Guidehouse

Eligibility of Renewable Energy Measures

Within Illinois Energy Efficiency Programs

July 14, 2021

1. Introduction
2. List of Measures
3. Legislation
4. Savings Estimation Assumptions
5. Discussion, Next Steps

Introduction

What defines the boundary between energy efficiency and renewable energy?

Which measures with a renewable energy feature can be included in the Illinois Energy Efficiency Programs?

List of Potential Measures

	Grid Connected	Electric	Gas
Lighting			
PV Exterior Lights with battery	No	X	
PV Exterior Lights without battery	Yes	X	
Indoor Lights Powered by Outdoor PV	No	X	
Indoor Lights Powered by Outdoor PV	Yes	X	
PV Walkway Lights	No	X	
PV Walkway Lights	Yes	X	
Solar Thermal			
Solar Thermal Hot Water	No	X	X
Solar Thermal Pre Heaters (outdoor air ventilation)	No	X	X
Solar Thermal Space Heating	No	X	X
Solar Pool Heaters	No	X	X
Space Conditioning			
PV Powered Attic Fans	No	X	
PV HVAC or Heat Pump Units	No	X	X
PV HVAC or Heat Pump Units	Yes	X	X
Other			
PV attached to specific equipment	?	?	?
Biogas, Biofuel, or Biomass-Fired CHP – Not Grid Connected	No	X	X
Biogas, Biofuel, or Biomass-Fired CHP – Grid Connected	No	X	X
Biogas, Biofuel, or Biomass-Fired Offsetting Natural Gas Heating	No		X
Biogas, Biofuel, or Biomass-Fired Offsetting Electric Heating	No	X	X

Definitions and Requirements from the Legislation

Illinois EE and renewable legislation (20 ILCS 3855/1-10):

"**Energy efficiency**" means measures that reduce the amount of electricity or natural gas consumed in order to achieve a given end use. … "Energy efficiency" also includes measures that reduce the total Btus of electricity, natural gas, and other fuels needed to meet the end use or uses.

Definitions and Requirements from the Legislation

Illinois EE and renewable legislation (20 ILCS 3855/1-10):

"**Renewable energy resources**" includes energy and its associated renewable energy credit or renewable energy credits from wind, solar thermal energy, photovoltaic cells and panels, biodiesel, anaerobic digestion, crops and untreated and unadulterated organic waste biomass, tree waste, and hydropower ….

"Distributed renewable energy generation device" means a device that is:

…

(2) interconnected at the distribution system level of either an electric utility as defined in this Section, a municipal utility as defined in this Section that owns or operates electric distribution facilities, or a rural electric cooperative
[highlight added]

Definitions and Requirements from the Legislation

Conclusion

It appears that this definition leads to the conclusion that a system that uses renewable energy and isn’t connected to the grid, and one that isn’t eligible for a renewable energy credit, would not be confined by the parameters of other Illinois renewable energy requirements and could be considered for inclusion under EE programs.

Next steps for determining whether everyone agrees with that conclusion?

Savings Estimation Assumptions

1. Decisions need to be made on key assumptions for calculating savings.
2. Baseline. The condition or energy use if the measure were not installed needs to be defined.
3. Incremental costs

Savings Estimation Assumptions

Examples illustrating the issues at hand

- If the measure is grid-connected, from wiring that is already present, and the grid power provides the backup for times when the sun is not shining, then the savings may simply be the output of the solar system as it directly offsets grid-supplied energy.
  - Technical features about the capability to provide power to the grid determine eligibility but not savings.

Savings Estimation Assumptions

Examples illustrating the issues at hand

- For a solar thermal pre-heater for outdoor air ventilation should the baseline assume that the
  - Outdoor air is not pre-heated? Or
  - Outdoor air would be pre-heated using grid power or gas?

Savings Estimation Assumptions

Examples illustrating the issues at hand

If the program had not been supporting the renewable measure, would the customer have installed a measure to meet the need anyway?

- E.g., **Solar powered parking lot lights or exterior lights**. Would the customer have installed grid-connected lights as the alternative? Or gone without the lights?
- E.g., **Solar Powered Attic Fan**. Would the customer have installed a fan connected to the grid as the alternative? Or installed some other kind of vent?

Are these questions to be resolved by the ex-ante savings calculation?

Are they questions to be answered by project-specific program documentation?

Or are they questions to be resolved by an evaluation's free-ridership survey?

Questions, Discussion, Next Steps

1. Resolve the question of “can the Illinois energy efficiency programs include these measures”?
2. Is it possible to generate rules that define criteria for allowable measures?
3. Is it possible to generate general rules that define how savings are calculated?
4. If not, define measure-specific criteria (perhaps including a TRM measure work paper).
5. Define baseline assumptions

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