

Illinois Energy Efficiency Stakeholder Advisory Group

2020 SAG Portfolio Planning Process
Proposed Energy Efficiency Ideas Template

Submitter Contact Information

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Energy Efficiency Idea Questions

Please check the boxes below to identify 1) the type of idea; 2) which Illinois utility or utilities will be impacted by the idea; and 3) which EE sector the idea impacts.

Check	Type of Energy Efficiency Idea
<input checked="" type="checkbox"/>	New Measure or New Program Idea
<input type="checkbox"/>	Proposed Program Approach
<input type="checkbox"/>	Innovative Idea

Check	Illinois Utility Impacted by Energy Efficiency Idea
<input checked="" type="checkbox"/>	Ameren Illinois
<input checked="" type="checkbox"/>	ComEd
<input type="checkbox"/>	Nicor Gas
<input type="checkbox"/>	Peoples Gas & North Shore Gas
<input type="checkbox"/>	All Illinois Utilities

Check	Energy Efficiency Sector Targeted by Energy Efficiency Idea
<input checked="" type="checkbox"/>	Residential Customers – Single Family (non-income qualified/income eligible)
<input checked="" type="checkbox"/>	Residential Customers – Multifamily (non-income qualified/income eligible)
<input checked="" type="checkbox"/>	Residential Customers – Single Family Income Qualified/Income Eligible
<input checked="" type="checkbox"/>	Residential Customers – Multifamily Income Qualified/Income Eligible
<input type="checkbox"/>	Small Business Customers (commercial & industrial sector)
<input type="checkbox"/>	Medium/Large Business Customers (commercial & industrial sector)
<input type="checkbox"/>	Other (research & development, emerging technologies, market transformation)

Additional Questions

1. **Description of Idea:** Describe the proposed idea, including the purpose of the suggested idea and rationale. Describe whether this is an idea that could be implemented in an existing EE program, or whether the idea involves establishing a new measure or program. Please indicate whether additional research may be required before implementation.

Questions to consider: What issue will this proposed change resolve? Will the proposed change increase participation and result in increased energy savings? Will this reduce costs? Will this increase customer satisfaction? Will this help achieve statutory goals? Will this help increase program penetration?

The U.S. Environmental Protection Agency (EPA)'s ENERGY STAR program is interested in working with Illinois utilities in bringing "next generation" residential refrigerators to the market more quickly. EPA has conducted an internal analysis and has acquired market intelligence that reflects the interest in introducing these next generation refrigerators that are at least 30% more efficient than the current U.S. Department of Energy standard. These refrigerators are standard-sized residential units with volumes between 10 and 25 cu-ft, are affordable, and have the basic functionality of residential refrigerators that are part of Illinois utilities' appliance programs. These refrigerators are not built-in models, which significantly exceed DOE minimum standards in general.

Product types will include:

- Top Freezer, two-door Bottom Freezer, and Side-by-Side
 - A simple, side-by-side model that might fit within the affordable price range may possibly be available in the next couple of months.
 - Smaller-sized bottom freezers (10-13 cu-ft) are available now, and larger models are planned for launch in Q3 and Q4 of 2020.
 - One model may have connected functionality.
 - A top freezer model is under development, and its timing for launch is Q4 of 2020.

Furthermore, based on numerous conversations, EPA believes that multiple manufacturers may be willing to accelerate the introduction of their "next generation" products to the U.S. market if these refrigerators become a focal measure for residential energy efficiency programs. In addition, EEPS that can claim other environmental benefits in cost-benefit

analyses may be interested in greenhouse gas reduction benefits associated with the use of [isobutane refrigerant, which is required in the European market](#). The [US EPA's Significant New Alternatives Policy \(SNAP\), Substitutes in Household Refrigerators and Freezers](#) lists Isobutane (R-600a), which these next-generation refrigerators use, as an acceptable substitute (with use conditions). Isobutane is among refrigerant substitutes with the lowest global warming and ozone depletion potential. These refrigerator models also use low-GWP foam-blowing agents in the insulation, which are on the SNAP list for Substitutes in Rigid Polyurethane in Appliances.

