

**COMPLÉMENT DE RÉPONSE D'HYDRO-QUÉBEC  
DISTRIBUTION À L'ENGAGEMENT NUMÉRO 5**



**Engagement 5 :**

E-5 (HQD) Fournir la profondeur du marché New York Zone A, ainsi que pour les marchés limitrophes . . . . . 168

**Complément de réponse à l'engagement 5 :**

Suite à l'audience du 7 février dernier, le Distributeur a commandé une étude externe afin d'évaluer l'impact sur le prix de l'énergie d'injecter 600 MW sur le marché de New York, au cours des mois de mars à décembre 2007.

Selon les résultats de l'étude, le prix de l'énergie à Massena diminuerait en moyenne d'un peu plus 3 \$US/MWh. En période de fine pointe, la baisse serait d'environ 21 \$US/MWh. Massena représente une bonne approximation du marché de la zone M du NYISO.

Le rapport de ESAI présentant les résultats de l'étude ainsi que le curriculum vitae de monsieur Paul Fleming, directeur à ESAI figurent en annexe. ESAI œuvre auprès de plusieurs entreprises d'importance du marché du nord-est américain.



**ANNEXE AU COMPLÉMENT DE RÉPONSE D'HYDRO-QUÉBEC  
DISTRIBUTION À L'ENGAGEMENT NUMÉRO 5**



# Energy Security Analysis, Inc.

Hydro-Quebec Distribution

February 12, 2007

22<sup>e</sup> etage  
 75, boul. Rene-Levesque Ouest  
 Montreal (Quebec) H2z 1A4

Attn: Mr. Gilles Cote'

Re: Impact of HQ Distribution Exports On New York Markets

Dear Gilles,

In response to your request, ESAI has conducted a study to assess the impacts of a 600 MW injection to the New York market under varying load conditions. By applying the percent of load that these various load levels represent, we can determine the load weighted impact of a 600 MW injection over the course of one year.

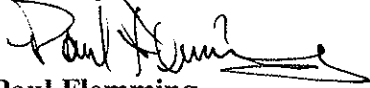
Table 1 shows that the impact of the exports will be to lower prices in the West zone by \$2.00 to \$13.74/MWh. The load weighted average reflects a decrease in prices of \$2.81/MWh. The price declines are greater in the Eastern zones as congestion is relieved slightly, in most cases, by the export injection.

<b>Table 1 - Impact of 600 MW Export On New York Market Areas</b>					
<b>LMP Deltas @</b>	<b>15,000 MW</b>	<b>20,000 MW</b>	<b>27,000 MW</b>	<b>30,000 MW</b>	<b>Load Wtd Avg</b>
<u>Load %</u>	<u>43.2%</u>	<u>41.0%</u>	<u>14.4%</u>	<u>1.4%</u>	<u>100%</u>
West	-3.00	-2.12	-3.11	-13.74	-2.81
Genesee	-3.16	-2.27	-3.38	-17.05	-3.02
Central	-3.29	-2.38	-3.52	-18.91	-3.17
North	-3.36	-2.47	-3.66	-21.61	-3.29
Massena Bus	-3.36	-2.46	-3.64	-21.58	-3.29
Mohawk Valley	-3.41	-2.52	-3.69	-20.29	-3.32
Captial	-3.64	-2.7	-3.92	-22.63	-3.56
Hudson Valley	-3.71	-2.79	-2.79	-3.49	-3.20
Millwood	-3.72	-2.83	-2.35	2.87	-3.07
Dunwoodie	-3.75	-2.9	-2.31	3.21	-3.10
NYC	-1.80	-0.32	-2.35	2.93	-1.21
Long Island	0.00	0.00	0.00	0.00	0.00

The price declines at the Massena bus (proxy for Zone M) appear to be consistent with price declines in the North and Mohawk Valley zones. There is no apparent depression of the Massena bus relative to adjacent zones.

