

McCULLOUGH RESEARCH

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To: Richard Brodsky, Chairman, Committee on Corporations, Authorities and Commissions

CC: Kent Sopris

From: Robert McCullough

Subject: New York State Electricity Plants' Profitability Results

A combination of high fuel costs and non-economic bidding practices at the New York Independent System Operator (NY ISO) made 2008 a very profitable year for generators in New York.

The profits of the largest plants in New York were very high. On the most conservative basis, assuming no debt in the capital structure, the profits range from 19% to 99%. Alternatively, assuming a 50/50 capital structure, the profits range from 31% to 186%. The before-tax weighted average of 100% equity is 50%, and the same measure for 50% equity is 93%.

PRE-TAX RETURN ON EQUITY

| | 50/50 Capital Structure | 100% Equity |
|---------------------------------|-------------------------|-------------|
| AES Cayuga | 186% | 99% |
| AES Somerset LLC | 112% | 61% |
| Astoria Generating Station | 122% | 67% |
| Athens Generating Plant | 44% | 27% |
| Bethlehem Energy Center | 40% | 23% |
| C R Huntley Generating Station | 155% | 81% |
| Danskammer Generating Station | 85% | 46% |
| Dunkirk Generating Station | 154% | 81% |
| Indian Point 2 | 51% | 28% |
| Indian Point 3 | 114% | 60% |
| Nine Mile Point Nuclear Station | 102% | 54% |
| R. E. Ginna Nuclear Power Plant | 72% | 39% |
| Ravenswood | 31% | 19% |
| Weighted Average: | 93% | 50% |

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Since profitability is seldom estimated on a plant level in standard financial reports, many assumptions are made in the course of calculating these estimates. Revenues are taken from the Federal Energy Regulatory Commission's (FERC) Electric Quarterly Reports (EQR). When the EQRs omit data or do not identify the specific plant, revenues are allocated on the basis of output taken from either the Environmental Protection Agency (EPA) emissions reports or the Energy Information Administration (EIA) monthly generation data. The capital costs are taken from financial statements or press coverage. We have assumed a 20-year straight-line depreciation schedule for all plants. In several cases, we allocate the capital costs to the plants on the basis of capacity.

AES Cayuga

AES Cayuga is a 306 MW coal-fired electric generating facility located in Lansing, NY owned by AES Corporation.¹ AES purchased the plant, along with 6 others, from NGE Generation in 1999.² AES sells the generation from the plant through the NY ISO. The total expenditures of the plant in 2008 amounted to \$74 million and its revenues were \$185 million.^{3,4} The net earnings were \$111 million. These calculations imply a 99% return in 2008 at 100% equity.⁵

AES Somerset

AES Somerset is a 675 MW coal-fired electric generating facility located in Somerset, NY owned by AES Corporation.⁶ AES purchased the plant, along with 6 others, from NGE Generation in 1999.⁷ AES sells the generation from the plant through the NY ISO. The total expenditures of the plant in 2008 amounted to \$163 million and its revenues were \$316 mil-

¹ <http://www.aes.com/aes/index?page=generation&type=CS>

²

<http://www.thefreelibrary.com/AES+Completes+Acquisition+of+Six+Power+Plants+in+New+York+With+Total...-a054638215>

³ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; AES Corp. Form 10-K, dated February 26, 2009; AES Eastern Energy's EQRs for 2008:Q1-4.

⁴ AES Eastern Energy's EQRs for 2008:Q1-4; NY ISO's 2009 Load & Capacity Data Report ("The Gold Book").

⁵ <http://www.thefreelibrary.com/AES+Completes+Acquisition+of+Six+Power+Plants+in+New+York+With+Total...-a054638215>

⁶ <http://www.aesbuildsniagara.com>

⁷ <http://www.thefreelibrary.com/AES+Completes+Acquisition+of+Six+Power+Plants+in+New+York+With+Total...-a054638215>

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lion.^{8,9} The net earnings were \$152 million. The capital cost of the plant is \$248 million, implying a 61% return in 2008.¹⁰

Astoria Generating Station

Astoria Generating Station is a 1,280 MW fuel oil and natural gas plant located in Astoria, Queens, bounded by the East River and Luyster Creek.¹¹ It is owned by U. S. Power Generating Company, which sells the output through the NY ISO. The total expenditures of the plant in 2008 amounted to \$226 million and its revenues were \$581 million.^{12,13} The net earnings were \$355 million. The capital cost of the plant is \$531 million, implying a 67% return in 2008.

