



# EDF Fellows Present: The 'Getting Started' Guide to Energy Actions

Sustainable Jersey Webinar

August 5, 2020





# Agenda

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1. What are EDF Climate Corps Fellows?
2. Why is energy tracking and management important?
3. How do I start collecting utility data?
4. How do I read my utility bill?
5. How do I use ENERGY STAR Portfolio Manager?
6. Municipal Waterworks Sneak Peek!



# CLIMATE CORPS<sup>®</sup>



Climate Corps embeds trained graduate students in organizations to help meet their energy goals by accelerating clean energy and energy efficiency projects in their facilities.

The following presentation is the culmination of tips and tricks for energy management we've learned from our 10 week fellowship at Sustainable Jersey.



# SAFE, RELIABLE NATURAL GAS AT OUR CORE ... AND SO MUCH MORE



## Sustainable Jersey EDF Climate Corp Webinar

Ray Perry

Senior Energy Efficiency Program Liaison





- Launched in September 2009
- Energy-efficiency rebates, financing and incentives
  - Help our customers save money
  - Support state policy
  - Benefit the environment
- Designed to complement New Jersey's Clean Energy Program (NJCEP)



# NJNG Connections to Sustainable Jersey

- Financial Support
  - Platinum Sponsor for Municipal Program
  - Founding Sponsor for Schools Program
- Technical Support
  - Participate on Task Forces
- Resources for SJ Green Teams
  - Supplemental incentives for your own facilities
  - Work together on outreach to residents and businesses
- Partner on Programs
  - PowerSave School Program
  - Environmental Defense Fund Climate Corps

# Company Managed Commercial Programs



- SAVEGREEN ON MAIN: Designed to serve small (Main Street) businesses
- ENGINEERED SOLUTIONS: For larger, more complex facilities. Open to Health Care, Municipal, Educational & Non-Profit organizations



# Commercial Incentives To Support the NJCEP

- Potential for 0% financing for your projects
  - Balance on NJCEP Direct Install Projects
  - Some NJCEP Smart Start equipment
  - Repaid through NJNG bill
- Assistance in SJ's commercial energy efficiency outreach and education (10 points; 20 points)
- Support at in-person meetings and events
- Learn more today
  - Ray Perry (732) 623-6353 or [rperry@njng.com](mailto:rperry@njng.com)



# Residential Programs

- The SAVEGREEN Project
  - Rebates up to \$4,000 and financing up to \$15,000 including 0% APR through NJNG's On-Bill Repayment Program for equipment upgrades
  - NJNG Marketplace
    - Discounts on smart thermostats and other energy-efficiency products
  - \$49 Home Energy Analysis
- We can help
  - Support communities to earn points for Community Energy Initiatives
    - Provide content for website and newsletters
    - Utility Partner Approach for residential energy efficiency outreach 20 point level
    - Participation at your community events
- Learn more today
  - Susan Ellman at (732) 378-4924 or [sellman@njng.com](mailto:sellman@njng.com)



# Sustainable Jersey Fellowship

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- Our Mission

*“Assist 1-3 clients with achieving or maintaining their Sustainable Jersey certification and progressing their energy efficiency goals.”*

- 10 weeks: June - August
- Each Fellow in 1 - 3 communities
  - Municipalities
  - School districts
- Remote this year because of COVID-19
- Work with a wide range of stakeholders:
  - Utilities, public works, police chiefs, business admins, green teams, councilmembers, mayors, teachers, sustainability and recycling coordinator



# Meet the Fellows

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**Addie Bash**  
Indiana University  
*Master's of Public  
Affairs*



**Annalisa Wilder**  
University of Michigan  
*Master's of Natural  
Resources &  
Environment | Public  
Policy*



**Blair Diehl**  
Columbia University  
*Master's of Science in  
Sustainability  
Management*



**Brandon Rothrock**  
West Virginia University  
*Master's of Arts in  
Geography*



**Zukhruf Amjad**  
Duke University  
*Master's of  
Environmental  
Management*


## Contact Information

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<b>Addie:</b> addiebash@gmail.com	<b>Annalisa:</b> anwilder@umich.edu	<b>Blair:</b> bcd2132@columbia.edu	<b>Brandon:</b> bar0044@mix.wvu.edu	<b>Zukhruf:</b> zukhruf.amjad@duke.edu
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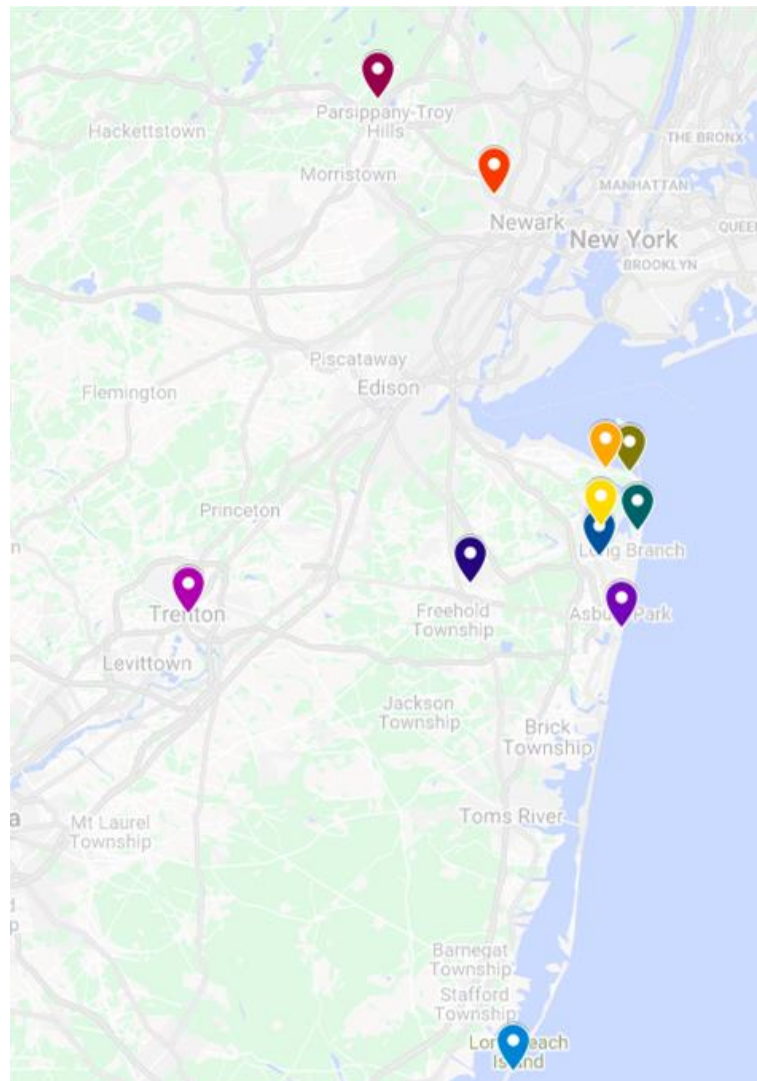
# Where Are Fellows Working?

