



CY2020 FOURTH QUARTER REPORT



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Sustained Excellence Sustained Excellence

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Portfolio Summary

1,736,690

Actual Net MWh YTD

1,637,572

CY2020 MWh Filed Goal

\$337,472,565

Actual Spend YTD

\$351,334,190

CY2020 Spending Cap

PORTFOLIO

- Through Q4, the portfolio achieved 106% of its CY2020 filed goal of 1,637,572 MWh.
- Since its inception in 2008, the ComEd Energy Efficiency Program has saved ComEd customers over \$5.3 billion on their electric bills.
- For granular breakout by program, please see the narrative.

RESIDENTIAL PROGRAMS

- Through Q4, residential programs achieved 283,795 MWh of savings.
- Customers have received over 236,879 rebates and over 17,607 homeowners and tenants have received free direct install products from assessments through Q4.

INCOME ELIGIBLE PROGRAMS

- Through Q4, income eligible programs achieved 66,603 MWh of savings, not including MWh savings from converted therms.
- Over 73,577 income eligible households have participated through Q4.

BUSINESS PROGRAMS

- Through Q4, business private sector programs achieved 751,748 MWh of savings; business public sector programs achieved 139,773 MWh of savings.
- Over 11,419 business private sector projects and 1,253 business public sector projects have been completed through Q4.

THIRD PARTY PROGRAMS

- Through Q4, third party programs achieved 158,359 MWh of savings.

COVID-19

- This report covers CY2020 and reflects spend and energy savings accordingly. Within the program narrative sections, there are some notes about steps that have been taken both during and since the end of Q4, in light of COVID-19.

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.

- **62,409 MWh savings achieved**

Report generation year-to-date, as of December 2020:

- Home Energy Reports (print): 7,991,061
- Home Energy Reports (email): 7,977,076
- High Usage Alerts (email): 1,822,221
- Weekly Usage Reports: 2,552,750
- The program continues to have a low opt-out rate, high customer satisfaction through customer inquiries, and high digital communication engagement rate.
- MWh savings are being reported as First Year Post Evaluation savings.

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.

- **155,418 Net MWh savings achieved based on 5,607,815 LED bulbs and fixtures discounted**
- The Lighting Discounts program introduced smart connected LED bulbs with instant discounts at participating retail stores for the first time in 2020. Over 36,000 smart bulbs were sold with the ComEd instant discount this year.

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.

- **35,639 Net MWh savings achieved based on 236,879 rebated appliances**
- A new Multi-Family Bulk Rebate Tool was launched on the Rebate Portal allowing multi-family property owners and managers a more streamlined process for submitting an application and receiving rebates on select ENERGY STAR appliances and smart thermostats.

Fridge and Freezer Recycling

Overview: The Fridge and Freezer Recycling Program provides ComEd customers free pickup and recycling of older, working refrigerators and freezers from residential customer homes. In addition to free pickup, customers receive a \$35 incentive for fridge and freezer units and \$10 for AC units and dehumidifiers when collected in conjunction.

- **2,317 MWh savings achieved based on 6,508 units**
- Program was suspended in mid-March and will not resume before 2022.

Home Energy Assessment

Overview: Offered in partnership with Nicor Gas, North Shore Gas, and Peoples Gas, the Home Energy Assessment is a free walkthrough or virtual 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 or delivered for free: ENERGY STAR® certified LEDs, programmable thermostats, WaterSense® certified showerheads, faucet aerators, and hot water pipe insulation. Advanced Power

Residential Programs

Strips are available for a purchase at a discounted price 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.

- **12,463 MWh savings achieved based on 10,694 in-home and 732 virtual assessments completed**
- Q4 the program reaching over 4,500 customers.
- The number of virtual Home Energy Assessments (vHEA) was expanded to 550 virtual assessments, or 12 percent of total assessments during Q4.
- The program ran a successful social media campaign promoting the virtual assessment offering which generated interest and awareness in the offering.

