

ComEd® Energy Efficiency Program



CY2021 Second QUARTER REPORT



ComEd has received the ENERGY STAR Partner of the Year Award for Sustained Excellence for the 9th consecutive year.

ComEd customers have saved more than \$5.7 billion on energy bills and avoided 56.4 billion pounds of carbon through its energy efficiency programs.

Table of Contents

Portfolio Summary.....	3
Residential Programs.....	4
Income Eligible Programs.....	6
Business Programs.....	9
Third Party Programs.....	13
Voltage Optimization.....	16
Emerging Technology and Market Transformation Programs	17
Marketing Education & Awareness.....	18
Stipulations.....	19
Total Resource Cost (TRC).....	21

Portfolio Summary

794,984

Actual Net MWh YTD

1,817,301

CY2021 MWh Forecast

1,659,037

CY2021 MWh Filed Goal

\$155,103,473

Actual Spend YTD

\$351,334,190

CY2021 Spending Cap

PORTFOLIO

- Through Q2, the portfolio has achieved 44% of its CY2021 forecast of 1,817,301 MWh and 48% of its CY2021 filed goal of 1,659,037 MWh.
- Since its inception in 2008, the ComEd Energy Efficiency Program has saved ComEd customers over \$5.7 billion on their electric bills.
- For granular breakout by program, please see the narrative.

RESIDENTIAL PROGRAMS

- Through Q2, residential programs have achieved 49% of its combined CY2021 forecast of 335,182 MWh.
- Customers have received over 145,198 rebates and over 13,398 homeowners and tenants have received free direct install products from assessments through Q2.

INCOME ELIGIBLE PROGRAMS

- Through Q2, income eligible programs have achieved 41% of their combined CY2021 forecast of 82,291 MWh, not including MWh savings from converted therms.
- Over 21,158 income eligible households have participated through Q2.

BUSINESS PROGRAMS

- Through Q2, business private sector programs have achieved 44% of its combined CY2021 forecast of 662,868 MWh; business public sector programs have achieved 29% of its combined CY2021 forecast of 125,067 MWh.
- Over 5854 business private sector projects and 529 business public sector projects have been completed through Q2.

THIRD PARTY PROGRAMS

- Through Q2, third party programs have achieved 43% of their combined CY2021 forecast of 171,786 MWh.

Residential Programs

Home Energy Reports

Overview: The Home Energy Report provides select residential customers with information on how they use energy within their households. Reports and the online portal include usage comparison to that of similar, nearby households, personalized energy efficiency advice, program promotions, and application of behavioral principles and social norms to drive adoption of energy efficient behaviors.

- **53,246 Net MWh savings achieved (71% of forecast)**
- Report generation year-to-date, as of May 2021:
- Home Energy Reports (print): 3,707,869
- Home Energy Reports (email): 3,917,610
- High Usage Alerts (unique customers): 1,108,837
- Weekly Usage Reports: 4,186,894
- The program continues to have a low opt-out rate, high customer satisfaction through customer inquiries, and high digital communication engagement rate.
- ComEd added new tips to the MyAccount tip library during Q2 highlighting some free or low-cost actions (add weather-stripping, plant a shade tree, wash in cold water, and adjusting television settings) and tips meant to introduce new technologies or products for home upgrades such as choosing and maintaining heat pumps or installing a demand water heater. These new tips are available today in MyAccount and will begin surfacing in customers' Home Energy Reports in the coming months.

Lighting Discounts

Overview: The Lighting Discounts Program provides instant in-store discounts to ComEd residential customers at participating retail stores on select ENERGY STAR® certified lighting: LEDs, LED trim kits, and LED integrated fixtures.

- **74,611 Net MWh savings achieved (51% of forecast) based on 2,623,134 discounted LED bulbs and fixtures.**
- The program partnered with charity retailers on an Earth Day desk lamp promotion, resulting in a 27% increase in fixture sales over Q1.

- The field team has returned to stores for merchandising which includes updating point-of-purchase signage, checking stock levels, and making sure promoted products are clearly marked. In-store demonstrations have not restarted and have been suspended due to COVID.

Appliance Rebates

Overview: Appliance Rebates offers rebates to ComEd residential customers on the purchase of new, select ENERGY STAR® certified appliances/products including: air purifier, clothes washer, electric clothes dryer, refrigerator, freezer, dehumidifier, variable speed pool pump, room air conditioner, smart thermostat, and advanced power strip.

- **10,977 Net MWh savings achieved (44% of forecast) based on 104,431 rebated appliances.**
- During Q2, the program saw a 250% increase in smart thermostat sales compared to Q2 of 2020. The increase is attributable to manufacturers introducing lower cost models, offering steeper manufacturer discounts on popular models, increasing the utility rebate from \$75 to \$100 and the retail impacts of the COVID pandemic.
- The program continued to see interest in the recently launched "bulk rebate tool" by receiving 3 additional applications totaling over \$10k in rebates. This allows multi-family building owners/property managers to submit a single application for multiple qualified products in a quick and efficient manner. Eligible product categories include smart thermostats, clothes washers, electric clothes dryers, and refrigerators.

Home Energy Assessment

Overview: Offered in partnership with Nicor Gas, North Shore Gas, and Peoples Gas, the Home Energy Assessment is a free walkthrough assessment with an energy advisor that determines the ways energy is used in the home. Customers receive personalized energy-efficiency recommendations, and the following energy-saving products are installed for free: ENERGY STAR® certified LEDs, programmable thermostats, WaterSense® certified showerheads, faucet aerators, and hot water pipe insulation. Advanced Power Strips are provided at a

Residential Programs

discounted price to the customer and left behind for the customer to install. Nest Learning and Nest E smart thermostats are also available for purchase at a discount and include free installation.

- **7,814 Net MWh savings achieved (45% of forecast) based on 7,474 in-home and 679 virtual assessments.**

- The program continues to see a lower kWh savings per in-home assessment due to decreased LED install opportunities and less smart thermostat installs. In response, the program selected Energy Advisors with a high smart thermostat installation rate to provide peer mentorship and share best practices with other Energy Advisors.
- The program leveraged a propensity model to develop a marketing campaign that highlighted in-person and virtual assessments. The campaign targeted customers with a higher propensity to participate and included direct mail postcards, email blasts and digital ads (Facebook, Google and Nextdoor). The campaign targeted 30,000 ComEd customers and resulted in 192 appointments during Q2. Program participation underperformed during Q2 likely as a result of COVID restrictions being lifted and people emerged from their homes.

Multi-Family Energy Savings

Overview: In partnership with Nicor Gas, North Shore Gas, and Peoples Gas, the Multi-Family Energy Savings Program provides multi-family tenants and property owners and managers with a variety of ways to save electricity and natural gas. The program will serve as a "one stop shop" to generate energy savings throughout the property. After an initial assessment, immediate energy savings are generated by the direct installation of energy-saving products in both tenant and common area spaces. The program further provides Service Provider installs of common area lighting measures.

- **4,922 Net MWh savings achieved (54% of forecast) based on 5,093 tenant units, 152 common area installs, and \$1,466,114 in Service Provider Installation**
- In Q2 the program saw strong participation from the Service Provider network processing over \$1M in rebates, approximately 44% of the annual volume expected in 2021.

Heating & Cooling Rebates

Overview: The Heating & Cooling Rebates Program promotes investment in long-term savings by providing rebates for the purchase and installation of high efficiency central air conditioners, air source heat pumps, ductless mini-split heat pumps, ECM furnace blower motors, smart thermostats, and ground source heat pumps.

