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*FILES  
C 99-F-1164*

July 9, 2001

**VIA E-MAIL AND HAND DELIVERY**

Presiding Examiner  
Hon. Gerald L. Lynch  
NYS Department of Public Service  
3 Empire State Plaza  
Albany, New York 12223-1350

Associate Examiner  
Hon. Kevin J. Casutto  
NYS Department of Environmental  
Conservation  
50 Wolf Road, 4<sup>th</sup> Floor, Room 423  
Albany, New York 12233-1550

Re: Case 99-F-1164: In the Matter of the Application of Mirant (formerly Southern Energy) Bowline, L.L.C. for a Certificate of Environmental Compatibility and Public Need to Construct and Operate a Nominal 750 Megawatt Combined Cycle Combustion Turbine Electric Generating Plant in Haverstraw, Rockland County, New York

Dear Judge Lynch and Judge Casutto:

In accordance with the "Ruling Identifying Decommissioning as an Article X Issue and Concerning Competition and Joint Case Schedule," dated June 13, 2001, Mirant Bowline, L.L.C., and my letter to you, dated June 20, 2001, Mirant Bowline, L.L.C. hereby submits a Herfindahl-Hirschman Index analysis for appropriate markets, both with and without Bowline Unit 3.

Very truly yours,

COUCH WHITE, LLP

*Barbara S. Brenner*

Barbara S. Brenner

BSB/sem

Enclosure

cc: Attached Service List (Via Email and U.S. Mail)

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**CASE 99-F-1164  
MIRANT BOWLINE, L.L.C. ARTICLE X  
SERVICE LIST**

**July 9, 2001**

**Presiding Examiner:**

Hon. Gerald L. Lynch  
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**Associate Examiner:**

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**Impact of Bowline 3 on concentration in New York  
electric power markets**

Prepared on behalf of  
**Mirant Bowline L.L.C.**

by

**Frontier Economics, Inc.**

Two Brattle Square  
Cambridge, MA 02138

July 2001

## Introduction

Pursuant to the "Ruling Identifying Decommissioning as an Article X Issue, and Concerning Competition and Joint Case Schedule", issued by the Hearing Examiners in this proceeding on June 13, 2001 ("Ruling"), Mirant Bowline, L.L.C. ("Mirant") hereby submits this study addressing the impact of Bowline 3 on market power concentration in the New York electric power markets.

Frontier Economics, Inc. of Cambridge, Massachusetts, under the supervision of Kevin Wellenius prepared this study. Mr. Wellenius is a founder and director of Frontier Economics, and has worked exclusively on electricity deregulation matters since 1996. Mr. Wellenius has helped prepare expert testimony before various state agencies as well as the Federal Energy Regulatory Commission, five of which have been in regard to the New York electricity markets. Mr. Wellenius received a Master's degree from the Massachusetts Institute of Technology (1996), where his research focused on energy and environmental economics.

As detailed more fully below, in the study, the following four different products were examined: energy, installed capacity (ICAP), 10-minute spinning reserve (10SR), and regulation. In addition, the study analyzes regionally defined sub-markets arising from transmission constraints or location-specific procurement requirements, as appropriate to each product. For each product in each regional market, both the share of potential output for each participant as well as the Herfindahl-Hirschman Index (HHI) for the market - a standard measure of market concentration - were calculated.<sup>1</sup>

Exhibit 1 summarizes the HHI values for each of the markets that were examined. In all but one of the markets, the impact of the Bowline expansion will be to reduce market concentration, as reflected by the decrease in HHI values. In the only instance where the Bowline expansion raises the HHI, the value of the index in this market is well below 1,000 and therefore, generally is regarded as 'not concentrated'.

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<sup>1</sup> HHI is equal to the sum of the square of each participant's market share.

**Exhibit 1. Summary of results**

Product	Market	Current	With	Change
			Bowline 3	
Energy	Entire NYCA	649	643	(5)
	All East	1010	996	(14)
	Hudson Valley	1531	1498	(33)
ICAP	RoS	772	774	2
10SR	NYCA minus LI	1453	1418	(35)
	East minus LI	1593	1556	(37)
Regulation	Entire NYCA	1250	1231	(19)

