to meet the additional demand

ou want to show they aren't needed for the IIE settlement on interchange

PR2

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200			200			200		
		x											
	FMM LMP	$21			$21			$21			$35		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
		-											
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225
		x											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	($35)	($44)	($44)	($44)	($44)	($44)	($44)	($44)	($44)

NPR2

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50			50			50		
		x											
	FMM LMP	$25			$27			$30			$35		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		x											
	RTD LMP	$22	$22	$22	$25	$25	$25	$25	$25	$25	$25	$25	$25
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

$0

$0

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5)

What is happening here? Is a LSE PR(2) being dispatched mid marke

BA Resource Plan	
	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid Range	50

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
Market Award	0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	25

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

PR1

	Base	1250											÷ 4	
		-												
	FMM RTUC (15 min)	1250			1250				1250					
		X												
	FMM LMP	$22			$22				$23					
		=											÷ 12	
64600	**FMM IIE**	**$0**			**$0**				**$0**					$0
		-												
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275	
		-												
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275	
		X												
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	
		=												
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	($333)
64750	**RTD UIE**	**$0**	**$0**	**$0.00**	**($33)**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	($33)
														($369) ($367)
														1

Interchange

	Base	500											÷ 4	
		-												
	FMM RTUC (15 min)	500			500				500					
		X												
	FMM LMP	$25			$27				$30					
		=											÷ 12	
64600	**FMM IIE**	**$0**			**$0**				**$0**					$0
		-												
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500	
		-												
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500	
		X												

what do you want the interchange metered actuals to be? They are

PR2

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200				200				200				÷ 12
		X															
	FMM LMP	$21			$21				$21				$21				
		=															
64600	**FMM IIE**	$0			$0				$0				$0				
		-															
	RTD (5 min)	200	200	200	200	225	225	225	225	225	225	225	225				
		-															
	Metered Actuals	200	200	200	220	225	225	225	225	225	225	225	225				
		X															
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21				
		=															
64700	**RTD IIE**	$0	$0	$0	$0	($44)	($44)	($44)	($44)	($44)	($44)	($44)	($44)				
64750	**RTD UIE**	$0	$0	$0	($35.00)	$0	$0	$0	$0	$0	$0	$0	$0				
	LAP contribution																

NPR1

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50				50				50				÷ 12
		X															
	FMM LMP	$21			$21				$21				$21				
		=															
64600	**FMM IIE**	$0			$0				$0				$0				
		-															
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50				
		-															
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50				
		X															
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21				
		=															
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0				
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0				

PR1

	Base	1250											÷ 4
		-											
	FMM RTUC (15 min)	1250			1250				1250				1250				÷ 12
		X															
	FMM LMP	$21			$21				$21				$21				
		=															
64600	**FMM IIE**	$0			$0				$0				$0				
		-															

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)

What is happening here? Is a LSE PR(2) being dispatched mid market run to meet INC load?

BA Resource Plan

	Scheduled
Load Forecast	**-1000**
Net Interchange	**-500**
Gen Base Sched	**1500**
RS Bid Req	**300**
Bid Range	**650**

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
Market Award	0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	25

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

	RTD (5 min)	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
		-											
	Metered Actuals	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

sum(FMM LMP * FMM demand forecast deviation used at T-40 for each interval) +

Interchange

	Base	500											÷ 4
		-											
	FMM RTUC (15 min)	500			500			500			500		
		X											
	FMM LMP	$21			$21			$21			$21		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500
		-											
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500
		X											
	RTD LMP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21
		=											x (-1)
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

what do you want the interchange metered actuals to be? They are needed to calc the load "metered actuals", but we can hide them if you wan

Load

	Hourly Load Base Schedule	1000											
	Submitted Hourly Load Value	1018											
	5-min Load Base Schedule	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
		-											÷ 12
	5 min Load "Metered Actuals"	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018
		X											
	LAP	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21
		=											x (-1)
	RTD UIE	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32

the LAP should be the weighted hourly average of the LMPs at the Pnodes above (was $48). See formula (not sure if it's entirely correct).

Total Load	Total BA Gen	Net Leaving	Net Net
$384	($387)	($387)	($3)

**what's throwing things off are the LMPs of the FMMs and the NPR 2

From 2a (2b) scenario

Total Load	Total BA Gen	Total PR Ge	Net Leaving	Net Net
$893	($385)	($458)	($385)	$50

What results from communicating the manual dispatch to the market operator is that load is now only charged half the amount of imbalance energy compared to not communicating it because the PR was not dispatched to try to meet the 25 MW INC in load in addition to the NPR INCing to meet the load.
The "Net net" amount is $12 higher due to not having the difference between the $458 payment to PR1 that is no longer occuring at the $25 LMP rate (compared to the NPR $21 LMP rate) and the additional $447 charge (double charge for the INC) to load that is no longer occuring.
This "Net Net" amount would likely show up in the different offset charge codes to the EESC.

