

# Offer Data Lag

Howard J. Haas

*719 TF*

*April 2, 2009*



Monitoring Analytics

# Data Availability Changes: Background

- **In NSTAR Services Company, 92 FERC ¶ 61,065 (2000) (the “NSTAR Order”), the Commission required as follows:**
  - **ISO-NE to disclose individual bid data with a six-month lag.**
  - **Required similar bid disclosure for PJM, the New York ISO, and the California ISO.**
  - **It is important for bid information to be released to the public in order to permit interested parties to monitor the market.**
  - **Keeping the information confidential for six months before releasing the data will sufficiently protect the commercial sensitivity of the data.**



# Data Availability Changes: Background

- **On May 24, 2006, the Joint Board on Economic Dispatch for the Northeast (the “Joint Board”) issued its Study and Recommendations Regarding Security Constrained Economic Dispatch:**
  - **“ISO-NE ... should pursue, with market participant input, making market bid data available to the market with a shorter lag time.”**
- **In making this recommendation, the Joint Board noted:**
  - **“a shorter lag period would provide quicker public access to bid data, which would strengthen public monitoring of market behavior and help ensure confidence in the competitiveness of the markets; it would also enhance the ability of market participants to quickly identify inefficiencies.”**



# Data Availability: Background

- **In NEISO a stakeholder process produced a proposal to go from six months to three months**
- **NEISO internal market monitor (Dr. Chao) concluded:**
  - **“three month period strikes a reasonable balance recognizing, among other factors, the value of enhanced market confidence and transparency as well as the concerns of the potential for collusive behavior facilitated by disclosure.” (ISONE’s Internal Market Monitoring Unit’s August 25, 2006)**



# Data Availability: Background

- **Dr. Chao’s central point is that “the earlier release of bid data adds transparency that generally helps the public to better understand the wholesale electricity markets.”**
  - **“Improved market confidence”**
    - **Earlier detection of market power problems or flaws in the design of market rules or mitigation measures.**
    - **Earlier public release of bid data will allow market participants and state regulators to supplement the market monitoring functions carried out by the internal and external market monitoring functions of the ISO.**



# Data Availability: Background

- **Dr. Chao recognized that the primary potential drawback of releasing data too early is that it could increase the chances that competitors could use the information to engage in collusive behavior or other forms of market manipulation.**
- **Less a concern to the extent that:**
  - **the market structure is competitive**
  - **market monitoring and mitigation procedures are effective**
  - **the bidding information becomes “stale” with time.**



# Data Availability: Core Concepts

- **Market efficiency requires price and product characteristic transparency**
  - **Decisions to buy or sell should be based on price relative to marginal costs/benefits**
  - **Requires timely and relevant information regarding prices**
  - **In efficient markets participants make their decisions to buy, sell, expand production, and to enter or exit the market on the basis of market prices and their *own* costs.**



# Data Availability: Core Concepts

- Improving *price* and product characteristic transparency tends to improve market efficiency
  - Important to look for markets/services where price transparency between marginal decision making and marginal effects is limited or absent
    - Operating reserve charges and credits





# Data Availability: Core Concepts

- **Improving other data transparency does not improve market efficiency**
- **Information about underlying participant costs is not information that is needed to produce or maintain competitive market behavior or results**
  - **Providing this information will tend to reduce market efficiency, all else held equal**



# Potential Collusion Concerns and Data Availability

- **Essential features of electricity markets make them prone to market power abuse:**
  - **Inelastic demand**
  - **Limited storage and intratemporal substitution opportunities**
  - **Markets operates as a repeated game with a relatively small number of key participants**
- **The data on the following slides provides supporting evidence**



**Table 2-4 PJM hourly Energy Market HHI (By segment):  
Calendar year 2008**

	Minimum	Average	Maximum
Base	1225	1549	1984
Intermediate	683	2130	6216
Peak	632	5476	10000

**Table 2-7 Three pivotal supplier results summary for three regional constraints: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
5004/5005 Interface	Peak	723	652	90%	149	21%
	Off Peak	535	467	87%	130	24%
Bedington - Black Oak	Peak	666	491	74%	296	44%
	Off Peak	425	301	71%	193	45%
Kammer	Peak	2,328	1,450	62%	1,111	48%
	Off Peak	4,740	3,302	70%	2,130	45%

