

September 22, 2025

An Introduction to Plan 2 Beneficial Electrification Research and Development

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Welcome

1

Objectives

What is Beneficial Electrification?

2

Benefits

Why should you participate?

3

Process

How does BE R&D work?

How do I submit an idea?

4

Focus area & screening criteria

What are we looking for?

Project Examples

5

Q&A

ILLUME supports Beneficial Electrification Research and Development

- **Support** ComEd in keeping BE Pilots information up-to-date on the Innovation website
- **Support the review of ideas** submitted through the Innovation website
- Work with vendors and ComEd to **shape project goals and tasks**
- **Oversee all active projects** to ensure they run smoothly and provide meaningful insights for ComEd and its customers



What is Beneficial Electrification?

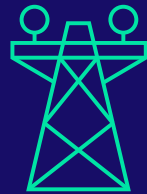
Beneficial Electrification serves to...



How Beneficial Electrification Helps Meet ComEd's 2030 vision.



Carbon-Free



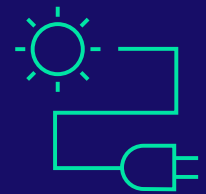
**Flexible and
Resilient**



**Efficient and
Affordable**



**Empowering
and Equitable**



**Simple and
Intuitive Energy
Choices**

**ComEd's Beneficial
Electrification Plan spurs
adoption of BE technologies
and delivery strategies to
deliver benefits to the
customers, to the grid,
and to the environment.**





Why should you participate?

**ComEd has
committed**

\$11 million

**through 2028 to
piloting BE R&D
projects**

Benefits: Get your idea off the ground!

- Receive funding
- Establish a relationship with ComEd
- Gain resources and collaboration
- Complete a utility-funded project and ComEd-branded report
- Help ComEd identify, test and scale solutions
- Play a future role in pilot transition and portfolio integration

A Unique Opportunity

As one of the nation's largest initiatives of its kind, ComEd Beneficial Electrification offers an ideal testing ground of transportation electrification in a service area

- comprised of four seasons,
- a diverse urban and rural population,
- a mix of residential and commercial customers

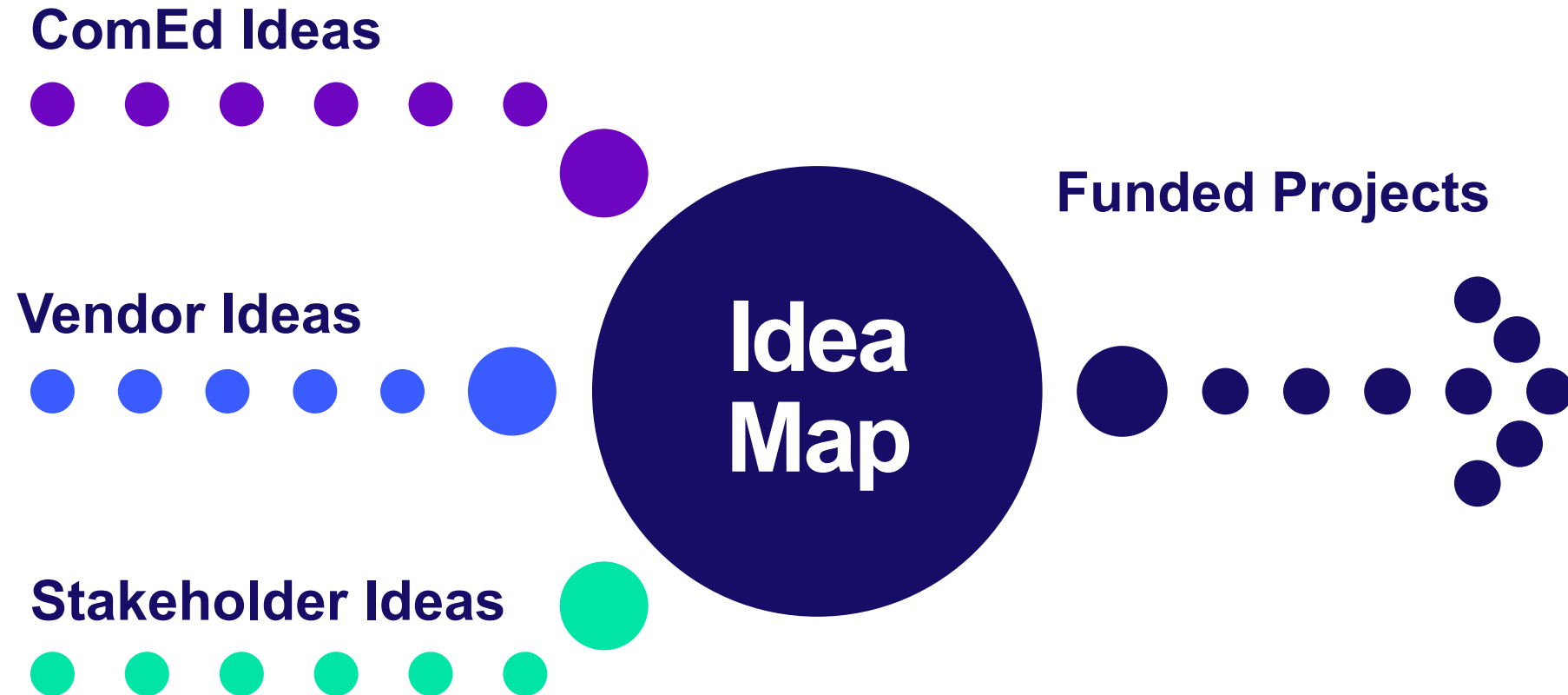
And a commitment to scale programs that effectively help us meet our goals.