## Municipalities

-  Mountain Lakes Borough (Addie)
-  City of Orange Township (Blair)
-  Little Silver Borough (Annalisa)
-  Eatontown Borough (Annalisa)
-  Freehold Borough (Addie)
-  Bradley Beach Borough (Brandon)
-  City of Trenton (Zukhruf)
-  Long Beach Township (Brandon)

## School Districts

-  Atlantic Highlands School District (Annalisa)
-  Henry Hudson School District (Addie)
-  Monmouth Beach School District (Brandon)





# What We Achieved This Summer



**243** Utility  
Accounts  
Tracked &  
Analyzed

**21** Direct  
Install Projects

**Three**  
SmartStart  
Projects

**Three**  
Engineered  
Solutions  
Projects

**Two**  
Local  
Government  
Energy Audits

**Six**  
Commercial/  
Residential  
Outreach  
Campaigns





# Why Is Energy Tracking and Management Important?

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- Energy costs are a significant expenditure in municipal budgets
  - Common for 10% or more of municipal budget to be devoted to energy expenses
  - Rising energy prices = growing expenses
- Energy usage data helps track building performance and improvement opportunities
  - Benchmarking
    - valuable planning tool
    - compares municipal building portfolio against other municipalities
    - general sense of performance compared to similar buildings
- Inspire widespread community improvements
  - Inspire residential and commercial energy improvements

# Benefits of Energy Efficiency

1. Significantly reduce utility bills and save money
2. Improve heating and cooling comfort inside buildings
3. Improve indoor air quality and health benefits
4. Protect the environment by reducing emissions
5. Insulate against changing energy prices
6. Earn great returns on energy efficiency investment



# Energy Tracking and Management Challenges

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## You Might Be Asking Yourself:

- How do we figure out which meters are connected to which buildings?
- What's the best way to store my data?
- Who should monitor the data and make sure it's input regularly?
- What do I do about municipal water works?





# Overcoming Challenges

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We're here to help get started!



CLIMATE CORPS®

# Collecting Energy Data

## Option 1: Printed Energy Invoices



- Collect copies of printed energy bills
- Scan bills to keep a digital record
- Input energy data into Excel tracking spreadsheet

## Option 2: Use Billing Statements



- Contact your utility company and third party billing company
- Request billing statements for given time period (some utilities only provide 2 years)
- Utilities can also provide printed copies of invoices





# What to Collect From Your Energy Bills

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1. Bill Start Date
2. Bill End Date
3. Cost
4. Usage (“Billed kWh”, “Therms”)
  - *Consumption or total amount of energy used*
5. Demand (“Billed kW”)
  - *Rate at which electricity is consumed*
6. Reading Type (Actual v. Estimate)



# Reading Your Energy Bills | Gas



Bill Start Date

Bill End Date


Reading Type  
"Actual"

Usage  
(therms)

Total Cost

<b>ACCOUNT NUMBER</b>	XXXXXXXXXX	<b>SERVICE ADDRESS</b>	123 Main St	<b>NEXT METER READING</b>	April 21, 2020
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**Details of your gas charges**

Your rate: Large Volume Gas (LVG)

**Meter #** XXXXXXXXXX

Actual reading	Mar 20, 2020	9633
Actual reading	Feb 20, 2020	8071
<b>Difference</b>		<b>1,562</b>

Converted to CCF x 1.012 1,580.744  
Converted to therms x 1.037 1,639.232


**Total gas you used in 29 days** 1,639.232 therms

**Delivery charges**

Monthly service charge	\$143.78
Charges for delivering gas to you:	
For the First: 1,000.000 therms x \$0.012330	\$12.33
For the Next: 639.232 therms x \$0.011905	\$7.61
Demand 77.023 therms x \$4.208743	\$324.17
Balancing Charge 1,634.179 therms x \$0.093503	\$152.80
Societal Benefits 1,639.232 therms x \$0.050810	\$83.29
<b>Total gas delivery charges</b>	<b>\$723.98</b>

**Supply charges**

Cost of gas supplied by PSE&G:	
1,639.232 therms x \$0.436845	\$716.09
<b>Total gas supply charges</b>	<b>\$716.09</b>

**Total gas charges** **\$1,440.07**

**Price to compare**

A history of PSE&G's monthly Basic Gas Supply Service (BGSS) prices are located on our website at [www.pseg.com](http://www.pseg.com).

Your PoD ID is: PGXXXXXXXXXXXXXXXXXX

**About the balancing charge**

The balancing charge includes pipeline, storage and other costs associated with seasonal peaks in usage. It applies during the heating season from November to March.



# Reading Your Energy Bills | Gas



Reading Type  
"Actual Read"

Bill Start Date

Bill End Date

Usage  
(therms)

Total Cost

ACCOUNT NUMBER XXXXXXXXXX		123 Main St Townsville, NJ				TOTAL AMOUNT DUE \$1,112.64		
BILL TYPE Monthly 006CNN2G						DUE DATE March 29, 2019		
CURRENT METER READING IS Actual Read						SHOWS PAYMENTS RECEIVED BY March 14, 2019		
NEXT SCHEDULED READING On or about Apr 10		SERVICE ADDRESS 123 Main St				PLEASE READ REVERSE SIDE		
SERVICE PERIOD		METER NUMBER XXXXXXX	METER READING		100'S OF CUBIC FEET USED (CCF)	BTU CONTENT	BILLING UNITS USED (THERMS)	THIS SERVICE PERIOD GAS CHARGES
FROM Feb 08	TO Mar 12		PRESENT 78449	PREVIOUS 76428				
					2021 x 1.070 =	2,162.47		1,112.64
Amount From Last Bill								2,421.62
Feb 19 Payment - Thank You								1,168.97-
Mar 05 Payment - Thank You								1,252.65-
Balance Forward								.00
This Period Gas Charge								1,112.64
Total Amount Due								\$1,112.64



