

March 8, 2013

VIA HAND DELIVERY & ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

**RE: Docket 4397 - Review of Energy Efficiency and Advanced Gas Technology
Incentives For 12.5 MW Combined Heat and Power System
Supplemental Filing**

Dear Ms. Massaro:

Reference is made to the Petition that National Grid¹ filed with the Commission on March 5, 2013 to provide for a \$15,890,000 incentive package to Toray Plastics (America), Inc. The Company is enclosing the financial analysis showing the calculation of the \$1,800,00 AGT incentive payment, which is part of the total incentive package. The Company provided a copy of this analysis to the Division and TEC-RI as part of their review of the AGT incentive as required by the Integrated Resource Planning Compliance Settlement in Docket 2025. The Division has requested that the Company submit the enclosed financial analysis as a supplement to the March 5, 2013 filing package. The Company is hereby complying with that request.

Thank you for your attention to this filing. If you have any questions concerning this transmittal, please feel free to contact me at (401) 784-7288.

Very truly yours,



Jennifer Brooks Hutchinson

Enclosures

cc: Leo Wold, Esq.
Steve Scialabba, Division

¹ The Narragansett Electric Company d/b/a National Grid (hereinafter referred to as “National Grid” or the “Company”).

**National Grid
Rhode Island
Alternative Gas Technology Program
Financial Analysis**

Inputs for IRP Financial Analysis		
Date:	02/17/2013	
Customer Name:	Toray Plastics	
Address:	Belver Road	
Account # :		
Equipment Type	2 x NG (only) Reciprocating Engines 12.5 MWe (Gross).	
Equipment Life (years)	20	
Current gas load saved due to heat recovery (Th)		
MADQ - Current:	26,266 Th	
- Proposed:	40,743 Th	
	Gas Project	Alternate Project
Capital Cost	\$22,700,000	\$0
Operating Cost	-\$1,612,053	\$0

Results of Analysis	
Incremental Distribution Margin per Year	\$ 475,261
Net Present Value based on equipment life	\$ 4,274,289
Rebate based on 75% of NPV	\$ 2,774,813 = REBATE
Rebate based on 75% of Capital Cost Difference	\$ 16,775,518
Rebate resulting in 1.5 year Simple Payback	\$ 20,032,439

Rate Classification:
 Current: EXTRA LARGE HIGH LOAD FACTOR
 Proposed: EXTRA LARGE HIGH LOAD FACTOR

Month	Current Load (Th)	Proposed Load (Th)	Adjustment to current for Heat Recovery	Adjusted
Jan	814,239	1,263,044		448,805
Feb	713,326	1,128,997		415,671
Mar	771,750	1,258,293		486,543
Apr	635,224	1,112,689		477,465
May	631,286	1,211,862		580,576
Jun	637,478	1,226,560		589,082
Jul	625,631	1,268,664		643,033
Aug	625,898	1,243,527		617,629
Sep	594,280	1,179,193		584,913
Oct	596,348	1,109,531		513,183
Nov	620,901	1,110,803		489,902
Dec	704,221	1,206,836		502,615
TOTAL	7,970,582	14,319,999	0	6,349,417
		Net Incremental Load		6,349,417

Proposed MADQ			
Nov	1,110,803	30	37,027
Dec	1,206,836	31	38,930
Jan	1,263,044	31	40,743
Feb	1,128,997	28	40,321
Mar	1,258,293	31	40,590
Apr	1,112,689	30	37,090
			40,743

Current MADQ			
Nov	620,901	30	20,697
Dec	704,221	31	22,717
Jan	814,239	31	26,266
Feb	713,326	28	25,476
Mar	771,750	31	24,895
Apr	635,224	30	21,174
			26,266

