



PROVIDENCE WATER

Tap Water Delivers

August 7, 2020

The Hon. Jorge O. Elorza
Mayor

Ricky Caruolo
General Manager

Mrs. Luly Massaro
Commission Clerk
RI Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

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RE: Dk 4994; Public Utilities Commission; Post Hearing Set 1

Dear Mrs. Massaro:

Attached please find an original and nine copies of Providence Water's responses to the first set of post hearing data requests from the Commission.

If you have any questions, I can be reached extension 7238.

Sincerely,

Nancy E. Parrillo
Senior Manager-Finance

cc: service list(via email)

MEMBER

Rhode Island Water Works Assn.
New England Water Works Assn.
American Water Works Assn.
Water Research Foundation

An EPA WaterSense Partner

(401) 521-6300

125 Dupont Drive
Providence, RI 02907

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Providence Water Docket 4994

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- COMMPH 1.** Mr. Caruolo in his direct testimony at page 6 states that the COF solar installation saves \$98,000 per year. Mr. Caruolo's schedules RC-1 and RC-2 identify savings from the DECA solar installation ranging between \$506,000 and \$584,000 in the first year of operation. Schedule HJS-5 (Settlement) identifies Rate Year 1 electric savings from solar generation of \$493,106.
- a. Please reconcile the savings included in HJS-5 of \$493,106 with the claimed savings of potentially \$682,000 ($98,000 + 584,000$) in Mr. Caruolo's testimony and schedules.
 - b. Please explain why the electric savings in HJS-5 is significantly less than the savings identified in Mr. Caruolo's testimony and schedules.

RESPONSE:

1. a) The \$493,106 in HJS-5 is not a claimed savings but is the adjustment made to the test year expense of \$1,266,076.00 to achieve the proforma expense of \$772,970.00 in the rate year.

The potential savings for the solar array located in Johnston is estimated to be between \$506,000 and \$584,000 based on the estimated levels of generation. The \$98,000 in savings indicate in part a above is savings actually being realized currently from the array located at 125 Dupont Drive.

- b) See above.

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- 2. Please provide a copy of the Schedule B provided to National Grid.**

Response: Attached National Grid's Schedule B.

Schedule B – Additional Information Required for Net Metering Service

THE NARRAGANSETT ELECTRIC COMPANY
NET-METERING APPLICATION OF CREDITS

Customer Name: Providence Water Supply Board
Account Number: 678046301
Facility Address: Lot 4, Michelle Way
City: Johnston State: RI Zip Code: 02919

The Agreement is between Providence Water Supply Board, a Net-Metered Customer (“NMC”) and The Narragansett Electric Company (the “Company”) for application of credits earned through net-metering from the NMC located at Lot 4, Michelle Way, Johnston, Rhode Island.

The NMC agrees to comply with the provisions of the Net-Metering Provision, the applicable retail delivery tariffs and the Terms and Conditions for Distribution Service that are on file with the Rhode Island Public Utilities Commission as currently in effect or as modified, amended, or revised by the Company, and to pay any metering and interconnection costs required under such tariff and policies.

A.) NMC Address: 125 Dupont Drive

Providence, RI 02907

Nameplate rating (AC) of the Eligible Net Metering System 4,999 kW
Estimated annual generation in kWh of Eligible Net-Metering System 8,521,000 kWh

Net Metered Account(s)

The following information must be provided for each individual Net Metered Account in a proposed Eligible Net Metering site:

Name: Providence Water Supply Board (Except in the case of a Public Entity or Multi-municipal Collaborative, the customer of record must be the same as the NMC)

Service Address: Below _____

National Grid Account number: 678046301

Three (3) years average kWh usage for this account 7,833,106

Total three (3) years average kWh usage for all accounts listed as an Eligible Net Metering Site 7,833,106

Once this information is received, the Company will determine if the accounts listed are eligible for net metering.