How does the BE R&D
initiative work?

Idea Generation Process

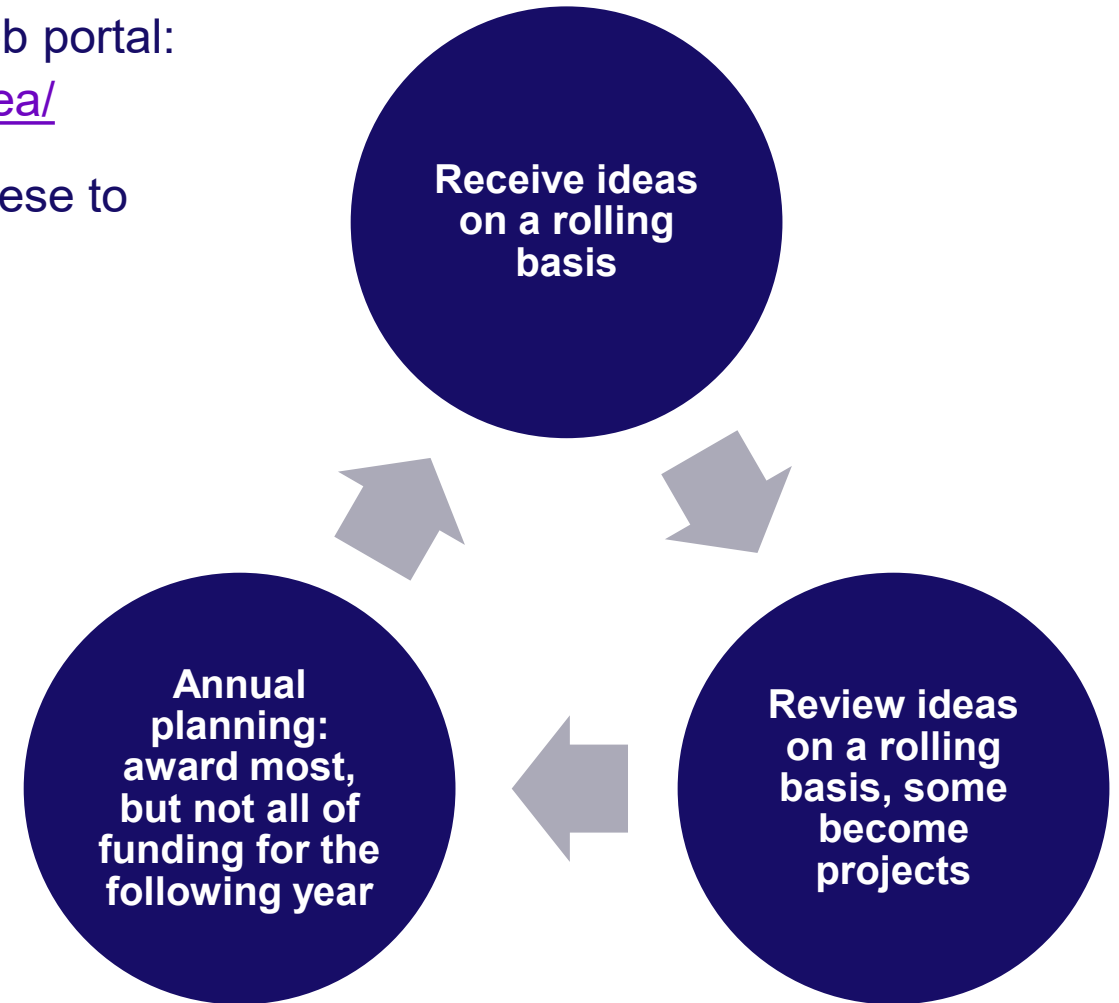




How do I submit an idea?


Idea Review Timeline

- Best way to have your idea considered: submit to our web portal:
<https://innovate.comed.com/bepilots/submit-a-be-pilot-idea/>
- If you have additional materials to share, please email these to
CustomerInnovations@IllumeAdvising.com
- What happens when you submit an idea:
 1. Customer Innovation team sends you an email confirming receipt within 72 hours
 2. We review idea with relevant ComEd focus area team
 3. Within 4-6 weeks, we will reach out with next steps for your idea





Submit your BE Pilot Idea



Customer Innovation

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Submit a BE Pilot Idea

Fill out this form to submit your idea. Your entries may not be saved if you leave the session and come back to them later, so it's recommended that you have your responses prepared. This form is for BE Pilots submissions only. For more information about the BE Pilot focus areas, please visit the [BE Pilots page](#).

If you are looking to submit an idea related to the energy efficiency and peak load reduction focus areas for Customer Innovation, please visit [Resources](#).

Required fields marked with an asterisk *


Idea Submitter *

Full Name of Contact Person

Organization *

Organization Name

[Download Idea Questions](#)



Customer Innovation

BE Pilot Idea Questions

Required fields marked with an asterisk *

Idea Submitter *

[Full Name of Contact Person]

Organization *

[Organization Name]

Contact Email Address *

[Email Address]

Idea Name *

[What is the name/title of this technology or concept?]

Relevant Focus Area *

[Dropdown: Air Quality Monitoring | Backup Power Capabilities | Curbside Charging | Electric Vehicle Energy Management Systems (EV EMS) | Residential Optimized Charging | Rideshare | School Bus Vehicle-to-Grid (V2G) | Submetering | Other]

Description *

What is the technology or concept you would like to test through the ComEd BE Plan Pilot Program?

Value *

How does the technology or concept provide value to the ComEd program portfolio and/or to customers (promotes beneficial electrification, delivers grid benefits, delivers customer economic or energy benefits, delivers benefits to income eligible or equity investment eligible communities, reduces greenhouse gases, includes community stakeholders)? If you are proposing a program design or outreach strategy initiative, please describe the mechanism(s) for providing value.

