

October 23, 2015

VIA HAND DELIVERY AND ELECTRONIC MAIL

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

RE: Docket 4371 - Long-Term Contracting for Renewable Energy Recovery Factor Responses to Commission Post-Hearing Data Requests - Set 8

Dear Ms. Massaro:

Enclosed is National Grid's¹ responses to the Rhode Island Public Utilities Commission's Eighth Set of Post-Hearing Data Requests concerning the above-referenced proceeding.

Thank you for your attention to this filing. Please feel free to contact me if you have any questions concerning this matter at (401) 784-7288.

Very truly yours,

Jennifer Brooks Hutchinson

Enclosures

cc: Docket 4371 Service List Steve Scialabba, Division Leo Wold, Esq.

¹ The Narragansett Electric Company d/b/a National Grid.

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

Paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.

Joanne M. Scanlon

October 23, 2015 Date

Docket No. 4371 - National Grid – Tariff Advice Filing to Amend Long-Term Contracting for Renewable Energy Recovery Factor effective 01/01/13

Service List updated 10/30/14

Name/Address	E-mail Distribution	Phone
Jennifer Brooks Hutchinson, Esq.	Jennifer.hutchinson@nationalgrid.com;	401-784-7288
National Grid		
280 Melrose St.	Celia.obrien@nationalgrid.com;	
Providence, RI 02907	Joanne.scanlon@nationalgrid.com;	
Jon Hagopian, Esq.	jon.hagopian@dpuc.ri.gov;	401-222-2424
Division of Public Utilities & Carriers		
89 Jefferson Blvd.	steve.scialabba@dpuc.ri.gov;	
Warwick, RI 02888		
Karen Lyons, Esq.	klyons@riag.ri.gov;	
Dept. of Attorney General	Lwold@riag.ri.gov;	
150 South Main St. Providence, RI 02903	dmacrae@riag.ri.gov;	
	jmunoz@riag.ri.gov;	
Richard Hahn	rhahn@lacapra.com;	
LaCapra Associates		
One Washington Mall, 9 th floor		
Boston, MA 02108		
File an original & 10 copies w/:	Luly.massaro@puc.ri.gov;	401-780-2017
Luly E. Massaro, Commission Clerk	Cynthia.WilsonFrias@puc.ri.gov;	
Public Utilities Commission	<u>Alan.nault@puc.ri.gov;</u>	
89 Jefferson Blvd.	Todd.Bianco@puc.ri.gov;	
Warwick, RI 02888	Amy.Dalessandro@puc.ri.gov;	
		1
Christopher Kearns, Program Service	Christopher.Kearns@energy.ri.gov;	
Officer	Nicholas.Ucci@energy.ri.gov;	
RI Office of Energy Resources	Danny.Musher@energy.ri.gov;	
Laurence Ehrhardt	replarry@gmail.com	

<u>PUC 8-1</u>

Request:

Please provide a projection of the above-market or below-market cost of the pricing for each project with which National Grid has entered an agreement to purchase power, the costs of which will be recovered through the LTCRER Tariff. Please use the most recent 2015 ESAI market price forecast for energy RECs and capacity in the same format as the Company's response to Commission Post Hearing Data Request issued October 2, 2014.

Response:

Please see Attachment PUC 8-1(a) and Attachment PUC 8-1(b).

Attachment PUC 8-1(a) contains a summary of the above-market cost for the long-term contracts and distributed generation standard contracts by year. Attachment PUC 8-1(b) contains a detailed listing of the above-market cost by unit.

Note that the Company used a market price forecast provided by ESAI in August 2014. The Company has not obtained a more recent market price forecast since then.

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(a) Page 1 of 1

	Long-term	DG Standard	
	Contracts	Contracts	Totals by Year
	Above Market	Above Market	
Year	Cost	Cost	Above Market Cost
2016	(\$1,142,570)	\$3,247,842	\$2,105,272
2017	\$833,759	\$4,870,166	\$5,703,924
2018	\$8,847,430	\$4,886,568	\$13,733,998
2019	\$5,114,479	\$4,424,557	\$9,539,035
2020	\$8,698,285	\$4,529,547	\$13,227,832
2021	\$8,910,029	\$4,521,075	\$13,431,104
2022	\$5,591,831	\$4,042,400	\$9,634,231
2023	\$3,546,575	\$3,674,230	\$7,220,805
2024	\$5,271,414	\$3,645,447	\$8,916,861
2025	\$9,272,292	\$3,827,809	\$13,100,101
2026	\$13,299,888	\$4,012,072	\$17,311,960
2027	\$14,661,020	\$3,933,166	\$18,594,186
2028	\$9,340,789	\$3,518,742	\$12,859,531
2029	\$9,602,930	\$1,774,960	\$11,377,890
2030	\$9,726,992	\$1,278,407	\$11,005,399
2031	\$10,375,472	\$651,729	\$11,027,200
2032	\$19,594,000	\$111,734	\$19,705,734
2033	\$23,271,097	\$0	\$23,271,097
2034	\$24,295,897	\$0	\$24,295,897
2035	\$25,307,283	\$0	\$25,307,283
2036	\$26,395,836	\$0	\$26,395,836
2037	\$27,477,508	\$0	\$27,477,508
Total	\$268,292,236	\$56,950,448	\$325,242,685
NPV (7%,			
2016)	\$102,442,143	\$36,000,678	\$138,442,821

Notes:

- RI LTC & RI DG Contracts as of September 2015; approximately 104% of the 90 MW minimum requirement

- Above market cost is calculated using market price forecasts for energy, capacity and RECs provided by ESAI in August 2014

- Capacity factors for the FCM, commercial operation dates, and annual output have been estimated for the given projects' technology and location

