

Illinois Energy Efficiency Stakeholder Advisory Group

2020 SAG Portfolio Planning Process
Proposed Energy Efficiency Ideas Template

Submitter Contact Information

Name: Ryan Dougherty

Organization: Geothermal Exchange Organization

Website: www.geoexchange.org

Email: ryan@geoexchange.org

Phone: (217) 891-5847

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 type="checkbox"/>	New Measure or New Program Idea
<input checked="" type="checkbox"/>	Proposed Program Approach
<input checked="" type="checkbox"/>	Innovative Idea

Check	Illinois Utility Impacted by Energy Efficiency Idea
<input type="checkbox"/>	Ameren Illinois
<input type="checkbox"/>	ComEd
<input type="checkbox"/>	Nicor Gas
<input type="checkbox"/>	Peoples Gas & North Shore Gas
<input checked="" 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 checked="" type="checkbox"/>	Small Business Customers (commercial & industrial sector)
<input checked="" 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?

Geothermal heat pumps are among the most efficient heating and cooling technologies but aren't a widely prevalent technology due to higher up-front costs. The Geothermal Exchange Organization (GeoExchange) respectfully requests that the SAG take up the following issues in its Portfolio Planning Process:

- An examination of open-loop geothermal systems. According to some GeoExchange member companies, these systems don't fare well when the Total Resource Cost Test is applied. This is perplexing because they should show greater efficiencies and performance than closed-loop systems. Perhaps this is because baseline comparison to IECC code compliant open-loop geothermal system. Given that this is not a widely prevalent technology, the baseline would likely be a more conventional HVAC system with natural gas heat. Is this comparison fair and appropriate?
- An examination of site vs. source energy for fuel switching from fossil fuel to electric heating and cooling technologies. Building decarbonization is starting to gain traction around the country as part of EE programs and overall state energy policies. It is the understanding of GeoExchange that electric heating and cooling technologies have to incorporate source emissions into the measure, but this isn't the case when the behavior being incentivized is a fuel switch. Why shouldn't fossil fuel technologies have source emissions incorporated into their profiles? Maybe there's some rationale here that we're not aware of, but it seems this is a worthy conversation to have in this day and age.
- Incorporating useful life of ground heat exchanger portion of residential geothermal systems. Geothermal systems are more than just a piece of technology, like a lightbulb, refrigerator, furnace etc. They are a comprehensive home heating and cooling system. There is the

geothermal heat pump AND the ground heat exchanger (loop field). They're two pieces of an overall system and they have different useful lives. There's a good chance the ground heat exchanger will last longer than the building that it is serving! Let's incorporate this durable part of the system into the calculation. This may be a subject for the TAC rather than the SAG.

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.
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?

GeoExchange wasn't at the table when the first versions of the TRM were produced. In later revisions, GeoExchange did participate and helped improve the TRM to more accurately reflect the real-world performance of these systems. We believe that there are additional improvements to be made.

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?

Clarification of ideas to consider could reduce program risk for utilities to offer standard incentives and lead to increased adoption of ground source heat pumps as an energy efficiency technology.

5. **Duration:** Is this idea intended to be offered for the duration of the 4-year EE Plan or as a pilot measure or program?
6. **Estimated Budget:** Provide the total estimated budget for each program year (2022 – 2025).
7. **Estimated Participation:** Provide participation totals for each program year (i.e. number of measures installed, number of customer participants, etc.)

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.

GeoExchange has access to real-time performance data for geothermal systems across Illinois. We would be pleased to have this data incorporated in some fashion if the SAG takes up any of the aforementioned issues.