Relationship to Existing ComEd Offerings *

Does your technology or concept extend an existing pilot or is it a new idea? If its a new idea, is the technology or concept included in your idea eligible for incentives through any current ComEd offerings? If no, do you know why not? If yes, what new information about your technology or concept will testing your idea provide?

Target Market *

What is the target market for your technology or concept? What kinds of customers or end users will your idea impact?

Market Potential

Has the market potential in northern Illinois for your technology or concept been established? Is the technology or concept already available in northern Illinois? If not, why is this the case? Where, if anywhere, is this technology or concept already available?

Program Benefits

Are you able to provide any information to help the team understand the quantitative value of the benefits your technology may provide? Possible benefits include: avoided electricity or distribution costs associated with shifting or eliminating electricity usage, avoided internal combustion engine fuel costs, net revenue from additional services provided, value of carbon emissions or value in reductions of surface-level pollution. Please provide attachments or links to existing resources (technical resource manuals, published studies, etc.) to help the BE Plan pilots team associated with the benefits from your idea.

Additional Resources Needed

What kind of research or testing needs would your idea require to determine its suitability for the ComEd BE Plan Program? This might include primary research, savings measurement, technology installation and/or customer engagement.



What are we looking for?

Project Focus Areas

Air Quality Monitoring

Seeks to understand the severity of air quality issues near heavily trafficked transportation hubs and other vulnerable areas.

Backup Power Capabilities

Explores the risks, benefits, and market opportunities associated with the ability of EVs and EV charging stations to provide bidirectional capabilities to support customer resiliency as well as the performance of these as backup power sources.