Athens Generating Plant

Athens Generating Plant is a 1,080 MW gas-fired combined-cycle electric generating facility located in the town of Athens, Greene County.¹⁴ It is owned by Mach Gen, a consortium of investors.¹⁵ The actual financial structure is poorly documented. Merrill Lynch, one of the owners, purchases the output from the plant and then resells it through the NY ISO at a significantly higher price.¹⁶ Because division of the profits between the owners is not the subject of this report, our calculations used the revenues from Merrill Lynch at Athens. The expenditures of the plant in 2008 amounted to \$344 million and its revenues were \$484 million.^{17,18} The net earnings for 2008 of the Athens plant are estimated to be \$139 million. The capital cost of the plant is \$525 million, implying a 27% return for 2008.¹⁹

⁸ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; AES Corp. Form 10-K, dated February 26, 2009; AES Eastern Energy's EQRs for 2008:Q1-4.

⁹ AES Eastern Energy's EQRs for 2008:Q1-4.

¹⁰ <http://www.thefreelibrary.com/AES+Completes+Acquisition+of+Six+Power+Plants+in+New+York+With+Total...-a054638215>

¹¹ <http://www.uspowergen.com/portfolio/astoria-generating/astoria>

¹² 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Astoria Generating Company's EQRs for 2008:Q1-4.

¹³ Astoria Generating Company's EQRs for 2008:Q1-4.

¹⁴ <http://www.athensgen.com>

¹⁵ *Athens Generating Co., L.P.*, 103 FERC ¶ 61,290 (2003); *Athens Generating Co., L.P.*, 104 FERC ¶ 62,067 (2003).

¹⁶ New Athens Generation's and Merrill Lynch's EQRs for 2008:Q1-4.

¹⁷ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Merrill Lynch's EQRs for 2008:Q1-4.

¹⁸ Merrill Lynch's EQRs for 2008:Q1-4.

¹⁹ <http://www.bizjournals.com/albany/stories/2003/09/22/story2.html>

Bethlehem Energy Center

Bethlehem Energy Center is a 747 MW gas-fired combined-cycle plant located in Bethlehem, NY, and owned by the Public Service Electric and Gas Company (PSEG) Power.²⁰ The expenditures of the plant in 2008 amounted to \$190 million and its revenues were \$268 million.^{21,22} The net earnings are estimated to be \$78 million. The capital cost of the plant is \$338 million, implying a 23% return in 2008.²³

C. R. Huntley Generating Station

C. R. Huntley Generating Station is a 552 MW coal-fired electric generating facility located in Tonawanda, NY, and owned by NRG Power Marketing.²⁴ NRG purchased Huntley and Dunkirk from Niagara Mohawk Power Corporation in June 1999.²⁵ NRG sells generation from the plant through the NY ISO. The expenditures of the plant in 2008 amounted to \$79 million and its revenues were \$149 million.^{26,27} The net earnings were \$70 million. The capital cost of the plant is \$86 million, implying an 81% return in 2008.²⁸

Danskammer Generating Station

Danskammer Generating Station is a 493 MW, 6-unit, coal-fired electric generating facility located in Newburgh, NY, and owned by Dynegy Holdings.²⁹ In 2008, most of Danskammer's energy and capacity was sold by Dynegy Power Marketing, a subsidiary of Dynegy Holdings, through the NY ISO. The plant's remaining capacity was traded in the NY ISO capacity market directly.³⁰ For the energy generated by the plant and sold by Dynegy Power Marketing through the NY ISO, we estimate the revenue by using the plant's gross loads filed at the Environmental Protection Agency (EPA) and the actual prices that the energy was sold at by Dynegy Power Marketing. For all other revenue sources including capacity sales, we use the plant's own electric quarterly reports for 2008. We estimate the plant's total

²⁰ <http://www.pseg.com/companies/fossil/plants/albany.jsp>

²¹ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; PSE&G's Form 10-K, dated February 26, 2009; PSEG Energy Resources and Trade's EQRs for 2008:Q1-4.

