

## R&D Portfolio Summary Q4 2020

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
<b>Validating New Technologies for New Energy Savings</b>							
<b>Affordable Multifamily Passive House</b>	Slipstream, LUCHA	Technology Assessment	Income Eligible Residential	Jun-18	Nov-20	A final report-out to project stakeholders occurred in November 2020. The Passive House building demonstrated significantly greater savings than the ENERGY STAR building, confirming potential for a PHIUS standard pathway in future offerings. This will be explored in 2021.	<a href="#">Link</a>
<b>Commercial Interior Insulating Shades</b>	IIT, Parata Solutions, Amatis Controls	Technology Assessment	Commercial	Sep-20	Aug-21	Installation at customer site (large Chicago Loop tower) completed in Q4 2020, and monitoring will proceed according to research design in 2021. Phase 2 of this project kicked off in December 2020. PNNL will conduct research and analysis on the water, energy and cost savings of alternative water treatment and cooling tower technologies and will assessing potential barriers to adoption.	<a href="#">Link</a>
<b>Cooling Tower Future Opportunities</b>	AWE, PNNL	Research	Cross Cutting	Jul-20	Oct-21	Recruitment of sites is ongoing, with first installations expected in Q1 2021.	<a href="#">Link</a>
<b>Flash Gas Condensers</b>	DNV GL	Technology Assessment	Commercial	Oct-20	Jun-21	Five sites have been recruited. The project team is now engaging with facility staff to build energy models of their production processes. Discussions are ongoing with the Industrial Systems and SEM teams to discuss how this offering will be integrated into their programs.	<a href="#">Link</a>
<b>Industrial EMIS</b>	Leidos, EPS Energie	Technology Assessment	Industrial	Feb-20	Jun-22	The project team kicked off research in January, and preliminary results are expected in Q2 2021.	<a href="#">Link</a>
<b>Innovations in Efficient Elevator Systems</b>	360 Energy Group, SEDAC, Kone Engineering	Research	Commercial	Dec-20	Jun-21	Recruitment is underway and installation at customer site and post installation monitoring will take place in Q1 2021.	<a href="#">Link</a>
<b>Liquid Cooled Server Racks</b>	Franklin Energy, ERS, LiquidCool Solutions	Technology Assessment	Commercial	Sep-20	Apr-21	Progress continues to be made on projects originally scheduled to be completed in 2020 but were delayed due to COVID-19 related lab closures, including switched reluctance motors for conveyor belt systems, refrigerated display cases using R-290 propane refrigerant, and high-performance cold climate heat pumps for residential and small commercial applications. These projects are now expected to be completed in 2021.	<a href="#">Link</a>
<b>National Laboratory Emerging Tech Partnership</b>	NREL and various technology partners	Technology Assessment	Commercial, Industrial	Jan-19	Dec-21	Post-installation monitoring of the customer site will complete by the end of Q1 2021. The project team is conducting additional interviews and research to examine how to best integrate the measure into the ComEd Energy Efficiency Program.	<a href="#">Link</a>
<b>Smart Pressure Independent Control Valves</b>	Slipstream	Technology Assessment	Commercial	Dec-18	Apr-21	The final report was presented and discussed in December 2020. Preliminary energy-savings calculations deemed it unlikely that the current generation of Smart Vents can provide cost-effective electricity savings from a resource acquisition standpoint.	<a href="#">Link</a>
<b>Smart Vents for HVAC Energy Savings</b>	Slipstream	Research	Residential	Aug-20	Dec-20	Further site recruitment continues, and the monitoring period has been extended to understand both heating and cooling season usage and savings.	<a href="#">Link</a>
<b>Switched Reluctance Motor Field Evaluation</b>	Slipstream, Turntide Technologies	Technology Assessment	Commercial	Jun-20	Aug-21	The project team completed their initial interviews and market assessment and will submit an interim report in January 2021.	<a href="#">Link</a>
<b>Variable Refrigerant Flow for Cold Climates</b>	Slipstream	Technology Assessment	Commercial	Sep-20	Mar-21	The project kicked off in December 2020. Evaluation discussions and initial recruiting efforts will take place in Q1 2021	<a href="#">Link</a>
<b>Very High Efficiency HVAC</b>	IMT, Slipstream, Ventacity	Technology Assessment	Cross Cutting	Dec-20	Dec-23	The project team completed a technology potential assessment of the selected water heating technologies and controls and have developed a market assessment plan for the technologies that they found to have the greatest savings potential.	<a href="#">Link</a>
<b>Water Heating Technology Opportunities</b>	Evergreen Economics, GDS Associates	Research	Residential	Aug-20	Apr-21		<a href="#">Link</a>