**Data overview**

Data regarding existing generation units was obtained from the New York Independent System Operator's (NYISO) *Existing NYCA Generation Facilities as of January 1, 2000*. This document lists the main characteristics of each generating unit within the New York Control Area (NYCA), including ownership, summer and winter capability, type of unit, and location within NYCA.<sup>2</sup> This data was compiled as of January 1, 2000, and required modification to reflect current conditions. First, some plants were subsequently sold as part of the divestiture process. Information about these transactions is available from the Electric Power Supply Association (EPSA). Second, new capacity has been brought on-line and the capacity of some existing units has changed. We have adopted most of the modifications made by the New York State Reliability Council in its December 2000 review of installed capacity requirements.<sup>3</sup> Finally, we have also included PG&E National Energy Group's Athens plant in this study, as it has received all necessary permits and we understand construction has begun. Athens is a 1080 MW, combined-cycle gas plant, located 30 miles south of Albany. Other plants are also under development, though not at such an advanced stage, and have been excluded from this analysis. It is fully anticipated that entry into these markets beyond what we have included in our study, which will likely make these markets less concentrated than our calculations indicate.

<sup>2</sup> The NYCA generation database does not attribute fractional ownership; therefore 100% of the generating capacity of a unit will be allocated to the company that operates the facility. Additionally, the generating capacity for some companies includes Qualifying Facilities and other non-utility generation. Both factors will tend to make ownership appear more concentrated than it actually is.

<sup>3</sup> New York State Reliability Council, *New York Control Area Installed Capacity Requirements for the Period May 2001 through April 2002*. pp. 13. All modifications were adopted except for the increase in In-City capacity, where individual unit-by-unit information is not given. "Special Case Resources" were also not incorporated into this study.

Information about transmission interfaces was obtained from various documents available on the NYISO website. These include the NYISO *Operating Study* reports for Summer 2001 and Summer 2000, as well as the 'Gold Book' from Summer 2000 *The Load and Capacity*. Additionally, the manuals for ancillary services and ICAP were referred to in the course of this analysis.

Finally, two independent sources of market analysis were used for data that was either not available, or as broad check on assumptions made in this analysis. The first such document is the analysis of ancillary services prepared by J. Stephen Henderson and filed before the Federal Energy Regulatory Commission in August 1997.<sup>4</sup> The second document is the analysis of David Patton, New York Market Advisor, which offers an evaluation of the NYISO's markets during 2000.<sup>5</sup>

## Energy markets

The study considers three specific energy market definitions: all of New York ('Entire NYCA'), East of the Total-East interface including New York City and Long Island ('All East'), and East of Total-East interface excluding New York City and Long Island ('Hudson Valley').<sup>6</sup>

Exhibit 2 presents the market shares for each generator under the 'Entire NYCA' market definition. The largest participant is the New York Power Authority, with a 13% market share. Mirant's market share is 4%, making it the 9th-largest owner of capacity. The HHI for the 'Entire NYCA' energy market is 649 based on summer capacity ratings. The Bowline expansion would increase Mirant's market share to 6%, making it the 5th largest owner of capacity. The HHI for the 'Entire NYCA' energy market after the Bowline expansion would be 643. As such, Mirant's Bowline 3 expansion will decrease the HHI for the 'Entire NYCA' energy market. While Mirant will increase its market share through the expansion, this is more than offset in the HHI analysis by the dilution of market share of larger participants.

Exhibit 3 presents the market shares for each generator under the 'All East' market definition. The largest participant is the Long Island Power Authority, with a 15% market share. Mirant's market share is 6%, making it the 6th-largest owner of capacity. The HHI for the 'All East' energy market is 1010. The Bowline expansion would increase Mirant's market share to 8%, making it the 4th-largest owner of capacity. The HHI for the 'All East' energy market after the Bowline expansion would be 996. Thus, Mirant's Bowline expansion will decrease the HHI for the 'All East' energy market. Again, the increase in Mirant's market share is more than offset in the HHI calculation by the dilution of market share of larger participants.

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<sup>4</sup> The affidavit is FERC Document 1777430, and was filed under dockets ER97-1523-000 and OA97-470-000.

<sup>5</sup> Patton, David B. *New York Market Advisor Annual Report on The New York Electric Markets for Calendar Year 2000*. April 2001.

<sup>6</sup> The term 'Hudson Valley' as used in this study is not the same as used to denote a specific load-serving region by the New York ISO. To be clear, 'Hudson Valley', as used in this study, refers to the four following NYISO regions: Dunwoodie, Millwood, Hudson Valley, and Capital.