AGT REBATE ANALYSIS

MARGIN CALCULATION

Firm Sales Service

Rates for Effect Dec 1, 2008		Customer Charge (Monthly)	Demand Rate (MADQ Th)	Distribution \$		Embedded Gas Cost	Head Margin (per Th)	Tail Margin (per Th)
				Head (Th)	Tail (Th)			
1	SMALL LOW LOAD FACTOR	\$ 22.00	\$ -	\$ 0.5431	\$ 0.2242	\$ -	\$ 0.5431	\$ 0.2242
2	SMALL HIGH LOAD FACTOR	\$ 22.00	\$ -	\$ 0.5431	\$ 0.2242	\$ -	\$ 0.5431	\$ 0.2242
3	MEDIUM LOW LOAD FACTOR	\$ 70.00	\$ 1.3000	\$ 0.1865	\$ -	\$ -	\$ 0.1865	
4	MEDIUM HIGH LOAD FACTOR	\$ 70.00	\$ 1.3000	\$ 0.1865	\$ -	\$ -	\$ 0.1865	
5	LARGE LOW LOAD FACTOR	\$ 175.00	\$ 1.3000	\$ 0.1727	\$ -	\$ -	\$ 0.1727	
6	LARGE HIGH LOAD FACTOR	\$ 175.00	\$ 1.8000	\$ 0.1007	\$ -	\$ -	\$ 0.1007	
7	EXTRA LARGE LOW LOAD FACTOR	\$ 425.00	\$ 1.3000	\$ 0.0328	\$ -	\$ -	\$ 0.0328	
8	EXTRA LARGE HIGH LOAD FACTOR	\$ 425.00	\$ 1.8000	\$ 0.0256	\$ -	\$ -	\$ 0.0256	

Calculation of Current Distribution Margin

MADQ-Current (Th)	26,266	Customer Charge	Demand	Distribution \$			TOTAL MARGIN
Month	Current (Th)			M, L, XL	Small Low	Small High	
Jan	814,239	\$ 425	\$ 47,278	\$ 20,845	-	-	\$ 68,548
Feb	713,326	\$ 425	\$ 47,278	\$ 18,261	-	-	\$ 65,965
Mar	771,750	\$ 425	\$ 47,278	\$ 19,757	-	-	\$ 67,460
Apr	635,224	\$ 425	\$ 47,278	\$ 16,262	-	-	\$ 63,965
May	631,286	\$ 425	\$ 47,278	\$ 16,161	-	-	\$ 63,864
Jun	637,478	\$ 425	\$ 47,278	\$ 16,319	-	-	\$ 64,023
Jul	625,631	\$ 425	\$ 47,278	\$ 16,016	-	-	\$ 63,720
Aug	625,898	\$ 425	\$ 47,278	\$ 16,023	-	-	\$ 63,726
Sep	594,280	\$ 425	\$ 47,278	\$ 15,214	-	-	\$ 62,917
Oct	596,348	\$ 425	\$ 47,278	\$ 15,267	-	-	\$ 62,970
Nov	620,901	\$ 425	\$ 47,278	\$ 15,895	-	-	\$ 63,598
Dec	704,221	\$ 425	\$ 47,278	\$ 18,028	-	-	\$ 65,731
TOTAL	7,970,582	\$ 5,100	\$ 567,341	\$ 204,047	\$ 0	\$ 0	\$ 776,488

Small C/I Breaks (Th)
 Peak 135
 Small Low Load 20
 Small High Load 65
 Off Peak 30

average distribution margin / Th \$ 0.097

Off Peak=May-Oct 3,710,921 Rate Classification 8 EXTRA LARGE HIGH LOAD FACTOR
 Off Peak / Total 47% Load Factor 1

Calculation of Proposed Distribution Margin

MADQ-Proposed (Th)	40,743	Customer Charge	Demand	Distribution \$			TOTAL MARGIN
Month	Proposed (Th)			M, L, XL	Small Low	Small High	
Jan	1,263,044	\$ 425	\$ 73,338	\$ 32,334	-	-	\$ 106,097
Feb	1,128,997	\$ 425	\$ 73,338	\$ 28,902	-	-	\$ 102,665
Mar	1,258,293	\$ 425	\$ 73,338	\$ 32,212	-	-	\$ 105,975
Apr	1,112,689	\$ 425	\$ 73,338	\$ 28,485	-	-	\$ 102,248
May	1,211,862	\$ 425	\$ 73,338	\$ 31,024	-	-	\$ 104,787
Jun	1,226,560	\$ 425	\$ 73,338	\$ 31,400	-	-	\$ 105,163
Jul	1,268,664	\$ 425	\$ 73,338	\$ 32,478	-	-	\$ 106,241
Aug	1,243,527	\$ 425	\$ 73,338	\$ 31,834	-	-	\$ 105,597
Sep	1,179,193	\$ 425	\$ 73,338	\$ 30,187	-	-	\$ 103,950
Oct	1,109,531	\$ 425	\$ 73,338	\$ 28,404	-	-	\$ 102,167
Nov	1,110,803	\$ 425	\$ 73,338	\$ 28,437	-	-	\$ 102,200
Dec	1,206,836	\$ 425	\$ 73,338	\$ 30,895	-	-	\$ 104,658
TOTAL	14,319,999	\$ 5,100	\$ 880,056	\$ 185,327	\$ 0	\$ 0	\$ 1,251,748