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.

- **9,328 MWh savings achieved based on 5,880 tenant units, 301 common-area installs, and \$3,480,018 in Service Provider Installation**
- In Q4, the program successfully launched the self-install option for property managers and owners. Self-Install (SI) is a contactless alternative to direct install in which the property manager is delivered eligible products to install on their own.
- To encourage customers to move forward with Multi-Family common area projects, measures specific copays (TLED's) were removed stimulating interest to move forward with lighting projects during COVID.

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.

- **6,221 MWh savings achieved based on 10,869 rebates**
 - Ductless Mini Split Heat Pump (DMHP) promotion, which increased rebates on one DMHP to \$500 and \$600 per system for two or more installations, continued through the end of Q4. The promotion generated a lot of interest and resulted in 260 DMHP rebates during the promotions; compared to 267 rebates during the first 9 months of 2020.

Income Eligible Programs

Income Eligible Product Discounts

Overview: Overview: Income Eligible Retail Discounts provides deeper instant in-store discounts to ComEd residential customers at participating retail stores located in qualifying neighborhoods on select ENERGY STAR® certified lighting: LEDs, LED trim kits, and LED integrated fixtures as well as instant in-store discounts on select ENERGY STAR certified appliances such as air purifiers. Instant in-store discounts are also available on advanced power strips. Instant Discounts are offered to minimize the burden on the target market by lowering barriers to participation.

- **59,401 MWh savings achieved based on 1,372,542 Units sold (appliance: 95,131 and lighting: 1,277,411)**
- Q4 had the highest individual months of energy savings for the year.
 - Sold the most interior LED fixtures for a quarter in Q4 at over 83k units (46% of all interior fixtures for the year).
 - 37% of all 2020 income-eligible lighting incentives were processed in Q4.
 - Over 30,000 Advanced Power Strips were incentivized in Q4 – more than any other quarter in 2020.
 - 48% of all 2020 air purifier and dehumidifier rebates occurred in Q4.

Single-Family Retrofits

Overview: The Single-Family Retrofits Program is delivered through several channels including, Illinois Community Action Agencies, 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, health and safety and additional upgrades at no cost to the customer. CBA/CVHA identifies and determines qualified vintage homeowners located in the City of Chicago and certain Cook County suburbs and coordinates home assessments to identify areas prone to air leaks or drafts and works with contractors to make weatherization and health and safety updates at no cost to the customer. This program covers costs associated with completing air sealing, attic and wall insulation, duct sealing, direct install

measures (LEDs, water saving measures, programmable thermostats) as well as health & safety improvements. This program is delivered in partnership with Peoples Gas.

ComEd, in coordination with the CAA's and the northern gas utilities partially and, in some cases fully funds whole home energy upgrades in coordination with the State-run Illinois Home Weatherization Assistance Program (IHWAP). Measures may include all of those in the CBA/CVHA side, as well as mechanical system upgrades or replacements.

- **3,603 MWh savings achieved based on 1,605 participating customers (Includes IHWAP +CBA/CVHA)**
- **CBA/CVHA Projects (YTD):**
 - Joint with Peoples Gas: 477 homes
 - ComEd Only: 550 homes
- **Single family IHWAP**
 - 578 Total Homes/Projects

Illinois Home Weatherization Assistance Program (IHWAP)

- Q4 saw ~46% of 2020's entire production, reflecting the concerted effort agencies made to push through as many projects as they could to try to meet forecasted production. Production in Q4 was just over double that of Q3. However, several agencies experienced end-of-year COVID setbacks such as: backordered materials, an inability to access customer homes, delayed access to customer homes, staffing shortages, and approval and installation delays due to the rise in COVID infections.

CBA/CVHA

- The program completed 44 projects per week throughout the months of October and November. There was a gradual ramp down in the month of December with the final projects being completed Dec. 19th.
- A total of 1,027 Wx projects were completed, despite a 4-month work stoppage due to COVID.

