

Industrial and Process Efficiency (IPE): Data Centers

HIMSS

July 1, 2018

Agenda

- Introduction to NYSERDA
- Overview of Data Center programs
 - FlexTech
 - Industrial and Process Efficiency (IPE)
- Case Study
- Application Process
- Summary
- Next Steps: How to Apply
- Questions?

Introduction to NYSERDA

- **New York State Energy Research and Development Authority (NYSERDA)**
 - State authority promoting energy efficiency since 1975
 - Financial incentives for energy efficiency projects
- **Willdan Energy Solutions**
 - Data center outreach contractor for NYSERDA
 - Paid 100% by NYSERDA for targeted outreach, free to applicants

Overview of Data Center Programs

- NYSERDA offers millions in financial incentives for a variety of energy improvements. You can use NYSERDA programs to help offset the cost of energy-efficiency projects in New York-based data centers through:

1. **FlexTech Program (up to \$500,000)**

- Cost share for energy-related engineering studies

2. **Industrial and Process Efficiency (IPE) Program (up to \$1,000,000)**

- Financial incentives for energy-saving IT and facilities projects

Customer Eligibility

- **Must pay Systems Benefit Charge (SBC)**
- Funds public initiatives
- Line item on most NY utility bills:
 - ✓ Upstate (CHG&E, National Grid, NYSEG, O&R, and RGE)
 - ✓ Downstate (Con Edison)
 - ✗ Long Island Power Authority
 - ? New York Power Authority

Name: _____ Account number: _____ Billing period ending: Apr 12, 2010

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Your electricity charges

These charges are for the electricity you used (supply) and getting that electricity to you (delivery). Rates are based on a 30 day period. When your billing period is more or less than 30 days, we prorate your bill accordingly.

Electricity you used during this 31 day billing period from Mar 12, 2010 to Apr 12, 2010	
Rate: EL1 Residential or Religious	Meter# 6277522
We measure your electricity by how many kilowatt hours (kWh) you use. One kWh will light a 100 watt bulb for 10 hours.	
Apr 12, 10 actual reading	41894
Mar 12, 10 actual reading	-41772
Your electricity use	122 kWh

► **Your supply charges**

Supply 122 kWh @8.3279¢/kWh	\$10.16
Charge for the electricity supplied to you by Con Edison.	
Merchant function charge	\$0.63
Charge associated with procuring electricity, credit and collection related activities and uncollectible accounts.	
GRT & other tax surcharges	\$0.26
Taxes on Con Edison gross receipts from sales of utility services and other tax surcharges.	
Total supply charges	\$11.05

Your total electricity supply cost for this bill is 9.1¢ per kWh. You can compare this price with those offered by energy services companies (ESCOs). For a list of ESCOs, visit www.PowerYourWay.com or call 1-800-780-2884.

► **Your delivery charges**

SBC/RPS charges @0.5492¢/kWh	\$0.67
The System Benefits Charge/Renewable Portfolio Standard charges fund New York State renewable energy, environmental and other related public policy programs.	
Temporary NY State Surcharge @0.3770¢/kWh	\$0.46
Covers new fees imposed by the state.	
GRT & other tax surcharges	\$1.45
See earlier definition.	
Total delivery charges	\$31.19

► **Your sales tax**

Sales tax @4.5000%	\$1.90
Tax collected on behalf of New York State and/or your locality.	
Total sales tax	\$1.90

►► **Total electricity charges** **\$44.14**

Your average daily electricity use

Month	Average Daily Use (kWh)
May	4.5
Jun	4.5
Jul	4.5
Aug	5.5
Sep	4.5
Oct	4.5
Nov	4.5
Dec	4.5
Jan	4.5
Feb	4.5
Mar	4.0
Apr	4.5

FlexTech Program Overview

- NYSERDA can help you identify and prioritize your energy-saving opportunities through energy studies.
- **Up to 50% cost share** for energy-related engineering studies including but not limited to:
 - Feasibility Studies
 - Cooling Optimization
 - Airflow Management
 - UPS/Power Systems
 - Design optimization
- **Up to \$500,000** per study



FlexTech Program Overview

- Work with competitively selected technical expertise or consultant of choice
- If a customer prefers to use their own consultant:
 - Customer pays 100% of study cost up front
 - NYSERDA reimburses 50% *after* study completed
 - Technical reviewer and NYSERDA Project Manager must review scope of work
- Scope of Work and Final Report requirements

IPE Program Overview

- Financial incentives to reward energy-saving IT and facilities measures
- Up to **\$1 Million or 50% of total cost** per project
- New construction, existing facilities
- Performance-based incentives

IPE Program Overview

- Eligible projects include, but are not limited to:

IT Infrastructure	Facilities Upgrades
• Server virtualization	• CRAC/CRAH replacements
• Server refresh	• UPS upgrades
• Storage refresh	• VFDs
• Desktop virtualization	• Free cooling
	• Airflow management

Performance-Based Incentives

- Incentive determined by verified energy savings:

$$\left(\begin{array}{c} \text{Pre-installation} \\ \text{kWh usage} \end{array} - \begin{array}{c} \text{Post-installation} \\ \text{kWh usage} \end{array} \right) \times \begin{array}{c} \text{Incentive} \\ \text{Rate} \end{array} = \text{Cash Incentive}$$

- **Upstate**
 - Incentive Rate: \$0.10/kWh saved
 - Minimum: 250,000 kWh savings (\$25,000 incentive)
- **Downstate** (Con Edison's service territory)
 - Incentive rate: \$0.16/kWh saved
 - Minimum: 500,000 kWh savings (\$80,000 incentive)
- Funds distributed post-installation

Case Study: Transit Authority

The Rochester-Genesee Regional Transportation Authority virtualized and consolidated 36 servers down to 8 virtual machines in its Rochester data center, avoiding the purchase of 25 new servers. They received an incentive of **\$31,303.92**. This upgrade helped them to use space more efficiently and reduce annual energy consumption.

Project Details	
Project Cost	\$188,405.65
Incentive Rate	\$0.12/annual kWh saved
Annual Energy Savings	260,800 kWh
Annual Electric Cost Savings	\$19,800
Pre-incentive Payback	9.5 years
Payback with Incentive	7.9 years



IPE Program Process

1. Consolidated Funding Application (CFA)

- Online applications for NY State and NYSERDA
- **CFA must be submitted before POs are cut**
- Willdan helps customer calculate energy savings and submit application

2. Technical Review

- Energy savings are verified through pre- and post-installation site visit
- M&V period may be required for large projects

3. NYSERDA cuts incentive check

Customer Support

- **Comprehensive assistance throughout participation**
 - Program understanding
 - Project scope definition
 - Application development and submittal
- **NYSERDA IPE Team**
 - NYSERDA
 - Willdan Energy Solutions (dedicated Outreach Contractor)

Summary

- Funding is available from NYSERDA for energy efficiency upgrades in NY-based Data Centers:
- **Technical Assistance Studies**
 - Up to 50% cost share for energy-related studies
- **Financial Incentives for Energy Efficiency Measures**
 - Incentive based on verified energy savings (\$0.16/kWh saved*)
 - Up to \$1 million or 50% of the project cost

Next Steps: How to Apply

Contact:

Louisa Chan, Willdan

Email: lchan@Willdan.com

Phone: (646) 634-2591

David Fallo, Willdan

Email: dfallo@willdan.com

Phone: (646) 963-3322

Willdan Energy Solutions/IPE: 1-646-604-4502

NYSERDA Hotline: 1-212-701-7222

Website: www.nyserda.ny.gov/Data-Centers

Questions?