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August 1, 2022

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

Re: Block Island Utility District d/b/a Block Island Power Company
Demand Side Management Plan – Docket 5244

Dear Luly:

As you know, our office represents Block Island Utility District ("BIUD").

Enclosed for filing in this matter are an original and five (5) copies of the PY2021 Annual Report for BIUD's Demand Side Management Program.

If you need any further information, please do not hesitate to contact me.

Very truly yours,

Leah J Donaldson

Leah J. Donaldson

Cc: Service List (via electronic mail)

PY2021 Annual Report on Block Island

Prepared for:

Block Island Utility District

Prepared by:

Dr. Katherine Johnson, President

Johnson Consulting Group

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with

Final Report
July 29, 2022

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Introduction

In March 2021, the Block Island Utility District (BIUD) filed a plan to offer a demand side management (DSM) program to provide its 1,900 customers access to energy efficiency programs that will benefit them and improve the service and reliability of the island's electric grid. The plan covers the 2021-2022 period from June 1, 2021, to May 31, 2022 (PY2021).

Block Island is a unique community because of its geographic separation from the mainland and its variable, tourist-driven seasonal usage profile. The community of New Shoreham and the grid that serves it needs to be flexible enough to handle the increased summer population, as well as reliable and resilient enough to provide service to the year-round residents and businesses, even in the face of harsh winter conditions.

Given Block Island's unique size, location, and seasonal usage spike, demand side management is especially important for this community and aligns with many of BIUD's goals outlined in the approved rate case filing (Docket #4975). Specifically, through the implementation of this proposed DSM plan, BIUD aims to empower its customers to make choices that help control their energy usage, reduce the energy burden on customers, improve resource allocation, and encourage the adoption of innovative new technologies that maximize the benefits of Block Island's smart meters.

Portfolio Overview

Block Island Utility District's 2021 DSM Plan offered a portfolio of energy efficiency measures designed to achieve the following objectives:

1. Empower its customers to make choices that help control their energy usage;
2. Reduce energy burden on consumers;
3. Improve resource allocation; and
4. Encourage the adoption of innovative new technologies that maximize the benefits of Block Island's smart meters.

Although BIUD is an electric utility, many of the energy efficiency improvements made by the program resulted in savings on other fuels. Table 1 summarizes the savings from the 2021 DSM Plan.

Table 1: Annual and Lifetime Savings from BIUD's 2021 DSM Plan

	Annual Savings	Lifetime Savings
Energy Savings (kWh)	20,260	195,404
Demand Savings (kW)	6.2	77.9
Oil Savings (MMBtu)	24.1	440.2
Propane Savings (MMBtu)	4.8	34.1

Overall, the program saved over 20 MWh of electricity, 24.1 MMBtu of oil, and 4.8 MMBtu of propane. This is equivalent to 22.4 tons of carbon dioxide, or the emissions avoided by 4.4 gasoline-powered passenger cars driven for one year, 4 homes' electricity use for one year, or 47.1 barrels of oil.

In PY2021, BIUD spent $35,386 of its anticipated budget of $119,540. The main reason for the lower than expected spending was the low number of both residential and business customers applying for incentives for energy efficient equipment. The table below breaks out the PY2021 spending in more detail.

Table 2: PY2021 Spending Breakout

Expense Type	Amount
ENE (Implementation Contractor)	$19,535
- *Monthly Admin Fee*	*$3,400*
- *Energy Audits*	*$5,614*
- *Direct Install Measure Costs*	*$2,650*
- *Travel Costs*	*$4,485*
- *Other ENE Expenses*	*$3,385*
Johnson Consulting (Energy Efficiency Consultant)	$8,650
Other Expenses	$7,201
Total	$35,386