- **1,946 Net MWh savings achieved (58% of forecast) based on 1,659 rebates**
- The program is seeing increased demand for Ductless Mini Split and Air Source Heat Pumps, by as much as 300% when compared to 2020. The increase may be attributable to lower participation last year due to COVID, but also the transition of these measures to midstream (distributor) incentives.
- 80% of the HVAC Service Provider network completed their ICC recertification.

Income Eligible Programs

Income Eligible Product Discounts

Overview: Income Eligible Retail Discounts provides deeper instant in-store discounts to ComEd residential customers at participating retail stores located in qualifying neighborhoods. These discounts are provided for select ENERGY STAR® certified lighting: LED bulbs, LED trim kits, LED nightlights, and LED integrated fixtures (both interior and exterior); as well as instant in-store discounts on select ENERGY STAR certified appliances, such as air purifiers, dehumidifiers, and room air conditioners. Instant in-store discounts are also available on advanced power strips (APS). These deeper instant discounts are offered to help reduce the energy burden for income eligible customers, by lowering the potential cost barrier to energy efficient products for home use.

- **29,381 Net MWh savings achieved (44% of forecast) based on 43,708 Advanced Power Strips, 72 Air Purifiers, 105 Dehumidifiers, 1 Room Air Conditioner; 36,114 LED Nightlights, 137,610 LED Kits/Fixtures, and 616,434 LED Bulbs (nightlights, kits/fixtures and bulbs total 288,888 packages)**
- At the end of Q2, participating retailers started to stock discounted room air conditioners. To promote the measure, ComEd mailed postcards to over 128,000 customers residing in zip codes with a participating retailer. Retailer point of sale (POS) data is starting to be shared with ComEd, so the results will be available in Q3.
- An Earth Day desk lamp promotion with Greenlite was held within Charity (Salvation Army, St. Vincent De Paul and Habitat ReStore) and Independent retailers, resulting in ~19% increase in average monthly sales of interior fixtures.

Single-Family Retrofits

Overview: The Single-Family Retrofits Program offering is delivered through several channels including, Illinois Community Action Agencies (CAAs), the Chicago Bungalow Association (CBA), and the Chicagoland Vintage Home Association (CVHA). The offering includes comprehensive home energy audits and work through contractors to complete weatherization (air sealing, attic and wall insulation, duct sealing), health & safety, and additional energy efficiency home upgrades at no cost to the customers served.

CBA/CVHA identifies and enrolls qualified vintage homeowners located in the City of Chicago and certain Cook County suburbs; coordinates home assessments to

identify areas in the homes prone to air leaks or drafts; and works with contractors to complete weatherization, health & safety, and direct installation of energy efficiency upgrades (LEDs, water saving measures, programmable thermostats) to their homes. The CBA/CVHA channel delivers the single-family retrofits program offering in partnership with Peoples Gas.

ComEd, in coordination with the CAAs, and in partnership with the northern gas utilities, partially (and in some cases fully) funds whole single-family home energy upgrades in coordination with the Illinois Department of Commerce and Economic Opportunity (DCEO) Illinois Home Weatherization Assistance Program (SF IHWAP). Upgrades may include all measures delivered through the CBA/CVHA channel, as well as mechanical system upgrades or replacements where the customer and equipment qualify.

- **1,850 Net MWh savings achieved (54% of forecast) based on 892 participating customers (Includes SF IHWAP +CBA/CVHA)**
- **CBA/CVHA**
 - **634 Homes Upgraded**
 - 297 Jointly funded with Peoples Gas 337 ComEd-only funded
- **Single-Family IHWAP**
 - **258 Homes Upgraded**
 - 144 Jointly funded with DCEO ("Braided")
 - 114 Utility-only funded

CBA/CVHA

- The program offering achieved 51% of the yearly savings goal during the first half of the year
- In total, there have been ~600,000 square feet of attic insulation installed, and air leakage has been reduced by over 1.7M CFM 50
- Production remains strong, and there is significant pipeline to maintain well into Q4.

SF IHWAP

- ComEd, Northern Illinois Gas Utilities and Program Implementer collaborated to establish an Income Eligible customer referral service which launched in Q2. This initiative will help and guide income eligible customers to appropriate energy efficiency program offerings.
- Direct engagement and communications with Community Action Agencies from ComEd and Northern Illinois Gas Utilities have

Income Eligible Programs

resulted in improved program offering processes and forecasting.

Multi-Family Retrofits

Overview: The Multi-Family Retrofits Program is delivered through two channels including Illinois Community Action Agencies (CAAs) for the Illinois Housing Weatherization Assistance Program (MF IHWAP) and the multi-family energy savings (IEMS) offering. The program offerings identify and enroll qualified multi-family building owners and property managers whose buildings serve income-eligible residents. Upgrade options include energy assessments, weatherization, and direct installation of energy-saving devices at no cost. As well as replacement of inefficient equipment/systems at no or very limited cost.

The MF IHWAP offering is delivered in partnership with all the northern Illinois gas utilities. The IEMS offering is delivered in partnership with Peoples Gas.

- **1,996 Net MWh savings achieved (37% of forecast) based on 4,516 impacted customers (Includes MF IHWAP + IEMS)**
- **IHWAP MF**
 - **347 Tenant Units in 34 buildings upgraded**
 - 29 Units (1 Buildings) Jointly funded with DCEO ("Braided")
 - 318 Units (33 Buildings) Utility-only funded
- **IEMS**
 - **4,169 tenant units in 259 buildings upgraded**
 - 414 Units (20 Buildings) Jointly funded with Peoples Gas
 - 1,793 Units (136 Buildings) Peoples Gas territory, ComEd-only funded
 - 1,814 Units (95 Buildings) Nicor territory, ComEd-only funded
 - 148 Units (8 Building) North Shore territory, ComEd-only funded

IHWAP

- The program offering held "CAA Multi-Family Cohort Meetings" in Q1 and Q2 to share best practices, provide support, clarify processes, and enhance coordination efforts for MF IHWAP

projects, bringing together community action agencies with representatives from DCEO, all northern Illinois utilities, and an engineering firm. The Q2 meetings covered Multi-Family procurement, QA/QC, and project screening.

- The Community Economic Development Association of Cook County (CEDA) successfully completed tenant unit measures at the Loomis project in Q2. Common area and central plant measures for these projects were completed in 2020, but tenant unit measures (air sealing, LEDs, bathroom exhaust fans) could not be addressed at that time due to properties' COVID-related restrictions on tenant unit access. As a result of these agencies' coordination efforts, customers received the most comprehensive retrofits possible.
- CEDA completed the majority of the retrofit work on the Olympic Village project in Chicago Heights. This project includes 320 units across 30 buildings and will be completely invoiced for by July. In Q2, 17 buildings and 172 tenant units were weatherized. This portion of the project produced savings of 128,772 kWh (not including therms).

IEMS

- Filmed video case study at The Arbors in Rockford and The Courtyards in Belvidere. Project scope for The Arbors, a campus property, includes Lighting, Pipe Insulation, and Weatherization; the total project incentives totaled over \$320,000 (ComEd-only). Projects completed at The Courtyards campus included Weatherization, Pipe Insulation, and Health and Safety and totaled over \$310,000 in incentives (ComEd-only).
- Issued over \$600,000 in incentives for weatherization projects at 52 buildings.
- Continuing to see high demand for the direct installation (DI) program component. Program team is working to add additional capacity to the scope. 2021 is on pace for all time highest DI participation for the IEMS program.

