



DUKE ENERGY SMART \$AVER® BUSINESS PROGRAM

DECEMBER 6, 2018

Small Water Systems Rebates

Gary Andrews

Sr. Energy Engineer





Duke Energy Fast Facts

- **Headquartered in Charlotte, NC with approximately 29,060 employees**
- **Electric Utilities and Infrastructure** (as of Dec. 31, 2017)
- States NC, SC, IN, OH, KY, FL
- Service Area 95,000 square miles
- Electric Generation Capacity (owned) 49,500 megawatts (MW)
- Electric Transmission Lines 31,900 miles
- Electric Distribution Lines 277,100 miles

- **Total Electric Retail Customers 7.6 million**
- North Carolina 3.4 million
- South Carolina 756,000
- Ohio/Kentucky 850,000
- Indiana 820,000
- Florida 1.8 million

Why Invest in Energy Efficiency?



Lowers energy costs
for years to come



Money saved to invest
back into the business



Minimizes future rate
increases and helps utility
defer the cost of building
additional generating facilities



Fosters a cleaner
environment by saving
valuable energy resources



Provides a more
comfortable, positive work /
learning environment



Lowers market prices by
increasing sales volume of
higher efficiency equipment

Who is Eligible?

Rebates and incentives are available to all Duke Energy business customers with two exceptions:



Cannot be on a residential rate



Cannot be opted out of the Energy Efficiency Rider



Who is Eligible to Receive Rebates and Incentives?



**Customer
or Vendor can
receive the
rebate or
incentive
payment**

**Vendor must
agree to lower
the invoice by
the amount of
the rebate or
incentive**

Smart \$aver Prescriptive Measure Groups



Lighting



HVAC



Industrial
Equipment



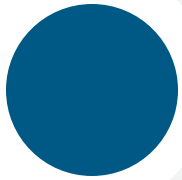
Commercial
Equipment



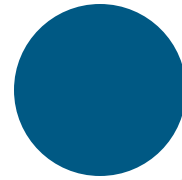
Agriculture

Over 300 Prescriptive Rebate Possibilities

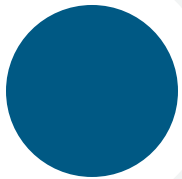
Smart \$aver Prescriptive Eligibility Requirements



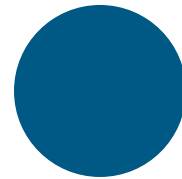
Equipment has not already received a rebate.



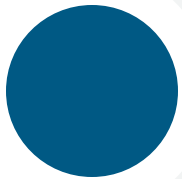
Application must be submitted within 90 days of project completion.



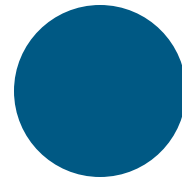
Application must be completed in full, with supporting documentation.



Must be willing to consent to installation verification.

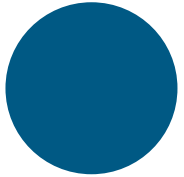


Payment is received after installation.

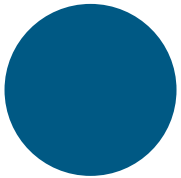


Rebates cannot exceed 75% of the customer's equipment cost in Kentucky, Ohio and the Carolinas and 50% in Indiana.

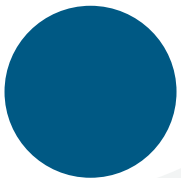
Smart \$aver Midstream Channel



Distributors offer instant rebates on energy-efficient products normally offered on our Smart \$aver® Prescriptive paper application. These products can include technologies such as lighting, HVAC and food service. Qualifying customer and product eligibility can be done online.



Customers receive instant incentives at point of purchase with no paperwork for the customer.



Requires distributor confirmation through questionnaire and signed contract. Additional requirements apply.



Smart \$aver Prescriptive - Lighting

Interior Lamps & Fixtures

Fluorescent High Bay Fixtures

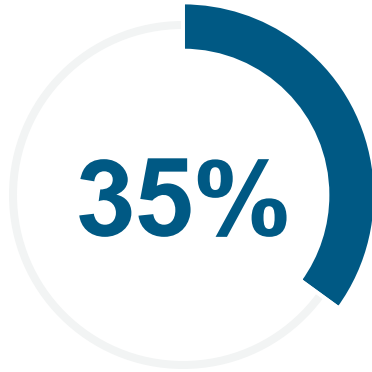
Exterior Lamps & Fixtures

Delamping

Controls & Sensors

Why Upgrade Lighting?

Lighting consumes close to



of the electricity used in commercial buildings in the United States.



Lighting is typically the largest source of waste heat inside commercial buildings. By reducing internal heat gain, efficient lighting also reduces a building's cooling requirements.



A building's lighting directly affects the comfort, mood, productivity, health and safety of its occupants. Improved lighting enhances visual comfort, reduces eye fatigue, and improves performance on visual tasks. May also increase productivity and reduce absenteeism.