Curbside Charging

Aims to address gaps in EV charger access while optimizing cost, efficiency, and grid operation. It also investigates and develops best practices in equitable implementation, construction practices, and municipal collaboration.

Electric Vehicle Energy Management Systems (EV EMS)

Investigates customer tools and processes to regulate the use of equipment such as EV supply equipment (EVSE) to either reduce or eliminate costs associated with make-ready and service capacity upgrades.

Residential Optimized Charging*

Aims to develop residential products and services for the purpose of reducing customers' costs and increase grid flexibility of EV charging.

Rideshare

Aims to accelerate EV access to LI/EIEC customers by addressing cost, availability, and other barriers to EVs and by promoting familiarity.

School Bus Vehicle-To-Grid (V2G)*

Aims to assess and demonstrate the viability of implementing vehicle-to-grid (V2G) technology with electric school buses (ESBs) and showcase the technology's potential to leverage ESBs as viable energy storage sources while achieving balance on the grid.

Submetering

Evaluates alternatives to using utility metering for billing EV charging and operation of EVSEs to expand or accelerate the deployment EV charging and EVSEs broadly.

Project Types



Market Characterization

Projects designed to characterize a specific market, in terms of key actors, size, etc.



Lab Testing

Projects designed to test the performance of a technology or concept in a laboratory or non-field setting.



Customer Research

Research conducted to provide an understanding of a specific customer segment or customer experience.



Field Tests & Demonstrations

Projects designed to test and measure the field performance of a technology or concept in real-world conditions.



Scaled Deployments

Projects piloting the implementation, delivery / deployment strategy and experience of a new offering.



Market Development

Projects designed to enable portfolio integration and wide scale market adoption.

Screening Criteria

Submissions should align with these guidelines to maximize the chance of being selected and funded.

1

Alignment to Current Focus Areas

(Required for Plan 2 consideration)

2

Technological Readiness

3

Avoided Customer Costs

(Avoided ICE costs or anticipated utility bill savings)

4

Grid and System Benefits

(Increase grid operational effectiveness, capacity, resiliency, reliability, or power quality or avoid grid upgrade costs)

5

Environmental Benefits

(Avoided greenhouse gas or surface pollutant emissions)

6

Implementation Potential

(Cost-effectiveness, lifetime of intervention, market adoption)

7

IE Customer, EIEC*, or Equitable Electrification Benefits

* Equity Investment Eligible Community

Project Examples

Project Highlight: Residential Optimized Charging

Pilot Goals

- Examine feasibility and incremental benefits of **optimized charging**
 - Customers allow the vendor/utility to manage level of charge within their home-based EV charging session
- Goal is to **reduce peak demand** and **reduce grid impacts** without diminishing the customer experience

Anticipated outcomes

- Assess **kW load shifted**
- Identify **participant bill impacts** for participants on hourly pricing
- Assess grid impacts: **mitigating timer peaks, evaluating demand response potential, and reducing peak load contribution**
- Understand **participant awareness and satisfaction** with managed charging



Project Highlight: Vehicle-to-Grid (V2G)

Pilot Goals

- Assess and demonstrate viability of implementing **vehicle-to-grid technology** with **electric school buses (ESBs)**
- Showcase the technology's potential to leverage ESBs as **viable energy storage sources** while achieving balance on the grid