Exhibit 4 presents the market shares for each generator under the 'Hudson Valley' market definition - by far the most restrictive of the three market definitions. The largest participant is Mirant, with a 9% market share, though imports across the Total-East interface and from New York City represent 26% and 20% of total capacity in this region, respectively. The HHI for the 'Hudson Valley' energy market is 1531. The Bowline expansion would increase Mirant's market share to 12%. The HHI for the 'Hudson Valley' energy market after the Bowline expansion would be 1498. Thus, Mirant's Bowline expansion will decrease the HHI for the 'Hudson Valley' energy market. Despite being the largest owner of capacity in the 'Hudson Valley' market, the significant participation of imports from other NYCA areas serves to limit Mirant's overall share of this market.

For each HHI calculation, the study assumes that the entire transmission import capacity into the evaluated market from each exporting source is controlled by a single entity. All imports from NEPOOL, for example, are assumed to be controlled by a single firm. In practice, a single entity could not control the entire transmission capacity, and multiple producers would participate in such transactions. The study, therefore, overestimates the concentration of resources external to New York, and consequently overestimates the HHI values in this analysis, yielding a conservative estimate of these values.

## ICAP markets

The market definition for the Installed Capacity market differs from the three energy markets previously discussed. ICAP is specified for Long Island, New York City, and 'Rest of State'. ICAP also differs from the energy markets in that the ability of resources outside of the New York Control Area to provide ICAP is subject to specific standards. Therefore, the study calculates HHI values before and after the proposed Bowline 3 expansion for the 'Rest of State' market, which excludes New York City and Long Island.

The amount of ICAP that can be provided by resources outside of NYCA is presented in the NYISO *Installed Capacity Manual*.<sup>7</sup> Once again, the study assumes that a single firm for each source market will control all ICAP resources outside of New York. As previously discussed, this assumption substantially overestimates the market shares of these imported resources, and consequently overstates the HHI values for this market. The HHI analysis conducted for ICAP is thus inherently conservative.

Exhibit 5 presents the market shares for participants in the 'Rest of State' market, according to summer capacity ratings. The largest participant is NYPA, with a market share of 16%. Mirant's market share is 7%, making it the 5<sup>th</sup> largest participant in the 'Rest of State' market. The HHI for the 'Rest of State' ICAP market is 772. The Bowline 3 expansion will increase Mirant's market share to 9%, making it the 3<sup>rd</sup> largest participant. The HHI for the 'Rest of State' market after the Bowline expansion would be 774. The effect of the proposed Bowline expansion will

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<sup>7</sup> NYISO, *NYISO Installed Capacity Manual*. Revised February 2001, page B-1.

therefore result in a minimal increase in the HHI for the 'Rest of State' ICAP market. The resulting HHI, however, remains well within the accepted 'unconcentrated' range.

## Ancillary services markets

The study analyzes the market for two ancillary services: regulation and 10-minute spinning reserve. The other market-based ancillary services -- 10-minute non-synchronous reserve and 30-minute operating reserve -- are both lower quality services than 10-minute spinning reserve, meaning that plants able to provide a higher-quality service can also provide a lower quality service. A direct concentration analysis, as requested in the Hearing Examiner's Ruling, is not possible for these lower-quality reserves due to the downward substitution potential from providers of higher-quality reserves. Therefore, the study analyzes the highest-quality operating reserve (10-minute spinning reserve), as this is the market with the most restrictive technical requirements.

The analysis of the ancillary services markets required additional information regarding the technical capabilities of the generating units. This information is not publicly available. As such, the study made assumptions about these characteristics based on the type of unit.

### 10-minute spinning reserves (10SR)

Thermal units are assumed to be able to provide 10-minute spinning reserves for 10% of their rated capacity. This is the maximum change in output that could be achieved by a plant within 10 minutes, assuming a typical ramp rate of 1% of capacity per minute. This ramping rate is a generic assumption for thermal plants with a steam boiler; combustion turbines typically have a faster ramp rate, making the study's assumptions conservative.

Hydro units are assumed to provide 10-minute spinning reserves for 20% of their rated capacity. This, too, is a generic assumption, based on the fact that hydro turbines can generally be ramped very quickly, but its ability to do this may be constrained by the specific characteristics of the facility, the details of which are not available to us for this analysis. The exception to this generic rule was for facilities for which specific information was publicly available. This was the case for the Moses Niagara hydro plant, whose 10-minute spinning reserve had been set at 10% of capacity in the Henderson analysis.<sup>8</sup>

The market definition for ancillary services is not specified in the Hearing Examiner's ruling. Currently, ancillary service products are priced on a single-market basis for all of the NYCA. There are, however, requirements that a certain amount of reserves be procured in specific locations. For example, while the 10-minute spinning reserve requirement for NYCA is 600

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<sup>8</sup> Henderson, *op cit* Ref. 2. Henderson excluded combustion turbines in his analysis of the 10SR market because they *typically* do not do so, even though he states, "there are no engineering requirements that would prevent such units from providing such services if the price were right." Since we are interested in all resources available to discipline market behavior, we have included these turbines in our analysis.