Affordable Housing New Construction

Overview: The Affordable Housing New Construction (AHNC) Program offering provides technical support and incentives for whole-building energy efficiency for

Income Eligible Programs

new construction and major renovation projects to reduce the energy burden for income eligible households by lowering their potential monthly energy costs. The program supports developers building or providing major renovation to affordable housing buildings, including both single and multi-family projects. The program offering's incentives are based on the square footage of the areas serving income eligible tenants, while upgrade requirements apply to the full building. The Affordable Housing New Construction offering is delivered in partnership with all the northern Illinois gas utilities.

- **507 Net MWh savings achieved (33% of forecast) based on 250 eligible tenant units in five (5) projects and 174,488 sq. ft. of eligible building area from completed projects through Q2.**
- In Q2, the program enrolled seven new projects.
- Applicants are showing a range of interest in the optional, advanced measures which were introduced in January 2021. To date, two projects opted to only pursue the base package, three projects pursued some advanced measures, and two projects opted to pursue all of the advanced measures.

Business Programs

Standard

Overview: The Standard Program provides monetary incentives to customers on a "Standard" per-unit or per-fixture basis. Offered measures include LEDs, T-8 and T-5 lighting and controls, building automation systems, air- and water-cooled chillers and variable speed drives, ground source heat pumps, roof top units, Q-sync motors, energy recovery ventilators, absorbent air cleaners, as well as equipment with niche or targeted market applications, such as laboratory, farm and commercial food service equipment, and grocery refrigeration measures.

- **Private: 72,408 Net MWh savings achieved (42% of forecast) based on 1,254 projects**
- **Public: 5,158 Net MWh savings achieved (25% of forecast) based on 283 projects**
- A Design Lights Consortium (DLC) product look up feature was added to the on-line application to validate product eligibility and help streamline application submissions.
- In Q2, the Standard offering received a large bulk of new public sector pre-applications from Chicago Public Schools (42 apps), Chicago Park District (38 apps), and City of Chicago (8 apps).

Custom

Overview: The Custom Program identifies and implements site-specific and unique cost-effective energy efficiency opportunities that are not available via the Standard program. Customized incentives based on per kWh basis and calculated for specific customer projects are offered. Measures include process efficiency improvements, system upgrades, and those measures not covered by the Standard program.

- **Private: 3,383 Net MWh savings achieved (26% of forecast) based on 36 projects**
- **Public: 175 Net MWh savings achieved (6% of forecast) based on 5 projects**
- The program remains on track to meet 2021 annual savings goals with paid and reserved applications.
- The custom combo promotion was created to encourage customer to submit applications for multiple programs including the custom programs. To date, the programs have received 33 applications with the intention of receiving the promotional incentives.

Small Business (Private and Public)

Overview: In 2021, Small Business started offering energy efficiency services for both private and public customers. The eligibility requirements are 0-200 kW for private customers and 0-400 for public customers. The program provides comprehensive energy savings solutions for customers including advanced lighting, refrigeration, HVAC, and compressed air.

- **Private: 115,941 Net MWh savings achieved (63% of forecast) and 4,090 projects**
- **Public: 8,040 Net MWh savings achieved (62% of forecast) based on 187 projects**
- Q2 continued to show strong participation. Increased customer eligibility showing positive SBO participation growth:
 - Private: 8% of projects from 100-200 kW customers
 - Public: 31% of projects from 100-400 kW customers
- Average kWh/project 2021Q2 vs 2020Q2
 - Private: ~7% increase
 - Public ~57% increase

Business Instant Discounts

Overview: The Instant Discounts Program provides instant discounts on qualifying commercial screw-in, pin-base, HID, exit signs and forklift battery chargers. Linear fluorescent lamps can be replaced with reduced wattage T8 lamps or Tubular LED (TLED) lamps. All screw-in, pin-base and exit sign replacements are LED.

- **Private: 29,067 Net MWh savings achieved (19% of forecast) based on 829,624 products sold**
- **Public: 4,448 Net MWh savings achieved (20% of forecast) based on 172,469 products sold**
- HVAC projects are steadily being processed. To date, projects have been based on rooftop units (RTUs) only and are below the forecasted \$0.95/kWh at approximately \$0.50/kWh.
- At the close of Q2, incentive levels were decreased in TLEDs, PAR lamps, and RTUs to align with the annual forecast and customer

Business Programs

demand. Also, reduced watt linear fluorescents have been removed making lighting all LED.

C&I New Construction

Overview: The New Construction Program offering provides technical assistance, support for the Leadership in Energy and Environmental Design (LEED) rating system, and incentives for whole-building energy efficiency for new construction and major renovation projects to influence building design practices during the design and construction of new buildings, major renovations of existing buildings, and tenant build-outs in the C&I market. The program serves private commercial and industrial buildings (CINC) as well as public sector buildings (PSNC) through a combined offering. The New Construction Program offering is delivered in partnership with all the northern Illinois gas utilities.

- **Private: 3,448 Net MWh savings achieved (24% of forecast) based on 19 projects and 4,739,491 sq. ft. of building area from completed projects**
- **Public: 1,021 Net MWh savings achieved (59% of forecast) based on 12 projects and 1,028,535 sq. ft. of building area from completed projects**
- The program began engaging design firms to use an online energy modeling tool at no cost to the firm. To date the program has provided training to three design firms.
- The Best Practices pathway continues to be very popular with customers. Currently 67% of all applications received in 2021 are for the Best Practices pathway.

Industrial Systems

Overview: The Industrial Systems Program is a study-based offering for compressed air, process cooling, industrial refrigeration and wastewater treatment plant. The target customer is over 100 kW but under 10 MW. Because this is a study-based program, there are no predefined measures. Measures are a mix of no- to low-cost system optimization as well as capital improvements like custom measures.

- **Private: 12,635 Net MWh savings achieved (27% of forecast) based on 150 projects**

- The Fix-It-Now (FIN) Compressed Air offering won a AESP Award for Outstanding Achievement in Groundbreaking Program Design & Implementation C&I for delivering a cost-effective way to fix compressed air leaks for industrial customers.
- Development of a marketing campaign to promote Industry 4.0 (monitoring solutions) and Process Cooling Fix it Now solutions targeted to customer's segments.
- Recruitment of 25 new sites for the Industrial Energy Management offering, with the completion of 22 treasure hunts, to identify both O&M measures and capital measures.
- Strong program pipeline performance with Q3/Q4 project completion projections.

Retro-Commissioning (RCx)

Overview: The RCx Program provides detailed engineering analysis of building systems designed to identify energy-saving operational improvements with a bundled simple payback of 18 months or less. Incentives are provided to customers who commit to implementing agreed-upon energy-saving equipment scheduling, optimization of economizer operations, and adjustment of heating, ventilation, and air conditioning (HVAC) setpoints.

- **Private: 9,754 Net MWh savings achieved (28% of forecast) based on 86 projects**
- **Public: 2,570 Net MWh savings achieved (17% of forecast) based on 14 projects**
- Despite a slow start to the year, the overall program is on track to meet forecasted spend and savings goals.
- Traditional RCx tracks (MBCx and RCx Flex) have sufficient pipeline and continued to pick up pace, but the implementation phase is proceeding at slower pace because customers are taking precautions due to COVID safety concerns.
- VCx has continued to gain momentum and accounts for over half of the program savings.

