

The Business Council and NYSERDA Webinar Series:

FlexTech and On-site Energy Manager Programs

Joanna Moore NYSERDA

Tristan Schwartzman Goldman Copeland

Laura Giannini TRC

Martin Susz Archdiocese of New York



**The
Business
Council**



NYSERDA

November 21 2019

Technical Assistance and Energy Studies

Get professional guidance to identify cost-effective opportunities that save time, money, and energy for your business

How you benefit

- > Receive expert advice on your business's overall energy performance
- > Understand your energy performance compared to that of other businesses
- > Uncover hidden problems that may be making your building less efficient
- > Identify potential health and safety concerns, such as improper ventilation, that may cause mold and mildew growth and degrade air quality

When you should consider it

Pursuing energy studies and technical assistance may be good for your business if you are:

- > Developing an energy strategy and energy action plan for your business
- > Establishing a baseline of your energy performance
- > Forming and setting goals related to energy management
- > Identifying energy saving opportunities to optimize operations and reduce costs

Flexible Technical Assistance

(FlexTech)

FlexTech (PON4192) – Q4 2019 Launch

Provides credible, objective, site-specific targeted technical assistance and analysis to help customers make informed clean energy investment decisions that result in the implementation of clean energy technologies.

Sectors Served

Commercial, Industrial, and Multifamily

Participant Eligibility

Primary SBC electric customers

Updates include in PON 4192

- New Level 1+ Studies
- New Multifamily
- Merging in Roadmaps Program
- Streamlined Documentation

Application Deadline

December 31st, 2025

FlexTech – Use Cases

- ✓ Clean Heating and Cooling system studies (including ASHP**, GSHP**, VRF**, Solar Heating)
- ✓ Comprehensive ASHRAE Level 2 or Level 3 audit
- ✓ Custom pilot projects
- ✓ Distributed Energy Resource studies (CHP, Energy Storage including Premium CHP)**
- ✓ Energy Advisor scopes of work
- ✓ Energy master planning and phased studies
- ✓ Energy Performance Contracting Assistance for P-12
- ✓ Energy studies with schematic design
- ✓ Level 1+ audit
- ✓ Net Zero energy/ Carbon reduction studies
- ✓ Retro-commissioning

** ASHP = Air source heat pump
GSHP = Ground source heat pump,
VRF = Variable refrigerant flow
CHP Premium = Combined Heat and Power studies include an evaluation of CHP coupled with other DER.

FlexTech – Cost Sharing

- > Most studies: 50% cost-sharing
- > Merging in Roadmaps Program
 - C&U are required to be REVCC members
 - 60% cost-sharing
 - LIPA funds available
- > New: L1+ studies
- > Re-opening the installation of permanent meters or permanent sub-meters to commercial facilities

	Technical Assistance Services	Standard NYSERDA: Cost Share	REV Campus Challenge Member: NYSERDA Cost Share ^{1,2}	NYSERDA Cost Share Cap per Project
Primary Services	Level 1+ Energy Study			up to \$10,000 per building
	Targeted or Comprehensive Energy Study Targeted or Comprehensive RCx Study Climate Action Plan or Sustainability Plan Clean Heating and Cooling Study Energy Master Planning Energy Advisor Services	50%	60%	up to \$500,000 or 10% Annual Energy Expenditure, whichever ever is less
	Traditional Combined Heat and Power (CHP) Study: Represents a single-technology solution that simultaneously provides thermal and electrical energy at a host site.	50%	50%	
	Premium Combined Heat and Power (CHP) Study: Includes an evaluation of CHP coupled with other distributed energy resources (DER). The intent is to evaluate optimized (integrated) solutions that capitalize on advances in technology, control analytics and deliver on-site power with resiliency benefits.	75%	75%	
	Energy Storage (ES)	75%	75%	up to \$100,000 or 10% Annual Energy Expenditure, whichever is less
<i>The following supporting services are eligible if completed in combination with any of the primary services above.</i>				
Supporting Services ³	Investigation of renewable energy technologies	50%	60%	
	Complete greenhouse gas emission inventory			
	Installation of permanent meters or permanent sub-meters			\$10,000
	Establish reporting protocol and report to voluntary third-party certification organizations	REV CC Only		
	Utilize a student intern	REV CC Only	up to \$4,000 of intern fees	10% of NYSERDA cost share

1. Colleges and Universities must be REV Campus Challenge members to receive a cost-share of any kind.
 2. Limited funds are available for REV Campus Challenge members who are Long Island Power Authority customers, who do not pay into the SBC.
 3. Supporting Services are only eligible for a NYSERDA cost share if completed in combination with a Primary Service.