## R&D Portfolio Summary Q4 2020

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
<b>Increasing Market Adoption Through Innovative Program Design</b>							
<b>BIT Neighborhood</b>	Slipstream, Southface, Illinois Green Alliance, Environmental Defense Fund	Outreach Strategy	Income Eligible Residential	Feb-19	Apr-21	BIT Aides worked with CHA building managers to collect data for the 40 selected buildings, and are now scheduling virtual energy audits for each site starting in February. The pilot team will collaborate with Elevate Energy to share data and identify projects.	<a href="#">Link</a>
<b>Building Operator Certification</b>	MEEA, NEEC	Program Design	Commercial, Public Sector	Jan-20	Dec-20	A total of 32 students over three training series completed the Building Operator Certification program in 2020. Evaluation results are expected from Guidehouse in January 2021.	
<b>Customer Targeting through NMEC</b>	Power TakeOff, Recurve	Research	Cross Cutting	Oct-20	Oct-21	ComEd delivered anonymized customer usage data to the project team in December, who is now using this information to identify a control group for their analysis. The project team will create analytical models in Q1 2021 and conduct the comparison analysis in early March.	<a href="#">Link</a>
<b>EcoAdvocates</b>	Slipstream, Faith in Place	Outreach Strategy	Income Eligible Residential	Feb-19	Dec-20	The project concluded with a final presentation to stakeholders in December 2020. Over the course of the project the eight EcoAdvocates enrolled 87 people from the South Shore and Waukegan communities into the pilot program and provided information on energy efficiency, distributed ComEd Energy Kits, and shared resources to support those in need during the pandemic.	<a href="#">Link</a>
<b>Electric Homes New Construction</b>	Slipstream	Program Design	Residential	Mar-19	Dec-22	11 homes were incentivized in 2020 and the team has received helpful feedback on program design from builders. Due to this feedback they are planning a training session for late February 2021 for interested builders on how to build/design around heat pumps.	<a href="#">Link</a>
<b>ENERGY STAR® Retail Products Platform</b>	NEEA, US EPA	Market Transformation	Residential	Apr-20	Dec-21	The evaluation plan is being finalized after consultation with NEEA and Guidehouse, which included the development of a naturally occurring baseline. These materials will be shared with stakeholders in 2021 for feedback.	
<b>Home Energy Reports Paperless Experience</b>	Oracle	Program Design	Residential	Apr-19	Dec-21	The project team continues to collect data on how customers respond to the digital-only experience compared to the traditional paper plus email experience. Results are expected at the end of 2021.	<a href="#">Link</a>
<b>Midstream Commercial Food Service</b>	GTI, Frontier Energy	Market Transformation	Commercial	Apr-19	Dec-20	Distributor recruitment and engagement was generally successful in 2020, although COVID-19's impacts on the food service industry led to lower-than-expected pilot participation. Gas equipment rebates were more prevalent than electric equipment rebates in Q2 and Q3 but electric equipment rebates began to rebound in Q4. Currently, the pilot team is discussing expansion of the pilot for 2021, looking for increased participation next year ideally as a state-wide offering.	<a href="#">Link</a>
<b>Online Choice Engine Program Model</b>	Enervee	Technology Assessment	Residential	May-20	Jun-21	The Choice Engine platform is live at <a href="https://comed.efficientchoice.com">https://comed.efficientchoice.com</a> , and marketing and outreach efforts to customers continue. The evaluation plan has been finalized and marketing efforts thus far have led to promising impacts on site traffic.	<a href="#">Link</a>
<b>Real-Time Virtual Commissioning (VCx)</b>	Power TakeOff	Technology Assessment	Commercial, Public Sector	Sep-20	Dec-21	By the end of 2020 the project team had completed five installations of specialized metering and monitoring equipment in CPS facilities. The rest of the 45 planned sites will be completed across Q1 2021.	<a href="#">Link</a>

## R&D Portfolio Summary Q4 2020

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
<b>Thinking Outside the Box for Future Opportunities</b>							
<b>Breathe Easy Ventilation Study</b>	Elevate Energy, IIT	Program Design	Income Eligible Residential	Dec-18	Dec-20	The project team presented their final report and presentation in December. The study found a small but significant improvement in asthma control across all participants after implementing ventilation systems. They also found that ECM upgrades in furnaces mitigated the increased energy required by certain ventilation systems.	<a href="#">Link</a>
<b>Fan Energy Index</b>	Slipstream	Research	Cross Cutting	Aug-20	Apr-21	The project team delivered an interim report in December. The team continues interviews with market actors to better understand market barriers to using FEI as a decision-making tool for fan selection.	<a href="#">Link</a>
<b>Home Paging Display</b>	ComEd Customer Innovation Lab	Technology Assessment	Income Eligible Residential	May-19	Nov-20	Phase 2 in 2020 confirmed the functionality of the paging devices. Phase 3 in 2021 will test the devices in a larger sample of customer homes. Interviews and data analysis will be designed to track energy and bill savings.	<a href="#">Link</a>
<b>Hybrid Heat Pump Systems and Future Beneficial Electrification Opportunities</b>	Center for Energy and Environment ERS, ACEEE, D+R International,	Research	Residential	Dec-19	Mar-21	Project kickoff occurred in December 2020, and research will take place during Q1 2021.	<a href="#">Link</a>
<b>Indoor Agriculture Future Opportunities</b>	Resource Innovation Institute	Research	Commercial	Oct-20	Apr-21	Research plan and interview guides with cultivators and stakeholders have been finalized. Interviews began in December and are expected to continue into early 2021, with the final study on track to be delivered in the spring.	<a href="#">Link</a>
<b>Municipal Water Infrastructure Leak Reduction</b>	TRC, Rezatec	Program Design	Cross Cutting	Jun-20	Nov-21	The project team collected all necessary data for two of the four communities to complete the geospatial analysis and modeling. Review of smart water technologies and development of community infrastructure upgrade plans are underway.	<a href="#">Link</a>
<b>Understanding Water Solution Providers</b>	Axiom Marketing	Research	Cross Cutting	Sep-20	May-21	The project team completed interviews with 8 municipal and industrial customers and presented the findings and recommendations in a report. They have identified the top five water solution providers that they will target for their next round of in-depth interviews.	<a href="#">Link</a>
<b>Water Energy Savings with Strategic Energy Management</b>	CLEAResult	Program Design	Commercial	Jun-20	Sep-21	The project team completed virtual water and energy audits for the seven participating sites and developed opportunity registers and savings measurement plans specific to each site.	<a href="#">Link</a>