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 1 of 8

	Deepwater Wind 30 MW	Rhode Island Landfill Gas GenCo 32MW	Orbit Energy HSAD Biogas 3.2 MW (\$95)	Black Bear Hydro 3.958 MW	Champlain (Bowers) Wind 48 MW	RI DG - Plain Meeting House Solar 2 MW	RI DG - ACP 28 Jacome Way 500 kW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$0	\$181,375	(\$371,907)	(\$952,038)	\$0	\$362,729	\$115,823
2017	\$0	\$5,186,976	(\$293,509)	(\$334,754)	(\$3,724,955)	\$405,759	\$126,581
2018	\$12,783,965	\$2,798,345	(\$672,332)	(\$408,263)	(\$5,654,285)	\$394,688	\$123,813
2019	\$12,727,191	\$942,738	(\$889,589)	(\$619,026)	(\$7,046,835)	\$373,128	\$118,423
2020	\$13,834,696	\$2,862,494	(\$736,499)	(\$499,212)	(\$6,763,194)	\$378,028	\$119,648
2021	\$13,224,506	\$3,531,018	(\$709,385)	(\$423,838)	(\$6,712,272)	\$377,632	\$119,549
2022	\$13,170,486	\$2,122,371	(\$884,529)	(\$644,044)	(\$8,172,454)	\$355,296	\$113,965
2023	\$13,386,112	\$1,271,029	(\$1,006,709)	(\$798,596)	(\$9,305,260)	\$338,116	\$109,670
2024	\$14,315,295	\$1,985,758	(\$978,360)	(\$731,983)	(\$9,319,295)	\$336,772	\$109,334
2025	\$15,703,421	\$3,685,399	(\$855,828)	(\$543,025)	(\$8,717,675)	\$345,282	\$111,462
2026	\$17,132,493	\$5,417,390	(\$731,464)	(\$360,834)	(\$8,157,697)	\$353,880	\$113,611
2027	\$18,072,809	\$5,975,126	(\$722,239)	(\$323,304)	(\$8,341,372)	\$350,198	\$112,691
2028	\$18,899,163	\$260,215	(\$745,854)	(\$280,641)	(\$8,792,094)	\$200,054	\$64,679
2029	\$19,720,521	\$0	(\$778,589)	\$0	(\$9,339,002)	\$0	\$0
2030	\$20,475,102	\$0	(\$834,353)	\$0	(\$9,913,756)	\$0	\$0
2031	\$21,436,329	\$0	(\$644,929)	\$0	(\$10,415,929)	\$0	\$0
2032	\$22,333,087	\$0	\$0	\$0	(\$2,739,087)	\$0	\$0
2033	\$23,271,097	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$24,295,897	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$25,307,283	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$26,395,836	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$27,477,508	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$373,962,798	\$36,220,233	(\$11,856,074)	(\$6,919,559)	(\$123,115,162)	\$4,571,563	\$1,459,251
NPV (7%, 2016)	\$156,710,071	\$22,447,111	(\$6,733,725)	(\$4,597,513)	(\$65,383,800)	\$3,004,792	\$956,972

Notes:

- RI LTC & RI DG Contracts as of September 2015; approximately 104% of the 90 MW minimum requirement

- Above market cost is calculated using market price forecasts for energy, capacity and RECs provided by ESAI in August 2014

- Capacity factors for the FCM, commercial operation dates, and annual output have been estimated for the given projects' technology and location

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 2 of 8

	RI DG - North Kingstown Green Wind 1.5 MW	RI DG - Forbes Street Solar 3.7 MW	RI DG - West Davisville Solar 2.34 MW	RI DG - 100 Dupont 1.5 MW	RI DG - Altus Comtram Cable Plant 499 kW	RI DG - Cox Comm 181 kW	RI DG - 0 Martin 500 kW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$20,131	\$509,064	\$315,313	\$150,633	\$115,592	\$41,928	\$115,823
2017	\$75,456	\$588,885	\$365,658	\$182,906	\$126,328	\$45,822	\$126,581
2018	\$61,221	\$568,347	\$352,704	\$174,602	\$123,565	\$44,820	\$123,813
2019	\$33,502	\$528,355	\$327,480	\$158,433	\$118,186	\$42,869	\$118,423
2020	\$39,801	\$537,443	\$333,212	\$162,107	\$119,409	\$43,313	\$119,648
2021	\$39,293	\$536,710	\$332,750	\$161,811	\$119,310	\$43,277	\$119,549
2022	\$10,574	\$495,275	\$306,616	\$145,058	\$113,737	\$41,255	\$113,965
2023	(\$11,514)	\$463,406	\$286,515	\$132,173	\$109,451	\$39,701	\$109,670
2024	(\$13,241)	\$460,915	\$284,943	\$131,166	\$109,116	\$39,579	\$109,334
2025	(\$2,300)	\$476,700	\$294,900	\$137,548	\$111,239	\$40,349	\$111,462
2026	\$8,755	\$492,650	\$304,960	\$143,997	\$113,384	\$41,127	\$113,611
2027	\$4,021	\$485,820	\$300,652	\$141,235	\$112,465	\$40,794	\$112,691
2028	(\$883)	\$472,375	\$267,824	\$135,799	\$82,993	\$40,138	\$110,879
2029	\$0	\$0	\$0	\$32,393	\$0	\$6,564	\$27,201
2030	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$264,815	\$6,615,947	\$4,073,527	\$1,989,860	\$1,474,775	\$551,537	\$1,532,651
NPV (7%, 2016)	\$211,904	\$4,314,919	\$2,663,227	\$1,295,897	\$962,712	\$355,910	\$986,693