Please advise if you need any further clarification with regard to these issues. We would be happy to provide further information if required.

Best Regards,

A handwritten signature in black ink, appearing to read "Paul Flemming", with a long horizontal flourish extending to the right.

**Paul Flemming**

**Director, Power and Gas**

**Energy Security Analysis, Inc.**

**Wakefield, Massachusetts**

# ENERGY SECURITY ANALYSIS, INC.

## Curriculum Vitae

### Paul Flemming, Director Power & Gas Services

Mr. Flemming manages ESAI's Power and Gas team and has been with ESAI since 1999 after over six years as Trading Manager with both Koch Industries and Caltex Petroleum. Mr. Flemming has been a part of ESAI's Power and Gas team for over six years and has expertise in the dynamics of Northeast Power Market analytics including Power Flow modeling and Locational Marginal Price analysis and has particular expertise in the developing capacity markets. He has been directly involved in numerous plant evaluation feasibility studies and performs regular analysis to determine the factors influencing the pricing dynamics of the deregulated Northeast power markets. Mr. Flemming also has direct responsibility for the firm's natural gas capability.

ESAI has provided specific plant economic analysis to a number of clients who have purchased assets in the Northeast markets. In addition, ESAI has acted as economic advisor to the Neptune merchant transmission project which will provide DC transmission from New Jersey to Long Island.

Mr. Flemming has 25 years global experience in the international energy arena in the areas of; power market analysis, generation and transmission project economic feasibility, trading and supply, strategic planning, project development and refinery operations. At ESAI, Mr. Flemming has also been responsible for Global oil refining analysis, Asia product market analysis, Risk Management Support Services, Project Management for consulting projects and he plays a lead role in expert witness work. Mr. Flemming is a registered CTA, Commodity Trade Advisor with the National Association of Securities Dealers (NASD).

ESAI Power Clients include:

NYISO	FERC	UBS	J.P. Morgan
CitiGroup	Keyspan	Emera	Brookfield Energy
Societe' Generale		UGI	Duke Energy

Mr. Flemming has recently spoken at the following conferences:

#### ***November 27, 2005***

Wisconsin Public Service End Users Conference  
Appleton, Wisconsin  
Sponsor – WPS  
Topic – “*Outlook for Natural Gas*”

***April 22, 2005***

Transmission Independence and Investment: Technology Conference  
Washington D.C  
Sponsor – FERC  
Topic – “*Barriers to Transmission Investment & Congestion Issues*”

***March 15, 2005***

Energy Contracts Conference  
Boston, MA  
Sponsor – Insight Information  
Topic – “*Hedging Outcomes For End Users*”

***October 21, 2004***

Weather Conference  
Houston, TX  
Sponsor – Weather Services International (WSI)  
Topic – “*2004/5 Winter Outlook For Natural Gas*”

Mr. Flemming has authored the following articles and has been a contributing author to two industry specific books.

- 1) Paul Flemming, “Generator Bid Strategies in Deregulated Markets: An Empirical Approach”, Vince Kaminski Editor, *Energy Modeling: Advances in the Management of Uncertainty*, Risk Books, 2005
- 2) Paul Flemming, “How Capacity Markets Work in Deregulated Power Pools”, *Combined Cycle Journal*, Spring 2004.
- 3) Paul Flemming, “Managing Congestion Costs in Deregulated Markets”, *Combined Cycle Journal*, Winter 2004.
- 4) Paul Flemming, Kristin Domanski “How Deregulated Energy Markets Impact Plant Revenue, Operation”, *Combined Cycle Journal*, Fall 2003.
- 5) Paul Flemming, “Designing an Effective Fuel Hedging Strategy”, Debbie Robinson Editor, *Air Finance Annual 2001/2*, Euromoney Publications.
- 6) Paul Flemming, “Fuel Expense Management”, Report for Distribution and LTL Carriers Association, September 2000.