Lighting directly affects the aesthetics and image of a building.



Occupancy sensors are effective in spaces where people move in and out frequently in unpredictable patterns.

High Efficiency Heating & Cooling Equipment

High Efficiency Chiller Equipment

Upgrades to Improve Existing Equipment

Controls

Building Envelope

Water Saving Measures

Why Upgrade HVAC?

Heating and cooling systems account for a significant portion of a building's energy use – typically about a quarter.



Increasing the efficiency of existing equipment or upgrading to more energy efficient equipment is a good way to lessen the impact of HVAC costs.



Temperature in the workplace plays an important role in providing a comfortable environment for employees and customers.



A high efficiency HVAC system helps create a pleasant and productive atmosphere while also providing energy savings up to **20%**.

Smart \$aver - Industrial Equipment

Process Pumping

High Efficiency Compressed Air Equipment

**Efficiency Improvements for Existing
Compressed Air Equipment**

**Efficiency Improvements for Existing Production
Equipment**

Why Upgrade Pumps and Drives?

A variable frequency drive is one of the most effective ways for businesses to reduce energy consumption.

Pumps can account for 75% or more of energy use in a business. By replacing existing pumps or investing in new high-efficiency pumps, you can significantly reduce energy costs. Also moving water slower reduces friction.





Prescriptive Pump Measures

Process pumping

1.a. Premium efficiency pumps -10% more expensive 5% more efficient

Select One	Pump size	Minimum nominal efficiency requirement	Rebate per unit	Enter Quantity	Total Rebate Before Cap
	1.5 HP	Efficiency of 65% or more for system	\$122.00/Pump		
	2 HP	Efficiency of 65% or more for system	\$175.00/Pump		
	3 HP	Efficiency of 67% or more for system	\$175.00/Pump		
	5 HP	Efficiency of 70% or more for system	\$170.00./Pump		
	7.5 HP	Efficiency of 73% or more for system	\$249.00/Pump		
	10 HP	Efficiency of 75% or more for system	\$165.00/Pump		
	15 HP	Efficiency of 77% or more for system	\$290.00/Pump		
	20 HP	Efficiency of 77% or more for system	\$400.00/Pump		

Enter Equipment Make/Model and additional required information:

- Pump efficiency is based on the design point on the pump curve. Documentation of the pump curve is required to receive a rebate.
- The pump efficiency at the design point on the pump curve must meet nominal efficiencies as stated in table above.
- Horsepower <1.5 does not qualify. Horsepower >20 will need to be applied for through Smart \$aver Custom.

Prescriptive Pump Measures

1. b. Variable speed drives for process pumping, 50 HP and under

Make/Model Number	Process Pumping Application	Project Type	Date Installed and Operable (mm/yy)	Rebate per Unit	Total HP	Equipment Cost (matches invoice)	Total Rebate Before Cap
		Retrofit		\$40.00/HP			

- Process pumping does not include HVAC or swimming pool fluid pumping systems.
- Rebates are only available for new VFDs installed on existing fluid process pumps.
- New replacement motors that power existing fluid process pumps are eligible for prescriptive rebates.
- VFDs over 50 HP and VFDs installed on new pumps are not eligible for prescriptive rebates, but may qualify for custom incentives.
- Variable Frequency Drive Fans and Pumps qualifying equipment must have 2,000 annual run hours or more.
- A 3 percent impedance reactor on the AC input to the VSD is recommended to prevent damage to the VSD due to overvoltage from power factor correction and should be properly sized by your supplier. A 5 percent reactor may be recommended if there is additional harmonic distortion on the AC input lines due to other plant-specific causes.
- Replacement of existing VFDs does not qualify for rebates.
- VFDs installed on redundant pumps do not qualify.
- VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signal.
- Existing throttling devices including inlet vanes, bypass dampers, and throttling valves must be removed or permanently

Improving Pumping Efficiency

- **Operate Smart Pump as slowly as possible**
- **Utilize storage to level out pumping rate**
- **Eliminate throttling**

- **► Fix Stuff Test pumps regularly (inc electrical measurements)**
- **Visual inspection of interior**
- **Modify or replace impeller to match conditions**
- **Replace old motors**

Smart \$aver Custom Incentive Program

- Building automation controls
- Upgrading compressed air systems
- Green building design
- Large variable frequency drives
- Unique process equipment
- Nonprescriptive lighting projects



Lighting



HVAC



Pumps



Food
Service



Process
Equip.