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 3 of 8

	RI DG - 225 Dupont	RI DG - 35 Martin 500	RI DG - Cox Comm 498	RI DG - Brickle	RI DG - Gannon & Scott	
	300 kW	kW	kW	Group 1.08 MW	406 kW	Solar 331 kW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$69,494	\$115,823	\$115,360	\$76,819	\$78,115	\$63,685
2017	\$75,949	\$126,581	\$126,075	\$100,141	\$86,850	\$70,807
2018	\$74,288	\$123,813	\$123,318	\$94,140	\$84,603	\$68,974
2019	\$71,054	\$118,423	\$117,950	\$82,455	\$80,226	\$65,406
2020	\$71,789	\$119,648	\$119,170	\$85,110	\$81,221	\$66,217
2021	\$71,730	\$119,549	\$119,071	\$84,896	\$81,141	\$66,152
2022	\$68,379	\$113,965	\$113,509	\$72,790	\$76,606	\$62,455
2023	\$65,802	\$109,670	\$109,231	\$63,478	\$73,119	\$59,612
2024	\$65,601	\$109,334	\$108,897	\$62,750	\$72,846	\$59,389
2025	\$66,877	\$111,462	\$111,016	\$67,362	\$74,574	\$60,798
2026	\$68,167	\$113,611	\$113,157	\$72,023	\$76,319	\$62,221
2027	\$67,614	\$112,691	\$112,240	\$70,027	\$75,572	\$61,611
2028	\$66,527	\$110,879	\$92,029	\$66,098	\$74,100	\$60,412
2029	\$16,320	\$27,201	\$0	\$56,465	\$24,138	\$54,118
2030	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
			A / JA / AAA			
Total	\$919,591	\$1,532,651	\$1,481,023	\$1,054,555	\$1,039,430	\$881,855
NPV (7%, 2016)	\$592,016	\$986,693	\$964,601	\$681,550	\$668,824	\$558,629

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 4 of 8

	RI DG - TEAM 182 kW	RI DG - CMS 128 kW	RI DG - Newport Vineyard 53 kW	RI DG - WED Coventry 1.5 MW	RI DG - Johnston Solar I 1.7 MW	RI DG - Randall Steere Farm 91 kW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$35,910	\$25,255	\$11,205	\$0	\$99,832	\$19,237
2017	\$39,826	\$28,009	\$12,345	\$80,789	\$136,407	\$21,195
2018	\$38,818	\$27,301	\$12,052	\$106,948	\$126,996	\$20,691
2019	\$36,856	\$25,921	\$11,480	\$79,229	\$108,671	\$19,710
2020	\$37,302	\$26,235	\$11,610	\$85,528	\$112,836	\$19,933
2021	\$37,266	\$26,209	\$11,600	\$85,020	\$112,499	\$19,915
2022	\$35,234	\$24,780	\$11,008	\$56,302	\$93,513	\$18,899
2023	\$33,670	\$23,680	\$10,553	\$34,213	\$78,910	\$18,117
2024	\$33,548	\$23,594	\$10,517	\$32,486	\$77,769	\$18,056
2025	\$34,322	\$24,139	\$10,742	\$43,427	\$85,002	\$18,443
2026	\$35,105	\$24,689	\$10,970	\$54,482	\$92,310	\$18,835
2027	\$34,770	\$24,453	\$10,873	\$49,748	\$89,181	\$18,667
2028	\$34,110	\$19,991	\$10,681	\$40,429	\$83,020	\$18,337
2029	\$30,575	\$0	\$9,589	\$29,753	\$75,962	\$4,490
2030	\$0	\$0	\$0	\$15,823	\$38,939	\$0
2031	\$0	\$0	\$0	\$6,799	\$0	\$0
2032	\$0	\$0	\$0	(\$1,833)	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$497,312	\$324,257	\$155,224	\$799,142	\$1,411,846	\$254,529
NPV (7%, 2016)	\$314,941	\$211,498	\$98,226	\$514,408	\$905,578	\$164,000

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 5 of 8

	RI DG - Bella 1600 Division Rd 1.3 MW	RI DG - Bella 574 Camp Ave 498 kW	RI DG - Nexamp 76 Stilson Rd 498 kW	RI DG - North Kingstown Solar 1720 Davisville Rd 500 kW	RI DG - SER Solar 23 Appian Way 52 kW	RI DG - Foster Solar - 23 Theodore Foster Drive 1.3 MW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$16,542	\$12,694	\$41,386	\$38,560	\$9,595	\$67,674
2017	\$61,011	\$23,408	\$52,101	\$49,318	\$10,714	\$165,451
2018	\$53,826	\$20,651	\$49,344	\$46,550	\$10,426	\$157,706
2019	\$39,834	\$15,283	\$43,976	\$41,160	\$9,865	\$142,623
2020	\$43,014	\$16,503	\$45,196	\$42,385	\$9,993	\$146,050
2021	\$42,757	\$16,404	\$45,097	\$42,286	\$9,982	\$145,774
2022	\$28,261	\$10,843	\$39,536	\$36,702	\$9,402	\$130,147
2023	\$17,111	\$6,565	\$35,258	\$32,407	\$8,955	\$118,127
2024	\$16,239	\$6,230	\$34,923	\$32,071	\$8,920	\$117,188
2025	\$21,762	\$8,349	\$37,042	\$34,199	\$9,141	\$123,141
2026	\$27,342	\$10,490	\$39,183	\$36,348	\$9,365	\$129,157
2027	\$24,952	\$9,573	\$38,266	\$35,428	\$9,269	\$126,581
2028	\$20,248	\$7,769	\$36,462	\$33,616	\$9,081	\$121,510
2029	\$14,859	\$5,701	\$34,394	\$31,540	\$8,865	\$115,700
2030	\$7,828	\$2,753	\$5,283	\$24,026	\$0	\$108,121
2031	\$1,636	\$0	\$0	\$0	\$0	\$51,605
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$437,223	\$173,217	\$577,447	\$556,594	\$133,571	\$1,966,554
NPV (7%, 2016)	\$291,315	\$117,396	\$369,246	\$351,344	\$84,474	\$1,192,233