Income Eligible Programs

- Just short of the original goal of 1,040 homes, but savings goals and spend targets were achieved.

Multi-Family Retrofits

Overview: The Multi-Family Energy Upgrade Program is delivered through several channels including Illinois Community Action Agencies (for the Illinois Housing Weatherization Program – IHWAP - multi-family offering) and the multi-family energy savings (IEMS) offering. The program offers one-stop shop options for multi-family building owners and managers whose buildings serve income-eligible residents, including energy assessments, direct installation of energy-saving devices, and replacement of inefficient equipment/systems at no or very limited cost. The IHWAP work is jointly funded with all the northern Illinois gas utilities and IEMS offering is joint with Peoples Gas and NorthShore Gas.

- **2,007 MWh savings achieved**
- **IHWAP: MF projects served 611 tenant units total**
- The largest single project was successfully completed entirely in Q4 on an expedited timeframe. Time from project submittal to completion was ~2.5 months.
- Agencies participating in MF projects faced COVID-related challenges such as staffing shortages, backordered materials and delayed or restricted access to tenant units
- Despite COVID setbacks, MF projects served 611 tenant units total, which is only 11 fewer tenant units than 2019.

IEMS

- **IEMS: Completed 419 projects and upgraded 6,759 residential units**
- The IEMS program closed out 177 projects and \$1,590,671 in Q4 which exceeded the total number of projects and incentives for the remainder of 2020 (160 projects and \$1,497,171).
- Significant uptick in boiler installation projects many of which were emergency replacements. 29 Boiler projects were completed, which accounted for 30% of the overall incentive spend in Q4.

- The program team worked to close out four large air sealing and insulation projects that amounted to \$844,279 in incentives and 1,426,225 kWh.

Affordable Housing New Construction

Overview: The Affordable Housing New Construction (AHNC) Program offers technical support and incentives for whole-building efficiency for new construction and major renovation projects that increase the energy efficiency of income eligible households.

- **1,592 net MWh savings achieved based on 13 projects and 553,226 sq. ft. of eligible building area from completed projects in 2020. This includes a total of 837 tenant units for income eligible residents through Q4.**
- Submitted year end calculations for the largest project count (13) since the start of the ComEd program in June 2017.
- Finalized updates to program collateral and the ComEd Multi-Family Standard, creating a more flexible and cost-effective program for participants and the utility.
- Completed the year with 36 total applications received, 20% higher than targeted and reflecting the value and awareness of the offering.

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: 208,163 MWh savings achieved based on 2,740 projects**
- **Public: 27,236 MWh savings achieved based on 822 projects**
- Customer participation in standard continues to remain strong. Total number of applications paid in 2020 (3,562) exceeded 2019 (3,069) by 16%.
- Q4 was the strongest quarter in 2020 for public customer participation, resulting in a total of 8,867 net MWhs of savings, \$1,992,821 incentive payments, and 226 paid applications.

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: 21,272 MWh savings achieved based on 181 projects**
- **Public: 4,145 MWh savings achieved based on 22 projects**
- The month of December represented the largest month for the private sector program, as 31% of the annual program performance was achieved.

Small Business & Small Facilities

Overview: The Small Business and Public Small Facilities Programs implement energy efficiency projects for customers under 100 kW peak demand. The

program provides comprehensive energy savings solutions for customers including lighting, controls, refrigeration, HVAC, compressed air, commercial kitchen and building envelope.