# Reading Your Energy Bills | Electric



Bill Start Date	<b>ACCOUNT NUMBER</b> XXXXXXXXXX	<b>SERVICE ADDRESS</b> 123 Main St	<b>NEXT METER READING</b> April 21, 2020
Bill End Date	<b>Details of your electric charges</b> Your rate: <i>General Lighting &amp; Power (GLP)</i>		
Reading Type "Actual"	Meter # XXXXXXXXXX		
Usage (kWh)	Actual reading Mar 20, 2020 9013 Less Actual reading Feb 20, 2020 8625 <b>Total electric you used in 29 days 388 kWh</b>		
Demand (kW)	<b>Delivery charges</b> Monthly service charge \$4.77 Charges for delivering electric to you: Annual Demand 1.500 kW x \$3.940000 \$5.91 kWh charges 388 kWh x \$0.012474 \$4.84 Societal Benefits 388 kWh x \$0.008454 \$3.28 <b>Total electric delivery charges \$18.80</b>		
Total Cost	<b>Supply charges</b> BGS Capacity Generation 7.376 kW x \$5.147777 \$37.97 Transmission 0.996 kW x \$12.931727 \$12.88 Cost of electric supplied by PSE&G: Charges For the first 120 kWh x \$0.057083 \$6.85 For the next 268 kWh x \$0.065187 \$17.47 <b>Total electric supply charges \$75.17</b> <b>Total electric charges \$93.97</b>		
	<b>BILLED DEMAND</b> Annual Demand kW 1.50 <b>MEASURED DEMAND</b> Demand kW 1.50 <b>SUPPLY CAPACITY</b> Generation kW 7.376 Transmission kW 0.996		
	<b>Price to compare</b> If you want to consider getting your electric supply from another supplier, you can compare their price with ours. This month, your cost for energy supply is \$75.17. This <i>price to compare</i> varies from month to month, depending on your usage. Your PoD ID is: PExxxxxxxxxxxxxxxxxx		



# Reading Your Energy Bills | Electric



**ACE CUSTOMER**

Account number: XXXXXXXXXX  
Your service address: 123 Main St  
Bill Issue date: Jul 2, 2020

**How to contact us**  
Customer service (Mon-Fri, 7am - 7pm) 1-800-642-3780  
TTY English 1-800-852-7897  
TTY Spanish 1-866-658-7714  
Electric emergencies & outages (24 hours) 1-800-833-7476  
¿Problemas con la factura? 1-800-642-3780  
Visit [atlanticcityelectric.com](http://atlanticcityelectric.com)

**Details of your Electric Charges**  
Residential Service  
Electricity you used this period

Meter Number	Current Reading	Previous Reading	Difference	Multiplier	Total Use
XXXXXXXXXX	Jul 1 045726 (actual)	May 30 045053 (actual)	673	1	673
Use (kWh)					

**Your next meter reading is scheduled for August 4, 2020**

**Delivery Charges:** These charges reflect the cost of bringing electricity to you.  
Current charges for 33 days.  
2 days billed winter rate, 31 days billed summer rate.

Type of charge	How we calculate this charge	Amount(\$)
Customer Charge		6.34
Distribution Charge	First 633 kWh X \$0.0658136 per kWh	41.66
Distribution Charge	First 33 kWh X \$0.0603030 per kWh	1.99
Distribution Charge	Last 7 kWh X \$0.0600000 per kWh	0.42
Market Transition Tax	673 kWh X \$0.0010253 per kWh	0.69
Transition Bond Charge	673 kWh X \$0.0024071 per kWh	1.62
Non-Utility Generation Charge	673 kWh X \$0.0122288 per kWh	8.23
Societal Benefits Charge	673 kWh X \$0.0058395 per kWh	3.93
RGGI Energy Efficiency	673 kWh X \$0.0003269 per kWh	0.22
EDIT Credit 5 Yr - kWh	673 kWh X \$0.0048886- per kWh	3.29-
Zero Emission Certif (ZEC) Charge	673 kWh X \$0.0042645 per kWh	2.87
<b>Total Electric Delivery Charges</b>		<b>64.68</b>

**Supply Charges:** These charges reflect the cost of producing electricity for you.  
You can compare this part of your bill to offers from competitive suppliers. The class average annual price to compare is 10.21 cents per kWh.

Type of charge	How we calculate this charge	Amount(\$)
Transmission Service Charge	673 kWh X \$0.0204309 per kWh	13.75
Basic Generation Service	First 633 kWh X \$0.0739021 per kWh	46.78
Basic Generation Service	First 33 kWh X \$0.0821212 per kWh	2.71
Basic Generation Service	Last 7 kWh X \$0.0828571 per kWh	0.58
<b>Total Electric Supply Charges</b>		<b>63.82</b>
<b>Total Electric Charges - I</b>		<b>128.50</b>

Demand (kW)  
(not found on ACE bills)

Demand data can be requested directly from ACE

Call: 1-800-642-3780

Email: [kast-north@pepcoholdings.com](mailto:kast-north@pepcoholdings.com)





# Reading Your Energy Bills | Electric

**Jersey Central**  
Power & Light  
A FirstEnergy Company



Jersey Central Power & Light  
A FirstEnergy Company

Bill Based On: Minimum Bill, Estimated Meter Reading

June 05, 2020  
Account Number: XXXXXXXXXX  
Amount Due: \$2,922.80  
Due Date: June 22, 2020

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Billing Period: Apr 30 to May 29, 2020 for 30 days  
Bill For: 123 Main St

Bill Start Date

Bill End Date

Usage (kWh)

Demand or "Billed Load" (kW/KVA)

Total Cost

Reading Type "Estimate"

This bill shows that the account purchases the energy supply from a third-party.

Account Summary		Amount Due
Previous Balance		3,628.03
Payments/Adjustments		-2,050.42
Balance at Billing on Jun 05, 2020		1,577.61
JCP&L - Consumption		307.64
Hudson Energy Services		1,037.55
Total Current Charges		1,345.19
Amount Due by Jun 22, 2020		\$2,922.80

Usage Information for Meter Number XXXXXXXXXX	
May 29, 2020 KWH Reading (Estimate)	54,068
Apr 30, 2020 KWH Reading (Estimate)	52,633
KWH used	11,236
Measured Load in KW	18.4
Billed Load in KW/KVA	33.1

Charges From JCP&L			
When contacting an Electric Generation Supplier, please provide the following.			
Customer Number: XXXXXXXXXX			
Rate: General Service Secondary JG_GS1_010			
Customer Charge			3.10
Demand Charges	23.1 KW	x 3.010000	69.30
Delivery Charges	1,000 KWH	x 0.059299	59.30
	10,236 KWH	x 0.004743	48.55
Non-Utility Generation Charges	1,000 KWH	x 0.000114	0.11
	10,236 KWH	x 0.000114	1.17
Societal Benefits Charges	11,236 KWH	x 0.007013	78.80
Tax Act Adjustment	11,236 KWH	x -0.000274	-3.08
ZEC Recovery Charge	11,236 KWH	x 0.004265	47.92
JCP&L Reliability Plus Charge	11,236 KWH	x 0.000199	2.24
Current Consumption Bill Charges			307.64