IT



Chillers



Ag



Unproven
Technologies

Custom Incentive Submission and Review Process

- Every Application is unique and reviewed on a stand-alone basis
- Submitting an application does not guarantee an incentive

Primary Criteria Considered:

Electric Savings to the Customer (kWh and kW)

**Incremental Project Cost
(compare EE option to standard/code)**

**Cost-effectiveness
(encourage the most cost effective options)**

**Technical Viability (conform to codes and
standard engineering practices)**

Useful Life

**Payback Must be One Year
or Greater to be Eligible**

**Incentive Cannot Exceed Incremental Cost of
75% in the Carolinas, OH, KY and 50% in IN**

This review often involves a request for additional information or dialogue for clarification

Smart \$aver Custom Incentive Program

Custom projects can vary widely and are sometimes complex. Here are some helpful hints to consider before beginning the incentive application process.

Only Duke Energy commercial and industrial electric customers are eligible to receive custom incentives.

To receive custom incentives, approval must be granted **prior to the initiation of the project.**



For complex projects, calculating the energy savings can often require engineering expertise. Before applying you may want to consider whether you have the resources to provide all the required information.

The application and approval process takes an average of **20 calendar days.**

Projects that are not eligible for rebates or incentives



Renewable energy generation projects, including Solar PV



Work that has begun prior to Duke Energy approval is not eligible for *Custom* incentives



Eliminating electric loads, or moving to another facility



Replacing electric loads with another fuel source



Measures that are not sustainable over time

CUSTOM-TO-GO / SMART \$AVER TOOLS



The Custom program makes available software tools which can be used for more common projects. The tools are currently being transitioned from standalone software (Custom-To-Go) to an online format (Smart \$aver Tools).



If your project can be defined using the calculator, no additional savings information is required.

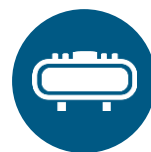
Our Custom-to-Go Tool / Smart Saver Tool Suite Features the Following:



**Lighting
Calculator**



**HVAC
Calculator**

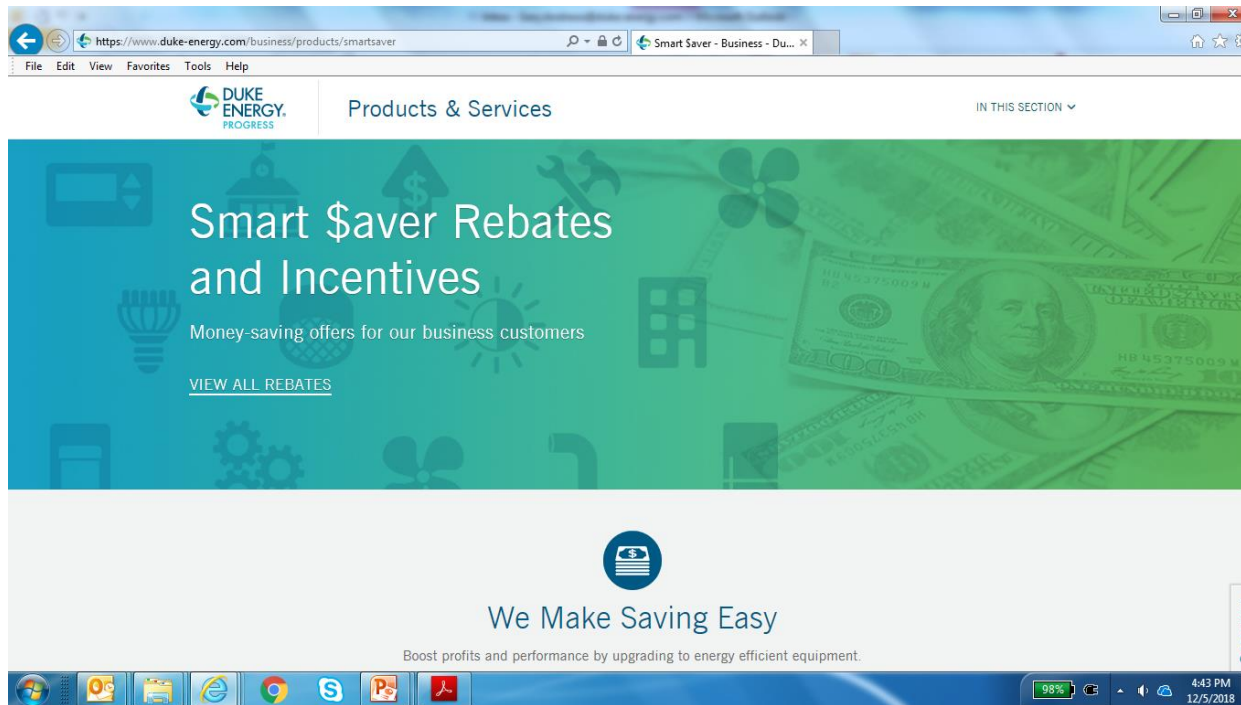


**Compressed
Air Calculator**



**Process VFD
Calculator**

www.duke-energy.com/savemoney



QUESTIONS?