- **Private: 209,846 MWh savings achieved and 7,620 projects**
- **Public: 10,809 MWh savings achieved based on 195 projects**
- **Small Business**
- Strong participation continued through Q4, while paying out over \$49.9 MM
- A strong pipeline of 729 projects, with an estimated 22.7 GWh of savings was also created to start off 2021.
- The pilot for 0-200 kW private business customers, in 39 zip codes with low participation, finished with 283 paid projects, for 10.6 GWh and \$2.5MM in incentives. There were also 46 projects in process to be completed in 2021, for an estimated 1.5 GWh and incentives over \$347k.
- The direct deposit (ACH) pilot completed, paying out \$23.1 MM, over 3372 projects. This will be offered to all service providers in 2021.
- **Public Small Facilities**
- Completed 15 projects with the city of Zion, for 377 MWh in savings and \$81,824 of incentives.
- Completed 9 projects, at nine Chicago Executive Airport buildings, totaling 1,419 MWh and \$259,110 of incentives.
- Public customers will participate through the Small Business offering starting in 2021.

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: 179,607 MWh savings achieved based on 1,902,698 products sold**
- **Public: 27,047 MWh savings achieved based on 446,756 products sold**
- Customers' HVAC priorities have shifted from just saving energy, to include air filtration due to COVID.

Business Programs

- The online midstream tool – that allows distributors to better engage with end users, verify customer and product eligibility and track payments – increased by over 100%.

C&I New Construction

Overview: The New Construction Program provides technical assistance, support for the Leadership in Energy and Environmental Design (LEED) rating system, and incentives for efficient designs and measure implementation 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.

- **Private: 13,827 MWh savings achieved based on 75 projects and 15,851,481 sq. ft. of building area from completed projects**
- **Public: 2,145 MWh savings achieved based on 26 projects and 1,527,619 sq. ft. of building area from completed projects**
- Initiated a marketing/outreach advertising campaign with three industry publications, with the goal to increase awareness of the program and capture the attention of customers thinking about COVID-19 related renovations.

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: 37,055 MWh savings achieved based on 443 projects**
- Q4 was strong, with higher than expected Fix It Now compressed air leak projects. The program was able to complete customer projects above the forecasted goal for the year.

- A new proof of concept program element, Industrial Energy Management, successfully completed work at 14 customer sites, with total savings at 3,936 MWh. These results were achieved while customer engagement was limited due to COVID restrictions.
- The program has a strong pipeline of projects for 2021.

Retro-Commissioning (RCx)

Overview: The RCx Optimization 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: 33,768 MWh savings achieved based on 162 projects**
- **Public: 10,165 MWh savings achieved based on 88 projects**
- Due to COVID-19 impact early in the year, there has been shift in interest towards VCx in the public sector, especially in public schools. In November and December, the program also saw increased MBCx applications and VCx projects in the private sector.

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 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: 27,370 MWh savings achieved based on 54 Customers. Energy savings are generally recognized at the end of the year for annualized savings.**

Business Programs

- **Public YTD: 6,034 MWh savings achieved based on 24 customers. Energy savings are generally recognized at the end of the year for annualized savings.**
- Successful shift to virtual delivery of SEM led to continued customer participation and sustained satisfaction

LED Street Lighting

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

- **Private (ComEd Owned): 17,723 MWh savings achieved based on 109 applications**
- **Public (Municipality Owned): 50,677 MWh savings achieved based on 96 applications**
- **Private**
 - Offering had a strong Q4 performance, processing approximately 65% greater MWh savings than Q3.
- **Public**
 - ComEd developed a Streetlights in Distressed Communities initiative, to provide free LED streetlight upgrades to municipalities located in economically distressed areas. This new initiative was launched in January 2021.

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: 3,118 MWh savings achieved based on 144 implemented measures**
- **Public: 359 MWh savings achieved based on 34 implemented measures**
- Q4 2020 was the highest yielding quarter for energy savings since the program was established. This high performance allowed the program to meet its goal, despite poorer performance earlier in the year due to the pandemic, which resulted in a reduction in the amount of Facility Assessments being completed and Operational Measures being identified.

Public Housing Retrofits

Overview: The Public Housing Retrofits Program 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 buildings owned and managed by a PHA, including residential units, and common areas at no cost. For energy efficiency projects requiring funding beyond program incentives, technical assistance will be offered to support implementation and identify financing options.