Billing Information for Hudson Energy Services	
4 Executive Blvd Suite 301, Suffern, NY 10901	
Customer Service: 1-877-483-7669	
Account Number: XX	Rate: BILL_READY
Billing Period: Apr 30, 2020 to May 29, 2020	
Adjustment	6.78
Energy Charge-11236Kwh@0.0660000 Per Kh	1,030.77
Total Hudson Energy Services Current Charges	1,037.55

Detail Payment and Adjustment Information	
06/11/20 Payment	-3,050.43

Account Balances by Company				
	Previous Balance	Payments/Adjustments	Current Charges	Amount Due
JCP&L	745.85	-348.19	307.64	705.30
Hudson Energy Services	2,881.18	-1,704.23	1,037.55	2,214.50
Total	3,628.03	-2,050.42	1,345.19	2,922.80



# Understanding Third Party Energy Supplier Costs

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## Delivery Charges

- Cover the cost it takes to transfer energy from its original source to your facility
- Charged by utility company (PSE&G, ACE, JCP&L, NJNG)

## Supply Charges

- Cover the cost of the energy itself
- May not be listed on your bill if you are using a third party energy supplier

## Third Party Suppliers:

- Hudson Energy Services
- Direct Energy
- South Jersey Energy

To accurately calculate total monthly energy cost for a facility:

Utility Costs (Delivery) + Third Party Supplier Costs (Supply) = Total Energy Cost



JCP&L -  
"Customer  
Number"

ACCOUNT NUMBER XX-XXX-XXX-XXXX		123 Main St Townsville, NJ				TOTAL AMOUNT DUE \$1,112.64		
BILL TYPE Monthly 006CNN2G						DUE DATE March 29, 2019		
CURRENT METER READING IS Actual Read						SHOWS PAYMENTS RECEIVED BY March 14, 2019		
NEXT SCHEDULED READING On or about Apr 10		SERVICE ADDRESS 123 Main St				PLEASE READ REVERSE SIDE		
SERVICE PERIOD		METER NUMBER xxxxxxx	METER READING		100'S OF CUBIC FEET USED (CCF)	BTU CONTENT	BILLING UNITS USED (THERMS)	THIS SERVICE PERIOD GAS CHARGES
FROM	TO		PRESENT	PREVIOUS				
Feb 08	Mar 12		78449	76428	2021	x 1.070	= 2,162.47	1,112.64
Amount From Last Bill					2,421.62			
Feb 19 Payment - Thank You					1,168.97-			
Mar 05 Payment - Thank You					1,252.65-			
Balance Forward					.00			
This Period Gas Charge					1,112.64			
Total Amount Due							\$1,112.64	

### 3. Add Costs

$$\begin{array}{r} \$1,112.64 \\ +\$994.52 \\ \hline 2,107.16 \end{array}$$

### Third Party Supplier Bill

Service Period:	02/09/2019-03/12/2019
Serv Loc ID:	
Utility Name:	New Jersey Natural
Pool/Point:	NJN DQG POOL
Utility Acct #:	xx-xxxx-xxxx-xxxx
PO #:	
Service to:	123 Main St TownsVille, NJ

Description	Deal ID	Date From-To	Volume	UOM	Unit Price	Total
Commodity		02/09/19-03/12/19	220.66	MMBTU	\$4.507039	\$994.52
Total :			220.66			\$994.52

Total for Service Period :	\$994.52
Total for Account :	\$994.52



# Reading Billing Statements



Cost

Bill End Date

Start Date = Read Date - (Nbr Days-1)

Usage = Cons Type Cons Usage

Jersey Central Power & Light

A FirstEnergy Company

DETAILED STATEMENT OF ACCOUNT

Customer Name:

Townsville

Account Number:

XXXXXXXXXX

Service Address:

123 Main St

Entry Date	Read Date	Cons Type	Meter Reading	Cons Usage	Nbr Days	Daily Average	Read Type	FE Billing Amt	Supplier Billing Amt	Total Billing Amt	Budget Billing Amt	Due Date	Payment Amt	Adj Amt	Adj Type	Account Balance
07/02/18													-151.98			0.00
07/05/18	06/21/18	KWH	122	1,120	29	39	Act	167.57	84.01	251.58		07/24/18				251.58
		KW	0.551	22.00												
		BILL KW		22.00												
08/04/18	07/21/18	KWH	194	2,880	30	96	Est	198.06	216.03	414.09		08/22/18				665.67
		KW	0.546	21.80												
		BILL KW		21.80												
09/04/18													-251.58			414.09
09/04/18													-414.09			0.00
09/05/18	08/22/18	KWH	253	2,360	32	74	Est	188.76	177.02	365.78		09/24/18				365.78
		KW	0.545	21.80												
		BILL KW		21.80												



# Reading Billing Statements



Cost

19216

Account Billing History

Account ID . . . XXXXXXXXXXXX

Townsville

Service Address. 123 Main St

Meter Position . 1

Group ID .

Bill End Date

O Invoice

Read Date

Bill Days

Degree Days

R

Meter Reading

Billabl Units

Amount

C N

Usage

02/06/19 01/31/19 27 796 1 48352 8,250.4324 8,547.38

01/08/19 01/04/19 34 751 1 40764 8,201.0116 9,389.04

12/06/18 11/30/18 30 524 1 33195 5,932.6060 3,237.31

11/05/18 10/30/18 29 187 1 27712 2,213.6258 1,645.96

10/04/18 10/01/18 31 3 1 25665 441.9048 889.16

09/05/18 08/30/18 28 1 25257 244.2156 786.02

08/07/18 08/02/18 29 1 25031 279.3056 801.34

07/09/18 07/03/18 32 1 24772 467.8132 883.66

06/07/18 06/01/18 29 21 1 24339 671.1147 972.55

05/08/18 05/02/18 29 336 1 23718 5,075.4776 2,897.70

04/09/18 04/03/18 31 713 1 19015 8,449.3908 4,563.51

03/08/18 03/02/18 31 563 1 11211 7,074.6321 3,950.84

02/06/18 02/01/18 26 740 1 4702 8,722.1860 4,710.53

Bill Start Date = previous bill end date





# What is the best way to track energy?

An Overview of ENERGY STAR Portfolio Manager



# What is ENERGY STAR Portfolio Manager?

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- ENERGY STAR: a program run by the EPA that promotes energy efficiency
- ENERGY STAR Portfolio Manager: a free, energy-management tool that allows you to easily track energy and water consumption across a building portfolio





# ENERGY STAR Portfolio Manager (ESPM)



**ENERGY STAR®**  
**PortfolioManager®**

Welcome  
BoroughBradleyBea  
ch:

Account | Settings

Notifications <sup>9</sup>

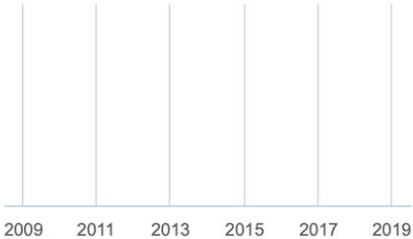
ENERGY STAR <sup>1</sup>  
Notifications

Contacts | Help

**MyPortfolio** | Sharing | Reporting | Recognition

Properties (8)  
[Add a Property](#)

[Refresh](#) to see **Source EUI** Trend  
[Change Metric](#)



2009 2011 2013 2015 2017 2019

Manage Portfolio

**Dashboard**

Please [refresh](#) to see your current metrics.