MW, 300 MW of this requirement must be located East of the Total-East interface. The study, therefore, calculates market shares and HHI for two market definitions: all of NYCA exclusive of Long Island ('NYCA minus LI'), and East of Total-East excluding Long Island ('East minus LI'). This more stringent definition applies to the first 50% of 10-minute spinning reserves that must be procured East of the Total-East constraint, while the broader 'NYCA minus LI' definition is appropriate for the remaining 50% of spinning reserves to be procured.

Exhibit 6 presents the market shares of 10-minute spinning reserve in the 'NYCA minus LI' market. The largest participant is NYPA, with a market share of 32%. Mirant's market share is 5%, making it the 5<sup>th</sup> largest owner of 10-minute spinning reserve capacity. The HHI for the 'NYCA minus LI' 10-minute spinning reserve market is 1453. With the expansion of Bowline, Mirant's market share will increase to 8%, making it the 4<sup>th</sup> largest owner of spinning reserve capacity. The HHI for the 'NYCA minus LI' 10-minute spinning reserve market after the Bowline expansion would be 1418. As such, the Bowline 3 expansion will reduce the HHI for the 10-minute spinning reserve market for the region covering NYCA but excluding Long Island.

Exhibit 7 presents the market shares of 10-minute spinning reserve in the 'East minus LI' market (East of Total-East interface excluding Long Island). The largest participant is NYPA, with a market share of 32%. Mirant's market share is 9%, making it the 4<sup>th</sup> largest provider of 10-minute spinning reserve. The HHI for the 10-minute spinning reserve market in 'East minus LI' is 1593. The expansion of Bowline would increase Mirant's market share to 12%, making it the 2<sup>nd</sup> largest provider of 10-minute spinning reserve capacity. The HHI for the 10-minute spinning reserve market in 'East minus LI' after the Bowline expansion would be 1556. Accordingly, the Bowline 3 expansion will reduce the HHI for the 10-minute spinning reserve market in the 'East minus LI' market.

### Regulation

The technical requirements for providing regulation include a minimum ramp rate of 1% of capacity per minute, being able to receive and respond to a dispatch signal every six seconds, and certain other requirements relating to control of output. The amount of regulation a unit can provide is equal to the change in output that can be achieved within five minutes. For units with a 1%/minute ramp rate, the regulation amount they can offer - assuming other criteria are met - is therefore 5% of unit capacity.

The study has limited the thermal units that provide regulation only to steam plants; no combustion turbines are presumed to provide regulation. This is consistent with the survey information contained in the Henderson analysis. Only one hydro unit - Moses Niagara - is included, providing 5% of its capability as regulation. Finally, the Blenheim-Gilboa pump storage unit is presumed to have regulation capability equal to 5% of its total capacity. These assumptions are also consistent with those in the Henderson analysis. The total regulation capability in NYCA is estimated at 1,025 MW; this is broadly consistent with the average regulation capability in the New York Market Advisor's April 2001 *Annual Report on the New*

*York Electric Markets.*<sup>9</sup> Finally, the regulation is procured on a NYCA-wide basis. Hence only one regional market definition was evaluated in this analysis.

Exhibit 8 presents the shares of regulation capability of market participants. The largest regulation capability is controlled by NYPA, representing 21% of total regulation capability. Mirant's share is 8%, making it the 6<sup>th</sup> largest owner of regulation capability in NYCA. The HHI for regulation capability is 1250. After the proposed Bowline expansion, Mirant's share of regulation capability would increase to 11%, making it the 4<sup>th</sup> largest owner in NYCA. The HHI for regulation capability after Bowline expansion would be 1231. Thus, the Bowline 3 expansion will reduce the HHI for regulation capability within NYCA.

## Conclusions

In all but one of the analyses conducted for the study, covering four products<sup>10</sup> and six different market definitions<sup>11</sup>, the HHI for each market falls as a result of Mirant's proposed Bowline 3. In the only instance where the HHI would rise, it will do so by a minimal amount (2 point) in a market where the overall value of HHI is now and would remain well below 1000.