- **1,154 MWh savings achieved**
- Completed non-DI projects in Livingston County, LaSalle County, Chicago, Winnebago County, and Aurora for a total of \$327,451 (ComEd-allocated spend) and 616,447 kWh.
- Reengaged with customers who had requested to pause work due to COVID. Completed interior scope in Aurora and exterior lighting assessments for Cook County. Some additional exterior lighting scope for Cook County is scheduled for Q1 2021.
- Coordinated with active customers regarding COVID-related protocols. Many customers paused work late in Q4 during a significant rise in COVID case numbers. Updated pipelines and forecasts to reflect affected work moved into Q1 2021.

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.

- **3,160 MWh savings achieved based on 21,368 shipped kits**
- Worked collaboratively with partner gas utilities to create a program model conducive to hybrid and virtual learning environments. In Q4, the program shipped several kits direct to student's homes who were learning 100% virtual.
- As a result of COVID-19, teacher engagement and enrollments remained lower than anticipated.

Small Business Kits

Overview: The Small Business Kits Program is an entry level program targeting C&I and public sector customers < 100KW 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. 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.

- **6,272 MWh savings achieved based on 7,312 Kits**
- Program successfully targeted businesses (computer stores, funeral homes, fire stations, libraries) that were open through the different phases of the Restore Illinois COVID plan.
- Increase from 4 to 7 CSR's to support higher outbound call volume to fulfill increased kit order goal
- Customer participation in Small Business Kits remains strong. Total number of kits for 2020 (7,312) exceeded 2019 kits (6,212) by 17% and 2020 savings exceeded 2019 savings (5,016 MWh) by 28%.

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, and community-based organization-hosted events. 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.

- **90,670 MWh savings achieved based on A19s: 1,302,500; Candelabras: 428,416; 11W fixtures: 120,000; BR30s: 608,000; APS: 4,000; Night Lights: 3,000; Door Sweeps: 1,500**
- The Food Bank program participated in 11 events in Q4 distributing free LEDs and educational material to over 4,000 ComEd customers.
- On December 21st, the Food Bank program partnered with Meals on Wheels to distribute free LEDs, educational material, and other branded giveaways, to independent seniors in need in the Chicagoland area.

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, (2) 9W LED bulbs, (1) 15W LED bulb, (1) 5W LED Globe, (1) 5W LED Candelabra, (1) 3-way 15W LED, (1) 8W BR30 LED, (1) Night Light, (1) low-flow kitchen aerator, (1) low-flow bathroom aerator, (1) low-flow showerhead, and general guidelines for energy savings.

- **25,154 MWh savings achieved based on 60,000 IE Energy Savings Kits delivered**
- The IE Kits program successfully met the program goal of distributing 60,000 kits to income eligible participants in 2020, equating to 25,069 MWh in savings. In Q4, the IE Kits program distributed 34,000 kits (equating to 14,206 MWh in savings), which is 56.67% of the overall kit distribution.

Third Party Programs

Existing Manufactured Homes

Overview: The ComEd Manufactured Homes offering is available to income eligible residents of manufactured homes at no cost to the customer. If the customer is approved to participate in the program after being screened over the phone or during an onsite visit at the community park, an appointment will be scheduled with a program technician. Customers may receive an energy assessment, duct sealing and insulation, air sealing, belly insulation, installation of free energy-savings devices such as LED bulbs, faucet aerators, smart power strips, advanced thermostats, and some health and safety measures; and educational tips to save energy

- **68 MWh savings achieved based on 49 Homes**
- Existing Manufactured Homes Program offering has not performed as expected. Therefore, the Existing Manufactured Homes program offering sunset at the end of October 2020.

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.

- **8,668 MWh savings achieved based on 125 projects**
- 2020 COVID challenges led to numerous retrofits being performed during low-occupancy overnight hours
- Completed projects include interior lighting for refrigerated cases, anti-sweat heater controls, and VFDs for condenser fans. Published a case study, Happy Foods, where the owners were very pleased with the program.

