



# CY2022 SECOND QUARTER REPORT



ComEd has received the ENERGY STAR Partner of the Year Award for Sustained Excellence for the 10th consecutive year. ComEd customers have saved more than \$7 billion on energy bills and avoided 54 billion pounds of carbon through its energy efficiency programs.

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## Portfolio Summary

**488,901**

Actual Net MWh YTD

**1,754,967**

CY2022 MWh Forecast

**1,738,083**

CY2022 MWh Filed Goal

**\$116,889,272**

Actual Spend YTD

**\$427,470,991**

CY2022 Spending Cap

### PORTFOLIO

- Through Q2, the portfolio has achieved 28% of its 2022 forecast of 1,754,967 MWh and 28% of its 2022 filed goal of 1,738,073 MWh.
- Since its inception in 2008, the ComEd Energy Efficiency Program has saved ComEd customers over \$7.0 billion on their electric bills.

### RESIDENTIAL IMPLEMENTATION

- Through Q2, market rate residential programs have achieved 39% of their combined 2022 forecast of 268,016 MWh, not including converted therms.
- Through Q2, income eligible residential programs have achieved 19% of their combined 2022 forecast of 203,275 MWh, not including converted therms.
- Customers have received over 54,200 incentives, and over 12,900 homeowners and tenants have received free direct install products from assessments through Q2.
- Over 6,600 income eligible homeowners and tenants have participated through Q2.

### C&I IMPLEMENTATION

- Through Q2, business private sector programs have achieved 28% of their combined 2022 forecast of 727,720 MWh.
- Business public sector programs have achieved 30% of their combined 2022 forecast of 154,170 MWh.
- Through Q2, 3,333 business private sector projects and 545 business public sector projects have been completed.

# Residential Implementation Programs

## Residential Direct to Consumer Program Highlights

- **Home Energy Savings - Home Energy Assessment (Market Rate and Income Eligible)** – After a slow start of the year, the program is seeing improvements in participation for income eligible customers; the average number of IE home assessments completed per month increased in Q2 by 105% as compared to Q1. The program is seeking to further increase the number of income eligible customers served and has developed several marketing tactics to increase participation. In total year to date, the program has served 5,983 customers (both income-eligible and market rate) with assessments and energy saving products.
- **Home Energy Savings - Income Eligible Retrofits** – The retrofits braided with Illinois Home Weatherization Assistance Program (IHWAP) saw additional Community Action Agencies (CAAs) participate in Q2: McHenry and Western Illinois. CEDA, Tazwood, WCCCC, and Tri-County continued delivering braided projects in Q2. Some CAAs also began completing non-braided retrofit projects, including CCI and CEDA. Anura Energy, a new diverse supplier to the program, was added to the program’s contractor network and completed their on-boarding. Urban Efficiency, also a diverse supplier, joined the program’s contractor network at the start of the year and has continued to increase the volume of retrofit projects throughout Q2. Additionally, the program expanded the enrollment services that program partners can provide customers. This is first launching with Urban Efficiency and the Chicago Bungalow Association who will begin helping customers schedule a home energy assessment when they are ineligible for a retrofit. Additionally, customer satisfaction results are still well above goal at 9.9/10 year to date.
- **Multi-Family Energy Savings (Includes Market Rate, Income-Eligible and Public Housing)** – After a slow start in the year, the program is seeing strong growth in submitted applications and completed projects. In Q2, a total of \$3,785,082 in incentives were issued, with 72% being allocated to income-eligible and public housing properties. Year to date, the program has served over 1,100 buildings and over 6,800 tenant units throughout the service territory with energy efficiency upgrades. In Q2, the program provided an overview presentation to the Chicago Community Loan Fund, a non-profit that provides financing and technical assistance to multi-family building owners in low to moderate income neighborhoods. The Loan Fund is working on a new climate and resiliency initiative and has pledged to share the program information with their clients. The program was able to enroll two new Energy Efficiency Service Providers (EESPs) to their network that participated in the ComEd EESP Incubator program – Veterans Construction Group and CSN Electric. Of the 79 registered EESPs in the Multi-Family Energy Savings network, 27% are diverse suppliers, with an additional 36 pursuing a DBE certification.
- **Home Energy Reports** – Achieved energy savings in Q2 outperformed planned savings by 2,521 net MWhs. The program saw a 59.89% open rate for emailed Home Energy Reports (eHERs) and saw an 8.69% increase in Q2 as compared to Q1 of energy saving tip-related actions that customers have taken through the web portal. A tip action consists of a customer indicating that for a particular energy saving tip they “will do that tip”, “have done it already”, or “will not do it”.