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 6 of 8

	RI DG - 60 Valley Street Solar 110 kW	RI DG - Brookside Equestrian Center - 90 Tifft Rd 1.2 MW	RI DG - Glocester- Reichert - 212 Old Snake Hill Rd 895 kW	RI DG - North Kingstown Organic Energy 500 kW	RI DG - 200 Frenchtown Road Solar 1.25 MW	RI DG - Wilco 260 South County Trail 1.246 MW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$16,669	\$29,013	\$18,187	\$0	\$50,319	\$78,249
2017	\$19,036	\$61,623	\$41,081	\$106,635	\$126,270	\$186,216
2018	\$18,427	\$54,726	\$36,126	\$303,101	\$119,675	\$178,570
2019	\$17,241	\$41,294	\$26,479	\$270,377	\$106,833	\$163,680
2020	\$17,511	\$44,347	\$28,671	\$277,814	\$109,752	\$167,064
2021	\$17,489	\$44,100	\$28,494	\$277,213	\$109,516	\$166,791
2022	\$16,260	\$30,185	\$18,498	\$243,310	\$96,211	\$151,364
2023	\$15,315	\$19,481	\$10,810	\$217,233	\$85,978	\$139,499
2024	\$15,242	\$18,645	\$10,209	\$215,194	\$85,178	\$138,571
2025	\$15,710	\$23,946	\$14,017	\$228,110	\$90,247	\$144,448
2026	\$16,183	\$29,303	\$17,865	\$241,161	\$95,368	\$150,387
2027	\$15,980	\$27,009	\$16,217	\$235,573	\$93,175	\$147,844
2028	\$15,581	\$22,493	\$12,974	\$224,571	\$88,858	\$142,838
2029	\$15,125	\$17,320	\$9,258	\$211,967	\$83,912	\$137,103
2030	\$13,318	\$10,571	\$4,042	\$195,522	\$77,459	\$129,621
2031	\$0	\$1,033	\$194	\$184,869	\$36,639	\$62,387
2032	\$0	\$0	\$0	\$113,567	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$245,087	\$475,089	\$293,124	\$3,546,217	\$1,455,390	\$2,284,631
NPV (7%, 2016)	\$151,797	\$316,716	\$198,682	\$2,004,594	\$886,480	\$1,378,573

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 7 of 8

	RI DG - Windy Acres Solar Farm 1.242 MW	RI DG - Smart Technologies 22 Christiansen Way 1.043 MW	RI DG - 1000 Division Street Solar 500 kW	RI DG - 116 Singleton Street Solar 500 kW	RI DG - 555 Veazie Street Solar 499 kW	RI DG - 240 Bald Hill Rd Solar 270 kW
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$15,234	\$60,235	\$18,771	\$19,494	\$20,727	\$13,510
2017	\$58,922	\$143,224	\$48,015	\$49,865	\$52,576	\$32,739
2018	\$51,601	\$137,369	\$45,320	\$47,066	\$49,714	\$31,268
2019	\$37,344	\$125,969	\$40,073	\$41,617	\$44,141	\$28,402
2020	\$40,584	\$128,560	\$41,265	\$42,855	\$45,408	\$29,053
2021	\$40,322	\$128,351	\$41,169	\$42,755	\$45,305	\$29,001
2022	\$25,552	\$116,539	\$35,732	\$37,109	\$39,532	\$26,032
2023	\$14,191	\$107,455	\$31,551	\$32,766	\$35,091	\$23,749
2024	\$13,302	\$106,745	\$31,224	\$32,427	\$34,744	\$23,570
2025	\$18,930	\$111,244	\$33,295	\$34,578	\$36,944	\$24,701
2026	\$24,616	\$115,791	\$35,388	\$36,751	\$39,166	\$25,844
2027	\$22,181	\$113,844	\$34,492	\$35,820	\$38,214	\$25,355
2028	\$17,388	\$110,011	\$32,727	\$33,988	\$36,341	\$24,391
2029	\$11,897	\$105,621	\$30,706	\$31,889	\$34,194	\$23,288
2030	\$4,732	\$99,892	\$28,069	\$29,151	\$31,394	\$21,848
2031	\$45	\$48,090	\$13,181	\$13,688	\$14,790	\$10,457
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$396,839	\$1,758,940	\$540,978	\$561,819	\$598,281	\$393,208
NPV (7%, 2016)	\$268,250	\$1,061,209	\$330,680	\$343,420	\$365,138	\$238,013

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-1(b) Page 8 of 8

	RI DG - 380 Warwick Ave	RI DG - WED Coventry	RI DG - WED Coventry	
	Solar 173 kW	Three 1.5 MW	Four 1.5 MW	Totals by Year
Year	Above Market Cost	Above Market Cost	Above Market Cost	Above Market Cost
2016	\$25,080	\$119,065	\$119,065	\$2,105,272
2017	\$50,160	\$291,426	\$291,426	\$5,703,924
2018	\$50,160	\$277,713	\$277,713	\$13,733,998
2019	\$50,160	\$251,010	\$251,010	\$9,539,035
2020	\$50,160	\$257,078	\$257,078	\$13,227,832
2021	\$50,160	\$256,589	\$256,589	\$13,431,104
2022	\$50,160	\$228,923	\$228,923	\$9,634,231
2023	\$50,160	\$207,644	\$207,644	\$7,220,805
2024	\$50,160	\$205,980	\$205,980	\$8,916,861
2025	\$50,160	\$216,520	\$216,520	\$13,100,101
2026	\$50,160	\$227,170	\$227,170	\$17,311,960
2027	\$50,160	\$222,609	\$222,609	\$18,594,186
2028	\$50,160	\$213,632	\$213,632	\$12,859,531
2029	\$50,160	\$203,347	\$203,347	\$11,377,890
2030	\$50,160	\$189,928	\$189,928	\$11,005,399
2031	\$25,080	\$90,617	\$90,617	\$11,027,200
2032	\$0	\$0	\$0	\$19,705,734
2033	\$0	\$0	\$0	\$23,271,097
2034	\$0	\$0	\$0	\$24,295,897
2035	\$0	\$0	\$0	\$25,307,283
2036	\$0	\$0	\$0	\$26,395,836
2037	\$0	\$0	\$0	\$27,477,508
Total	\$752,400	\$3,459,250	\$3,459,250	\$325,242,685
NPV (7%, 2016)	\$441,909	\$2,097,610	\$2,097,610	\$138,442,821

<u>PUC 8-2</u>

Request:

For each project listed in the Company's response to PUC-8-1, please provide the total contract cost and the annual financial remuneration National Grid expects to receive for each contract for each year. Please include column totals on the spreadsheets in addition to the row totals already provided.