Non-Profit Offering (NPO)

Overview: The Nonprofit Organizations Program is a 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.

- **3,357 MWh savings achieved based on 51 projects completed, 14,665 units of measures installed, and 30 assessments completed**
- All projects for the 2020 program year were complete and closed out in Q4. The Nonprofit Organizations Offering (NPO) exceeded the annual kWh goal, achieving over 3 GWh in net savings for the year.

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.

- **4,300 MWh savings achieved based on 115 projects**
- Partnered with the Illinois Farm Bureau to host an energy efficiency webinar. Technological advances continue to promote the expansion of indoor agriculture in the ComEd territory.

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.

Third Party Programs

- **6,828 MWh savings achieved based on 58 completed projects**
- US Cellular captured the largest project of the year with over 800 MWh of savings. This project was founded on Computer Room Air Conditioning (CRAC) unit optimization and air flow management. An additional phase of this project will close in early 2021.

The second largest project of the year, the MDI Data Center site, completed with over 700 MWh in savings. The primary focus of this project incorporated thermal containment and air flow management.

Public Building in Distressed Communities

Overview: Public Buildings in Distressed Communities is focused on improving safety and energy efficiency for these communities by providing free LED lighting for customers to install and highly incentivized HVAC measures including tune-ups and indoor air quality measures

- **9,883 MWh savings achieved based on Verified projects YTD:**
391 Projects
- The PBDC team continued to market the offering with a pipeline of 183 projects in installation phase for 15,308 MWh in 2021

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 monitor, manage and deliver the voltage customers need more precisely. 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.

- **216,761 MWh of energy savings based on 40 commissioned substations and 428 feeders**
- This is equivalent to 338M pounds of carbon dioxide reduction or removing ~33,000 passenger vehicle driven each year.

Emerging Technology and Market Transformation Programs

The mission of the Emerging Technologies 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 catalog of all Emerging Technology completed and active projects.

[2020 Q4 COMED EE RD Portfolio Summary](#)

Market Education and Awareness

Rebates Campaign - Neighbors

Overview: The campaign was created to promote awareness of the rebate offerings with a call to action of ComEd.com/Rebates.

- In-market through November 23rd, 2020
- Included TV, Cinema, Digital, Billboards and Hispanic Transit Shelters
- Generated 9,971,334 digital impressions
- Generated 188,688 unique clicks to ComEd.Com/Rebates

Lighting Discounts Campaign – Saved by Savings

Overview: The campaign was created to create awareness of lighting discounts and drive purchase at local retailers.

- In-market August – November 29th
- Included cable, digital, radio, CTA rail cards and transit shelters
- Generated 6,697,358 digital impressions
- Generated 33,202 unique clicks to ComEd.Com/LightingDiscounts

Residential E&A Campaign – Saving Energy

Overview: This campaign was created to talk about our available offerings for residential customers with a call to action of ComEd.com/HomeSavings

- In-market June 29th - December 21st
- Included Radio, Outdoor, Digital and Print
- Has generated 22,242,734 digital impressions
- Drove 71,708 unique page visits to ComEd.com/HomeSavings

Public Sector Campaign – K-12 Schools

Overview: The campaign was created to promote awareness of our public sector offerings for K-12 schools with a call to action to look at incentives available on ComEd.com/Schools

- In-market August 17th – November 15th
- Includes digital and print
- Generated 6,220,400 digital impressions
- Generated 10,281 unique clicks to ComEd.com/Schools

C&I Campaign – Like a Boss

Overview: The campaign was to promoted awareness of offerings for custom projects, IT optimization, industrial systems and retro-commissioning through the ComEd Energy Efficiency program with a call to action.