²² PSEG Energy Resources and Trade's EQRs for 2008:Q1-4.

²³ PSE&G Form 10-K, dated February 26, 2009.

²⁴ <http://www.nrgenergy.com/locations/showallrgns.asp?Rgn=na>

²⁵ http://www.nrgenergy.com/locations/detail_print.asp?PID=299&Rgn=na

²⁶ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; NRG Energy's Form 10-K, dated February 12, 2009; NRG Energy (Huntley)'s EQRs for 2008:Q1-4.

²⁷ NRG Energy (Huntley)'s EQRs for 2008:Q1-4.

²⁸ <http://www.secinfo.com/d267i.617.b.htm>

²⁹ http://www.dynegy.com/downloads/Annual_Reports/Dynegy08AR.pdf

³⁰ Dynegy Danskammer's EQRs for 2008:Q1-4.

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revenue to be \$183 million in 2008.³¹ With total expenditures at \$93 million, the net 2008 earnings of Danskammer Generating Station are estimated to be \$90 million.³² The plant's capital cost is \$194 million, implying a 46% return in 2008.³³

Dunkirk Generating Station

Dunkirk Generating Station is a 4-unit, 600 MW coal-fired electric generating facility located in Dunkirk, NY owned by NRG Power Marketing.³⁴ NRG acquired both Dunkirk and Huntley from Niagara Mohawk Power in 1999. NRG holds a transition power purchase agreement (PPA) with Niagara Mohawk Power for Dunkirk's output for six months out of the year. Generation for the remaining six months is sold on the grid through the NY ISO, New England Independent System Operator (ISO-NE), Pennsylvania-New Jersey-Maryland Power Pool (PJM) participants, and to Ohio and Canada.³⁵ The expenditures of the plant in 2008 amounted to \$122 million and its revenues were \$210 million.^{36,37} The net earnings were \$88 million. The capital cost of the plant is \$109 million, implying an 81% return in 2008.³⁸

Indian Point 2

Indian Point 2 is a 1,028 MW pressurized water nuclear reactor located in Buchanan, NY owned by Entergy Nuclear.³⁹ Indian Point 2 sells its output through the NY ISO at market rates. The expenditures of the plant in 2008 amounted to \$198 million and its revenues were \$448 million.^{40,41} The net earnings were \$250 million. The capital cost of the plant is \$881 million, implying a 28% return in 2008.⁴²

³¹ Dynegy Power Marketing's EQRs for 2008:Q1-4; Dynegy Danskammer's EQRs for 2008:Q1-4; Environmental Protection Agency's (EPA) 2008 Emissions Data for Danskammer Generating Station; 2008 December EIA-923 Monthly Time Series File.

³² 2008 December EIA-923 Monthly Time Series File; Environmental Protection Agency's (EPA) 2008 Emissions Data for Danskammer Generating Station; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Dynegy Holdings' Form 10-K, dated February 26, 2009; Dynegy Power Marketing's EQRs for 2008:Q1-4; Dynegy Danskammer's EQRs for 2008:Q1-4.

³³ Dynegy Danskammer Form 10-K, dated March 26, 2002.

³⁴ http://investor.nrgenergy.com/phoenix.zhtml?c=121544&p=irol-newsArticle_Print&ID=1190477&highlight=

³⁵ <http://www.nrgenergy.com/locations/locations.asp>

³⁶ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; NRG Energy's Form 10-K, dated February 12, 2009; NRG Energy (Dunkirk)'s EQRs for 2008:Q1-4.

³⁷ NRG Energy (Dunkirk)'s EQRs for 2008:Q1-4.