B.) For any Billing Period in which the NMC earns Net Metering Credits, please indicate how the Distribution Company will apply them:

- Apply all of the Net Metering Credits to the account of the NMC (skip Items C and D below)
- Allocate all the Net Metering Credits to the accounts of eligible Customers (please fill out C and D below)
- Both apply a portion of the Net Metering Credits to the NMC's account and allocate a portion to the accounts of eligible Customers (please fill out C and D below)

The Company will notify the NMC within 30 days of the Company's receipt of Schedule B whether it will allocate or purchase Net Metering Credits. If the Company elects to purchase Net Metering Credits, the Company will render payment by issuing a check to the NMC each Billing Period, unless otherwise agreed in writing by the NMC and Company. If the Company elects to allocate Net Metering Credits, the NMC must complete Item C and submit the revised Schedule B to the Company.

C.) Please state the total percentage of Net Metering Credits to be allocated.

% Amount of the Net Metering Credit being allocated.

The total amount of Net Metering Credits being allocated shall not exceed 100%. Any remaining percentage will be applied to the NMC's account.

Please identify each eligible Customer account to which the NMC is allocating Net Metering Credits by providing the following information (attach additional pages as needed):

NOTE: If a designated Customer account closes, the allocated percentage will revert to the NMC's account, unless otherwise mutually agreed in writing by the NMC and the Company.

Name: Fruit Hill Pole 45
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 00526-34009
Amount of the Net Metering Credit: 2.42 %

Name: "Protection"
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 03892-31001
Amount of the Net Metering Credit: 0.08 %

Name: Mineral Spring
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 12794-37009
Amount of the Net Metering Credit: 0.16 %

Name: Starline Way
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 14719-18001
Amount of the Net Metering Credit: 1.21 %

Name: Pinewood Drive
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 16077-54004
Amount of the Net Metering Credit: 0.55 %

Name: Ridge Road Pole 84
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 25856-16004
Amount of the Net Metering Credit: 0.33 %

Name: Carriage Way
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **26758-89024**
Amount of the Net Metering Credit: 0.03 %

Name: Plainfield Pike PLE 151
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **26789-70013**
Amount of the Net Metering Credit: 0.08 %

Name: Dupont Drive Solar
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **27144-85017**
Amount of the Net Metering Credit: 13.44 %

Name: Basil Crossing
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **28269-12003**
Amount of the Net Metering Credit: 0.24 %

Name: Scaralia Road
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **28288-61009**
Amount of the Net Metering Credit: 0.03 %

Name: Front Clinton
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **31064-36009**
Amount of the Net Metering Credit: 0.02 %

Name: Ashby Pump
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **37759-22009**
Amount of the Net Metering Credit: 24.30 %

Name: Greenville Tank
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **51957-52012**
Amount of the Net Metering Credit: 1.09 %

Name: Hoover Street
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **53353-93000**
Amount of the Net Metering Credit: 0.30 %

Name: Atwood Pump
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **53518-69009**
Amount of the Net Metering Credit: 0.63 %

Name: Melody Lane
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **53711-46007**
Amount of the Net Metering Credit: 2.37 %

Name: Budlong
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **63892-31001**
Amount of the Net Metering Credit: 0.07 %

Name: Hope Furnace
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **64204-56002**
Amount of the Net Metering Credit: 22.29 %

Name: Greenville Ave
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 75186-54000
Amount of the Net Metering Credit: 0.19 %

Name: **Scituate Avenue**
Billing Address: 125 Dupont Drive, Providence, RI
Account number: 77003-46002
Amount of the Net Metering Credit: 12.77 %

Name: **Cella Lane**
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **78095-24004**
Amount of the Net Metering Credit: 0.15 %

Name: **Elmore Avenue**
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **87807-98001**
Amount of the Net Metering Credit: 0.32 %

Name: **Bath Street**
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **90018-05008**
Amount of the Net Metering Credit: 16.94 %

Name: **Ridge Rd**
Billing Address: 125 Dupont Drive, Providence, RI
Account number: **88194-66001**
Amount of the Net Metering Credit: 0.29 %

- D.) The terms of this Schedule B shall remain in effect unless and until the NMC executes a revised Schedule B and submits it to the Company. Unless otherwise required herein or mutually agreed to in writing by the NMC and the Company, a revised Schedule B shall not be submitted more than once in any given calendar year.
- E.) A signature on the application shall constitute certification that (1) the NMC has read the application and knows its contents; (2) the contents are true as stated, to the best knowledge and belief of the NMC; and (3) the NMC possesses full power and authority to sign the application.