View All Properties (8) | Energy Highlights | [Refresh Metrics](#)

[Add/Edit/Delete Groups](#) | [Add/Edit/Delete Views](#)

Name	Energy Current Date	ENERGY STAR Score	Site EUI (kBtu/ft²)	Source EUI (kBtu/ft²)
<a href="#">Borough of Bradley Beach Borough Hall &amp; Police Station</a> 5460519				
<a href="#">Borough of Bradley Beach Cliff Avenue Tag Booth</a> 5470831				
<a href="#">Borough of Bradley Beach DPW Buildings</a> 5480035				
<a href="#">Borough of Bradley Beach Lifeguard Station</a> 5470828				

# ESPM: Building Summary

Borough of Bradley Beach Borough Hall  
& Police Station

 Not currently eligible for  
ENERGY STAR Certification

[Change Metric](#)

**Weather Normalized  
Source EUI (kBtu/ft²)** Why not  
score?

**Current:** 707.2  
(507.72% higher than median.)

**Baseline:** 795.9  
(583.90% higher than median.)




[Edit](#)

Summary

Details

Energy

Water

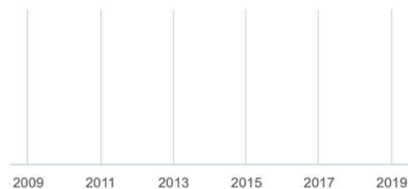
Waste & Materials

Goals

Design

[Refresh](#) to see **Source EUI** Trend

[Change Metric](#)



[Change Metrics](#)

[Change Time Periods](#)

## Metrics Summary

Metric <a href="#">Change Metric</a>	Dec 2015 (Energy Baseline) <a href="#">Change Metric</a>	May 2020 (Energy Current) <a href="#">Change Metric</a>	Change <a href="#">Change</a>
ENERGY STAR Score (1-100)	<a href="#">Not Available</a>	<a href="#">Not Available</a>	N/A
Source EUI (kBtu/ft²)	797.9	692.9	-105.00 (-13.20%)
Site EUI (kBtu/ft²)	380.4	327.8	-52.60 (-13.80%)
Energy Cost (\$)	<a href="#">Not Available</a>	35,198.72	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	31.2	27.0	-4.20 (-13.50%)
Water Use (All Water Sources) (kgal)	<a href="#">Not Available</a>	<a href="#">Not Available</a>	N/A
Total Waste (Disposed and Diverted) (Tons)	<a href="#">Not Available</a>	<a href="#">Not Available</a>	N/A

## Included in ESPM:

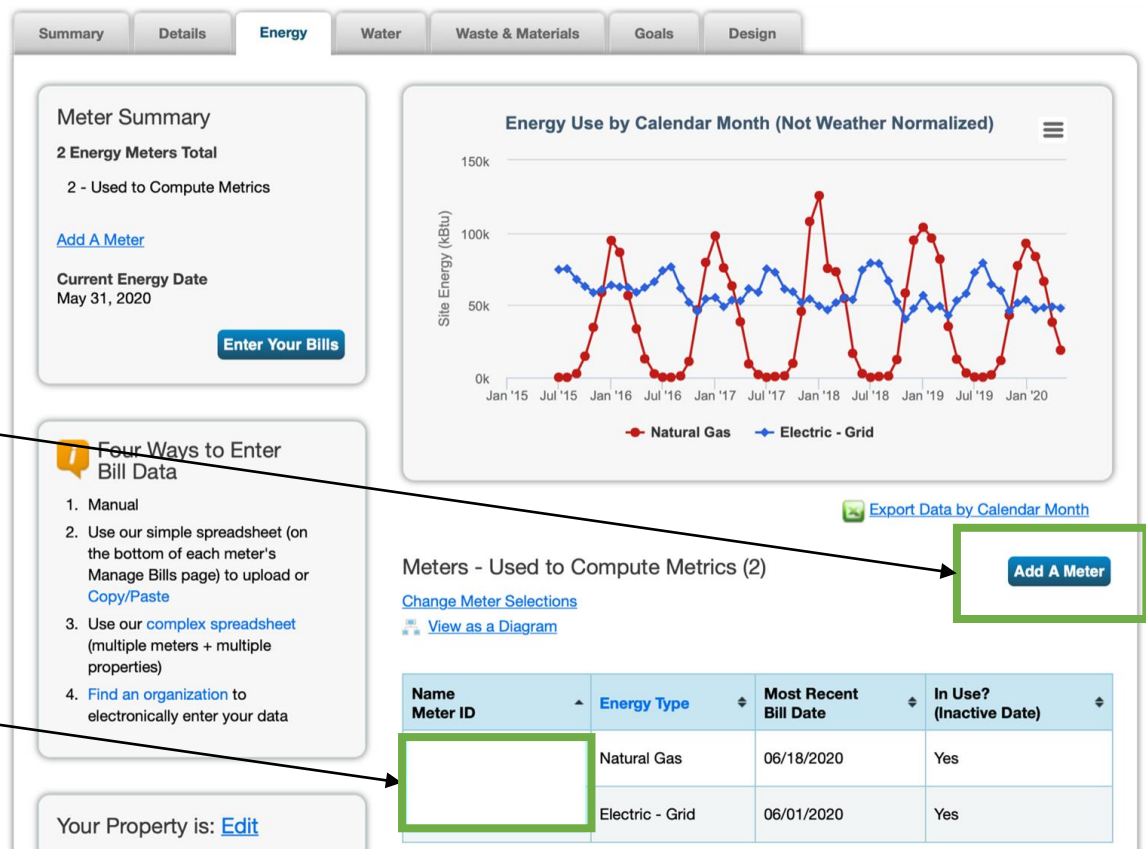
- Name and address/location
- Square footage, year built, occupancy usage
- List of all utility accounts for each building
- 12 months of complete utility data for all municipal buildings

# ESPM: Tracking Electric and Natural Gas Utility Data

Establish a point person:

- Green Team
- Deputy Clerk
- Finance Dept.