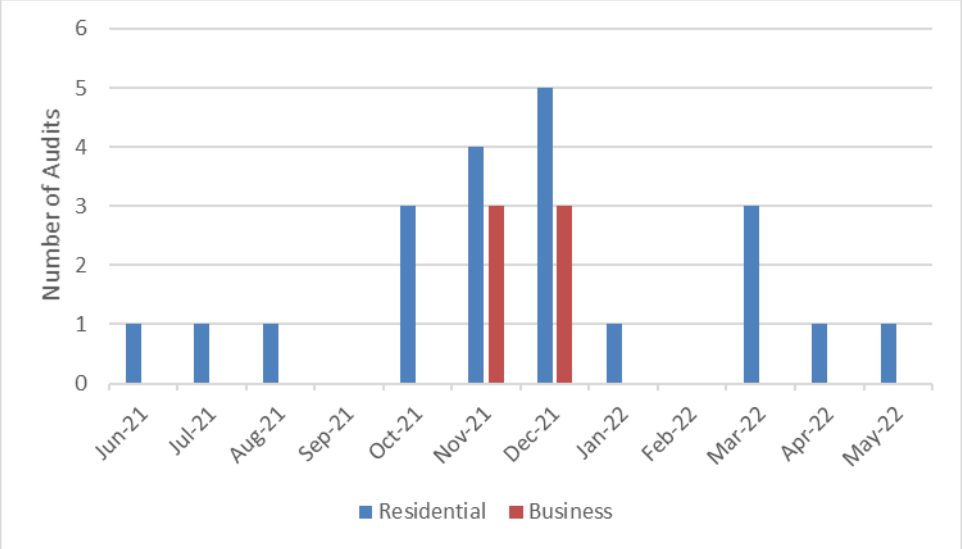
Summary of Program Activity in 2021-2022

For both residential and business customers, BIUD program falls into two broad categories: 1) building audits including directly installed measures, and 2) incentives for energy efficient equipment.

Energy Audits

BIUD worked with its implementation contractor, ENE, to schedule and conduct audits throughout the program year. In PY2021, the program completed 21 residential audits and six commercial audits, compared to 17 and zero, respectively, in PY2020. The program achieved 47% of its residential goal and 100% of its business goals for conducting energy audits in PY2021. Of the audits performed, all were conducted in person except for one, which was conducted virtually via video conference application.

Figure 1: Audits Conducted in PY2021



During the audit, the auditor conducts an assessment of the energy use of the home or business and provides recommendations for potential energy efficiency improvements. The auditor also directly installs

a variety of low cost energy-saving measures where applicable. Lastly, the assessment provides a list of applicable incentives offered by BIUD for the customers to upgrade to energy efficient equipment.

Table 3 provides a summary of the direct install measures installed during audits in PY2021. The large majority of savings were from LED bulbs, as 20 of the 21 residential audits received this measure. Note that the water saving measures (i.e., low flow showerheads and faucet aerators) had non-electric savings due to the types of water heaters in those homes; the program would have achieved electric savings if the homes had electric water heaters.

Table 3. Savings from Direct Install Measures in PY2021

	Quantity	Energy Savings (kWh)	Demand Savings (kW)	Fuel Oil Savings (MMBtu)	Propane Savings (MMBtu)
LED Bulbs	245	10,658	2.45	-6.48	-0.24
Smart Power Strips	27	2,835	0.54	0.00	0.00
Low Flow Showerheads	17	0.00	0.00	11.76	4.60
Faucet Aerators	20	0.00	0.00	4.40	0.44
Total		**13,493**	**2.99**	**9.68**	**4.80**

Recognizing that the program did not meet its goal for the number of residential audits, the program has been exploring additional ways to increase the number of audits in PY2021 and beyond. These activities include:

- Reconfiguring BIUD website's landing page to prominently feature audit sign up via a highly visible button linking to ENE's audit intake survey;
- Creating a bill stuffer advertising the residential audits on one side and the commercial audits on the other;
- Developing a program material packet to be distributed by Real Estate brokers after a property sale;
- Scheduling on-island visits from ENE representatives to meet business owners for potential commercial audits and to spread the word about the offering; and
- Launching a referral program via high-traffic businesses that are popular with island residents.

Equipment Incentives

The program only received rebate applications for two projects in PY2021: one for a ductless mini split heat pump and one for a weatherization and air sealing project. The savings from these projects are summarized below.

Table 4: Savings from Equipment Incentives in PY2021

	Quantity	Energy Savings (kWh)	Demand Savings (kW)	Fuel Oil Savings (MMBtu)	Propane Savings (MMBtu)
Weatherization	1	876	0.66	14.38	0.00
Ductless Minisplit Heat Pump	1	5,891	2.58	0.00	0.00
Total		**6,767**	**3.24**	**14.38**	**0.00**

Cost Effectiveness

The 2021 DSM Plan was cost-effective, exceeding a benefit-cost ratio of 1.00 for the Rhode Island Test. The table below shows the total benefits of the program and the total costs.

Table 5: Cost Effectiveness Results for PY2021

	Amount (2022$)
Total Benefits	$74,082
Total Costs	$50,419
Benefit/Cost Ratio	1.47