Strategic Energy Management (SEM)

Overview: Strategic Energy Management provides tools, coaching and technical resources to support customers' energy goals through a year-long series of

Business Programs

workshops and one-on-one coaching. It draws on principles of continuous improvement and organizational change and integrates Lean, Six Sigma and other cost savings and operational excellence initiatives. SEM helps implement organizational structures, behavior changes, and systematic practices that can lead to reducing energy costs by up to 15% for both electricity and natural gas.

- **Private YTD: 0 Net MWh savings achieved (0% of forecast) based on 74 Customers energy savings are generally recognized at the end of the year once the cohort completes.**
- **Public YTD: 0 Net MWh savings achieved (0% of forecast) based on 12 WWT customers, 13 additional Public customers, including 6 School Districts- covering 70 schools**
- Additional SEM training due to large turnover of customer Energy Champions.
- Working to increase customer energy savings reductions due to COVID-19 in public buildings, especially schools.
- 75% of SEM customers have completed their on-site treasure hunts.

LED Street Lighting

Overview: The program replaces existing ComEd-owned mercury vapor (MV) or high-pressure sodium (HPS) fixtures with LED streetlights. These streetlights are installed and maintained by ComEd and the municipality pays a rental charge for the fixture as well as an energy charge. LED streetlights provide energy efficient lighting which reduces operating costs and increases the life of street lighting.

- **Private (ComEd Owned): 4,508 Net MWh savings achieved (30% of forecast) based on 57 applications**
- **Public (Municipality Owned): 9,183 Net MWh savings achieved (34% of forecast) based on 23 applications**
- Incentives paid for the first Streetlights in Distressed Communities project, with a total energy savings of 60.7 MWh. Streetlights in Distressed Communities is a new initiative launched in January 2021, to provide free LED streetlight upgrades to municipalities located in economically-distressed areas.

- City of Chicago began installations on final phase (4B) of their Smart Lighting Project.
- Number of EESPs in the Streetlight Hybrid Network continues to grow. The offering now has 43 EESPs, which is approximately double the amount of EESPs from last year (22).

Operational Savings

Overview: The Operational Savings Program identifies no-cost/low-cost opportunities that do not qualify for incentives. These opportunities are identified by engineers during various types of ComEd Energy Efficiency Program studies and Facility Assessments (FAs). Examples of such opportunities include shutting off idle equipment, optimizing the efficiency of existing systems and changes in the operating habits of occupants.

- **Private: 828 Net MWh savings achieved (28% of forecast) based on 50 implemented measures**
- **Public: 396 Net MWh savings achieved (86% of forecast) based on 3 implemented measures**
- Facility Assessment requests continue to trend upward, resulting in an increase in identified operational measures.

Public Housing Retrofits

Overview: The Public Housing Retrofits Program offering provides energy efficiency retrofits in Public Housing Authority (PHA) facilities in the ComEd service territory. The program offers energy assessments and incentives to upgrade most inefficient equipment in the buildings served, including residential units, and common areas at no cost. The program offering identifies and enrolls qualified public housing buildings. Upgrade options include energy assessments, weatherization, and direct installation of energy-saving devices at no cost. As well as replacement of inefficient equipment/systems at no or very limited cost. For energy efficiency projects requiring funding beyond program incentives, technical assistance is offered to support implementation and identify financing options. The offering is delivered in partnership with Nicor Gas and Peoples Gas.

- **435 Net MWh savings achieved (20% of forecast)**
- **Upgraded 2,369 residential units in 94 buildings**
- **665 Units (3 Buildings) Jointly funded with Peoples Gas**

Business Programs

- **162 Units (4 Buildings) Jointly funded with Nicor Gas**
- **1,542 Units (87 Buildings) ComEd-only funded, in Peoples Gas and Nicor Gas territories**
- In Q2, the program engaged with 10 customers: 5 completed projects, 5 completed new assessments or pursued projects based on previous assessments. The 3 new customers – Housing Authority of Joliet, the Housing Authority of Elgin, and Jo Daviess County Housing Authority – all completed their first service provider-installed projects in Q2.
- 72 scattered sites were assessed in Winnebago County, which resulted in the identification of numerous opportunities and emergency replacement of non-functioning ACs in 6 homes. Construction began on these projects in late June.
- Outreach efforts have netted an increase in expected projects for Q3. Notable projects include emergency HVAC replacements (Winnebago), service provider-installed projects (lighting) (Joliet, CHA), AC covers (Elgin, CHA), direct installation (Jo Daviess, Joliet, Winnebago), steam trap replacements (CHA), attic insulation and air sealing (Winnebago, Jo Daviess), and boiler tune-ups (CHA, North Chicago).

Third Party Programs

Elementary Energy Education

Overview: ComEd, Nicor Gas, Peoples Gas, and North Shore Gas have partnered to offer schools the opportunity to teach 5th grade students and their families how to use less energy at home. Students learn about valuable ways to save energy and money through in-class education. They also receive free take-home kits containing ENERGY STAR®-certified LEDs, faucet aerators, and other energy-saving products to install at home with their families. The kits also contain a coupon that can be redeemed for free specialty LED bulbs.

- **1,534 Net MWh savings achieved (19% of forecast) based on 12,711 shipped kits and 160 LED portal redemptions.**
- To capture students who did not have the opportunity to participate in 2020 due to COVID, the program invited select 6th grade classrooms to participate. This is a special, one-time opportunity that garnered participation from 4,194 students.
- The program was able to surpass the spring semester kit distribution goal by 40% (12,711 kits total, including 6th graders). A contributing factor to greater participation over 2020 was schools moving from remote and hybrid learning models to in-person with the COVID vaccine rollout.

Small Business Kits

Overview: The Small Business Kits Program is an entry level program targeting C&I customers <200KW and public sector customers <400KW peak demand in restaurants and other general/office facilities and fire stations, libraries, park district offices and public works offices who have not previously participated in energy efficiency programs. Eligibility criteria was changed in 2021 to align with the Small Business Offering requirements. The program achieves savings through a kit of self-install energy efficiency measures delivered directly to customer facilities. A customer survey is used to determine installation rates for each measure.

- **3,044 Net MWh savings achieved (42% of forecast) based on 3,523 Kits**
- The top participating segments in Q2 include restaurants, repair services, childcare services, industrial equipment and physical fitness facilities.
- Generated 550 leads for Small Business Offering assessments.

- To improve participation across all customer segments, program launched two new social media marketing campaigns, with Google and Facebook ads in late Q2.
- Continuing targeted outreach to eligible customers in distressed communities.

Food Banks LED Distribution

Overview: The Food Banks Distribution Program provides ENERGY STAR® LEDs to food banks affiliated with Feeding America, as well as through pantries outside the Feeding America network. The food banks then use their network of local food pantries to distribute the bulbs to utility customers in need, who may elect to receive the offered products. The offering is designed to help reduce the energy burden for income eligible customers, by providing them with free energy efficient products for home use. Additional products (e.g. weather strips, night lights, and battery back-up LED bulbs) are distributed through pop up events on a limited basis.

- **46,904 Net MWh savings achieved (52% of forecast) based on 1,396,176 A19 LED bulbs (349,044 4-bulb packages); 3000 Weather Strips; 7,572 Night Lights, 2,112 Back-up Battery Bulb**
- The Food Bank program participated in three large partnership events on Chicago's South and West Side, reaching over 2000 ComEd customers.
- June highlighted the largest distribution month so far this year, distributing 78,520 4-packs to food pantries and community-based organizations. A 16% increase from last month (67,776 in May).
- The program team achieved successful outreach into Brighton Park, a high priority area in the 70 percentile, low-income households, on Chicago's Southwest side. In Q1, no products were sent to this area, however, with extensive outreach to food pantries in this area, the program ended Q2 with three participating pantries distributing over 1,500 LED 4-packs in the 60632-zip code.