Response:

Please see Attachment PUC 8-2(a) and Attachment PUC 8-2(b).

Attachment PUC 8-2(a) contains a summary of the contract cost and annual financial remuneration for the long-term contracts and distributed generation standard contracts by year. Attachment PUC 8-2(b) contains a detailed listing of the contract cost and annual financial remuneration by unit.

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(a) Page 1 of 1

	Long-term Contracts		DG Standar	d Contracts	Totals by	Year
						Total
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Total Contract Cost	Remuneration
2016	\$35,724,504	\$982,424	\$7,878,918	\$216,670	\$43,603,422	\$1,199,094
2017	\$47,029,337	\$1,293,307	\$10,242,561	\$281,670	\$57,271,898	\$1,574,977
2018	\$75,825,884	\$2,085,212	\$10,883,370	\$299,293	\$86,709,254	\$2,384,504
2019	\$77,631,805	\$2,134,875	\$10,883,370	\$299,293	\$88,515,175	\$2,434,167
2020	\$79,491,003	\$2,186,003	\$10,883,370	\$299,293	\$90,374,373	\$2,485,295
2021	\$81,405,103	\$2,238,640	\$10,883,370	\$299,293	\$92,288,473	\$2,537,933
2022	\$83,375,780	\$2,292,834	\$10,883,370	\$299,293	\$94,259,149	\$2,592,127
2023	\$85,404,761	\$2,348,631	\$10,883,370	\$299,293	\$96,288,131	\$2,647,924
2024	\$87,493,831	\$2,406,080	\$10,883,370	\$299,293	\$98,377,201	\$2,705,373
2025	\$89,644,827	\$2,465,233	\$10,883,370	\$299,293	\$100,528,197	\$2,764,525
2026	\$91,859,647	\$2,526,140	\$10,883,370	\$299,293	\$102,743,017	\$2,825,433
2027	\$94,140,246	\$2,588,857	\$10,883,370	\$299,293	\$105,023,616	\$2,888,149
2028	\$71,055,797	\$1,954,034	\$10,026,021	\$275,716	\$81,081,818	\$2,229,750
2029	\$51,433,170	\$1,414,412	\$6,513,862	\$179,131	\$57,947,032	\$1,593,543
2030	\$52,756,161	\$1,450,794	\$5,504,714	\$151,380	\$58,260,875	\$1,602,174
2031	\$52,644,013	\$1,447,710	\$3,002,211	\$82,561	\$55,646,224	\$1,530,271
2032	\$43,209,450	\$1,188,260	\$640,809	\$17,622	\$43,850,259	\$1,205,882
2033	\$41,509,756	\$1,141,518	\$0	\$0	\$41,509,756	\$1,141,518
2034	\$42,962,598	\$1,181,471	\$0	\$0	\$42,962,598	\$1,181,471
2035	\$44,466,288	\$1,222,823	\$0	\$0	\$44,466,288	\$1,222,823
2036	\$46,022,609	\$1,265,622	\$0	\$0	\$46,022,609	\$1,265,622
2037	\$47,633,400	\$1,309,918	\$0	\$0	\$47,633,400	\$1,309,918
Totals	\$1,422,719,972	\$39,124,799	\$152,642,792	\$4,197,677	\$1,575,362,763	\$43,322,476
NPV (7%,						
2016)	\$744,320,445	\$20,468,812	\$92,977,193	\$2,556,873	\$837,297,638	\$23,025,685

Notes:

- RI LTC & RI DG Contracts as of September 2015; approximately 104% of the 90 MW minimum requirement

- Above market cost is calculated using market price forecasts for energy, capacity and RECs provided by ESAI in August 2014

- Capacity factors for the FCM, commercial operation dates, and annual output have been estimated for the given projects' technology and location

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 1 of 16

	Deepwater Wind 30 MW		Rhode Island Lai 32M		Orbit Energy HSA (\$9	-
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$0	\$0	\$31,604,856	\$869,134	\$1,100,100	\$30,253
2017	\$0	\$0	\$32,394,977	\$890,862	\$2,244,204	\$61,716
2018	\$24,776,784	\$681,362	\$33,204,852	\$913,133	\$2,289,088	\$62,950
2019	\$25,643,971	\$705,209	\$34,034,973	\$935,962	\$2,334,870	\$64,209
2020	\$26,541,510	\$729,892	\$34,885,847	\$959,361	\$2,381,567	\$65,493
2021	\$27,470,463	\$755,438	\$35,757,994	\$983,345	\$2,429,199	\$66,803
2022	\$28,431,930	\$781,878	\$36,651,943	\$1,007,928	\$2,477,783	\$68,139
2023	\$29,427,047	\$809,244	\$37,568,242	\$1,033,127	\$2,527,338	\$69,502
2024	\$30,456,994	\$837,567	\$38,507,448	\$1,058,955	\$2,577,885	\$70,892
2025	\$31,522,988	\$866,882	\$39,470,134	\$1,085,429	\$2,629,443	\$72,310
2026	\$32,626,293	\$897,223	\$40,456,888	\$1,112,564	\$2,682,032	\$73,756
2027	\$33,768,213	\$928,626	\$41,468,310	\$1,140,379	\$2,735,672	\$75,231
2028	\$34,950,101	\$961,128	\$17,710,424	\$487,037	\$2,790,386	\$76,736
2029	\$36,173,354	\$994,767	\$0	\$0	\$2,846,193	\$78,270
2030	\$37,439,422	\$1,029,584	\$0	\$0	\$2,903,117	\$79,836
2031	\$38,749,801	\$1,065,620	\$0	\$0	\$1,480,590	\$40,716
2032	\$40,106,045	\$1,102,916	\$0	\$0	\$0	\$0
2033	\$41,509,756	\$1,141,518	\$0	\$0	\$0	\$0
2034	\$42,962,598	\$1,181,471	\$0	\$0	\$0	\$0
2035	\$44,466,288	\$1,222,823	\$0	\$0	\$0	\$0
2036	\$46,022,609	\$1,265,622	\$0	\$0	\$0	\$0
2037	\$47,633,400	\$1,309,918	\$0	\$0	\$0	\$0
Totals	\$700,679,568	\$19,268,688	\$453,716,888	\$12,477,214	\$38,429,466	\$1,056,810
NPV (7%, 2016)	\$300,377,579	\$8,260,383	\$290,285,192	\$7,982,843	\$22,012,042	\$605,331