Thus, in nearly every instance, the effect of Bowline 3 will reduce the market share of the larger participants in each market, reducing the relative concentration of resource ownership across the markets in which Mirant might participate.

1000.08027/data/client1/08027/hhi report (final)

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<sup>9</sup> Patton, David B. *New York Market Advisor Annual Report on The New York Electric Markets for Calendar Year 2000*. April 2001. pp. 84-87.

<sup>10</sup> Energy, ICAP, 10-minute spinning reserves and regulation.

<sup>11</sup> These include NYCA (energy, regulation), NYCA excluding Long Island (10SR), NYCA excluding Long Island and New York City (ICAP), East of Total-East including NYC and LI (energy), East of Total-East excluding LI (10SR), East of Total-East excluding NYC and LI (energy)

Exhibits

Exhibit 2. Energy - 'Entire NYCA'

Current				
Owner	Summer MW	%	Winter MW	%
1 NYPA	5,800	13%	5,843	13%
2 NRG	4,392	10%	4,591	10%
3 LIPA	4,233	10%	4,608	10%
4 Con. Ed.	2,553	6%	2,595	6%
5 NiMo	2,522	6%	2,725	6%
6 Orion Power	2,425	6%	2,821	6%
7 KeySpan	2,229	5%	2,368	5%
8 Entergy	1,790	4%	1,820	4%
9 Mirant	1,782	4%	1,807	4%
10 Dynegy	1,708	4%	1,683	4%
11 Sithe	1,354	3%	1,376	3%
12 AES Corp.	1,295	3%	1,304	3%
13 PG&E	1,080	2%	1,080	2%
14 Rochester G&E	886	2%	907	2%
15 NYSEG	727	2%	779	2%
16 Indeck	377	1%	391	1%
17 PSE&G	361	1%	381	1%
18 Selkirk	355	1%	366	1%
19 Central Hudson	343	1%	299	1%
20 Constellation	100	0%	103	0%
21 Sempra	89	0%	97	0%
22 Enron	66	0%	66	0%
23 TransCanada	64	0%	70	0%
24 NFR Power	63	0%	63	0%
25 LI Muni Elec.	59	0%	59	0%
26 Westchester RESCO	54	0%	54	0%
27 West NY Muni Elec	38	0%	38	0%
28 O&R	27	0%	30	0%
29 PP&L	22	0%	18	0%
30 PECO	20	0%	20	0%
HQ - NYISO	1,500	3%	1,500	3%
ISONE - NYISO	1,325	3%	1,325	3%
PJM - NYISO	2,250	5%	2,250	5%
OH - NYISO	1,375	3%	1,375	3%
Total	43,260	100%	44,811	100%
HHI		649		654

With Bowline 3				
Owner	Summer MW	%	Winter MW	%
NYPA	5,800	13%	5,843	13%
NRG	4,392	10%	4,591	10%
LIPA	4,233	10%	4,608	10%
Con. Ed.	2,553	6%	2,595	6%
Mirant	2,532	6%	2,557	6%
NiMo	2,522	6%	2,725	6%
Orion Power	2,425	6%	2,821	6%
KeySpan	2,229	5%	2,368	5%
Entergy	1,790	4%	1,820	4%
Dynegy	1,708	4%	1,683	4%
Sithe	1,354	3%	1,376	3%
AES Corp.	1,295	3%	1,304	3%
PG&E	1,080	2%	1,080	2%
Rochester G&E	886	2%	907	2%
NYSEG	727	2%	779	2%
Indeck	377	1%	391	1%
PSE&G	361	1%	381	1%
Selkirk	355	1%	366	1%
Central Hudson	343	1%	299	1%
Constellation	100	0%	103	0%
Sempra	89	0%	97	0%
Enron	66	0%	66	0%
TransCanada	64	0%	70	0%
NFR Power	63	0%	63	0%
LI Muni Elec.	59	0%	59	0%
Westchester RESCO	54	0%	54	0%
West NY Muni Elec	38	0%	38	0%
O&R	27	0%	30	0%
PP&L	22	0%	18	0%
PECO	20	0%	20	0%
HQ - NYISO	1,500	3%	1,500	3%
ISONE - NYISO	1,325	3%	1,325	3%
PJM - NYISO	2,250	5%	2,250	5%
OH - NYISO	1,375	3%	1,375	3%
Total	44,010	100%	45,561	100%
HHI		643		648

Exhibits

Exhibit 3. Energy - 'All East'