³⁸ <http://www.secinfo.com/d267j.617.b.htm>

³⁹ http://www.entergy.com/content/investor_relations/pdfs/2007_final_IG.pdf, page 52.

⁴⁰ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Entergy Arkansas's Form 10-K, dated March 2, 2009; Entergy Nuclear Power Marketing's EQR's for 2008:Q1-4.

Indian Point 3

Indian Point 3 is a 1,041 MW pressurized water nuclear reactor located in Buchanan, NY owned by Entergy Nuclear.⁴³ Indian Point 3 has a value-sharing agreement with the New York Power Authority (NYPA) in which Entergy Nuclear agrees to make payments based on the generation of the plant through 2014. Entergy will pay \$6.59 per MWh for power sold from Indian Point 3, up to an annual cap of \$48 million.⁴⁴ The expenditures of the plant in 2008 amounted to \$240 million and its revenues were \$496 million.^{45,46} The net earnings were \$256 million. The capital cost of the plant is \$428 million, implying a 60% return in 2008.⁴⁷

Nine Mile Point Nuclear Station

The Nine Mile Point Nuclear Station is a 1,768 MW 2-unit nuclear reactor located in Scriba, NY owned by Constellation Energy and purchased in 2001 from Niagara Mohawk Power Corporation and others.⁴⁸ The Long Island Power Authority (LIPA) owns 18% of Unit 2.⁴⁹ The expenditures of the plant in 2008 assuming 100% equity amounted to \$261 million and its revenues were \$499 million.^{50,51} The net earnings were \$238 million. The capital cost of the plant is \$439 million, implying a 54% return in 2008.⁵²

Ravenswood Generating Station

Ravenswood Generating Station is a 2,480 MW gas- and oil-fired power plant consisting of multiple units (steam turbine, combined-cycle and combustion turbine technology) located in Long Island City, Queens.⁵³ A \$2.8 billion purchase transferred ownership of the plant on August 26, 2008 from National Grid to TransCanada, the current owner and operator.⁵⁴

⁴¹ Entergy Nuclear Power Marketing's EQR's for 2008:Q1-4.

⁴² http://www.entergy.com/content/investor_relations/pdfs/2007_final_IG.pdf, page 52.

⁴³ http://www.entergy.com/content/investor_relations/pdfs/2007_final_IG.pdf, page 52.

⁴⁴ Entergy Arkansas Form 10-K, March 02, 2009, page 48

⁴⁵ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Entergy Arkansas's Form 10-K, dated March 2, 2009; Entergy Nuclear Power Marketing's EQR's for 2008:Q1-4; New York Power Administration's Approved Budget and Financial Plan for 2009-2012.

⁴⁶ Entergy Nuclear Power Marketing's EQR's for 2008:Q1-4.

⁴⁷ http://www.entergy.com/content/investor_relations/pdfs/2007_final_IG.pdf, page 52.

⁴⁸ <http://www.constellation.com/portal/site/constellation/menuitem.487e3f1fe004e1908d84ff10025166a0>

⁴⁹ <http://www.constellation.com/portal/site/constellation/menuitem.487e3f1fe004e1908d84ff10025166a0>

⁵⁰ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Nine Mile Point Nuclear Station's EQRs for 2008:Q1-4.

⁵¹ Nine Mile Point Nuclear Station's EQRs for 2008:Q1-4.

⁵² http://www.accessmylibrary.com/coms2/summary_0286-10168213_ITM

⁵³ <http://www.transcanada.com/pdf/power/ravenswood.pdf>

⁵⁴ http://www.transcanada.com/news/2008_news/20080331.html

TransCanada had acquired the plant on August 24, 2007, as a result of merging with KeySpan Energy, Ravenswood's previous owner.⁵⁵ In 2008, most of the plant was operated under a tolling contract with Amerada Hess Corporation, which used the plant for fuel conversion and then sold the output through the NY ISO. The plant's remaining capacity was traded in the NY ISO capacity market.⁵⁶ We used Hess Corporation's revenues from generation at Ravenswood as well as Ravenswood's own revenues from capacity sales in NY ISO. Ravenswood generated a total revenue of \$558 million in 2008 and its total expenditures were \$332 million.^{57,58} We estimate the net 2008 earnings of Ravenswood Generating Station to be \$226 million. With the plant's capital cost estimated at \$422 million, this implies a 19% return for the plant in 2008. Ravenswood's capital cost was estimated as a weighted average of the plant's transfer price in 2008 in the National Grid-TransCanada transaction and its transfer price in 1999 in the KeySpan-Consolidated Edison transaction.^{59,60}