- In-market November -December 2020
- Included Cable, radio, OOH, print and digital
- Has generated 44,745,818 digital impressions
- Drove 54,194 unique page visits to ComEd.com/LikeABoss

Energy Efficiency HVAC – Saving Energy

Overview: The campaign was to promote awareness of the ComEd Energy Efficiency Program offerings with a call to action of ComEd.com/SavingEnergy

- In-market October 26 – December 2020
- Included TV, Radio, Social and Print
- Generated 12,122,692 digital impressions
- Drove 24,242 unique page visits to ComEd.com/SavingEnergy

Small Business/Public Facility

Overview: The campaign was created to promote awareness of small business/public facility incentives.

- December 2020
- Includes digital and outdoor
- Generated 12,178,672 digital impressions
- Generated 20,181 unique clicks to ComEd.com/OneStop

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:

- 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 1,605 income-qualified homes through Q4.
 - The Multi-Family Retrofits program has completed direct install work in 7,370 tenant units through Q4.
 - The Public Housing Retrofits program has completed direct install work in 3,765 residential units through Q4.
 - The Affordable Housing New Construction program has completed 13 projects for a total of 837 tenant units for income eligible residents through Q4.
 - The Income Eligible Kits program has distributed 60,000 kits to income-qualified single-family homes through Q4.
 - The Food Banks Distributions program has distributed A19s: 1,302,500; Candelabras: 428,416; 11W fixtures: 120,000; BR30s: 608,000; APS: 4,000; Night Lights: 3,000; Door Sweeps: 1,500 through Q4.
- Income-Qualified pilot program results:
 - The Emerging Technologies program has several pilot and research projects specific to income eligible and public housing customers.
 - Information on these projects can be found in the Emerging Technologies section of this report.
- 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), Shelton Solutions (WMBE for-profit), 15 community action agencies in the ComEd territory (not-for-profits)
 - Public Housing Retrofits – Elevate Energy (not-for-profit), Franklin Energy (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, and community based organizations (not-for-profit).
 - Outreach & Marketing – Eire (WBE for-profit), Franklin Energy (for-profit), Ignition (for-profit), PACO (MBE for-profit), Surge Solutions (MBE for-profit), The L3 Agency (WMBE for-profit)
- 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

Stipulations

- ComEd intends to develop metrics for this area in coordination with the Income Eligible Advisory Committee. A Workforce & Business Development Working Group was established in 2019. ComEd agrees to work with the Income-Qualified Advisory Committee in the development of a metric to be added to quarterly energy efficiency reports filed with the Commission that reports the number of businesses and employees based in economically disadvantaged communities hired to assist in the delivery of energy efficiency programs. ComEd agrees to discuss and establish goals and best practices outside the context of Docket No. 17-0312, in consultation with the Income Qualified Advisory Committee and other job training initiatives for increasing the diversity and number of locally-based trainees, vendors and employees of its energy efficiency workforce, and for establishing tracking methodologies for reporting purposes. ComEd presented at the SAG and IQ Advisory Committee in October. This was a joint meeting on equity hiring and workforce development. ComEd discussed their workforce development activities highlighting the Diverse Energy Efficiency Incubator Program. The 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.

CY2020 New Measures

CY2020 New Measures

All measures in the table below were launched in CY2020.