Income Eligible Kits

Overview: The Income Eligible Energy Saving Kits Program provides energy efficiency kits to income eligible residential customers, primarily through the network of Illinois Community Action Agencies (CAAs). The kits include (1) Tier 1 Advanced Power Strip, (4) 9W LED bulbs, (2) 15W LED bulbs, (1) 6W LED Globe

Third Party Programs

bulb, (1) 5W LED Candelabra bulb, (1) 8W BR30 LED bulb, (1) Night Light, (1) Low-flow Kitchen Aerator, (1) Low-flow Bathroom Aerator, (1) Low-flow Showerhead, (1) Plumber's Tape; an instructional brochure which includes links to instructional videos for product use and installation, plus general information on energy savings. The offering is designed to help reduce the energy burden for income eligible customers, by providing them with free energy efficient products for home use.

- **8,355 Net MWh savings achieved (25% of forecast) based on 15,500 IE Energy Savings Kits delivered**
- The IE Energy Savings Kits program has met forecasted Q2 goal of distributing 9,000 IE Kits and is on track to meet the total year end goal with a high level of distribution in Q3 and Q4 aligned with the LIHEAP applicant surge typical at that time of year.
- Due to the partnership on program implementation with the IE Kits program, Green Home Experts (GHE) was able to hire an additional 7 employees with special needs and disabilities. GHE now has 24 fulltime employees.

Grocery Program

Overview: The Grocery Program provides free customized assessments to identify energy-saving opportunities for lighting and commercial refrigeration system retrofits and upgrades, along with financial incentives and implementation assistance.

- **1,177 Net MWh savings achieved (23% of forecast) based on 19 projects**
- The program has had a strong start, with continued customer interest and has completed 19 projects, while maintaining a healthy pipeline.

Non-Profit Offering (NPO)

Overview: The Nonprofit Organizations Program is a new program designed for nonprofit, 501(c)3 organizations with a maximum peak demand of 400 kW and that provide direct services to at-risk populations. The Program provides free energy assessments, procurement assistance, project oversight and a comprehensive list of incentives. Direct install is available for LED lamps and vending machine misers.

- **1,142 Net MWh savings achieved (29% of forecast) based on 20 projects completed, 5,282 units of measures installed, and 11 assessments completed**
- The NPO offering has built a strong pipeline through both referrals from EESPs and energy assessments. We have received pre-applications for over 80% of the current budget.
- The NPO team is starting to consider ramp down and transition plans for Q3 and Q4, which may include referral to other ComEd offers.

Agriculture

Overview: The Agricultural Program is a specialized offering that targets the full vertical market including farms (dairy, poultry, hogs, cash crops, etc.), greenhouses, indoor agriculture facilities, supply houses, and on-site processing facilities. It serves both existing facilities and new construction and offers Standard and Custom type of incentives. Once a customer is engaged, the program will offer customers a free walk-through assessment appropriate for their facility to identify energy efficiency opportunities and assist the customer with prioritizing projects and through the application process.

- **1,944 Net MWh savings achieved (22% of forecast) based on 96 projects**
- Controlled Environment Agriculture (CEA) is a growth area for the program and supported with two webinars and outreach activities. CEA will get a boost in Q3 and Q4 with the awarding of recreational cannabis licenses to craft growers, infusers, and transporter applicants.
- The pipeline for Q3 and Q4 remains strong, to be on track to meet year end goals. Wilder Fields is a large project that the team is working directly with the customer to track completion by November.
- Lighting product delays, due to global supply issues, will have an impact on timelines for the larger agriculture projects. These delays are being closely monitored.

Third Party Programs

Telecommunications

Overview: The Telecommunication program offers incentives for telecommunication and internet service providers and associated systems such as rectifiers, soft switches, air flow management, HVAC solutions, economization and lighting. Customer engagements are supported from the national and local levels with dedicated energy advisors and engineers providing individual customized assessments and reports on energy efficiency opportunities throughout the network infrastructures and facilities within ComEd's territory.

- **3,106 Net MWh savings achieved (37% of forecast) based on 45 completed projects**
- A large telecom customer has completed 9 network combing projects for about 2.0 GWH of savings.
- Pipeline is very strong, at 125% of weighted and realized for the 2021 goal. There are two very large projects over 2 GWH each that are being closely monitored for implementation and verification.
- The new thermostat TRM measure has been used as a standard Telecom offering at several locations for a large cellular company.

Public Building in Distressed Communities

Overview: Public Building in Distressed Communities provides LED light kits for self-install, and the top 6 HVAC measures, to provide energy efficiency to public buildings that do not have extra capital for these upgrades.

- **6,396 Net MWh savings achieved (41% of forecast) based on projects (installation phase) YTD: 187 Projects, Completed projects YTD: 58 Projects**
- New applications are no longer being accepted, due to a significant number of uninstalled measures already in the field.
- Working with customers to install all lamps received to maximize energy savings by Q3.
- Team has shifted focus to prioritize project completions with associated energy savings.

Voltage Optimization

Voltage Optimization

Overview: The Voltage Optimization Program deploys circuit voltage detectors and control equipment that will effectively assess and adapt the amount of voltage traveling across a power line at any given time. Once in place, these devices will allow ComEd to more precisely monitor, manage and deliver the voltage customers need. No additional effort by consumers will be required as the control equipment will automatically adjust to consistently deliver only the voltage each customer requires while providing energy savings.

- **75,390 Net MWh of energy savings (29% of YE target), based on 21 commissioned substations and 162 feeders**
- This is equivalent to 117M pounds of carbon dioxide reduction or removing ~11,000 passenger vehicle driven each year.

Emerging Technologies and Market Transformation (“R&D”)

The mission of the R&D team is to identify, test, validate, and integrate new energy-saving technologies and program delivery strategies into the ComEd Energy Efficiency Program so that it continues to meet customers' needs and its energy savings goals cost-effectively.

- Please refer to the attached PDF for a summary of active Emerging Technologies and Market Transformation projects.