& the reason you would do the manual dispatch in this case to the NPR is because the LMP is more economical than the LMP at the PR to meet the additional demand

t to show they aren't needed for the IIE settlement on interchange

PR2

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200			200			200		
		X											
	FMM LMP	$20			$20			$20			$20		
		=											÷ 12
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**		
		-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
		-											
	Metered Actuals	200	200	200	200	200	200	200	200	200	200	200	200
		X											
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
64750	**RTD UIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

NPR2

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50			50			50		
		X											
	FMM LMP	$20			$20			$20			$20		
		=											÷ 12
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**		
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		X											
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
64750	**RTD UIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

18220
6000 update for a change at T-0 (top of the trade hour)
12220 What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (

1018.33333

BA Resource Plan

	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid (+/-)	650

	Resource name	PR1
$0	Capacity	3000
	Base Point	1250
$0	Interchange	0
	Bid Range	600
	Market Award	25

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
Bid $	$20
Market Award	25

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Bid $	$21
Market Award	0

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA

$0

$0

PR1

	Base	1250											÷ 4		
		-													
	FMM RTUC (15 min)	1250			1250			1250			1250				
		x													
	FMM LMP	$20			$20			$20			$20				
		=											÷ 12		
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**			$0	
		-													
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275		
		-													
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275		
		X													
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20		
		=													
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	**($42)**	($333)	
64750	**RTD UIE**	**$0**	**$0**	**$0.00**	**($33)**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	($33)	
														($367)	($367)
															1

Interchange

	Base	500											÷ 4		
		-													
	FMM RTUC (15 min)	500			500			500			500				
		x													
	FMM LMP	$20			$20			$20			$20				
		=											÷ 12		
64600	**FMM IIE**	**$0**			**$0**			**$0**			**$0**			$0	
		-													
	RTD (5 min)	500	500	500	500	500	500	500	500	500	500	500	500		
		-													
	Metered Actuals	500	500	500	500	500	500	500	500	500	500	500	500	$380	**what do you want the interchange metered actuals to be? They are needed**
		X													
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	**x (-1)**	
		=													
64700	**RTD IIE**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	$0	

PR2

	Base	200											÷ 4
		-											
	FMM RTUC (15 min)	200			200			200			200		
		x											
	FMM LMP	$20			$20			$20			$20		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	200	200	200	200	200	200	200	200	200	200	200	200
		-											
	Metered Actuals	200	200	200	200	200	200	200	200	200	200	200	200
		x											
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0.00	$0	$0	$0	$0	$0	$0	$0	$0
	LAP contribution												

NPR1

	Base	50											÷ 4
		-											
	FMM RTUC (15 min)	50			50			50			50		
		x											
	FMM LMP	$20			$20			$20			$20		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	50	50	50	50	50	50	50	50	50	50	50	50
		-											
	Metered Actuals	50	50	50	50	50	50	50	50	50	50	50	50
		x											
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
64700	**RTD IIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64750	**RTD UIE**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

PR1

	Base	1250											÷ 4
		-											
	FMM RTUC (15 min)	1250			1250			1250			1250		
		x											
	FMM LMP	$20			$20			$20			$20		
		=											÷ 12
64600	**FMM IIE**	$0			$0			$0			$0		
		-											
	RTD (5 min)	1250	1250	1250	1250	1275	1275	1275	1275	1275	1275	1275	1275
		-											
	Metered Actuals	1250	1250	1250	1270	1275	1275	1275	1275	1275	1275	1275	1275
		x											
	RTD LMP	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
		=											
64700	**RTD IIE**	$0	$0	$0	$0	($42)	($42)	($42)	($42)	($42)	($42)	($42)	($42)

update for a change at T-0 (top of the trade hour)
What has ran? FMM-1 (37.5), FMM-2 (22.5), FMM-3 (7.5); RTD 1 (7.5); RTD-2 (2.5)

What is happening here? Is a LSE PR(2) being dispatched mid market run to meet INC load?

BA Resource Plan

	Scheduled
Load Forecast	-1000
Net Interchange	-500
Gen Base Sched	1500
RS Bid Req	300
Bid Range	650

Resource name	PR1
Capacity	3000
Base Point	1250
Interchange	0
Bid Range	600
Market Award	0

Resource name	PR2
Capacity	500
Base Point	200
Interchange	0
Bid (+/-)	50
Market Award	25

Resource name	NPR2
Capacity	200
Base Point	50
Interchange	0
Bid (+/-)	NA
Market Award	NA