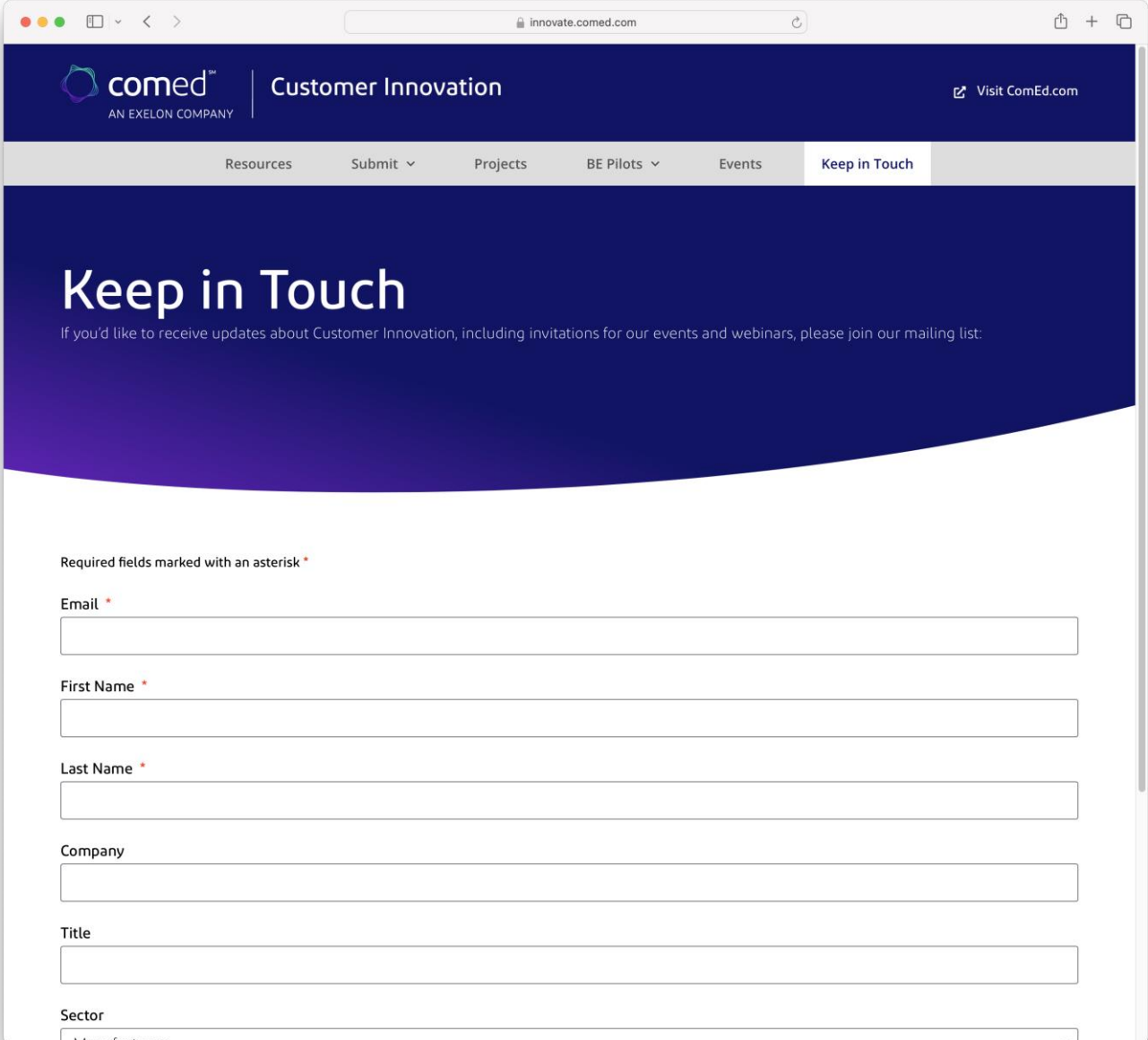
Anticipated outcomes

- Assess **performance, stability, and reliability** of V2G chargers and ESB vehicles
- Understand **impact** on the grid
- Identify environmental gains such as **greenhouse gas reductions** and **air quality improvements**



Keep in Touch

Sign up for our mailing list to receive updates, notifications of upcoming opportunities and invitations RFIs/RFPs at innovate.comed.com/keep-in-touch/.



The screenshot shows a web browser window with the URL innovate.comed.com. The page header includes the ComEd logo (AN EXELON COMPANY) and the text "Customer Innovation". A navigation bar contains links for Resources, Submit, Projects, BE Pilots, Events, and Keep in Touch. The main heading is "Keep in Touch" with a subtext: "If you'd like to receive updates about Customer Innovation, including invitations for our events and webinars, please join our mailing list:". Below this is a sign-up form with the following fields: Email (required), First Name (required), Last Name (required), Company, Title, and Sector (a dropdown menu with "Manufacturer" selected). A note states "Required fields marked with an asterisk *".

Required fields marked with an asterisk *

Email *

First Name *

Last Name *

Company

Title

Sector
Manufacturer

Questions?

Ready to help create a cleaner energy future?

For more information:
innovate.comed.com/bepilots/

Submit your BE Pilot Idea:
innovate.comed.com/bepilots/submit-a-be-pilot-idea/



Customer Innovation

Thank you