2021 Q2 ComEd EE
RD Portfolio Summa

R&D Portfolio Summary Q2 2021							
Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Validating New Technologies for New Energy Savings							
Commercial Interior Insulating Shades	IIT, Parisa Solutions, Atmos Controls	Technology Assessment	Commercial	Sep-20	Mar-22	Installation has completed and monitoring began in May. To capture sufficient data for heating and cooling seasons, the monitoring period has been extended through winter 2021-2022.	Link
Cooling Tower Future Opportunities	AWE, PHNL	Research	Cross-Cutting	Jul-20	Oct-21	AWE and PHNL completed the Cooling Tower Estimating Model and accompanying guidelines. The project team delivered the first draft of their analysis of the energy savings and cold water savings of selected alternative treatments for cooling towers in June, with a final draft due in early Q3.	Link
Dipper Wells Market Research	Frontier Energy	Research	Commercial	Jan-21	Sep-21	Interviews with end users, distributors and health departments are complete. A summary report is currently being developed. The final environmental report is currently being compiled and will be delivered to ComEd in Q3.	Link
Film Gas Condensers	DNV GL	Technology Assessment	Commercial	Oct-20	Oct-21	Recruitment difficulties have delayed the completion of a full sample of installations for monitoring, but as of this update the project is still scheduled for completion in October.	Link
Industrial EMIS	Leidos, EPS-Energie	Technology Assessment	Industrial	Feb-20	Jun-22	The project team has received 1 state for installation and implementation of an EMS plan. Final audits have been completed and proposed EMS plans have been presented to all participants. These plans are currently undergoing executive approval from site ownership and expected to be completed in early Q3. Underway is the final report being developed detailing the EMS plan and monitoring equipment.	Link
Innovations in Efficient Elevator Systems	360 Energy Group, SRDAC, Kore Engineering	Research	Commercial	Dec-20	Aug-21	Interviews with end users, manufacturers, building owners, professional engineers, and contractors were completed in June. These along with a technology scan of potential elevator measures will inform the market along with a savings potential analysis for modern elevator retrofit opportunities.	Link
Liquid Cooled Server Racks	Franklin Energy, DNV, LiquidCool Solutions	Technology Assessment	Commercial	Sep-20	May-21	Post-installation monitoring completed at the end of May. The unit demonstrated 40% savings at the test facility, and 74.3% savings in an edge computing case. The final report also indicated a high technical market potential for liquid cooling of server racks in ComEd territory.	Link
National Laboratory Emerging Tech Partnership	HREL and various technology partners	Technology Assessment	Commercial	Jan-19	Dec-21	Progress continues to be made on projects originally scheduled for completion in 2020 but were delayed due to COVID-19-related lab closures. The project team is developing a refrigerant management system and a residential heat pump system. They are on track to complete the refrigerated display cases using R-290 propane refrigerant and the high-performance cold climate heat pumps for residential and small commercial applications research in early Q3.	Link
Refrigeration Thermal Energy Storage	Stesstream	Technology Assessment	Commercial	Apr-21	Dec-21	Phase 2 of this project will study the on-site performance of the refrigeration thermal energy storage (TES) approach developed as the baseline for Phase 1. This will involve the use of phase change materials (PCM). The final evaluation will examine the savings potential and economic viability of thermal energy storage in commercial refrigeration applications. The project team is currently working on the design of the TES system.	Link
Residential Dryer Moisture Sensor	GTI	Technology Assessment	Residential	Jan-21	Sep-21	Laboratory tests are complete and summarized results will be presented to ComEd in Q3. The project team is behind with site recruitment for the field demo, so they are expanding outreach. In lab tests, battery life issues have been identified.	Link

Marketing Education & Awareness

There have been no campaigns in market for Q2.

Stipulations

Commitments Regarding Interactions with the Income-Qualified Advisory Committee (Settlement Stipulation § IV(D)(1))

ComEd agrees to report on a quarterly basis to both the Income-Qualified Energy Efficiency Advisory Committee and the SAG on the development of reporting metrics on the following topics:

- a. Identification of budget, savings, and number of participants served through Income-Qualified Plan funding, separately tracking by single-family and multi-family programs:
 - For budget and savings, please refer to the Income Qualified Programs section on the "Ex Ante Results" tab of the statewide quarterly report template. Total Income Qualified homes served is captured on the "Other" tab of the statewide quarterly report template.
 - The Single-Family Retrofits program has completed projects in 892 income-qualified homes through Q2.
 - The Multi-Family Retrofits program has completed direct install work in 4,516 tenant units through Q2.
 - The Public Housing Retrofits program has completed direct install work in 2,369 tenant units through Q2.
 - The Affordable Housing New Construction program has completed 5 projects for a total of 250 tenant units serving income eligible residents through Q2.
 - The Income Eligible Product Discounts program has provided deeper instant in-store discounts to income eligible customers for 43,708 Advanced Power Strips, 72 Air Purifiers, 105 Dehumidifiers, 1 Room Air Conditioner; 36,114 LED Nightlights, 137,610 LED Kits/Fixtures, and 616,434 LED Bulbs (nightlights, kits/fixtures and bulbs total 288,888 packages) through Q2.
 - The Income Eligible Kits program has distributed 15,500 kits to income-qualified single-family homes through Q2.
 - The Food Banks Distributions program has distributed 1,396,176 A19 LED bulbs (349,044 4-bulb packages); 3,000 Weather Strips; 7,572 Night Lights and 2,112 Back-up battery bulb through Q2.
- b. Income-Qualified R&D projects:

- The ComEd Emerging Tech team has completed several pilot and research projects specific to income eligible and public housing customers in the past year; information can be found at <https://www.comedemergingtech.com>.
- Information on active R&D project can be found in the R&D section of this report.
- c. Identification of implementation vendors who receive funding designated for Income-Qualified programs, indicating whether each vendor is an independent third party that has demonstrated capabilities to serve such households, including not-for-profit entities and government agencies that have existing relationships with or experience serving Low-Income communities in the State:
 - Single-Family Retrofits – Chicago Bungalow Association (not-for-profit), Chicagoland Vintage Home Association (not-for-profit), Franklin Energy (for-profit), Illinois Association of Community Action Agencies (not-for-profit), Resource Innovations (WBE for-profit), 15 community action agencies in the ComEd territory (not-for-profits)
 - Multi-Family Retrofits – Elevate Energy (not-for profit), Franklin Energy (for-profit), Resource Innovations (WBE for-profit), 15 community action agencies in the ComEd territory (not-for-profits)
 - Public Housing Retrofits – Elevate Energy (not-for-profit), University of Illinois at Chicago Energy Resources Center (not-for-profit)
 - Affordable Housing New Construction – Slipstream Group Inc. (not-for-profit)
 - Income Eligible Lighting Discounts – CLEARResult (for-profit)
 - Income Eligible Energy Saving Kits – University of Illinois at Chicago Energy Resources Center (not-for-profit), 15 community action agencies in the ComEd territory (not-for-profits)
 - Food Bank – CLEARResult (for-profit), food banks affiliated with Feeding America, including Greater Chicago Food Bank (not-for-profit), Northern Illinois Food Bank (not-for-profit), Riverbend Food Bank (not-for-profit); as well as through (not-for-profit) food pantries outside the Feeding America network.
 - Outreach & Marketing – Eire (WBE for-profit), PACO (MBE for-profit), Surge Solutions (MBE for-profit), The L3 Agency (WMBE for-profit)

Stipulations

- d. Job training in economically disadvantaged and diverse communities within its service territory that is supported by ComEd's efficiency program portfolio funding, including training offered through the IHWAP program necessary to increase capacity to deliver services in ComEd's territory
 - The ComEd Incubator program has provided training and support services to enable diverse contractors to join the ComEd Energy Efficiency Service Provider Network, represent the portfolio to customers and complete energy efficiency projects by leveraging existing workforce development frameworks, community-based agency partnerships and support from ComEd's Energy Efficiency Portfolio Implementation Contractors. The 2021 Incubator cohort (which graduated training on 4/30) has 28 members from five counties in the ComEd service territory. Eight are lighting contractors, seven are HVAC contractors, six are general contractors and the others are in project management, energy consulting or weatherization. Phase 2 of the program will begin in May and run for 6 months.

This will include back office support with a focus on 1X1 training with each cohort member in providing support within their business growth plans. In addition, the program will be conducting a mentoring pilot for cohort members to work with an existing EESP on their first EE project. 2022 Incubator recruitment is anticipated in Q3.

- Additionally, ComEd annually supports IHWAP's training programs.
- In its upcoming Plan 6, ComEd has committed to launch a full Market Development Initiative (MDI), which will focus both on growing diverse business and workforce opportunities. The focus of this work in 2021 will be research to inform the MDI, and ComEd will be issuing a related RFP in Q2.

CY2021 New Measures

CY2021 New Measures

All measures in the table below were launched in CY2021.