\$ 475,261

average distribution margin / Th \$ 0.087

Off Peak=May-Oct (Th) 7,239,337 Rate Classification 8 EXTRA LARGE HIGH LOAD FACTOR
 Off Peak / Total 51% Load Factor 1.00

Rate= 0.1005

Incremental Distribution Margin per year \$ 475,261
 Equipment Life (years) 20 No Deduct
 Net Present Value of Margin over Equipment Life: \$4,274,289 Year

1	\$ 475,261
2	\$ 475,261
3	\$ 475,261
4	\$ 475,261
5	\$ 475,261
6	\$ 475,261
7	\$ 475,261
8	\$ 475,261
9	\$ 475,261
10	\$ 475,261
11	\$ 475,261
12	\$ 475,261
13	\$ 475,261
14	\$ 475,261
15	\$ 475,261
16	\$ 475,261
17	\$ 475,261
18	\$ 475,261
19	\$ 475,261
20	\$ 475,261
NPV1-20	\$4,032,393
NPVremaining	\$4,032,393
75% of above	\$3,024,295
Less: Construction \$	\$249,482
	\$2,774,813

Calculation of Customer Bill

Total Customer Bill		Firm Sales Service				
<u>Rates Eff. May 1, 2005</u>		Customer Charge (Monthly)	Demand Rate (MADQ Ccf)	Distribution \$		GCR (Th)
				Head Block (Th)	Tail Block (Th)	
1	SMALL LOW LOAD FACTOR	\$ 22.00	\$ -	\$ 0.5431	\$ 0.2242	\$ 0.6725
2	SMALL HIGH LOAD FACTOR	\$ 22.00	\$ -	\$ 0.5431	\$ 0.2242	\$ 0.6725
3	MEDIUM LOW LOAD FACTOR	\$ 70.00	\$ 1.3000	\$ 0.1865	\$ -	\$ 0.6725
4	MEDIUM HIGH LOAD FACTOR	\$ 70.00	\$ 1.3000	\$ 0.1865	\$ -	\$ 0.6725
5	LARGE LOW LOAD FACTOR	\$ 175.00	\$ 1.3000	\$ 0.1727	\$ -	\$ 0.6725
6	LARGE HIGH LOAD FACTOR	\$ 175.00	\$ 1.8000	\$ 0.1007	\$ -	\$ 0.6240
7	EXTRA LARGE LOW LOAD FACTOR	\$ 425.00	\$ 1.3000	\$ 0.0328	\$ -	\$ 0.6725
8	EXTRA LARGE HIGH LOAD FACTOR	\$ 425.00	\$ 1.8000	\$ 0.0256	\$ -	\$ 0.6240

Calculation of Current Bill								
MADQ-Current (Th)	26,266	Customer Charge	Demand	Distribution \$		GCR	TOTAL BILL	
Month	Current (Th)			M, L, XL				
Jan	814,239	\$ 425	\$ 47,278	\$ 20,845	-	\$ 508,085	\$ 576,633	
Feb	713,326	\$ 425	\$ 47,278	\$ 18,261	-	\$ 445,115	\$ 511,080	
Mar	771,750	\$ 425	\$ 47,278	\$ 19,757	-	\$ 481,572	\$ 549,032	
Apr	635,224	\$ 425	\$ 47,278	\$ 16,262	-	\$ 396,380	\$ 460,345	
May	631,286	\$ 425	\$ 47,278	\$ 16,161	-	\$ 393,922	\$ 457,787	
Jun	637,478	\$ 425	\$ 47,278	\$ 16,319	-	\$ 397,786	\$ 461,809	
Jul	625,631	\$ 425	\$ 47,278	\$ 16,016	-	\$ 390,394	\$ 454,113	
Aug	625,898	\$ 425	\$ 47,278	\$ 16,023	-	\$ 390,560	\$ 454,287	
Sep	594,280	\$ 425	\$ 47,278	\$ 15,214	-	\$ 370,831	\$ 433,748	
Oct	596,348	\$ 425	\$ 47,278	\$ 15,267	-	\$ 372,121	\$ 435,091	
Nov	620,901	\$ 425	\$ 47,278	\$ 15,895	-	\$ 387,442	\$ 451,041	
Dec	704,221	\$ 425	\$ 47,278	\$ 18,028	-	\$ 439,434	\$ 505,165	
TOTAL	7,970,582	\$ 5,100	\$ 567,341	\$ 204,047	\$ 0	\$ 4,973,643	\$ 5,750,131	

average charge / Th \$ 0.721

Off Peak=May-Oct 3,710,921 Rate Classification 8 EXTRA LARGE HIGH LOAD FACTOR
 Off Peak / Total 47% Load Factor 1