2. **Implementation:** How will this idea be delivered to the target market? Describe marketing strategies used to reach the target market and minimize market confusion.

Next generation refrigerators can be delivered via different types of existing energy efficiency programs:

- Standard retail mark-down rebate programs
- Midstream programs
- Direct procurement programs, and
- Low-income programs.

Marketing will be dependent on each type of program, but ENERGY STAR has marketing strategies and platforms in place for retail mark-down rebate programs. In addition, ENERGY STAR has relationships with manufacturers and dealers and can provide tools to the utility to ensure dealers and distributors are equipped with the knowledge to sell next generation refrigerators. Moreover, ENERGY STAR can provide marketing materials (e.g., for social media and point-of-purchase) to utilities to leverage.

3. **Background:** Describe where the idea originated from, including whether this idea has been successfully implemented in other jurisdictions. Provide specific background information that will help utilities and SAG participants understand the proposed idea.

Questions to consider: In what jurisdiction has this idea been successfully implemented? Do you have information on eligible customers, participation achieved, and/or savings achieved? Do you have access to reports describing the successful idea / program approach?

In 2019, the European Union (EU) revised [its Energy Labeling Framework Regulation and its Regulation on Ecodesign Requirements](#) to provide meaningful differentiation among product classes (using an A-G scale, with A being most efficient), update energy consumption bins, and update minimum efficiency requirements. To meet the EU requirements, effective March 2021, manufacturers will be required to significantly improve efficiency across energy consumption bins, and it will become increasingly difficult to achieve ratings at the higher end of the scale. In response to this development, some refrigerator manufacturers are designing significant improvements into new offerings for the European market.

With the willingness of manufacturers to accelerate the production of next generation refrigeration for sale in the U.S. and ENERGY STAR's support, Illinois utilities will be the first in the nation to bring this technology to its customers.

4. **Idea Impact:** Provide additional information on the customer segment that will be targeted with the program idea, including how and why this idea will have a positive impact on customers participating in Illinois EE programs.

Questions to consider: What level of impact will this idea have on current EE programs? How much additional market share do you estimate this change will impact?

The programs identified in "Implementation" (Number 2) will see a great uptick in energy savings, which will result in customer satisfaction in terms of monetary benefits. Next generation refrigerators will be available for both single-

family and multifamily homes. ENERGY STAR plans to work with utilities to identify multifamily home property managers to facilitate direct procurement, so renters can benefit as well.

The table below outlines the saving estimates for next generation refrigerators.

Annual Energy Savings Estimates for Refrigerators that are 30% More Efficient than DOE Standard

Type	Total Volume	Savings beyond Federal Minimum
	(ft ³)	(kWh/yr)
Top Freezer	10	100
	15	114
	20	130
	25	143
Bottom Freezer	10	128
	15	143
	20	160
	25	175
Side-by-Side Freezer	10	121
	15	135
	20	152
	25	167

- Duration:** Is this idea intended to be offered for the duration of the 4-year EE Plan or as a pilot measure or program?

What makes these refrigerators “next-generation” is the 2.0 version of the variable speed compressor system, which includes the variable speed compressor as well as sensors throughout the refrigerator to create an on-the-fly system that adapts and reacts. This is a technology that has already been implemented and used in the European market, and manufacturers have made plans to imminently bring these next-generation refrigerators into the U.S. market. As such, this technology is proven and is feasible, and most likely will not require piloting. Therefore, these refrigerators are intended to be offered for the duration of the 4-year EE plan as part of its appliance program offerings.

- Estimated Budget:** Provide the total estimated budget for each program year (2022 – 2025).

The budget will be to be determined by the utilities. There is a low incremental cost for next generation refrigerators as compared to conventional models. Publicly available pricings will come forth, and ENERGY STAR will provide those costs to the Illinois Energy Efficiency Stakeholder Advisory Group.

- Estimated Participation:** Provide participation totals for each program year (i.e. number of measures installed, number of customer participants, etc.)

The target participation will be around the number of participants in typical appliance programs and/or low-income programs.

Sources

If any sources will be useful to Illinois utilities in reviewing ideas, please either provide links within this template or send attachment(s) to the SAG Facilitator with the Energy Efficiency Idea submittal.