Measure	TOTAL RESOURCE COST (TRC)	Sector	IL TRC
Mag Bearing - College		Business	7.50
Mag Bearing - Healthcare Office		Business	16.72
Mag Bearing - Hospital		Business	19.68
Mag Bearing - Hotel		Business	20.21
Mag Bearing - K-12		Business	9.18
Mag Bearing - Office		Business	16.56
VSD Chiller - College		Business	15.37
VSD Chiller - Healthcare Office		Business	26.62
VSD Chiller - Hospital		Business	24.83
VSD Chiller - Hotel		Business	28.85
VSD Chiller - K-12		Business	15.56
VSD Chiller - Office		Business	23.15
Smart Socket		Business	1.54
Advanced Rooftop Controls with Switch Rotor Pole Motor (> 20 ton)		Business	0.47
Advanced Rooftop Controls with Switch Rotor Pole Motor (> 10 ton to ≤ 20 ton)		Business	0.57
Advanced Rooftop Controls with Switch Rotor Pole Motor (>5 ton to ≤ 10 ton)		Business	0.68
Advanced Rooftop Controls with Switch Rotor Pole Motor (<=5 tons)		Business	0.74
Dipper Wells		Business	41.60
LED Grow Lights - Flowering		Business	3.82
LED Grow Lights - Vegetative		Business	2.09
Energy Efficient Rectifier		Business	3.55
Network Combing, Line and Trunk Equipment Removal		Business	2.60
ENERGY STAR Uninterruptible Power Supply		Business	1.73
Agricultural Swine Heat Pad		Business	0.19
Common Area Vending Miser Non-Refrigerated		Residential	0.40
ENERGY STAR Most Efficient Refrigerators		Residential	0.96
LED Globe 6-watt 450 lumens		Residential	3.57
LED BR30 bulb		Residential	4.15
LED Candelabra 5-watt 325 lumens		Residential	3.40
LED Mini Globe (350 Lumens)		Residential	1.40
Three Way A19 LED (500/1000/1500 lumens)		Residential	2.62

ATTACHMENT

R&D Portfolio Summary Q2 2021

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Validating New Technologies for New Energy Savings							
Commercial Interior Insulating Shades	IIT, Parata Solutions, Amatis Controls	Technology Assessment	Commercial	Sep-20	Mar-22	Installation has completed and monitoring began in May. To capture sufficient data for heating and cooling seasons, the monitoring period has been extended through winter 2021-2022.	Link
Cooling Tower Future Opportunities	AWE, PNNL	Research	Cross Cutting	Jul-20	Oct-21	AWE and PNNL completed the Cooling Tower Estimating Model and accompanying guidebook. The project team delivered the first draft of their analysis of the energy savings and cold water savings of selected alternative treatments for cooling towers in June, with a final draft due in early Q3.	Link
Dipper Wells Market Research	Frontier Energy	Research	Commercial	Jan-21	Sep-21	Interviews with end users, distributors and health departments are complete. A summary of interview results (along with a market potential report) is currently being compiled and will be delivered to ComEd in Q3.	Link
Flash Gas Condensers	DNV GL	Technology Assessment	Commercial	Oct-20	Oct-21	Recruitment difficulties have delayed the completion of a full sample of installations for monitoring, but as of this update the project is still scheduled for completion in October.	Link
Industrial EMIS	Leidos, EPS Energie	Technology Assessment	Industrial	Feb-20	Jun-22	The project team has selected 5 sites for installation and implementation of an EMIS plan. Facility audits have been completed and proposed EMIS plans have been presented to all participants. These plans are currently undergoing executive approval from site ownership and expect to be completed in early Q3. Upon approval, the team will begin executing the EMIS plans and installing monitoring equipment.	Link
Innovations in Efficient Elevator Systems	360 Energy Group, SEDAC, Kone Engineering	Research	Commercial	Dec-20	Aug-21	Interviews with elevator manufacturers, building managers, architectural/engineering firms, and contractors were completed in June. These along with a technology scan of potential elevator measures will inform the market and savings potential analyses for modern elevator retrofit opportunities.	Link
Liquid Cooled Server Racks	Franklin Energy, DNV, LiquidCool Solutions	Technology Assessment	Commercial	Sep-20	May-21	Post-installation monitoring completed at the end of May. The unit demonstrated 40% savings at the test facility, and 74.3% savings in an edge computing case. The final report also indicated a high technical market potential for liquid cooling of server racks in ComEd territory.	Link
National Laboratory Emerging Tech Partnership	NREL and various technology partners	Technology Assessment	Commercial, Industrial	Jan-19	Dec-21	Progress continues to be made on projects originally scheduled for completion in 2020 but were delayed due to COVID-19-related lab closures. The project team delivered the final reports for switched reluctance motors and conveyor belt systems. They are on track to complete the refrigerated display cases using R-290 propane refrigerant and the high-performance cold climate heat pumps for residential and small commercial applications research in early Q3.	Link
Refrigeration Thermal Energy Storage	Slipstream	Technology Assessment	Commercial	Apr-21	Dec-21	Phase 2 of this project will study the on-site performance of the refrigeration thermal energy storage (TES) approaches identified as the most promising in Phase I—static thermal mass and phase change materials (PCM). This field evaluation will examine the savings potential and economic viability of thermal energy storage in commercial refrigeration applications. The project team is currently recruiting for 2021 demonstration sites.	Link
Residential Dryer Moisture Sensor	GTI	Technology Assessment	Residential	Jan-21	Sep-21	Laboratory tests are complete and summarized results will be presented to ComEd in Q3. The project team is behind with site recruitment for the field demo, so they are expanding outreach. In lab tests, battery life issues have been identified.	Link

R&D Portfolio Summary Q2 2021

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Smart Controls for Small and Medium Commercial Buildings	E Source	Research	Commercial	Mar-21	Nov-21	Interviews with ComEd small commercial customers are complete and recruitment has started for peer utility interviews. The project team delivered a summary of initial research on EMS products and programs in North America.	Link
Smart Pressure Independent Control Valves	Slipstream	Technology Assessment	Commercial	Dec-18	Apr-21	The field site studied for the pilot achieved 566,000 annual kWh savings. The project team found the best candidates for smart valves are cooling-intensive facilities, including hospitals and educational laboratories, and that the Custom offering is the most likely path for promoting smart valve savings opportunities.	Link
Switched Reluctance Motor Field Evaluation	Slipstream, Turntide Technologies	Technology Assessment	Commercial	Jun-20	Oct-21	Some difficulties have arisen in data acquisition from additional customer sites; the initial sample will have achieved a full year of monitoring by the end of Q3.	Link
Variable Refrigerant Flow for Cold Climates	Slipstream	Technology Assessment	Commercial	Sep-20	Sep-22	The project team found that variable refrigerant flow systems have widespread potential for both adoption and energy savings in ComEd territory across a variety of building types, and in both retrofit and new construction scenarios. A Phase 2 project involving additional research into savings drivers and field evaluation has been approved and will launch in Q3.	Link
Very High Efficiency HVAC	IMT, Slipstream, Ventacity	Technology Assessment	Cross Cutting	Dec-20	Dec-23	Customer site recruitment continues, with installs expected by the end of the year. As of Q2 several customers are interested and recruitment is in process.	Link
Water Heating Technology Opportunities	Evergreen Economics, GDS Associates	Research	Residential	Aug-20	Sep-21	The research team conducted interviews with manufacturers of refrigeration heat recovery and recirculation heat pump technologies to better understand the market for each technology. They also conducted a survey of plumbing contractors that carry unitary heat pump water heaters in ComEd's service territory but ran into recruitment challenges and instead opted to run small discussion groups focused on heat pump water heaters with a group of plumbing contractors and distributors. The research team is using the findings from the market assessment to inform a program strategy they are developing for the residential and commercial sectors to present to ComEd.	Link