Input System





# ESPM: Tracking Electric and Natural Gas Utility Data



Keep separate  
Excel  
spreadsheets

Keep track of:

- Bill Start Date
- Bill End Date
- Usage (kWh)
- Total Cost
- Demand (kW)

Monthly Entries

Display Year(s):

Show All Years

Start Date	End Date	Usage kWh (thousand Watt-hours)	Total Cost (\$)	Estimation	Green Power	Demand (kW)	Demand Cost (\$)	Last Updated
<div><div></div><div>The date that the meter became active which you have entered for G28027639 (11/01/2014) creates a gap of missing bills for this meter. There are no bills entered between the date that the meter became active which you selected and the first bill you have entered. If you continue, your metrics may not be able to be calculated until this missing information is entered.</div></div>								
<input type="checkbox"/> 11/21/2014	12/22/2014	16,440	2,002.85	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 12/23/2014	1/21/2015	16,680	2,025.33	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 1/22/2015	2/23/2015	19,760	2,340.63	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 2/24/2015	3/25/2015	17,880	2,189.26	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 3/26/2015	4/24/2015	17,360	2,111.64	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 4/25/2015	5/26/2015	18,800	2,260.36	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 5/27/2015	6/23/2015	19,320	2,393.06	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>
<input type="checkbox"/> 6/24/2015	7/23/2015	21,000	2,557.55	<input type="checkbox"/>	<input type="checkbox"/>			11/20/2016 <a href="#">Star Stewart</a>





# Connect With Sustainable Jersey



## My Contacts

[Search for new contacts](#)

This is where you keep track of your contacts and/or organizations (i.e. people or companies associated with your properties such as Professional Engineers, Registered Architects, or others with whom you share information). You can add anyone as a contact, regardless of whether they have a Portfolio Manager account and you can share your properties & reports with any of your **connected** contacts. You can "connect" to other Portfolio Manager users by searching for their accounts and sending a connection request.

[Share](#) [Edit](#) [Delete](#) [Add Contact](#) [Add Organization](#)

All	<input type="checkbox"/>	Name	Organization
B	<input type="checkbox"/>	<a href="#">Borough of Bradley Beach</a> Government: Local (U.S.)	<a href="#">Borough of Bradley Beach</a>
J	<input type="checkbox"/>	<a href="#">Sustainable Jersey (SUSTAINABLEJERSEY)</a> Connected Sustainability Organization	<a href="#">Sustainable Jersey</a>
S	<input type="checkbox"/>	<a href="#">Star Stewart (RREISNER)</a> Connected NOT AVAILABLE	<a href="#">TRC</a>

[Share](#) [Edit](#) [Delete](#) [Add Contact](#) [Add Organization](#)

Add Sustainable Jersey as a contact

Share properties

**ENERGY STAR®**  
**PortfolioManager®**

Welcome  
BoroughBradleyBea  
ch:

Account | Notifications  
Settings

ENERGY  
STAR  
Notifications

0 | Contacts | Help | Sign  
Out

[MyPortfolio](#) [Sharing](#) [Reporting](#) [Recognition](#)

**My Shared Properties**  
(0)

[Share \(or Edit Access to\) a Property](#)

[Set Up Web Services/ Data Exchange](#)

[Download Sharing Report](#)

**Sharing Notifications (8)** [View All](#)

[Borough of Bradley Beach Lifeguard Station](#) - Sharing request sent to [Sustainable Jersey](#)

[Cancel](#)  
[Clear](#)

[Borough of Bradley Beach Third Avenue Tag Booth](#) - Sharing request sent to [Sustainable Jersey](#)

[Cancel](#)  
[Clear](#)

Overview of Shared Properties [Learn more about Sharing Properties](#)



# ENERGY STAR Reporting



Generate a Statement of Energy Performance (SEP) for each building

MyPortfolio | Sharing | **Reporting** | Recognition

### My Contacts

This is where you keep track of your contacts and/or organizations (i.e. people or companies associated with your properties such as Professional Registered Architects, or others with whom you share information). You can add anyone as a contact, regardless of whether they have a F account and you can share your properties & reports with any of your **connected** contacts. You can "connect" to other Portfolio Manager their accounts and sending a connection request.

Share Edit Delete **Add Contact** **Add Organization**

All	Name	Organization
B	<a href="#">Borough of Bradley Beach</a> Government: Local (U.S.)	<a href="#">Borough of Bradley Beach</a>
J	<input checked="" type="checkbox"/> <a href="#">Sustainable Jersey (SUSTAINABLEJERSEY)</a> Connected Sustainability Organization	<a href="#">Sustainable Jersey</a>
S	<input type="checkbox"/> <a href="#">Star Stewart (RREISNER)</a> Connected NOT AVAILABLE	<a href="#">TRC</a>

Share Edit Delete **Add Contact** **Add Organization**

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[Contact Us](#) | [Privacy Policy](#) | [Browser Requirements](#) | [ENERGY STAR B](#)

## 1 Select Report(s) to Download

- ☒ Statement of Energy Performance (SEP)
- ☐ ENERGY STAR Data Verification Checklist (energy data only)
- ☐ ENERGY STAR Scorecard
- ☐ Progress and Goals Report
- ☐ Statement of Energy Design Intent (SEDI)
- ☐ Water Scorecard (Multifamily only)

## 2 Select Property for Report(s)

Property: \*

## 3 Select Timeframe for Report(s)

Timeframe: \*  for:

## 4 Select Contacts for Report(s)

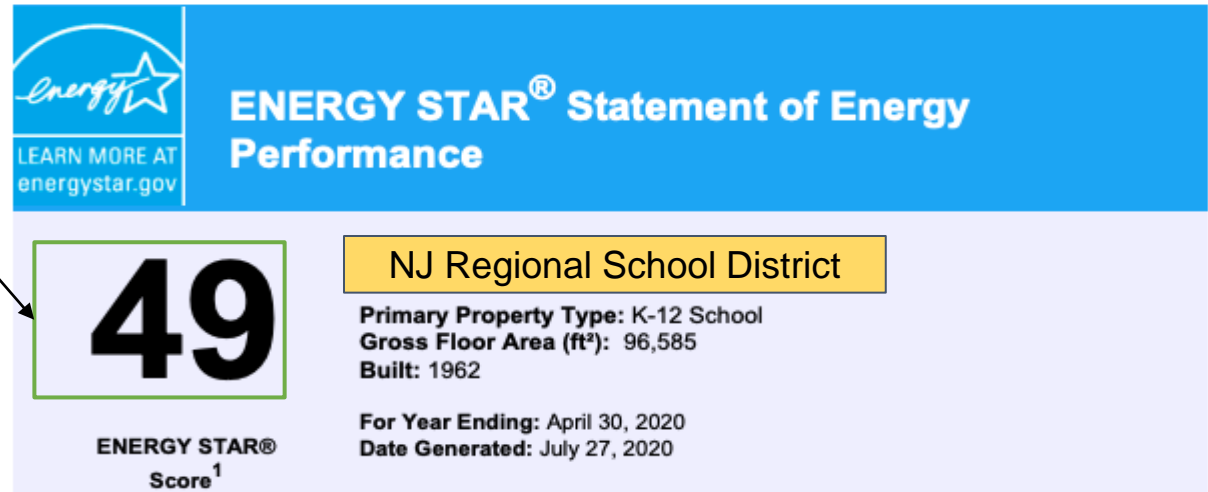
Select Property Contacts:

Primary Contact:  [Add Contact](#)  
Property Owner:  [Add Organization](#)  
Verifying Professional:  [Add Contact](#)

**Generate & Download Report(s)**

# Interpreting The SEP Report

- Energy Star Score
  - 1-100
  - Higher = more efficient
- National median = 50
- Don't worry if it reads N/A!



1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

## Property & Contact Information

**Property Address**  
Henry Hudson Regional School  
1 GRAND TOUR  
Highlands, New Jersey 07732

**Property Owner**

( ) -

**Primary Contact**

( ) -

**Property ID:** 11466818

## Energy Consumption and Energy Use Intensity (EUI)

**Site EUI**  
66.5 kBtu/ft²

**Annual Energy by Fuel**

Natural Gas (kBtu)	3,620,528 (56%)
Electric - Grid (kBtu)	2,800,409 (44%)

**Source EUI**  
120.5 kBtu/ft²

**National Median Comparison**

National Median Site EUI (kBtu/ft²)	66.2
National Median Source EUI (kBtu/ft²)	120
% Diff from National Median Source EUI	0%
<b>Annual Emissions</b>	
Greenhouse Gas Emissions (Metric Tons CO <sub>2</sub> e/year)	476

Energy Use Intensity (EUI) = energy use per square foot.

Comparison of your energy use per square foot to national median & estimate of annual GHG emissions



# Common Issues With ESPM



## Building not Eligible for Energy Star Score

- Building use not eligible
- Not enough data
- Missing Property Details

## Data Gaps

- Make sure start and end dates for each entry are sequential and do not create gaps
- “Date Meter Became Active” should match earliest bill

## Data Input Error

- Look at commas and periods when inputting data
- Make sure to input the right information per bill

## Inconsistent Baseline Years

- Baseline year = earliest billing cycle for property
- Match first billing dates as closely as possible



# Benefits of Energy Tracking

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## Visibility

- Monitor continuous energy use information
- Validate cost reductions for energy saving projects
- Be aware of spikes and drops in municipal energy use

## State Incentives

- Many state incentives such as **Direct Install, Pay for Performance, Smart Start, and Local Government Energy Audit** require 14 months of utility data for application.
- Some incentives can cover up to 80% of the cost of your energy efficiency projects

## Sustainable Jersey Points

- 20 points for Energy Tracking and Management
- Up to 50 points for Energy Efficiency for Municipal Facilities



# Our Final Recommendations

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Take the time now to identify the facilities and addresses of your energy accounts.

Don't be shy asking for billing statements from your utility company! It's easier, and you're less likely to make data input errors.

Connect with your community Green Team. They could assist with ESPM maintenance, accountability, and grant writing.

Apply for an EDF Fellow for next year to get your community started on Energy Tracking and Management and other energy goals!

When applying for an LGEA, if you are stuck with building information, reach out to NJCEP (TRC). They can help you figure things out.



# Energy in Municipal Water Works

- Waterworks, commonly defined as a system of pumps and reservoirs, are the facilities that provide water to a municipality or town.
- They have to adhere to **strict state and federal regulations**.
- They are energy intensive facilities:
  - up to **40% of municipal electricity** use
- Waterworks
  - can be owned by the utilities or privately owned
  - may not be bound by the geographical limitations of the municipality
  - can have a variety of energy intensive equipment.





# Energy In Municipal Waterworks



## Common Energy Efficiency Equipment Upgrades

### Variable Pump Sizes

- Different pump sizes to handle higher & lower flow rates ensures pumps are not overworking and wasting energy

### Variable Frequency Drives (VFDs)

- VFDs adjust pump motor power supply to ensure peak efficiency.
- Useful when flow rates vary significantly throughout the day.


### Upgraded Aeration Equipment

- Aeration systems typically account for half of the energy use in a wastewater plant.
- Upgrading to energy efficient blowers and diffusers can save energy and costs.



# New Jersey Clean Energy Program





New Jersey's  
cleanenergy  
program™

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Local Government Energy Audit

LEAD BY EXAMPLE

All across New Jersey, residents and business owners are looking for ways to save energy and the environment. In order to understand how they can save, the Local Government Energy Audit (LGEA) Program allows local government agencies, state contracting agencies, public agencies, state colleges and state universities, and select non-profit agencies, to examine their facilities and see how they can improve their energy use. The program can help you identify cost-justified energy-efficiency measures, as well as subsidize the full cost of the audit. The entire audit process including customer assistance, application processing and auditing will be performed by TRC, the Program Manager for New Jersey's Clean Energy Program (NJCEP). More details are available about the LGEA program in this [brochure](#), [Video Overview](#), [Program Guide](#) and [FAQs](#).

Eligibility


The LGEA Program targets buildings owned by many local government-related entities, New Jersey Colleges and Universities, and 501(c)(3) non-profit agencies. Such facilities may include, but are not limited to: offices, courtrooms, town halls, police and fire stations, sanitation buildings, transportation structures, schools and community centers.


Your Expense is Covered

NJCEP will subsidize 100% of the cost of the audit, up to an incentive cap, so there are no out of pocket expenses associated with services provided under this program.