Notes:

- RI LTC & RI DG Contracts as of September 2015; approximately 104% of the 90 MW minimum requirement

- Above market cost is calculated using market price forecasts for energy, capacity and RECs provided by

- Capacity factors for the FCM, commercial operation dates, and annual output have been estimated for the given projects' technology and location

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 2 of 16

	Black Bear Hy	vdro 3.958 MW	Champlain (Bow	ers) Wind 48 MW
Year	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$3,019,549	\$83,038	\$0	\$0
2017	\$3,079,939	\$84,698	\$9,310,217	\$256,031
2018	\$3,141,538	\$86,392	\$12,413,622	\$341,375
2019	\$3,204,369	\$88,120	\$12,413,622	\$341,375
2020	\$3,268,456	\$89,883	\$12,413,622	\$341,375
2021	\$3,333,826	\$91,680	\$12,413,622	\$341,375
2022	\$3,400,502	\$93,514	\$12,413,622	\$341,375
2023	\$3,468,512	\$95,384	\$12,413,622	\$341,375
2024	\$3,537,882	\$97,292	\$12,413,622	\$341,375
2025	\$3,608,640	\$99,238	\$12,413,622	\$341,375
2026	\$3,680,813	\$101,222	\$12,413,622	\$341,375
2027	\$3,754,429	\$103,247	\$12,413,622	\$341,375
2028	\$3,191,265	\$87,760	\$12,413,622	\$341,375
2029	\$0	\$0	\$12,413,622	\$341,375
2030	\$0	\$0	\$12,413,622	\$341,375
2031	\$0	\$0	\$12,413,622	\$341,375
2032	\$0	\$0	\$3,103,406	\$85,344
2033	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0
Totals	\$43,689,720	\$1,201,467	\$186,204,330	\$5,120,619
NPV (7%, 2016)	\$27,708,199	\$761,975	\$103,937,433	\$2,858,279

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 3 of 16

	RI DG - Plain Meet M		RI DG - ACP 28 Jacome Way 500 kW		RI DG - North Kingstown Green Wind 1.5 MW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2017	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2018	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2019	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2020	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2021	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2022	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2023	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2024	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2025	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2026	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2027	\$674,520	\$18,549	\$193,771	\$5,329	\$421,006	\$11,578
2028	\$393,470	\$10,820	\$113,033	\$3,108	\$70,168	\$1,930
2029	\$0	\$0	\$0	\$0	\$0	\$0
2030	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$8,487,710	\$233,412	\$2,438,288	\$67,053	\$5,122,235	\$140,861
NPV (7%, 2016)	\$5,520,777	\$151,821	\$1,585,969	\$43,614	\$3,373,032	\$92,758

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 4 of 16

	RI DG - Forbes Street Solar 3.7 MW		RI DG - West Davisville Solar 2.34 MW		RI DG - 100 Dupont 1.5 MW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2017	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2018	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2019	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2020	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2021	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2022	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2023	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2024	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2025	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2026	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2027	\$1,087,437	\$29,905	\$680,108	\$18,703	\$384,476	\$10,573
2028	\$1,087,437	\$29,905	\$623,433	\$17,144	\$384,476	\$10,573
2029	\$0	\$0	\$0	\$0	\$96,119	\$2,643
2030	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$14,136,676	\$388,759	\$8,784,731	\$241,580	\$5,094,312	\$140,094
NPV (7%, 2016)	\$9,088,415	\$249,931	\$5,660,589	\$155,666	\$3,250,596	\$89,391

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 5 of 16

		RI DG - Altus Comtram Cable Plant 499 kW		RI DG - Cox Comm 181 kW		RI DG - 0 Martin 500 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration	
2016	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2017	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2018	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2019	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2020	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2021	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2022	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2023	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2024	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2025	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2026	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2027	\$193,384	\$5,318	\$70,145	\$1,929	\$193,771	\$5,329	
2028	\$145,038	\$3,989	\$70,145	\$1,929	\$193,771	\$5,329	
2029	\$0	\$0	\$11,691	\$321	\$48,443	\$1,332	
2030	\$0	\$0	\$0	\$0	\$0	\$0	
2031	\$0	\$0	\$0	\$0	\$0	\$0	
2032	\$0	\$0	\$0	\$0	\$0	\$0	
2033	\$0	\$0	\$0	\$0	\$0	\$0	
2034	\$0	\$0	\$0	\$0	\$0	\$0	
2035	\$0	\$0	\$0	\$0	\$0	\$0	
2036	\$0	\$0	\$0	\$0	\$0	\$0	
2037	\$0	\$0	\$0	\$0	\$0	\$0	
Totals	\$2,465,642	\$67,805	\$923,578	\$25,398	\$2,567,468	\$70,605	
NPV (7%, 2016)	\$1,596,171	\$43,895	\$590,783	\$16,247	\$1,638,259	\$45,052	

