The Business Council and NYSERDA Webinar Series:

FlexTech and On-site Energy Manager Programs

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The Business Council  NYSERDA  NEW YORK STATE OF OPPORTUNITY

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.

<table>
<thead>
<tr>
<th>Sectors Served</th>
<th>Commercial, Industrial, and Multifamily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant Eligibility</td>
<td>Primary SBC electric customers</td>
</tr>
<tr>
<td>Updates include in PON 4192</td>
<td>• New Level 1+ Studies</td>
</tr>
<tr>
<td></td>
<td>• New Multifamily</td>
</tr>
<tr>
<td></td>
<td>• Merging in Roadmaps Program</td>
</tr>
<tr>
<td></td>
<td>• Streamlined Documentation</td>
</tr>
<tr>
<td>Application Deadline</td>
<td>December 31st, 2025</td>
</tr>
</tbody>
</table>
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.
### Technical Assistance Services

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Standard NYSERDA: Cost Share</th>
<th>NYSERDA Cost Share Cap per Project</th>
<th>REV Campus Challenge Member: NYSERDA Cost Share Cap per Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1+ Energy Study</td>
<td>50%</td>
<td>up to $10,000 per building</td>
<td>up to $10,000 or 10% Annual Energy Expenditure, whichever is less</td>
</tr>
<tr>
<td>Targeted or Comprehensive Energy Study</td>
<td>50%</td>
<td>up to $500,000 or 10% Annual Energy Expenditure, whichever is less</td>
<td></td>
</tr>
<tr>
<td>Climate Action Plan or Sustainability Plan</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Heating and Cooling Study</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Master Planning</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Advisor Services</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional Combined Heat and Power (CHP) Study</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premium Combined Heat and Power (CHP) Study</td>
<td>75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Storage (ES)</td>
<td>75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigation of renewable energy technologies</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete greenhouse gas emission inventory</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation of permanent meters or permanent sub-meters</td>
<td>50%</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>Establish reporting protocol and report to voluntary third-party certification organizations</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilize a student intern</td>
<td>60%</td>
<td></td>
<td>up to $4,000 or intern fees</td>
</tr>
</tbody>
</table>

### Supporting Services

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<td>60%</td>
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### Notes
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 – 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
FlexTech – Level 1+ Studies

Streamlined Scope of Work, Budget, and Final Report

Energy savings estimates

Cost-share up to $10,000
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
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

<table>
<thead>
<tr>
<th>Quality</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report was understandable</td>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
</tr>
<tr>
<td>Report was actionable</td>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
</tr>
<tr>
<td>Report was useful</td>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
</tr>
<tr>
<td>Report addressed my needs</td>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
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</table>
## FlexTech – Benefits of Participation

### Satisfaction with Energy Consultant

<table>
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<tr>
<th>Quality</th>
<th>Ranking</th>
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</thead>
<tbody>
<tr>
<td>Reasonable cost</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Customer service</td>
<td>★★★★★★</td>
</tr>
<tr>
<td>Communication &amp; responsiveness</td>
<td>★★★★★★</td>
</tr>
<tr>
<td>Quality of work</td>
<td>★★★★★★</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>★★★★★★</td>
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</tbody>
</table>
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.

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OsEM – Cost Sharing

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

<table>
<thead>
<tr>
<th>Facility Consumption (aggregated)</th>
<th>OsEM Cost-Share (12+ month term)</th>
<th>OsEM Bonus #1 (12 months after initial term)</th>
<th>OsEM Bonus #2 (24 month after initial term)</th>
<th>Total Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; $1 million annual energy spend</td>
<td>Up to 75% cost-share not to exceed $200,000</td>
<td>$7,000</td>
<td>$7,000</td>
<td>$214,000</td>
</tr>
<tr>
<td>&lt; $1 million annual energy spend</td>
<td>Up to 75% cost share not to exceed $100,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$110,000</td>
</tr>
</tbody>
</table>
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
  - Full Time
  - Half Time
  - Other

- Staffing Arrangement
  - Permanent Hire
  - Contracted Staff

Project Data – Location and Sector Breakdown

- Location
  - Downstate
  - Upstate

- Sector
  - Other
  - Hospital
  - Industrial
  - College/University
OsEM – Current Stats

Annual Savings Target by Project (Avg. 6.2%)

Percentage of Total Energy Savings by Measure Type

- Controls
- HVAC
- Industrial Process
- Lighting
- Motors
- Other
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

<table>
<thead>
<tr>
<th>Measure Description</th>
<th>Electric Savings (kWh)</th>
<th>Steam Savings (Mlbs)</th>
<th>Annual Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC Controls</td>
<td>151,453</td>
<td>8,416</td>
<td>$228,625</td>
</tr>
<tr>
<td>Chiller Upgrade</td>
<td>-</td>
<td>19,000</td>
<td>$313,744</td>
</tr>
<tr>
<td>Lighting Upgrade</td>
<td>165,822</td>
<td>-</td>
<td>$37,631</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317,275</strong></td>
<td><strong>27,416</strong></td>
<td><strong>$580,000</strong></td>
</tr>
</tbody>
</table>
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 nyserda.ny.gov/putenergytowork
Resources

Keep up-to-date on NYSERDA programs, offerings, and information
nyserda.ny.gov/subscribe

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(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