**Table 2-9 Three pivotal supplier results summary for the AP South and West interfaces: January 1, 2008, through May 16, 2008**

Constraint	Period	Total Tests Applied	Tests with	Percent Tests	Tests with	Percent Tests
			One or More Passing Owners	with One or More Passing Owners	One or More Failing Owners	with One or More Failing Owners
AP South	Peak	634	464	73%	273	43%
	Off Peak	903	641	71%	414	46%
West	Peak	578	543	94%	64	11%
	Off Peak	455	420	92%	77	17%

**Table 2-10 Three pivotal supplier results summary for the AP South and West interfaces: May 17, 2008, through December 31, 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
AP South	Peak	1,575	1,088	69%	766	49%
	Off Peak	1,053	643	61%	639	61%
West	Peak	334	325	97%	22	7%
	Off Peak	186	162	87%	38	20%

**Table 2-17 Three pivotal supplier results summary for constraints located in the PSEG Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Athenia - Saddlebrook	Peak	79	5	6%	77	97%
	Off Peak	427	2	0%	426	100%
Branchburg - Readington	Peak	653	56	9%	646	99%
	Off Peak	195	3	2%	193	99%
Brunswick - Edison	Peak	536	0	0%	536	100%
	Off Peak	211	0	0%	211	100%
Cedar Grove - Clifton	Peak	772	106	14%	746	97%
	Off Peak	529	107	20%	484	91%
Cedar Grove - Roseland	Peak	117	37	32%	94	80%
	Off Peak	415	80	19%	381	92%

**Table 2-19 Three pivotal supplier results summary for constraints located in the AP Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Bedington	Peak	1,147	7	1%	1,145	100%
	Off Peak	443	0	0%	443	100%
Bedington - Harmony	Peak	1,523	0	0%	1,523	100%
	Off Peak	427	0	0%	427	100%
Elrama - Mitchell	Peak	364	128	35%	326	90%
	Off Peak	657	136	21%	630	96%
Meadow Brook	Peak	847	0	0%	847	100%
	Off Peak	273	2	1%	271	99%
Mount Storm	Peak	705	422	60%	405	57%
	Off Peak	928	440	47%	632	68%
Mount Storm - Pruntytown	Peak	924	620	67%	476	52%
	Off Peak	1,678	1,097	65%	891	53%
Sammis - Wylie Ridge	Peak	1,158	756	65%	624	54%
	Off Peak	4,114	2,754	67%	2,094	51%



**Table 2-21 Three pivotal supplier results summary for constraints located in the AEP Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Carnegie - Tidd	Peak	409	0	0%	409	100%
	Off Peak	353	0	0%	353	100%
Cloverdale - Lexington	Peak	1,044	736	70%	563	54%
	Off Peak	6,167	3,579	58%	3,996	65%
Kammer - Ormet	Peak	564	0	0%	564	100%
	Off Peak	816	0	0%	816	100%
Mahans Lane - Tidd	Peak	531	0	0%	531	100%
	Off Peak	247	0	0%	247	100%

**Table 2-25 Three pivotal supplier results summary for constraints located in the PENELEC Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
East Towanda	Peak	1,361	35	3%	1,353	99%
	Off Peak	452	1	0%	452	100%
Garman - Westover	Peak	628	0	0%	628	100%
	Off Peak	779	0	0%	779	100%
Homer City - Shelocta	Peak	319	4	1%	316	99%
	Off Peak	327	4	1%	326	100%

**Table 2-27 Three pivotal supplier results summary for constraints located in the Dominion Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Beechwood - Kerr Dam	Peak	457	0	0%	457	100%
	Off Peak	70	0	0%	70	100%
Clover	Peak	321	144	45%	321	100%
	Off Peak	2	0	0%	2	100%
Danville - East Danville	Peak	87	9	10%	85	98%
	Off Peak	415	5	1%	415	100%
Halifax - Mount Laurel	Peak	444	31	7%	413	93%
	Off Peak	455	30	7%	425	93%