FlexTech – Level 1+ Studies

- > Streamlined Scope of Work, Budget, and Final Report
- > Energy savings estimates
- > Cost-share up to \$10,000

Sample Level 1+ Scope of Work Template and Deliverables

FlexTech Consultant (hereafter "The Consultant") Contact Information: *(Include: Name, Title, Telephone, Email)*

Facility Square Footage: *(Indicate the square footage)*

Example: 165,000 square feet

Facility Description: *(Include a high-level description (use, occupancy, vintage, location, energy sources, etc.)*

Example: 123 Broadway, located in New York, NY is an office building with 10 tenants and approximately 120 occupants during normal business hours of 9am to 6pm Monday through Friday. It was built in 1960 with 10 stories plus a basement. The heating is provided by (10) rooftop units with DX cooling and natural gas-fired heating that are original to the building and in fair condition.

Scope of Work Description & Tasks: *(Mandatory tasks below; ability to add detail to each section as desired).*

The scope of the L1+ energy study shall include the following systems as applicable:

- Envelope
- Lighting
- HVAC (cooling, heating, air distribution, and ventilation and exhaust systems)
- Heating, chilled, condenser and domestic water systems
- Refrigeration (optional, food processing refrigeration)
- Industrial processes and support systems (compressed air, etc.)
- People moving systems
- Plug Loads (including office equipment, appliances)
- Laundries
- Food Preparation
- Pools, saunas and spas
- Other (please list): _____

1. **Scope Determination**– The Consultant will work with facility representatives to determine the overall project scope, initial facility opportunities, establishment of a project timeline and the determination of the degree of onsite testing that may be required to determine existing performance.
 - a. Review Existing Drawings/Documentation
 - b. Utility data review
 - c. Interviews
2. **Tabulate facility's energy usage** – The Consultant will collect and analyze historic energy use and determine the facility(ies) Energy Use Index (EUI).
3. **Energy Analysis** – The Consultant's analysis will focus on identifying energy efficiency measures (EEMs) that would be appropriate for implementation. For each measure analyzed, a description will be developed. In addition to the energy savings, the Consultant will provide basic economic metrics such as estimated project costs and estimated simple paybacks for each measure, routinely using **RMeans** Cost Estimator and other estimating tools. Once the measure-independent energy savings and cost exercises are complete, the Consultant will re-organize the measures according to the needs of the project (typically ranking them from most to least cost-effective).

Deliverables to NYSERDA:

**Deliverables may be submitted in any format if Scope of Work content and report guidelines are adhered to*

- Complete scope of work for NYSERDA review
- Final report for NYSERDA review

Report Guidelines:

1. Table of Contents with section headings and reference page numbers
2. Executive summary narrative, including:
 - a. General intent and scope of the study
 - b. Brief description of major findings
3. Project Summary Sheet and applicable synergistic opportunities and interactive effects
4. Methodology
 - a. Approach and methodology used to analyze the building(s) for O&M and ECMS
 - b. Source of implementation cost estimates
5. Narrative for all Energy Efficiency Measures (EEMs) evaluated
 - a. Description of the existing system(s) recommended for upgrade and recommended corrective measures/system
 - b. Brief description of general potential operational and/or indoor environmental quality benefits
 - c. Any additional analysis recommended as a next step, if applicable
6. Appendix
 - a. All energy conservation measure calculations and assumptions (Technical Resource Manual is a minimum, if measures are not listed on the TRM, provide a high-level spreadsheet or BII analysis)
 - b. Baseline operation (occupied hours, indoor temperature, system schedules)
 - c. Utility bill data used to determine the building's energy use baseline (minimum 12 months)