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 6 of 16

	RI DG - 225 Dupont 300 kW Contract Cost Remuneration			RI DG - 35 Martin 500 kW Contract Cost Remuneration		RI DG - Cox Comm 498 kW Contract Cost Remuneration	
Year			Contract Cost				
2016	\$116,263	\$3,197	\$193,771	\$5.329	\$192,996	\$5,307	
2017	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2018	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2019	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2020	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2021	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2022	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2023	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2024	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2025	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2026	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2027	\$116,263	\$3,197	\$193,771	\$5,329	\$192,996	\$5,307	
2028	\$116,263	\$3,197	\$193,771	\$5,329	\$160,830	\$4,423	
2029	\$29,066	\$799	\$48,443	\$1,332	\$0	\$0	
2030	\$0	\$0	\$0	\$0	\$0	\$0	
2031	\$0	\$0	\$0	\$0	\$0	\$0	
2032	\$0	\$0	\$0	\$0	\$0	\$0	
2033	\$0	\$0	\$0	\$0	\$0	\$0	
2034	\$0	\$0	\$0	\$0	\$0	\$0	
2035	\$0	\$0	\$0	\$0	\$0	\$0	
2036	\$0	\$0	\$0	\$0	\$0	\$0	
2037	\$0	\$0	\$0	\$0	\$0	\$0	
Totals	\$1,540,481	\$42,363	\$2,567,468	\$70,605	\$2,476,783	\$68,112	
NPV (7%, 2016)	\$982,955	\$27,031	\$1,638,259	\$45,052	\$1,599,646	\$43,990	

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 7 of 16

	RI DG - Brickle Group 1.08 MW		RI DG - Gannon	RI DG - Gannon & Scott 406 kW		RI DG - All American Solar 331 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration	
2016	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2017	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2018	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2019	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2020	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2021	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2022	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2023	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2024	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2025	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2026	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2027	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2028	\$245,809	\$6,760	\$141,409	\$3,889	\$115,287	\$3,170	
2029	\$225,325	\$6,196	\$47,136	\$1,296	\$105,679	\$2,906	
2030	\$0	\$0	\$0	\$0	\$0	\$0	
2031	\$0	\$0	\$0	\$0	\$0	\$0	
2032	\$0	\$0	\$0	\$0	\$0	\$0	
2033	\$0	\$0	\$0	\$0	\$0	\$0	
2034	\$0	\$0	\$0	\$0	\$0	\$0	
2035	\$0	\$0	\$0	\$0	\$0	\$0	
2036	\$0	\$0	\$0	\$0	\$0	\$0	
2037	\$0	\$0	\$0	\$0	\$0	\$0	
Totals	\$3,420,846	\$94,073	\$1,885,451	\$51,850	\$1,604,404	\$44,121	
NPV (7%, 2016)	\$2,141,773	\$58,899	\$1,200,126	\$33,003	\$1,004,509	\$27,624	

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 8 of 16

	RI DG - TEAM 182 kW		RI DG - CMS 128 kW		RI DG - Newport Vineyard 53 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2017	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2018	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2019	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2020	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2021	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2022	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2023	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2024	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2025	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2026	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2027	\$64,283	\$1,768	\$45,210	\$1,243	\$19,467	\$535
2028	\$64,283	\$1,768	\$37,675	\$1,036	\$19,467	\$535
2029	\$58,926	\$1,620	\$0	\$0	\$17,845	\$491
2030	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$894,605	\$24,602	\$580,195	\$15,955	\$270,919	\$7,450
NPV (7%, 2016)	\$560,107	\$15,403	\$374,723	\$10,305	\$169,621	\$4,665

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 9 of 16

	RI DG - WED Co		RI DG - Johnston			teere Farm 91 kW
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$0	\$0	\$364,854	\$10,033	\$33,424	\$919
2017	\$311,155	\$8,557	\$364,854	\$10,033	\$33,424	\$919
2018	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2019	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2020	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2021	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2022	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2023	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2024	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2025	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2026	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2027	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2028	\$466,733	\$12,835	\$364,854	\$10,033	\$33,424	\$919
2029	\$466,733	\$12,835	\$364,854	\$10,033	\$8,356	\$230
2030	\$466,733	\$12,835	\$212,832	\$5,853	\$0	\$0
2031	\$466,733	\$12,835	\$0	\$0	\$0	\$0
2032	\$155,578	\$4,278	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$7,000,992	\$192,527	\$5,320,788	\$146,322	\$442,865	\$12,179
NPV (7%, 2016)	\$3,886,226	\$106,871	\$3,267,959	\$89,869	\$282,585	\$7,771

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 10 of 16

	RI DG - Bella 1600 Division Rd 1.3 MW		RI DG - Bella 574 Camp Ave 498 kW		RI DG - Nexamp 76 Stilson Rd 498 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$117,719	\$3,237	\$90,330	\$2,484	\$119,022	\$3,273
2017	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2018	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2019	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2020	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2021	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2022	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2023	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2024	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2025	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2026	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2027	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2028	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2029	\$235,437	\$6,475	\$90,330	\$2,484	\$119,022	\$3,273
2030	\$235,437	\$6,475	\$82,802	\$2,277	\$19,837	\$546
2031	\$117,719	\$3,237	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$3,531,557	\$97,118	\$1,347,415	\$37,054	\$1,686,151	\$46,369
NPV (7%, 2016)	\$2,074,199	\$57,040	\$819,985	\$22,550	\$1,048,097	\$28,823

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 11 of 16

		RI DG - North Kingstown Solar 1720 Davisville Rd 500 kW RI DG - SER Solar 23 Appian Way 52 kW Foster Drive 1.3 M				
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$116,508	\$3,204	\$17,701	\$487	\$176,739	\$4,860
2017	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2018	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2019	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2020	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2021	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2022	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2023	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2024	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2025	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2026	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2027	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2028	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2029	\$116,508	\$3,204	\$17,701	\$487	\$353,479	\$9,721
2030	\$97,090	\$2,670	\$0	\$0	\$353,479	\$9,721
2031	\$0	\$0	\$0	\$0	\$176,739	\$4,860
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$1,728,202	\$47,526	\$247,820	\$6,815	\$5,302,183	\$145,810
NPV (7%, 2016)	\$1,054,107	\$28,988	\$154,807	\$4,257	\$3,114,146	\$85,639