Notice

Execution of this agreement will cancel any previous agreement for the net-metered account under the Net-Metering Provision.

The Company or NMC may terminate this agreement on thirty (30) days written notice, which includes a statement of reasons for such termination. In addition, the NMC must re-file this agreement annually.

Agreed and Accepted – Please sign

[NAME OF NMC]

Date: 12/31/19

By:  - PW Principal Engineer

Name: Peter DiLorenzo
Title: Project Manager

The Narragansett Electric Company
d/b/a National Grid

Date: 7/31/2020

By: 

Name: Jared DeSousa
Title: CEI Consultant

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COMM 3. Please provide the annual electric usage for the 36 month period commencing with bills received the month prior to submission of Schedule B to National Grid (only for the accounts listed on Schedule B). Please provide the response in the same format as the response to DIV 1-31(d). Also please provide the response in live excel format.

RESPONSE:

3. Provided – See Attached. Please note that the Dupont Solar Array Commercial Operation Date was January 4, 2018.

3-Yr Avg	7,827
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PW Locations	October 2016 - October 2019	Town	Type	Wholesale Connections	N Grid Account #
0 ASHBY ST	5,710	Johnston	Ashby & Neut Pump Station		37759-22009
0 HOPE-FURNACE RD	5,239	Hope	Treatment Plant/ Scit Dam		64204-56002
0 BATH ST	3,980	Providence	Pump Station		90018-05008
125 DUPONT DR	3,157	Providence	COF - Solar		27144-85017
0 SCITUATE AVE	3,002	Cranston	Pump Station		77003-46002
0 FRUIT-HILL AVE	569	North Providence	Fruit Hill Pump Station		00526-34009
0 MELODY LN	558	Cranston	Pump Station		53711-46007
36 STARLINE WAY	285	Cranston	Cranston Commons Pump Station		14719-18001
0 GREENVILLE AVE	255	Johnston	Pump Station		75186-54000
0 ATWOOD AVE	147	Johnston	Pump Station		53518-69009
1 PINEWOOD DR LOT 109	129	East Smithfield	Waltham Pump Station		16077-54004
0 RIDGE RD	77	Esmond	Tank		88194-66001
0 ELMORE AVE	74	North Providence	Pump Station		87807-98001
0 HOOVER ST	70	West Warwick	Structure D	Kent County	53353-93000
0 BASIL XING	56	Cranston	Pump Station		28269-12003
685 GREENVILLE AVE	45	Johnston	Tank		51957-52012
1835 MINERAL SPRING AVE	37	North Providence	Longview Reservoir Tank		12794-37009
0 CELLA LN	35	Cranston	Lawton Hill Reservoir		78095-24004
0 BUDLONG RD	18	Cranston	Cathodic Protection		03892-31001
Budlong- 63892-31001	16	Cranston	Wholesale Connection	East Providence	63828-50013
0 CARRIAGE WAY LOT 2	8	Johnston	Pressure Station		26758-89024
30 SCARALIA RD	7	Cranston	East Portal		28288-61009
40 FRNT CLINTON AVE	5	Hope	Wholesale Connection	Kent County	31064-36009
0 WAKEFIELD ST	0	Warwick	Structure E		41062-19009
Grand Total	23,481				

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- COMM** 4. Please explain how the savings in Schedules RC-1 and RC-2 were calculated. Include examples if they would be helpful. Explain any assumptions made.

RESPONSE:

4. To get the **Total Savings** Providence Water took the **Total PW Electric Bill** (no solar credit) and subtracted the **Payment to the Developer**.

The **Total PW Electric Bill** (no solar credit) is calculated by adding together the **Estimated Supply Charge** and the **Estimated Delivery Charge**.

The **Estimated Supply Charge** for the initial year is calculated by taking the current **3 Year Constellation Electric Supply Rate (\$0.0761)** and multiplying by the **Assumed Annual Electric Consumption (kWh) (7,640,105)**. The calculated value remains constant for 3 years and is then adjusted by the **Assumed Annual Utility Escalation Rate (2%) * 3 Years** to calculate the value for years 4-6. The process is then repeated to calculate values for years 7-9, 10-12, 13-15, 16-18, 19-21, 22-24 and 25.

