Energy Initiative - Retrofit

EMS - *Energy Management Systems, Hotel Occupancy Sensors & Vending Misers*

2011 Project Information Form for Upstate New York

This Project Information Form provides a template to collect project systems and equipment information and specifications. In addition, this form serves as a guide to Energy Management Systems, Hotel Occupancy Sensors and Vending Misers and identifies energy efficiency improvement products and incentives. Prior to the start of any installation of equipment or systems, **call your National Grid representative** to arrange a convenient time to perform an inspection of the existing equipment or systems. This inspection is required for all applications.

Customer Facility Information

Customer Facility Name: _____

_____

Contact Person: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Classification Type: ≥ 2MW ____ (Large Industrial only)*

< 2MW ____ (Mid-size) ❑ Industrial ❑ Commercial

* ≥ 2MW Large Commercial customer use the <2 MW classification

Date of Application: _____

Sq. Ft. Covered by Application: _____

Federal ID Number: _____

Company Type:

❑ Incorporated ❑ Exempt ❑ Not Incorporated

Phone Number: _____

Fax Number: _____

E-mail Address: _____

Customer of Record Information: Billing Account Number: _____ *Internal Use only*

Building Type *(select one)*

❑ Assembly	❑ Full Service Restaurant	❑ Light Industrial	❑ Small Office
❑ Auto	❑ Grocery	❑ Heavy Industrial	❑ Small Retail
❑ Big Box	❑ High School	❑ Motel	❑ University
❑ College Dormitory	❑ Hospital	❑ Multifamily high-rise	❑ Warehouse
❑ Community College	❑ Hotel	❑ Multifamily low-rise	❑ Other _____
❑ Elementary School	❑ Large Office	❑ Refrigerated Warehouse	
❑ Fast Food	❑ Large Retail	❑ Religious	

Installation Contractor Information

Installation Performed By:* ❑ Customer ❑ Installation Contractor (Vendor) ***If contractor has not been selected, select **Customer***

Complete this section if installation is not by the customer

Installation Company: _____ Street Address:_____

Contact Person: _____ City:_____ State:_____ Zip _____

E-mail Address:_____ Phone Number: _____

Application Information

Expected Completion Date: _____

Proposed Incentive Recipient: ❑ Customer (*Account Credit or Check*) ❑ Installation Contractor**

** ***Complete this section if Installation Contractor has been selected***

Federal ID Number: _____ Company Type: ❑ Incorporated ❑ Exempt ❑ Not Incorporated

This Form Was Completed By:

Name: _____

Phone Number: _____ E-mail Address: _____

For More Information

Phone: 1-800-787-1706 Website: www.nationalgridus.com

Instructions:

1) Fill in the Customer information datasheet on page 1.
2) Enter the Proposed EMS information in Table 1A - EMS Incentives below.
3) Follow the checklist instructions on Table 1B for the Documentation Required to Complete EMS Project Information Form.
4) Fill in Table 1C: EMS - Equipment Specification (*Facility Detail*) and Table 1D: EMS - Equipment Inventory List - Survey of Controlled Equipment Table on page 3.
5) Fill in Table 1E: Energy Management Summary Table on page 4.
6) For Hotel Occupancy Sensors, fill in Table 2A on page 5.
7) For Vending Miser Controls, fill in Table 3A on page 6.
8) Contact your National Grid representative to complete an application and to determine the incentives of your project.

1. Energy Management System (EMS) Eligibility Requirements and Incentive Details

EMS Requirements:

1. To qualify for an incentive, the building's new energy management system (EMS) must incorporate all EMS strategies listed if they are appropriate to the facility and equipment. EMS points associated with gas end uses where National Grid is not the customer's utility for natural gas delivery are not eligible for a gas incentive from National Grid. Those customers should contact their natural gas utility to explore their options for obtaining incentives for the points associated with gas end uses.
2. Only the installation of a new EMS or expansion of an existing system to control additional equipment is eligible for incentives. EMS must be installed in an existing building on existing equipment. The replacement of an operating EMS or existing control points or a software upgrade is not eligible for incentives. When mechanical equipment is replaced, EMS points are not eligible when a) the control point from the replaced equipment can be re-used or b) the new equipment is equipped with EMS control points as standard equipment
3. An EMS shall include a central operator's station including a central processing unit, PC (local or remote), and monitor. The operator's station shall be capable of monitoring all sensors and field devices in real time. Communications shall be via modem, communications bus, wireless device or internet connection to other microprocessor-based field services.

Table 1A: EMS Incentives

Measure Description	Maximum Unit Incentive per Eligible Electric Point*	Maximum Number of Points	Recommended Control Strategies
Energy Management Systems Conditioned space controlled *(See Req. 1,2,3 above)*			Facility must have electric air conditioning and/or electric/gas heat. EMS to include, if applicable: 1. Optimal start/stop 2. 7-day scheduling 3. Economizer, enthalpy control and/or demand control ventilation 4. Direct digital temperature control for air handling units.
5,000 - 40,000 Sq. Ft.	$225/pt	Total of 20 points not to exceed 16 electric points and 4 gas points	
Total Sq. Ft.		**Total # of Electric and Gas Points**	
40,001 - 80,000 Sq. Ft	$275/pt	Total of 60 points not to exceed 48 electric points and 12 gas points	
Total Sq. Ft.		**Total # of Electric and Gas Points**	
80,001 Sq.Ft. to <200,000 Sq. Ft	$225/pt.	Total of 160 points not to exceed 128 electric points and 32 gas points	
Total Sq. Ft.		**Total # of Electric and Gas Points**	

*** See your National Grid representative for custom incentive calculations for eligible points and for buildings smaller than 5,000 Sq. Ft. and larger than 200,000 Sq. Ft.**