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 12 of 16

	RI DG - 60 Valley Street Solar 110 kW		RI DG - Brookside Equestrian Center - 90 Tifft Rd 1.2 MW		RI DG - Glocester-Reichert - 212 Old Snake Hill Rd 895 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$33,818	\$930	\$190,884	\$5,249	\$134,459	\$3,698
2017	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2018	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2019	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2020	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2021	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2022	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2023	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2024	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2025	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2026	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2027	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2028	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2029	\$33,818	\$930	\$229,061	\$6,299	\$161,351	\$4,437
2030	\$31,000	\$852	\$229,061	\$6,299	\$147,905	\$4,067
2031	\$0	\$0	\$38,177	\$1,050	\$24,651	\$678
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$504,448	\$13,872	\$3,435,920	\$94,488	\$2,404,583	\$66,126
NPV (7%, 2016)	\$306,988	\$8,442	\$2,063,524	\$56,747	\$1,447,918	\$39,818

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 13 of 16

	RI DG - North Kingstown Organic Energy 500 kW		RI DG - 200 Frenchtown Road Solar 1.25 MW		RI DG - Wilco 260 South County Trail 1.246 MW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$0	\$0	\$143,178	\$3,937	\$185,917	\$5,113
2017	\$242,616	\$6,672	\$286,356	\$7,875	\$371,833	\$10,225
2018	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2019	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2020	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2021	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2022	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2023	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2024	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2025	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2026	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2027	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2028	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2029	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2030	\$727,847	\$20,016	\$286,356	\$7,875	\$371,833	\$10,225
2031	\$727,847	\$20,016	\$143,178	\$3,937	\$185,917	\$5,113
2032	\$485,231	\$13,344	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$10,917,698	\$300,237	\$4,295,340	\$118,122	\$5,577,495	\$153,381
NPV (7%, 2016)	\$5,925,272	\$162,945	\$2,522,794	\$69,377	\$3,275,846	\$90,086

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 14 of 16

	RI DG - Windy Acres Solar Farm 1.242 MW		RI DG - Smart Technologies 22 Christiansen Way 1.043 MW		RI DG - 1000 Division Street Solar 500 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$118,325	\$3,254	\$142,670	\$3,923	\$56,715	\$1,560
2017	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2018	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2019	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2020	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2021	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2022	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2023	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2024	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2025	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2026	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2027	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2028	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2029	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2030	\$236,650	\$6,508	\$285,340	\$7,847	\$113,430	\$3,119
2031	\$118,325	\$3,254	\$142,670	\$3,923	\$56,715	\$1,560
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$3,549,747	\$97,618	\$4,280,100	\$117,703	\$1,701,450	\$46,790
NPV (7%, 2016)	\$2,084,883	\$57,334	\$2,513,843	\$69,131	\$999,317	\$27,481

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 15 of 16

	RI DG - 116 Singleton Street Solar 500 kW		RI DG - 555 Veazie Street Solar 499 kW		RI DG - 240 Bald Hill Rd Solar 270 kW	
Year	Contract Cost	Remuneration	Contract Cost	Remuneration	Contract Cost	Remuneration
2016	\$58,900	\$1,620	\$61,023	\$1,678	\$34,230	\$941
2017	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2018	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2019	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2020	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2021	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2022	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2023	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2024	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2025	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2026	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2027	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2028	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2029	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2030	\$117,800	\$3,240	\$122,045	\$3,356	\$68,460	\$1,883
2031	\$58,900	\$1,620	\$61,023	\$1,678	\$34,230	\$941
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$1,767,000	\$48,593	\$1,830,675	\$50,344	\$1,026,900	\$28,240
NPV (7%, 2016)	\$1,037,817	\$28,540	\$1,075,215	\$29,568	\$603,132	\$16,586

The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 4371 Attachment PUC 8-2(b) Page 16 of 16

Year	RI DG - 380 Warwick Ave Solar 173 kW Contract Cost Remuneration		RI DG - WED Coventry Three 1.5 MW Contract Cost Remuneration		RI DG - WED Coventry Four 1.5 MW Contract Cost Remuneration	
2016	\$25.080	Remuneration \$690	Contract Cost \$312,155	\$8,584	Contract Cost \$312,155	\$8,584
2010	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2017			\$624,309	,		
2018	\$50,160 \$50,160	\$1,379	\$624,309	\$17,168 \$17.168	\$624,309 \$624.309	\$17,168 \$17.168
	ŧ ,	\$1,379	+- /	÷)	f -)	+)
2020	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2021	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2022	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2023	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2024	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2025	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2026	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2027	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2028	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2029	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2030	\$50,160	\$1,379	\$624,309	\$17,168	\$624,309	\$17,168
2031	\$25,080	\$690	\$312,155	\$8,584	\$312,155	\$8,584
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$752,400	\$20,691	\$9,364,635	\$257,527	\$9,364,635	\$257,527
NPV (7%, 2016)	\$441,909	\$12,153	\$5,500,157	\$151,254	\$5,500,157	\$151,254

<u>PUC 8-3</u>

Request:

For each contract entered into under the Long Term Contracting for Renewable Energy statute (not including distributed generation) for which commercial operation has not begun, please provide an update as to the status, including copies of any extensions that may have been executed and which have not already been filed with the PUC.

Response:

Deepwater Wind

Deepwater Wind has achieved financial close and all permitting work is complete. Construction on the project has commenced and the commercial operation date is not expected to be later than December 31, 2017.

Orbit Energy

Orbit Energy's Power Purchase Agreement (PPA) was amended a third time on January 9, 2015. The amendment was filed with the Rhode Island PUC on March 13, 2015. Since then, Orbit elected to extend the critical milestones under the amended PPA by six months, such that the deadline for receipt of all permits necessary to construct the facility is extended to November 30, 2015 and the deadline for achievement of the Commercial Operation Date is extended to June 30, 2016.

Champlain Wind

The Bureau of Environmental Protection voted to uphold the Maine DEP's denial of the site permit. First Wind filed an appeal to the Maine Law Court in July 2014 and the decision is pending.