Project Cost Estimate

Project Total Pricing	\$4,000.00
Estimated Expenses/Travel Costs	\$50.00
Total Not-to Exceed Pricing	\$4,050.00

NYSERDA Cost Share	\$2,025.00
Customer Cost Share	\$2,025.00

Schedule (After Notice to Proceed): *(Indicate number of weeks to complete deliverables)*

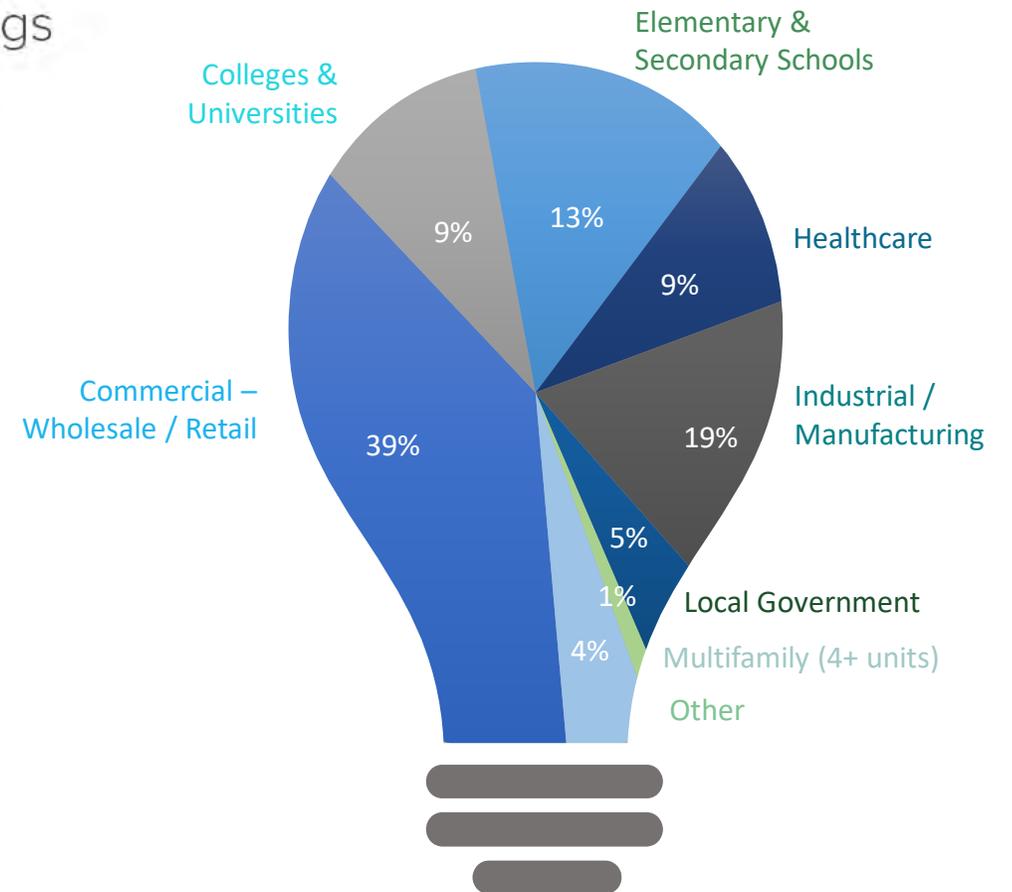
Invoicing (no more than monthly) will be based on the actual staff deployed, specific services provided and approved hourly rates.

FlexTech – Eligible Sectors

Commercial..... Commercial Real Estate/Office Buildings
Hospitals/Healthcare
Colleges & Universities
P-12 Schools
Municipal Buildings
Non-Profits
Retail
Stadiums, Theatres, etc.

Industrial..... Industrial Parks,
Manufacturing Facilities,
Wastewater Treatment Plants
Data Centers

Multifamily..... 4+ Residential Units



FlexTech – Benefits of Participation

88%

of customers had a good experience with FlexTech and would participate again

90%

of customers would work with their Energy Consultant again



FlexTech – Benefits of Participation

FlexTech Report

Quality	Ranking
Report was understandable	★★★★☆
Report was actionable	★★★★☆
Report was useful	★★★★☆
Report addressed my needs	★★★★
Overall satisfaction	★★★★☆

FlexTech – Benefits of Participation

Satisfaction with Energy Consultant

Quality	Ranking
Reasonable cost	★★★★
Customer service	★★★★☆
Communication & responsiveness	★★★★☆
Quality of work	★★★★☆
Overall satisfaction	★★★★☆

FlexTech – Benefits of Participation

86% 

of customers have already, or plan to,
install recommended measures

Fun Fact...