Current					
	Owner	Summer MW	%	Winter MW	%
1	LIPA	4,233	15%	4,608	15%
2	NYPA	2,596	9%	2,638	9%
3	Con. Ed.	2,549	9%	2,581	9%
4	KeySpan	2,229	8%	2,368	8%
5	Orion Power	2,020	7%	2,359	8%
6	Mirant	1,782	6%	1,807	6%
7	Dynegy	1,708	6%	1,683	6%
8	NRG	1,475	5%	1,581	5%
9	PG&E	1,080	4%	1,080	4%
10	Entergy	970	3%	990	3%
11	PSE&G	361	1%	381	1%
12	Selkirk	355	1%	366	1%
13	NiMo	216	1%	267	1%
14	Indeck	128	0%	128	0%
15	Central Hudson	105	0%	111	0%
16	NYSEG	79	0%	86	0%
17	Enron	66	0%	66	0%
18	TransCanada	64	0%	70	0%
19	LI Muni Elec.	59	0%	59	0%
20	Westchester RESCO	54	0%	54	0%
21	O&R	27	0%	30	0%
	ISONNE - EofTE	1,200	4%	1,200	4%
	Total East	5775	20%	5775	19%
	Total	29,128	100%	30,288	100%
	HHI		1010		1002

With Bowline 3					
	Owner	Summer MW	%	Winter MW	%
	LIPA	4,233	14%	4,608	15%
	NYPA	2,596	9%	2,638	9%
	Con. Ed.	2,549	9%	2,581	8%
	Mirant	2,532	8%	2,557	8%
	KeySpan	2,229	7%	2,368	8%
	Orion Power	2,020	7%	2,359	8%
	Dynegy	1,708	6%	1,683	5%
	NRG	1,475	5%	1,581	5%
	PG&E	1,080	4%	1,080	3%
	Entergy	970	3%	990	3%
	PSE&G	361	1%	381	1%
	Selkirk	355	1%	366	1%
	NiMo	216	1%	267	1%
	Indeck	128	0%	128	0%
	Central Hudson	105	0%	111	0%
	NYSEG	79	0%	86	0%
	Enron	66	0%	66	0%
	TransCanada	64	0%	70	0%
	LI Muni Elec.	59	0%	59	0%
	Westchester RESCO	54	0%	54	0%
	O&R	27	0%	30	0%
	ISONNE - EofTE	1,200	4%	1,200	4%
	Total East	5775	19%	5775	19%
	Total	29,878	100%	31,038	100%
	HHI		996		989

Exhibits

Exhibit 4. Energy - 'Hudson Valley'

Current					
	Owner	Summer MW	%	Winter MW	%
1	Mirant	1,782	9%	1,807	9%
2	Dynegy	1,708	9%	1,683	8%
3	PG&E	1,080	5%	1,080	5%
4	NYPA	1,066	5%	1,069	5%
5	Con. Ed.	988	5%	1,015	5%
6	Entergy	970	5%	990	5%
7	PSE&G	361	2%	381	2%
8	Selkirk	355	2%	366	2%
9	NiMo	216	1%	267	1%
10	Orion Power	178	1%	224	1%
11	Indeck	128	1%	128	1%
12	Central Hudson	105	1%	111	1%
13	NYSEG	79	0%	86	0%
14	TransCanada	64	0%	70	0%
15	Westchester RESCO	54	0%	54	0%
16	O&R	27	0%	30	0%
	Total East	5775	29%	5775	29%
	ISONE - Cap/MidHudson	1025	5%	1025	5%
	Dunwd South	3950	20%	3950	20%
	Total	19,909	100%	20,111	100%
	HHI		1531		1505

With Bowline 3					
	Owner	Summer MW	%	Winter MW	%
	Mirant	2,532	12%	2,557	12%
	Dynegy	1,708	8%	1,683	8%
	PG&E	1,080	5%	1,080	5%
	NYPA	1,066	5%	1,069	5%
	Con. Ed.	988	5%	1,015	5%
	Entergy	970	5%	990	5%
	PSE&G	361	2%	381	2%
	Selkirk	355	2%	366	2%
	NiMo	216	1%	267	1%
	Orion Power	178	1%	224	1%
	Indeck	128	1%	128	1%
	Central Hudson	105	1%	111	1%
	NYSEG	79	0%	86	0%
	TransCanada	64	0%	70	0%
	Westchester RESCO	54	0%	54	0%
	O&R	27	0%	30	0%
	Total East	5775	28%	5775	28%
	ISONE - Cap/MidHudson	1025	5%	1025	5%
	Dunwd South	3950	19%	3950	19%
	Total	20,659	100%	20,861	100%
	HHI		1498		1474