The **Estimated Delivery Charge** for the initial year is calculated by taking the **Total Electric Bill from FY2019 (\$1,266,076.10)** and subtracting the **Estimated Supply Charge** for that year. Each year the value is then adjusted by the **Assumed Annual Utility Escalation Rate (2%)** to calculate the Estimated Delivery Charge for each subsequent year.

The **Payment to Developer** is calculated by taking the projected **kWh Produced** and multiplying by the **PPA Rate (0.0914)**.

The **Projected kWh Produced** for the initial year is estimated to be 8,457,000 kWh. Each subsequent year is calculated by taking the original value of generation and adjusting it using the Estimated Degradation Rate of 0.5% per year. (Multiply previous year by 0.995)

Note: The total Providence Water Electric bill of \$1,279,769.38 includes the Constellation contracted 3-year supply rate.

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EXAMPLE CALCULATIONS RC-2

Total Savings (Year 1) (\$506,799.58) = Total PW Electric Bill (Year 1) (\$1,279,769.38) – Payment to Developer (Year 1) (\$772,969.80)

Total Savings (Year 2) (\$524,631.58) = Total PW Electric Bill (Year 2) (\$1,293,736.53) – Payment to Developer (Year 2) (\$769,104.95)

Total PW Electric Bill (Year 1) (\$1,279,769.38) = Estimated Supply Charge (Year 1) (\$581,411.99) + Estimated Delivery Charge (Year 1) (\$684,664.11)

Total PW Electric Bill (Year 2) (\$1,293,736.53) = Estimated Supply Charge (Year 2) (\$581,411.99) + Estimated Delivery Charge (Year 2) (\$698,357.39)

Estimated Supply Charge (Years 1-3) (\$581,411.99) = 3 Year Constellation Electric Supply Rate (\$0.0761) * Assumed Annual Electric Consumption (kWh) (7,640,105)

3 Year Escalation Increase (6%) = Assumed Annual Utility Escalation Rate (2%) * 3 Years

Estimated Supply Charge Increase (Years 4-6) (\$34,884.72) = Estimated Supply Charge (Years 1-3) (\$581,411.99) * 3 Year Escalation Increase (6%)

Estimated Supply Charge (Years 4-6) (\$616,296.71) = Estimated Supply Charge (Years 1-3) (\$581,411.99) + Estimated Supply Charge Increase (Years 4-6) (\$34,884.72)

Estimated Delivery Charge (Year 1) (\$684,664.11) = FY2019 Total Electric Bill (\$1,266,076.10) – Estimated Supply Charge (Year 1) (\$581,411.99)

Estimated Delivery Charge Increase (Year 2) (\$13,693.28) = Estimated Delivery Charge (Year 1) (\$684,664.11) * Assumed Annual Utility Escalation Rate (2%)

Estimated Delivery Charge (Year 2) (\$698,357.39) = Estimated Delivery Charge (Year 1) (\$684,664.11) + Estimated Delivery Charge Increase (Year 2) (\$13,693.28)

kWh Produced (Year 1) = 8,457,000

Payment to Developer (Year 1) (\$772,969.80) = kWh Produced (Year 1) (8,457,000) * PPA Rate (0.0914)

kWh Produced (Year 2) (8,414,715) = kWh Produced (Year 1) (8,457,000) * Degradation Rate (0.5%/Year) (0.995)

Payment to Developer (Year 2) (\$769,104.95) = kWh Produced (Year 2) (8,414,715) * PPA Rate (0.0914)

kWh Produced (Year 3) (8,372,641) = kWh Produced (Year 2) (8,414,715) * Degradation Rate (0.5%/Year) (0.995)

Payment to Developer (Year 3) (\$765,259.43) = kWh Produced (Year 3) (8,372,641) * PPA Rate (0.0914)

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5. Please reconcile total annual electricity expense shown in RC-1 and RC-2 of \$1,266,076 with RY 1 of \$1,109,634 in HJS-5.

RESPONSE: See Below.