Customers of the following sectors **prioritize impacts on occupant comfort.**

Colleges & Universities
Commercial Office

Healthcare
Government

Industrial
K-12 School

On-site Energy Manager

On-site Energy Manager (PON 3701)

To demonstrate how a dedicated On-site Energy Manager (OsEM) can improve a company's profitability by delivering energy, process, and operational improvements.

Sectors Served

Commercial, Industrial, and Multifamily

Participant Eligibility

SBC electric customers

Application Deadline

December 30th, 2022

OsEM – Cost Sharing

Program provides a 75% cost-share for labor cost of a dedicated OsEM.

Facility Consumption (aggregated)	OsEM Cost-Share (12+ month term)	OsEM Bonus #1 (12 months after initial term)	OsEM Bonus #2 (24 month after initial term)	Total Possible
> \$1 million annual energy spend	Up to 75% cost-share not to exceed \$200,000	\$7,000	\$7,000	\$214,000
< \$1 million annual energy spend	Up to 75% cost share not to exceed \$100,000	\$5,000	\$5,000	\$110,000

OsEM – Participation Parameters

- > Organizations can utilize a new or existing permanent hire, contracted staff, or a hybrid of the two to fulfill the On-site Energy Manager role.
 - Organizations cannot have an existing On-site Energy Manager
- > The minimum ongoing commitment is half time (20 hours per week).
- > The minimum engagement length is 12 months.
- > Primary deliverables are:
 - A living energy management plan
 - Quarterly reports on energy savings initiatives identified and implemented

OsEM – Benefits of Participation

- > Utility cost savings
- > Carbon footprint reduction
- > Improve public perception
- > Influence changes in company culture and philosophy
- > Preparation for future growth
- > Allow others to focus on their primary jobs duties
- > Pursuit of outside funding sources for energy projects