R&D Portfolio Summary Q2 2021

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Increasing Market Adoption Through Innovative Program Design							
BIT Neighborhood	Slipstream, Southface, Illinois Green Alliance, Environmental Defense Fund	Outreach Strategy	Income Eligible Residential	Feb-19	Sep-21	The BIT Aides started to conduct onsite building assessments at the CHA sites in late May to complete the data collection for the energy savings analysis and identification of ECMs. Slipstream has continued to offer the BIT Aide professional development and training opportunities, and in Q2 2021 they hired one of the BIT Aides for a position on their New Construction team.	Link
Building Operator Certification	Midwest Energy Efficiency Alliance	Program Design	Commercial	Jan-21	Dec-21	MEEA has scheduled several BOC training series for 2021 and marketing and recruitment is underway. ComEd is working with Guidehouse and MEEA to successfully introduce BOC training into the IL TRM v10. Based on that milestone, ComEd will then work to create a sustainable BOC marketing model going forward.	Link
Customer Targeting through NMEC	Power TakeOff, Recurve (separate projects)	Research	Cross Cutting	Oct-20	Oct-21	The Recurve research team received customer AMI data in May and is underway with their analysis of selected measures. The Power TakeOff team is in the final stages of conducting their analysis on indoor lighting, outdoor lighting and variable speed drive measures and are expected to deliver their results in a final report in early Q3.	Link
Electric Homes New Construction	Slipstream	Program Design	Residential	Mar-19	Dec-22	EHNC has not closed out any 2021 projects to date, though will be closing out 7 projects by early August. The program has seen delays due to high construction costs in the market. There are 12 additional projects with pre-applications submitted and 10-15 others pending submission. EHNC will be participating in Illinois Green Alliance's 2021 Greenbuilt Homes Tour webinar on 8/25.	Link
ENERGY STAR® Retail Products Platform	NEEA, US EPA	Market Transformation	Residential	Apr-20	Dec-21	Guidehouse, NEEA and ComEd are meeting frequently to refine an evaluation plan for 2021 and future years. The team presented an update during the Q2 SAG Market Transformation Working Group meeting. Ongoing discussions also include Ameren and Opinion Dynamics, as a single consensus statewide evaluation approach is the end goal.	Link
Home Energy Reports Paperless Experience	Oracle	Program Design	Residential	Apr-19	Dec-21	The digital-only reports experience for 20,000 pilot customers is ongoing. As of February 2021, the test group had generated 3.1 GWh in energy savings and will hit its two-year mark in August 2021.	Link
Midstream Commercial Food Service	GTI, Frontier Energy	Program Design	Commercial	Apr-19	Dec-21	Electric measure rebates continue to lag behind gas measures. GTI proposed an incentive plan to all involved utilities to increase market adoption; those recommendations are currently under consideration and discussion between utilities. Bridging the pilot into 2022 for a state-wide pilot offering is also under discussion.	Link
Municipal Energy Planning Engagement Concept Development	Slipstream	Research	Cross Cutting	Feb-21	Jun-21	Slipstream delivered a final report summarizing the findings of their literature review and interviews along with a proposal to test a municipal energy planning-related offering for three municipalities in the ComEd service territory.	Link
Online Choice Engine Program Model	Enervee	Technology Assessment	Residential	May-20	Dec-21	Wave 2 evaluation survey discussions took place throughout Q2 with a focus on NTG methodology. IL utilities and evaluation teams are now all in agreement with plan moving forward. Survey pre-testing is underway and will open in July-August. Analysis/results will be completed in September. The Enervee platform will remain operational through the end of 2021.	Link
Real-Time Virtual Commissioning (VCx)	Power TakeOff	Technology Assessment	Commercial, Public Sector	Sep-20	Dec-21	Real time monitoring equipment and pulse meter upgrades have been installed at 27 Chicago Public School (CPS) locations and one Cook County site. The project team is continuing their VCx engagement with CPS and has delivered participant data to M&V to receive the first verified results in Q3.	Link

R&D Portfolio Summary Q2 2021

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Scalable Community Building Energy Modeling	Mapdwell	Technology Assessment	Cross Cutting	Jan-21	Nov-21	The pilot team completed phase 1 work which included initial database setup and data mapping. The pilot community has been selected. Phase 2 requires a customer AMI data overlay and that transfer from ComEd to Mapdwell is in progress.	Link

R&D Portfolio Summary Q2 2021

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Thinking Outside the Box for Future Opportunities							
Fan Energy Index	Slipstream	Research	Cross Cutting	Aug-20	Apr-21	Results were presented to ComEd staff in early May. The project team found that application of the FEI metric has high technical savings potential in both commercial and industrial buildings, and that a midstream approach would be most effective in overcoming market barriers to adoption for fan distributors and manufacturers. A TRM workpaper for the FEI has been approved.	Link
Hybrid Heat Pump Systems and Future Beneficial Electrification Opportunities	Center for Energy and Environment	Research	Residential	Dec-19	Apr-21	CEE finalized this research in Q2. The ComEd team is using findings from those projects to refine its heat pump program strategy and undertake new, targeted research projects.	Link
Illinois Building Energy Code Advancement	Slipstream, Midwest Energy Efficiency Alliance	Research	Cross Cutting	Jan-21	Dec-21	Slipstream/MEEA have continued their conversations with municipalities in ComEd's service territory about the long-term savings potential from stretch codes and building performance standards. In addition, the research team has made significant progress on developing an attribution model to enable the claiming of savings under stretch codes and building performance standards. They have presented to the SAG multiple times and begun working with Guidehouse to hone in on an acceptable attribution model.	Link
Indoor Agriculture Future Opportunities	ERS, ACEEE, D+R International, Resource Innovation Institute	Research	Commercial	Oct-20	Apr-21	The research team presented their findings and delivered the final report to ComEd in Q2. Although it proved more difficult than anticipated to reach growers in Illinois, ERS was able to provide insight into the controlled environment agriculture sector in ComEd's territory and the impacts of HB 1438. The final report includes actionable recommendations to help ComEd engage with this difficult to reach sector and how to best address the limited savings potential identified.	Link
Municipal Water Infrastructure Leak Reduction	TRC, Rezatec	Program Design	Cross Cutting	Jun-20	Nov-21	The pilot team started onsite infrastructure testing for each of the four participating communities and researched smart water technologies to integrate into the community upgrade plans. They also continue to research available funding opportunities for the communities and developed a proposed evaluation methodology for evaluator review.	Link
Understanding Water Solution Providers	Axiom Marketing	Research	Cross Cutting	Sep-20	May-21	The research team conducted interviews with consulting engineers and water solution providers in the service territory to learn about the barriers and opportunities for working with municipal and commercial customers to provide water-energy savings. The team delivered a summary of their analysis from all interview findings and presented seven proposed projects for ComEd to pursue.	Link
Water Energy Savings with Strategic Energy Management	CLEAResult	Program Design	Commercial	Jun-20	Sep-21	The seven pilot participants have continued to implement previously identified water conservation measures at their facilities and two participants purchased water sub-meters. The pilot team is working with Guidehouse to complete an early evaluation trial for three different water conservation projects.	Link