Table 1B: Documentation Required to Complete EMS Project Information Form (Mandatory)

Seq	Description	Check-off
1	Complete Table 1D: "EMS - Equipment Inventory List", survey of controlled equipment (page 3)	☐
2	Attached points list for all controls being installed. Include point type and description	☐
3	Attach complete sequence of operations	☐
4	Complete Table 1E: "Energy Management Summary" (page 5)	☐
5	Attach manufacturers' performance for all controlled equipment including model numbers and efficiency levels	☐
6	Complete Table 1A: EMS Incentives including the total square feet controlled and the total number of control points	☐

Energy Management Systems

Table 1C: EMS - Equipment Specification (*Facility Detail*)

Building Type and Description	Building Conditioned Space Controlled (Sq. Ft.)	Building Control System Description	Annual Energy Use		Estimated Energy Savings	
			kWh	therms	kWh	therms

Table 1D: EMS - Equipment Inventory List - Survey of Controlled Equipment Table

	Equipment ID	Location	Area Served	HP/kW/Tons/etc	Current Operating Schedule	Future Operating Schedules	Control Strategy
Ex. 1	Hot water pump P-1	Boiler Room	West Wing AHUs	20 hp nameplate 10.2 kW measured (*5,088 hrs.*)	October 1-April 30 24 hrs/day	October - April when OAT <52F (4,414 hours)	EMS will schedule to run based on date and outdoor air temperature
Ex. 2	RTU-2	Roof NW	Second Floor Offices	5 hp supply fan 10 ton AC, 14 kW est. total	Runs "fan auto" 7 days/24 hours/day	Fan on 7am–5pm, 5 days/week. Cooling as required. Night setback by 5 degrees.	EMS will run during work days from 7am-5pm. Cooling will cycle on to maintain setpoint.

Energy Management Systems

Table 1E: Energy Management Summary

Equipment Controlled	Connected kW	No of Input/Output Points	Schedule Operating Hours				Control Strategies (*indicate with an "X"*)								
			Before EMS		After EMS		7-day Schedule	Optimal Start-Up	Night Setback	DDC Temp. Control	CHW Reset	Enthalpy Economizer	Static Reset	OA HW Reset	DCV
			Hrs/Wk	Wks/Yr	Hrs/Wk	Wks/Yr									
Cooling Equipment - Variable Load Factors															
Chillers															
Pumps - w/VSDs (CHW or CW)															
Condenser Fans															
Cooling Tower Fans															
DX Compressors															
Heating Equipment - Variable Load Factors															
HW Pumps (*VSD*)															
Electric/Gas Boiler or Furnace (enter rated kW or MMBTU as appropriate)															
Electric Baseboard Heating															
Electric Heat															
Year Round Equipment - Variable Load Factors															
Heat Pumps															
Fans – VAV															
Electric Reheat															
Constant Load Factors															
Circ. Pumps - CHW & CW															
Circ. Pumps – HW															
Heat Recovery Pumps															
Fans – Supply															
Fans – Exhaust															
Other Type of Loads															
Lighting															
Other (please provide a description on a separate page)															

2. Hotel Occupancy Sensors Eligibility Requirements and Incentive Details

Eligibility Requirements for Hotel Sensors:

1. Sensors must control PTAC or stack units with AC and electric resistance heat, heat pumps or gas heat.
2. PTAC's must have electric heat pump or gas unit to be eligible
3. The control must include:
   (a) occupancy detectors
   (b) window/door switches for rooms that have operable windows or patio doors
   (c) set back to 65°F in the heating mode and set forward to 78°F in the cooling mode when unoccupied detector is in unoccupied mode
4. Sensors controlled only by a front desk system are not eligible
5. Replacement or upgrade of occupancy based HVAC controls are not eligible
6. Hotels must operate 12 months of the year
7. Total quantity of eligible sensors cannot exceed the total quantity of room HVAC units controlled.

Table 2A: Hotel Occupancy Sensors Incentives

Quantity of Sensors	Electric Unit Incentive*	Total Incentive	Heat Source Cooling Provided by	Equipment Capacity BTUH or Tons
	$75/Sensor	$	☐ Heat Pump ☐ PTAC with Electric Heat	
	$75/Sensor	$	☐ Heat Pump ☐ PTAC with Electric Heat	
	Gas Incentive Calculated as Custom		☐ Water Source Heat Pump ☐ PTAC with Gas Heat	

***See your National Grid representative for custom gas incentives**

3. Vending Misers Eligibility Requirements and Incentive Details

Equipment Information:

All vending machine and cooler sensors must be installed on vending/cooling equipment scheduled to remain in service for minimum of 3 years. Only refrigerated vending machines, glass-front refrigerated coolers and non-refrigerated snack vending machines with lighting that contains nonperishable goods and that are installed indoors are eligible.

Table 3A: Vending Miser Incentives

Description	Per Unit Incentive
Refrigerated Beverage Vending Machine	$ 55.00
Non-Refrigerated Snack Vending Machine	$ 30.00
Glass Front Refrigerated Coolers	$ 75.00

Table 3B: Calculated Incentives

	Building Type	Location Description	Model Number	Control Quantity *(E)*	$ Incentive Per Control *(F)*	Calculated $ Incentive *(E x F)*
Ex.	**College library**	**Main lobby 1st floor**	**VM150**	**2**	**$75.00/Control**	**$150.00**
1						
2						
3						
4						

Keys to saving energy with vending misers

- Appoint a coordinator
- Inform all involved parties (students, staff, facilities, vendors, etc.)
- Provide training on how the vending misers work early in the process
- Establish a system for when vending machines have to be moved