Exhibits

Exhibit 5. Installed capacity (ICAP) - 'Rest of State'

Current					With Bowline 3					
	Owner	Summer MW	Winter MW%			Owner	Summer MW	Winter MW%		
1	NYPA	4,270	16%	4,273	16%	NYPA	4,270	16%	4,273	15%
2	NRG	2,917	11%	3,010	11%	NRG	2,917	11%	3,010	11%
3	NiMo	2,522	10%	2,725	10%	<del>Mirant</del>	<del>2,532</del>	<del>9%</del>	<del>2,557</del>	<del>9%</del>
4	Entergy	1,790	7%	1,820	7%	NiMo	2,522	9%	2,725	10%
5	<del>Mirant</del>	<del>1,762</del>	<del>7%</del>	<del>1,807</del>	<del>7%</del>	Entergy	1,790	7%	1,820	7%
6	Dynegy	1,708	7%	1,683	6%	Dynegy	1,708	6%	1,683	6%
7	Sithe	1,354	5%	1,376	5%	Sithe	1,354	5%	1,376	5%
8	AES Corp.	1,295	5%	1,304	5%	AES Corp.	1,295	5%	1,304	5%
9	PG&E	1,080	4%	1,080	4%	PG&E	1,080	4%	1,080	4%
10	Con. Ed.	988	4%	1,015	4%	Con. Ed.	988	4%	1,015	4%
11	Rochester G&E	886	3%	907	3%	Rochester G&E	886	3%	907	3%
12	NYSEG	727	3%	779	3%	NYSEG	727	3%	779	3%
13	Orion Power	583	2%	687	3%	Orion Power	583	2%	687	2%
14	Indeck	377	1%	391	1%	Indeck	377	1%	391	1%
15	PSE&G	361	1%	381	1%	PSE&G	361	1%	381	1%
16	Selkirk	355	1%	366	1%	Selkirk	355	1%	366	1%
17	Central Hudson	343	1%	299	1%	Central Hudson	343	1%	299	1%
18	Constellation	100	0%	103	0%	Constellation	100	0%	103	0%
19	Sempra	89	0%	97	0%	Sempra	89	0%	97	0%
20	TransCanada	64	0%	70	0%	TransCanada	64	0%	70	0%
21	NFR Power	63	0%	63	0%	NFR Power	63	0%	63	0%
22	Westchester RESCO	54	0%	54	0%	Westchester RESCO	54	0%	54	0%
23	West NY Muni Elec	38	0%	38	0%	West NY Muni Elec	38	0%	38	0%
24	O&R	27	0%	30	0%	O&R	27	0%	30	0%
25	PP&L	22	0%	18	0%	PP&L	22	0%	18	0%
26	PECO	20	0%	20	0%	PECO	20	0%	20	0%
	ISO NE	0	0%	0	0%	ISO NE	0	0%	0	0%
	PJM	1,253	5%	1,253	5%	PJM	1,253	5%	1,253	5%
	Ontario - IMO	0	0%	0	0%	Ontario - IMO	0	0%	0	0%
	Hydro Quebec	1,200	5%	1,200	4%	Hydro Quebec	1,200	4%	1,200	4%
	Total	26,265	100%	26,848	100%	Total	27,015	100%	27,598	100%
	HHI		772		769	HHI		774		770

Exhibits

Exhibit 6. 10-minute spinning reserve - 'NYCA minus Long Island'