Calculation of Proposed Bill								
MADQ-Proposed (Th)	40,743	Customer Charge	Demand	Distribution \$	Distribution Charges		GCR	TOTAL BILL
Month	Proposed (Th)			M, L, XL	Small Low	Small High		
Jan	1,263,044	\$ 425	\$ 73,338	\$ 32,334	-	-	\$ 788,139	\$ 894,236
Feb	1,128,997	\$ 425	\$ 73,338	\$ 28,902	-	-	\$ 704,494	\$ 807,159
Mar	1,258,293	\$ 425	\$ 73,338	\$ 32,212	-	-	\$ 785,175	\$ 891,150
Apr	1,112,689	\$ 425	\$ 73,338	\$ 28,485	-	-	\$ 694,318	\$ 796,566
May	1,211,862	\$ 425	\$ 73,338	\$ 31,024	-	-	\$ 756,202	\$ 860,989
Jun	1,226,560	\$ 425	\$ 73,338	\$ 31,400	-	-	\$ 765,373	\$ 870,536
Jul	1,268,664	\$ 425	\$ 73,338	\$ 32,478	-	-	\$ 791,646	\$ 897,887
Aug	1,243,527	\$ 425	\$ 73,338	\$ 31,834	-	-	\$ 775,961	\$ 881,558
Sep	1,179,193	\$ 425	\$ 73,338	\$ 30,187	-	-	\$ 735,816	\$ 839,767
Oct	1,109,531	\$ 425	\$ 73,338	\$ 28,404	-	-	\$ 692,347	\$ 794,514
Nov	1,110,803	\$ 425	\$ 73,338	\$ 28,437	-	-	\$ 693,141	\$ 795,341
Dec	1,206,836	\$ 425	\$ 73,338	\$ 30,895	-	-	\$ 753,066	\$ 857,724
TOTAL	14,319,999	\$ 5,100	\$ 880,056	\$ 366,592	\$ 0	\$ 0	\$ 8,935,679	\$ 10,187,428

average charge / Th \$ 0.711

Off Peak=May-Oct 7,239,337 Rate Classification 8 EXTRA LARGE HIGH LOAD FACTOR
 Off Peak / Total 51% Load Factor 1

AGT Rebate Calculations based on:

- 75% of the difference in Capital Cost and
- An amount resulting in a 1.5 year Simple Payback

75% of the difference between the Base and Alternate Energy Projects' capital costs

$$\begin{aligned} &= (\$22,700,000) - (\quad \$0) \times 75\% \\ &= \boxed{\$17,025,000} - \frac{\$249,482}{\text{Constr Cost}} = \mathbf{\$16,775,518} \end{aligned}$$

An amount resulting in a simple payback of 1.5 years

$$\begin{aligned} &= (\$22,700,000 - \quad \$0) / (\quad \$0 - \quad -\$1,612,053) \\ &= \$22,700,000 / \$1,612,053 \\ &= 14.0814229 \text{ years} = \text{Simple payback of Base Energy Project} \end{aligned}$$

Rebate Amount

$$\begin{aligned} &= (14.0814229 - 1.5) \times (\quad \$0 - \quad -\$1,612,053) \\ &= 12.5814229 \times \$1,612,053 \\ &= \boxed{\$20,281,921} - \frac{\$249,482}{\text{Constr Cost}} = \mathbf{\$20,032,439} \\ &= \end{aligned}$$

AGT FINANCIAL ANALYSIS

Miscellaneous notes on the AGT Financial Analysis for Applications Falling in the Small, Medium, Large or Extra Large Rate Classification

- 1 Model is set up for Customers in the Small, Medium, Large and Extra Large Rate classifications both on a current basis and with the added AGT Program load
- 2 Heat Recovery:
 - If the proposed application will have heat recovery which displaces existing gas heat, the displaced therms will be factored into the margin calculation.
 - The model distributes the displaced Ccf in the same relationship to when the proposed load uses gas since that is when the heat is generated
- 3 Bill Calculation
 - The bill calculation sheet can be used to get a gas energy cost for the customer.
- 4 Separate meter:
 - If the application is to be separately metered run model with no current load to get the right rate calculation for the new account and see Pricing for help with loss of existing margin due to heat recovery from new application.