OsEM – Current Stats

Project Data – Hours and Staffing

Hourly Commitment

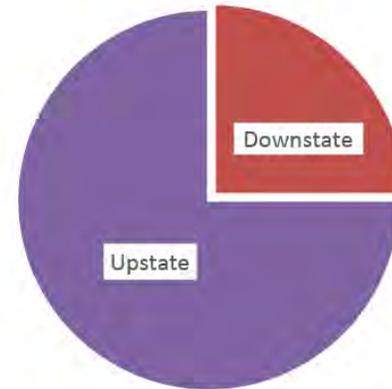


Staffing Arrangement

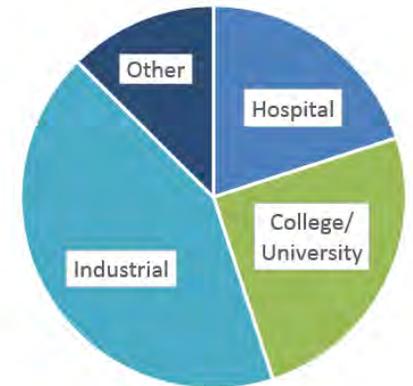


Project Data – Location and Sector Breakdown

Location

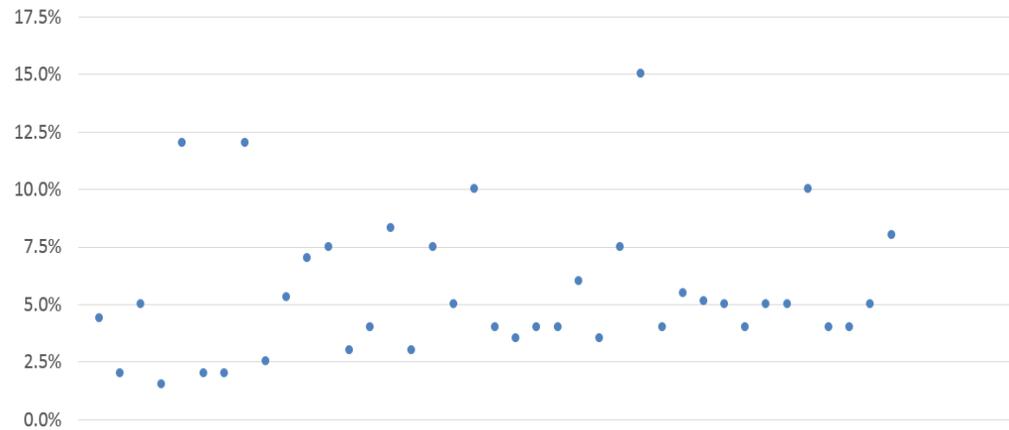


Sector

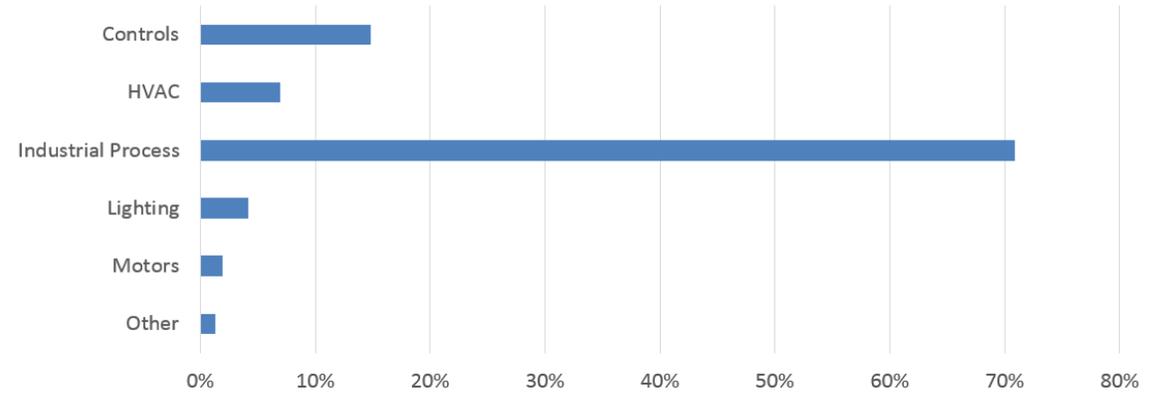


OsEM – Current Stats

Annual Savings Target by Project (Avg. 6.2%)



Percentage of Total Energy Savings by Measure Type



Archdiocese of New York Energy Audits and Energy Master Planning

Launch of the Energy Initiative

- > Original Goals:
 - Improve building performance
 - Reduce energy expenses
 - Demonstrate care for creation
- > FlexTech provided ***50% cost share*** for:
 - Energy audits at key buildings throughout the real estate portfolio
 - Development of a comprehensive Energy Master Plan



FlexTech Audits



- > 64 ASHRAE Level II Audits completed
 - Schools, churches, seminary, convents, rectories, office building



- > 300+ Buildings and nearly ~6.2M square feet audited*
 - *Combination of FlexTech audits and audits completed through NYSERDA's Small Commercial Energy Audit program



- > Average simple payback of recommended ECMs from FlexTech Audits = 8.2 years
 - Lighting, envelope, HVAC, motors, controls, hot water, refrigeration

Energy Master Plan

- > **Data from Energy Audits** provide technical foundation for the EMP
- > **Energy Master Plan Charrette** compiled input from varied groups and individuals within the organization to shape master plan content

Key Topics:

- Energy Efficiency Facility Improvements
- Efficient Operations
- Sustainability and Renewable Energy
- Leadership

Energy Master Plan Content:

- Vision and Mission
- Analysis of Baseline Energy Data and Audits
- Strategies related to Energy Procurement and Costs
- Specific and Measurable Goals
- Prioritized Next Steps and Action Items

Outcomes and ADNY Energy Initiative Today

> **Dedicated Energy Department oversees implementation of Energy Master Plan**

- Energy efficiency project implementation
- Extensive LED upgrade program
- Improved energy procurement
- Utility bill auditing
- On-site solar photovoltaic systems
- Building operator training
- Energy benchmarking training and support
- Parishioner engagement events
- Improved data management
- NYC Local Law compliance support
- On-going energy and sustainability communication content

Goldman Copeland 350 Park FlexTech Project

Why'd GoCo/Vornado Participate in FlexTech?