Robert E. Ginna Nuclear Power Plant

Robert E. Ginna Nuclear Power Plant is a 581 MW nuclear reactor located on the southern shore of Lake Ontario in Ontario, NY, and owned by Constellation Energy Group.⁶¹ Ninety percent of the plant's capacity and output is sold to the former owner, Rochester Gas and Electric, at an average price of \$44.00 per MWH under a long-term unit-contingent power purchase agreement. The remaining output is sold through the NY ISO.⁶² In 2008, the total expenses for the plant amounted to \$104 million and the plant returned \$222 million in revenue.^{63,64} We estimate the net earnings for 2008 of the R. E. Ginna nuclear plant to be \$118 million. The plant's capital cost is \$300 million, implying a 39% return for 2008.⁶⁵

⁵⁵ Table ES4. Plants Sold and Transferred in 2007, 2008, and 2009 - EIA Electric Power Monthly, April 22, 2009.

⁵⁶ KeySpan-Ravenswood's Electric Quarterly Reports (EQR) for 2008:Q1-3; TC Ravenswood's EQR for 2008:Q4; and Amerada Hess Corporation's EQRs for 2008:Q1-4; Amerada Hess Corporation's EQRs for 2008:Q1-4; KeySpan-Ravenswood's EQRs for 2008:Q1-3; TC Ravenswood's EQR for 2008:Q4.

⁵⁷ Amerada Hess Corporation's EQRs for 2008:Q1-4; KeySpan-Ravenswood's EQRs for 2008:Q1-3; TC Ravenswood's EQR for 2008:Q4.

⁵⁸ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; TransCanada's 2008 Consolidated Financial Statements.

⁵⁹ http://www.transcanada.com/news/2008_news/20080331.html

⁶⁰ <http://www.coned.com/newsroom/news/pr19990618.asp>

⁶¹ <http://www.constellation.com/portal/site/constellation/menuitem.385c7a188817d1908d84ff10025166a0/>

⁶² Baltimore Gas & Electric Co, Form 10-K, February 27, 2009.

⁶³ 2008 December EIA-923 Monthly Time Series File; EIA's Electric Power Monthly 2008 Ed. - Costs of Fossil Fuels; Nuclear Energy Institute - U.S. Electricity Production Costs and Components; Baltimore Gas & Electric Company's Form 10-K, dated February 27, 2009.

⁶⁴ R. E. Ginna Nuclear Power Plant's EQRs for 2008:Q1-4.

⁶⁵ <http://www.nytimes.com/2003/11/26/business/rochester-utility-sells-nuclear-power-station.html?n=Top%2FNews%2FBusiness%2FCompanies%2FConstellation%20Energy%20Group>

East River and Northport

We did not generate profit estimates for East River and Northport. These plants have special circumstances that required substantial additional assumptions that would have substantially driven the results. East River is a jurisdictional resource that provides both steam and electricity. To complicate matters, it also reports sales in FERC's EQR. Northport has a number of methodological complexities. The plant's output and capacity are sold to LIPA under a complex series of contracts that cover a variety of units.⁶⁶ National Grid, the plant's current owner, acquired these contracts as a result of its merger with KeySpan Generation, the plant's previous owner, on August 24, 2007.⁶⁷ Determining the plant's profitability would require allocating the revenues under these contracts among a portfolio of units.

⁶⁶ KeySpan Corp. Form 8-K, dated February 7, 2006; KeySpan Corp. Form 8-K, dated July 25, 2007.

⁶⁷ Table ES4. Plants Sold and Transferred in 2007, 2008, and 2009 - EIA Electric Power Monthly, April 22, 2009.