Reconciliation between HJS-5 and RC-1 and RC-2		
FY 2019 Purchased Power (RC-1 and 2)	\$	1,266,076
FY 2021 Utilities Expense (HJS-5)	\$	1,109,634
Difference	\$	156,442
Fuel for Purchased Power-WTO (61630) ⁽¹⁾	\$	(200,347)
Rate Year Adjustment ⁽²⁾	\$	493,106
Inflation ⁽³⁾	\$	(8,521)
Natural Gas ⁽⁴⁾	\$	(127,796)
	\$	156,442
Remaining Difference	\$	(0)
<p>(1) This was included in HJS-5, but not RC-1 and 2</p> <p>(2) RC-1 and RC-2 do not include the \$493,106 adjustment, HJS-5 does include it.</p> <p>(3) HJS-5 included a small amount of assumed inflation for RY1, which was not included in RC-1 and 2, which represents the actual cost in that year (FY 2019).</p> <p>(4) HJS-5 included natural gas costs in cost center 61580, which are not included in RC-1 and RC-2</p>		

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COMM 6. Referring to Schedule RC-1, why is the DECA Solar Array sized to produce more than Providence Water's annual electricity consumption? Is it correct that Providence Water will realize greater total savings in the scenario presented in RC-2? Why didn't Providence Water contract for a system size equivalent to the scenario in RC-2? Please explain the rationale for paying the developer for net metering credits that are in excess of the utility's electric bill.

RESPONSE:

6. The DECA Solar Array was designed to produce 110% of Providence Water's current electrical needs. The DECA Solar Array was sized for an additional 10% for the following reasons.
- At this time, Providence Water does not know what the exact production of the solar array will be. In any given year, the DECA Solar Array electrical production could vary depending on the amount of sunny days. In addition, the Solar Array has an allowable production degradation. As such, Providence Water is guaranteed a minimum of 90% production under its contract. Therefore, the solar array was sized with 10% additional capacity to ensure that Providence Water will be 100% green.
 - The additional 10%, if it becomes available, will be used for potential future additional electrical demands such as tank mixing, updated clarification process, and water system acquisitions (such as Johnston) and any other facility upgrades.

Yes, savings in the scenario in RC-2 seems greater because Providence Water will pay less for electricity if the system is only producing power at 90%. However, the savings and net meter credit combined in scenario RC- 1 is greater.

RC-2 is for the minimum 90% production as required by contract, however the system was sized for the reasons stated above.

As stated earlier the DECA Solar Array was specifically designed to ensure that Providence Water was 100% green. In a given year, if the DECA Solar Array produces electricity in excess of our demand, Providence Water will realize additional credits on our National Grid electrical bill. In addition, Providence

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Water will sell any Renewable Energy Credits (RECs) that are received in excess of our demand.

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COMM: 7. Referring to Schedule RC-1, if the DECA Solar Array generates more electricity than Providence Water's annual electricity consumption, what will Providence Water do with the RECs associated with the excess generation? Please estimate the market value of RECs associated with generation greater than 100% of consumption in each contract year.

RESPONSE:

7. The official commercial operational start date for the DECA Solar Array is expected to be early August 2020, Providence Water is awaiting the official permission to operate from National Grid. Because the solar production will vary from season to season, Providence Water will need to operate the Solar Array for one calendar year to determine if there will be any excess RECs. At that time, if the solar production is in excess of Providence Water's electrical demand, any additional RECs will be sold. In addition, the additional solar production will produce additional credits on Providence Water's National Grid electrical bill.

Since Providence Water will not know until at least August of 2021 if we will have any excess RECs, our solar consultant provided us a forecasted price of \$41.50 for a REC. However, it is important to note that this price is subject to the timing of when the RECs are sold, the volatility of the REC market, and the volume of RECs that Providence Water will be selling.

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COMM: 8. Referring to Schedule RC-1, does Providence Water have any knowledge of whether National Grid will allow Providence Water to accrue a negative balance on its electricity bill for generation in excess of consumption?

RESPONSE:

8. Yes, RI General Law 39-26.4-3(a) Paragraph 4 states that up to an additional twenty-five percent (25%) beyond the net-metering customer's usage is allowed.