- > To meet Vornado's aggressive sustainability goals, they rely on recommended energy conservation measures and their expected energy/cost savings/payback period to justify implementation
- > Vornado had minimum upfront costs but was able to realize large savings
- > Through FlexTech, Goldman Copeland handles the entire NYSERDA application process, requiring minimum effort by Vornado
- > Goldman Copeland helped Vornado set energy performance goals, identify savings opportunities, and then prioritize those opportunities to achieve the greatest benefit

How FlexTech Was Beneficial

- > FlexTech shares the cost for the consultant to produce an objective, site-specific, and targeted study on how best to implement clean energy and/or energy efficient technologies.
- > Roadmap to Energy and Cost Savings
 - Electric Driveline Chiller
 - Perimeter Control Valves on Supply Fans
- > Significantly reduce the annual energy use and utility expenses for 350 Park
- > Improved Life Expectancy of Building Equipment
 - RCx of Existing Building Equipment
- > Improved air quality, occupant comfort, and productivity of building occupants

Project Results/Savings Summary

Measure Description	Electric Savings (kWh)	Steam Savings (Mlbs)	Annual Cost Savings
HVAC Controls	151,453	8,416	\$228,625
Chiller Upgrade	-	19,000	\$313,744
Lighting Upgrade	165,822	-	\$37,631
Total	317,275	27,416	\$580,000

Vornado Realty Trust

“An energy study is a quick way to evaluate your building’s energy performance and identify opportunities for easily implemented improvements at low or no cost. Taking advantage of programs and having a FlexTech Consultant identify ways to save energy and money improves the quality of your space, creates a better environment for your tenants, and helps the environment and your portfolio” — *Vornado Realty Trust*

Vornado Realty invested \$126,449 in services provided by Goldman Copeland to discover opportunities that could save them nearly \$600,000 on their utility expenses annually.

Why to Participate/Engage a FlexTech Consultant

- > Make capital intensive upgrades and impactful decisions more strategic through an objective perspective
- > Low cost to receive the service
- > Ability to identify energy and cost savings

Want to Learn More?



Visit nyserdera.ny.gov/putenergytowork



NYSERDA

Resources

Keep up-to-date
on NYSERDA
programs, offerings,
and information

nyserderda.ny.gov/subscribe

Follow NYSERDA



FlexTech

nyserderda.ny.gov/FlexTech

flextech@nyserderda.ny.gov

Contacts:

Matt Christopher, NYSERDA

(518) 862-1090 x3064

Matthew.Christopher@nyserderda.ny.gov

OsEM

nyserderda.ny.gov/OsEM

onsiteenergymanager@nyserderda.ny.gov

Contacts:

Commercial:

Adam DeSio, NYSERDA

(212) 917-5342 x3009

Adam.DeSio@nyserderda.ny.gov

Industrial:

Stacey Sabo, NYSERDA

(716) 842-15222 x3037

Stacey.Sabo@nyserderda.ny.gov

Multifamily:

Simonne Li, NYSERDA

(212) 971-5342 x3082

Simonne.Li@nyserderda.ny.gov

Archdiocese of New York - Energy Audits & Energy Master Planning

Contacts:

Martin Susz, Archdiocese of New York

Director of Energy Management

martin.susz@archny.org

Laura Giannini, TRC

Senior Project Manager

lgianini@trccompanies.com

350 Park Flextech Project

Contacts:

Tristan Schwartzman, Goldman Copeland Associates

Principal, PE, CEM, EBCP, LEED AP BD+C

tschwartzman@goldmancopeland.com

(212) 868-4660

Upcoming Webinars

- > Thursday, December 19: Energy 101 - Beginning Your Energy Journey
- > Thursday, January 16: Cost Benefit Analysis of Energy Investments – How to Sell the Value Proposition
- > Thursday, February 20: NYS Energy Policy Update
- > Thursday, March 19: Energy Workforce Development Funding
- > Thursday, April 16: Energy Supply Chain Management