**Table 2-29 Three pivotal supplier results summary for constraints located in the DPL Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with	Percent Tests	Tests with	Percent Tests
			One or More Passing Owners	with One or More Passing Owners	One or More Failing Owners	with One or More Failing Owners
Keeney At5n	Peak	304	64	21%	284	93%
	Off Peak	196	24	12%	191	97%
North Seaford - Pine Street	Peak	255	0	0%	255	100%
	Off Peak	145	0	0%	145	100%

**Table 2-31 Three pivotal supplier results summary for constraints located in the AECO Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Churchtown	Peak	170	0	0%	170	100%
	Off Peak	53	0	0%	53	100%
Monroe	Peak	1,132	0	0%	1,132	100%
	Off Peak	284	0	0%	284	100%
Quinton - Roadstown	Peak	80	0	0%	80	100%
	Off Peak	35	0	0%	35	100%

**Table 2-33 Three pivotal supplier results summary for constraints located in the DLCO Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Cheswick - Evergreen	Peak	170	0	0%	170	100%
	Off Peak	26	0	0%	26	100%
Cheswick - Logans Ferry	Peak	283	0	0%	283	100%
	Off Peak	157	0	0%	157	100%
Cheswick - Universal	Peak	163	0	0%	163	100%
	Off Peak	34	0	0%	34	100%

**Table 2-35 Three pivotal supplier results summary for constraints located in the ComEd Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Burnham - Munster	Peak	378	13	3%	366	97%
	Off Peak	633	223	35%	451	71%
Cherry Valley	Peak	117	0	0%	117	100%
	Off Peak	15	0	0%	15	100%
Crete - East Frankfort	Peak	18	0	0%	18	100%
	Off Peak	2,262	59	3%	2,238	99%

**Table 2-37 Three pivotal supplier results summary for constraints located in the PECO Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Graceton - Peach Bottom	Peak	138	93	67%	84	61%
	Off Peak	492	269	55%	300	61%



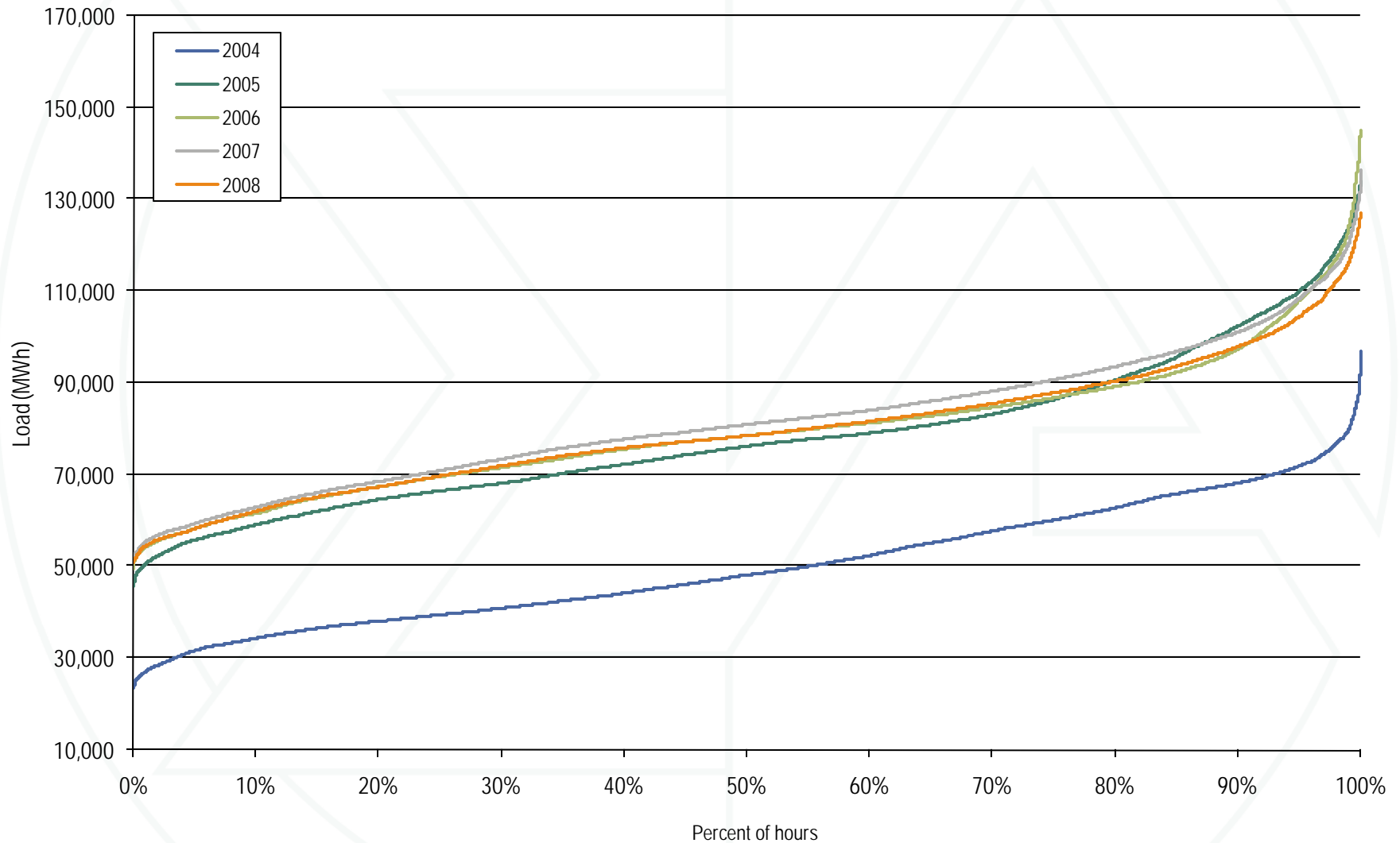
**Table 2-39 Three pivotal supplier results summary for constraints located in the Pepco Control Zone: Calendar year 2008**