MEASURE TOTAL RESOURCE COST (TRC)	Sector	IL TRC
Central Air Conditioner Tier 1 (15 SEER) - Midstream Distribution	Residential	6.57
Furnace Filter Whistle - Single-Family	Residential	1.52
Furnace Filter Whistle - Multi-Family	Residential	0.66
Above-Ground Pool Pump	Residential	0.71
Heat Pump Water Heater	Residential	0.31
Occ Controlled Bi-Level LED Fixtures 25-99W_CA SPIA	Residential	1.14
Occ Controlled Bi-Level LED Fixtures 100-152W_CA SPIA	Residential	2.32
Occ Controlled Bi-Level LED Fixtures 153-204W_CA SPIA	Residential	3.28
Occ Controlled Bi-Level LED Fixtures 205-256W_CA SPIA	Residential	4.24
In Unit Interior LED - 5W Mini-globe (40 W) DI	Residential	4.73
0-30W LED Fixture_CA 24/7 SPIA	Residential	1.17
31-60W LED Fixture_CA 24/7 SPIA	Residential	1.50
61-90W LED Fixture_CA 24/7 SPIA	Residential	1.30
>90W LED Fixture_CA 24/7 SPIA	Residential	1.09
Tankless Hot Water Heater	Residential	0.33
Agricultural End Use LED Grow Lights	Business	2.63
Agricultural End Use Lower Pressure Sprinkler Nozzles	Business	1.09
Agricultural End Use Fan Thermostat Controller	Business	15.02
Agricultural End Use High Speed Fans	Business	1.33
Agricultural End Use Dairy Refrigeration Scroll Compressor with Heat Exchange	Business	2.58
Agricultural End Use Dairy Refrigeration Scroll Compressor without Heat Exchange	Business	5.17
Agricultural End Use VSD Milk Pump with Plate Cooler Heat Exchanger	Business	0.27
Agricultural End Use Milk Pre-Cooler	Business	1.33
Agricultural End Use Dairy Refrigeration Heat Recovery	Business	0.80
Packaged Terminal Heat Pump	Business	4.95
Ozone Laundry (Laundromat)	Business	1.88
Ozone Laundry (Other)	Business	5.86
Commercial Clothes Dryer Moisture Sensor	Business	1.91
Domestic Hot Water Demand Recirculation Pumps	Business	6.92
Smart Socket	Business	0.16

ATTACHMENT

R&D Portfolio Summary Q4 2020

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Validating New Technologies for New Energy Savings							
Affordable Multifamily Passive House	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.	Link
Commercial Interior Insulating Shades	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.	Link
Cooling Tower Future Opportunities	AWE, PNNL	Research	Cross Cutting	Jul-20	Oct-21	Recruitment of sites is ongoing, with first installations expected in Q1 2021.	Link
Flash Gas Condensers	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.	Link
Industrial EMIS	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.	Link
Innovations in Efficient Elevator Systems	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.	Link
Liquid Cooled Server Racks	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.	Link
National Laboratory Emerging Tech Partnership	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.	Link
Smart Pressure Independent Control Valves	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.	Link
Smart Vents for HVAC Energy Savings	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.	Link
Switched Reluctance Motor Field Evaluation	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.	Link
Variable Refrigerant Flow for Cold Climates	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	Link
Very High Efficiency HVAC	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.	Link
Water Heating Technology Opportunities	Evergreen Economics, GDS Associates	Research	Residential	Aug-20	Apr-21		Link

R&D Portfolio Summary Q4 2020

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	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.	Link
Building Operator Certification	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.	
Customer Targeting through NMEC	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.	Link
EcoAdvocates	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.	Link
Electric Homes New Construction	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.	Link
ENERGY STAR® Retail Products Platform	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.	
Home Energy Reports Paperless Experience	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.	Link
Midstream Commercial Food Service	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.	Link
Online Choice Engine Program Model	Enervee	Technology Assessment	Residential	May-20	Jun-21	The Choice Engine platform is live at https://comed.efficientchoice.com , 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.	Link
Real-Time Virtual Commissioning (VCx)	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.	Link

R&D Portfolio Summary Q4 2020

Name	Partners	Project Type	Customer Segment	Start	End	Quarterly Update	Web Link
Thinking Outside the Box for Future Opportunities							
Breathe Easy Ventilation Study	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.	Link
Fan Energy Index	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.	Link
Home Paging Display	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.	Link
Hybrid Heat Pump Systems and Future Beneficial Electrification Opportunities	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.	Link
Indoor Agriculture Future Opportunities	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.	Link
Municipal Water Infrastructure Leak Reduction	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.	Link
Understanding Water Solution Providers	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.	Link
Water Energy Savings with Strategic Energy Management	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.	Link