Audit Scope


The audit includes an inventory of all energy-consuming equipment, comprehensive utility bill analysis, facility benchmarking, and feasibility for solar and combined heat & power. When your audit is complete, you'll have a list of recommended, cost-justified measures and facility upgrades that will help reduce operating expenses and, in many cases, improve the health and productivity of the buildings' occupants. Many of the recommended measures will be eligible for additional incentives






New Jersey's  
cleanenergy  
program™

Local Government Energy Audit:  
Energy Audit Report



Administration Building  
Asbury Park Board of Education  
910 Fourth Ave.  
Asbury Park, New Jersey 07712



Results you can rely on

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October 11, 2018

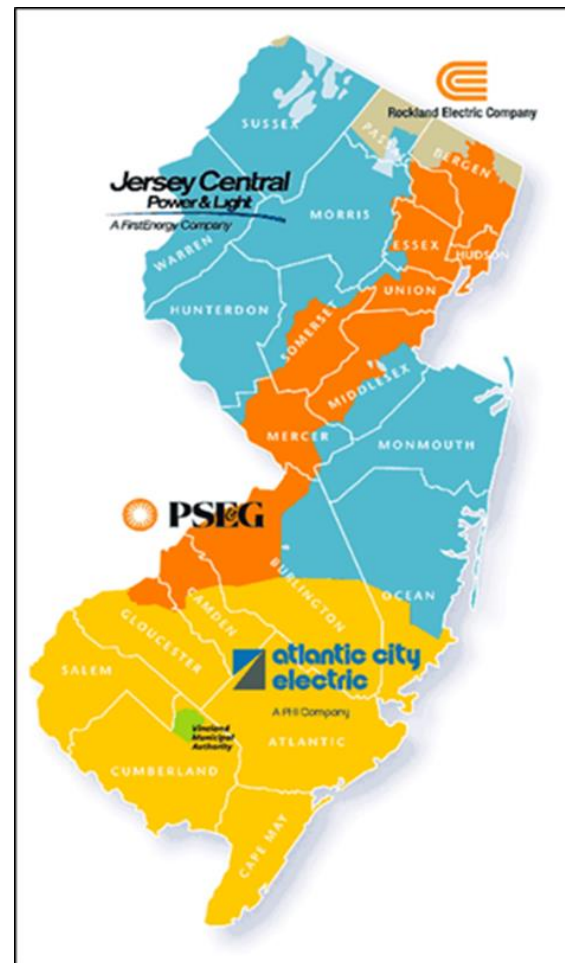
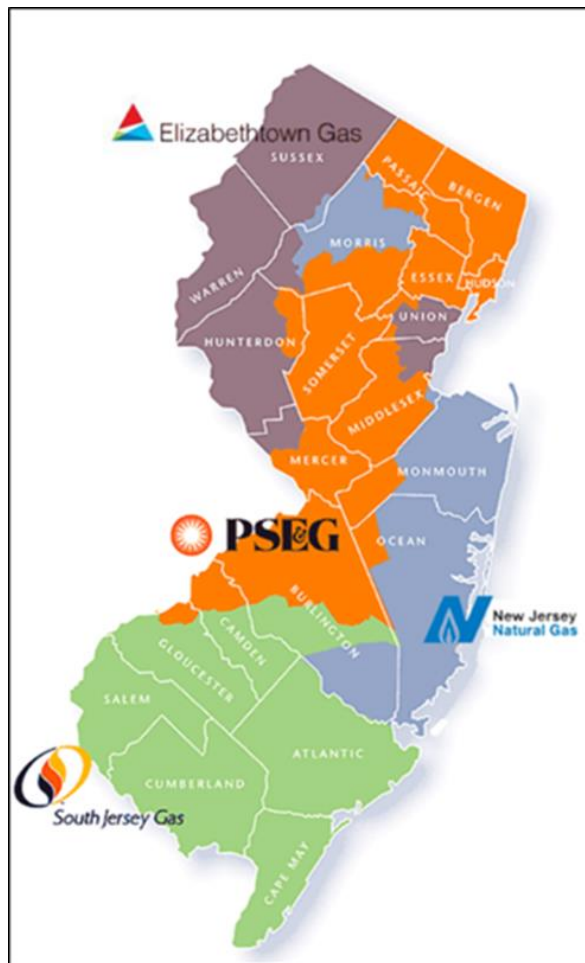
Final Report by:  
TRC Energy Services

[njcleanenergy.com](http://njcleanenergy.com)

Facebook: SustainableJersey | Twitter: @SJ\_Program, @SJ\_Schools | Insta: sustainable\_jersey | LinkedIn: sustainable-jersey

# Utility Incentive Programs

- Incentives vary by utility
- Contact your local natural gas and electric utilities





# Sustainable Jersey Supporters & Sponsors

## Program Underwriters



## Grants Program



## Corporate Sponsors

### PLATINUM



### GOLD



### SILVER



### BRONZE



# Sustainable Jersey for Schools Supporters & Sponsors

## Program Underwriters



## Grants Program



## Corporate Sponsors

### PLATINUM



### GOLD



### SILVER



### BRONZE







- NJEA Grant
- Ten (10) \$10,000 project grants to school districts and schools
- Forty (40) \$2,000 grants to support school green teams
- Webinar
- August 20, 2020 - 3:00 pm to 4:00 pm
- [Register](#)

## Sustainable Jersey for Schools Grants Program

### Funding Available for Sustainability Initiatives!

*Does your school have a project that needs funding?*

We are pleased to announce that the New Jersey Education Association (NJEA), as a program Underwriter, is sponsoring its sixth annual Sustainable Jersey for Schools Grants Program cycle. Since the inception of the Sustainable Jersey for Schools Program in 2014, NJEA has provided \$1.5 million dollars to support a sustainable future for children and communities across the state.

**Available Grants** : Ten \$10,000 District or School Project Grants  
Forty \$2,000 School Project/Green Team Grants

**Access Application** : Visit [bit.ly/2020NJEAgrants](http://bit.ly/2020NJEAgrants) to find links to the \$2,000 and \$10,000 online applications and more information on this grants cycle

**Application Due** : Friday, October 30, 2020 at 11:59pm

**Eligible Applicants** : New Jersey public school districts or schools registered in the Sustainable Jersey for Schools program with an established green team and an NJEA local association. Previous grant recipients must meet additional requirements available for review at [bit.ly/SJSGrantEligibility](http://bit.ly/SJSGrantEligibility)

**Informational Webinar** : Thursday, August 20, 3:00-4:00pm visit [bit.ly/2020NJEAgrantsWebinar](http://bit.ly/2020NJEAgrantsWebinar) to register

**IMPORTANT NOTE REGARDING ENERGY RELATED PROJECTS**  
Energy-related projects ARE NOT eligible proposals for 10k grants and will only be accepted in the Sustainable Jersey energy grants cycle funded by the Gardiner Environmental Fund. Proposals for energy education, conservation, and behavioral change for 2k grants will be accepted in the NJEA cycle. More information on the energy grants cycle can be found at [bit.ly/2020EnergyGrants](http://bit.ly/2020EnergyGrants) once officially announced.

**Sponsored By:**  **njea** NEW JERSEY EDUCATION ASSOCIATION

For more information visit [www.sustainablejerseyschools.com](http://www.sustainablejerseyschools.com)  
Questions? Contact [grants@sustainablejersey.com](mailto:grants@sustainablejersey.com) or call (609) 771-3189



# Keep in Touch!

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## Contact Information

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**Zukhruf:**

[zukhruf.amjad@duke.edu](mailto:zukhruf.amjad@duke.edu)

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