Constraint	Period	Total Tests Applied	Tests with One or More Passing Owners	Percent Tests with One or More Passing Owners	Tests with One or More Failing Owners	Percent Tests with One or More Failing Owners
Dickerson - Pleasant View	Peak	592	472	80%	232	39%
	Off Peak	215	171	80%	86	40%

**Table 2-42 Frequently mitigated units and associated units  
(By month): Calendar year 2008**

	FMUs and AUs			Total Eligible for Any Adder
	Tier 1	Tier 2	Tier 3	
January	19	15	69	103
February	30	12	81	123
March	27	21	75	123
April	26	26	72	124
May	23	25	76	124
June	27	26	75	128
July	27	28	73	128
August	28	37	63	129
September	18	45	53	116
October	31	35	61	127
November	36	30	64	130
December	28	51	61	140

## Figure 2-4 PJM real-time load duration curves: Calendar years 2004 to 2008



**Table 2-43 Frequently mitigated units and associated units  
total months eligible: Calendar year 2008**

Months Adder-Eligible	FMU & AU Count
1	16
2	15
3	8
4	3
5	3
6	3
7	4
8	5
9	2
10	13
11	25
12	74
Total	171

# Data Availability: Core Concepts

- **Under the conditions that exist in PJM markets**
  - incentives to cooperate with rivals
  - Incentives to anticipate and react to the behavior of rivals
- **Competitiveness is not improved via the public availability of competitors' underlying cost information.**



# Data Availability: Core Concepts

- **Such information is always more useful in undermining the competitiveness of a market than improving its competitiveness, particularly if the tool for efficiency improvement is via after the fact regulatory action.**



# Data Availability: Core Concepts

- **In choosing the lag in availability of offer data need to balance:**
  - **First order inefficiencies caused by increases in unilateral or collusive behavioral effects over time**
  - **Third order improvements made possible by earlier participant or regulator detection of inefficient behavior**
    - **Strengthened confidence in the market**
  - **There is no evidence to support the claim that shortening the lag would improve market efficiency**
  - **There is no practical basis for the assertion that public detection of inefficient behavior will improve with a three month lag**



# Data Availability: Recommendation

- **Offer data lag: 3 or 4 months?**
  - **A longer delay is preferable**
  - **4 months is preferable to 3 months**
  - **Limit seasonally relevant information**





# Data Availability: Proposal

- **4 month lag for public provision of data**