Current				With Bowline 3			
	Owner	10SR MW	%	Owner	10SR MW	%	
1	NYPA	1,057	32%	NYPA	1,057	31%	
2	NRG	439	13%	NRG	439	13%	
3	Orion Power	301	9%	Orion Power	301	9%	
4	KeySpan	223	7%	Mirant	258	8%	
5	Mirant	133	5%	KeySpan	223	7%	
6	Dynegy	171	5%	Dynegy	171	5%	
7	Con. Ed.	161	5%	Con. Ed.	161	5%	
8	Sithe	135	4%	Sithe	135	4%	
9	AES Corp.	130	4%	AES Corp.	130	4%	
10	PG&E	108	3%	PG&E	108	3%	
11	NiMo	99	3%	NiMo	99	3%	
12	NYSEG	82	2%	NYSEG	82	2%	
13	Rochester G&E	44	1%	Rochester G&E	44	1%	
14	Central Hudson	40	1%	Central Hudson	40	1%	
15	Indeck	38	1%	Indeck	38	1%	
16	PSE&G	36	1%	PSE&G	36	1%	
17	Selkirk	36	1%	Selkirk	36	1%	
18	Constellation	10	0%	Constellation	10	0%	
19	Sempra	9	0%	Sempra	9	0%	
20	TransCanada	6	0%	TransCanada	6	0%	
21	NFR Power	6	0%	NFR Power	6	0%	
22	Westchester RESCO	5	0%	Westchester RESCO	5	0%	
23	West NY Muni Elec	4	0%	West NY Muni Elec	4	0%	
24	O&R	3	0%	O&R	3	0%	
25	PP&L	2	0%	PP&L	2	0%	
26	PECO	2	0%	PECO	2	0%	
27	Entergy	0	0%	Entergy	0	0%	
	Total	3,329	100%	Total	3,404	100%	
	HHI		1453	HHI		1418	

Exhibits

Exhibit 7. 10-minute spinning reserve - 'East minus Long Island'

Current				With Bowline 3			
	Owner	10SR MW	%		Owner	10SR MW	%
1	NYPA	657	32%		NYPA	657	31%
2	KeySpan	223	11%		Mirant	258	12%
3	Orion Power	220	11%		KeySpan	223	11%
4	Mirant	183	9%		Orion Power	220	10%
5	Dynegy	171	8%		Dynegy	171	8%
6	Con. Ed.	161	8%		Con. Ed.	161	8%
7	NRG	148	7%		NRG	148	7%
8	PG&E	108	5%		PG&E	108	5%
9	PSE&G	36	2%		PSE&G	36	2%
10	Selkirk	36	2%		Selkirk	36	2%
11	NiMo	34	2%		NiMo	34	2%
12	Central Hudson	16	1%		Central Hudson	16	1%
13	Indeck	13	1%		Indeck	13	1%
14	NYSEG	10	0%		NYSEG	10	0%
15	TransCanada	6	0%		TransCanada	6	0%
16	Westchester RESCO	5	0%		Westchester RESCO	5	0%
17	O&R	3	0%		O&R	3	0%
18	Entergy	0	0%		Entergy	0	0%
	Total	2,028	100%		Total	2,103	100%
	HHI		1593		HHI		1556

Exhibits

Exhibit 8. Regulation - 'Entire NYCA'

Current				With Bowline 3			
	Owner	Reg MW	%	Owner	Reg MW	%	
1	NYPA	214	21%	NYPA	214	20%	
2	NRG	188	18%	NRG	188	18%	
3	LIPA	139	14%	LIPA	139	13%	
4	KeySpan	86	8%	Mirant	121	11%	
5	Dynegy	85	8%	KeySpan	86	8%	
6	Mirant	83	8%	Dynegy	85	8%	
7	AES Corp.	64	6%	AES Corp.	64	6%	
8	Orion Power	54	5%	Orion Power	54	5%	
9	Con. Ed.	38	4%	Con. Ed.	38	4%	
10	Sithe	20	2%	Sithe	20	2%	
11	PSE&G	18	2%	PSE&G	18	2%	
12	Rochester G&E	13	1%	Rochester G&E	13	1%	
13	NiMo	9	1%	NiMo	9	1%	
14	NYSEG	4	0%	NYSEG	4	0%	
15	Sempra	4	0%	Sempra	4	0%	
16	Central Hudson	3	0%	Central Hudson	3	0%	
17	Westchester RESCO	3	0%	Westchester RESCO	3	0%	
18	PECO	1	0%	PECO	1	0%	
19	Constellation	0	0%	Constellation	0	0%	
20	Enron	0	0%	Enron	0	0%	
21	Entergy	0	0%	Entergy	0	0%	
22	Indeck	0	0%	Indeck	0	0%	
23	LI Muni Elec.	0	0%	LI Muni Elec.	0	0%	
24	NFR Power	0	0%	NFR Power	0	0%	
25	O&R	0	0%	O&R	0	0%	
26	PG&E	0	0%	PG&E	0	0%	
27	PP&L	0	0%	PP&L	0	0%	
28	Selkirk	0	0%	Selkirk	0	0%	
29	TransCanada	0	0%	TransCanada	0	0%	
30	West NY Muni Elec	0	0%	West NY Muni Elec	0	0%	
	Total	1,025	100%	Total	1,063	100%	
	HHI		1250	HHI		1231	