# Residential Implementation Programs

Program	Net MWh YTD	% Savings Achieved to Plan Savings Goal	Program Participation YTD	Unit Definition
Home Energy Savings – Market Rate Assessment	3,489	79%	4,643	Homes
Home Energy Savings – Income Eligible Assessment	916	7%	1,340	Homes
Home Energy Savings – Income Eligible Retrofits	2,032	15%	1,620	Homes
Multi-Family Energy Savings – Income Eligible	2,515	15%	Tenant Unit Direct Installation: 4,627 Building Upgrades: 618	Projects
Multi-Family Energy Savings – Public Housing	1,471	44%	Tenant Unit Direct Installation: 0 Building Upgrades: 36	Projects
Multi-Family Energy Savings – Market Rate	2,244	37%	Tenant Unit Direct Installation: 2,297 Building Upgrades: 467	Projects
Home Energy Report	52,726	59%	Home Energy Reports (print): 3,493,695 Home Energy Reports (email): 5,475,504 High Usage Alerts: 1,328,604 Weekly Usage Reports: 4,662,354	Reports and Alerts

# Residential Implementation Programs

## Residential Channels Program Highlights

- **Retail (Market Rate and Income Eligible)** – The program continued to ramp up during Q2 by continuing to offer post purchase rebates, verified instant discounts, and markdowns at retailers across ComEd's service territory. In Q2, we continued to develop a new comprehensive marketing strategy for Retail that will roll out later this year. New to the program, two unique Limited Time Offers (LTOs) were launched in Q2 specifically for income eligible customers. The first, launched around Earth Day, offered a free ENERGY STAR certified smart thermostat. The second, launched in June, offered significantly discounted ENERGY STAR certified dehumidifiers and room air conditioners.
- **Product Distribution (Market Rate and Income Eligible)**
  - **Food Bank Distribution** – In Q2, 16 events were hosted in Rockford and over 27,000 energy saving products and informational material were distributed to over 2,000 income eligible customers. To date the program has distributed over 330,000 ENERGY STAR certified lighting products, over 800 water-saving products, over 2,000 advanced power strips, and over 24,000 rolls of weatherstripping.
  - **Income Eligible Kits** – In Q2 the program signed agreements with 10 Community Action Agencies (CAAs), who are the primary delivery channel for kit distribution to income qualified customers. To date the program has distributed 3,794 kits.
  - **School Kits** – School kits began shipping in April. To date the program has shipped 4,313 joint income eligible school kits and 9,169 joint market rate school kits. The program finalized a new jointly branded lithographic box design for school kits for the Fall portion of the program.
- **Residential New Construction** – A new all-electric homes pathway was created for small multi-family buildings (4 stories or less) to allow for participation in the Electric Homes New Construction program. The Affordable Housing New Construction program enrolled a total of 5 Multi-family Passive Housing projects with an estimated 150 total income eligible units. Some of these projects are also a part of the Clinton Foundation "C40" initiative as well as include all-electric and solar power projects.
- **Heating and Cooling** – During Q2 the program focused primarily on improving service providers' and distributors' experience with transaction processing, quality assurance, and portal accessibility.

# Residential Implementation Programs

Program	Net MWh YTD	% Savings Achieved to Plan Savings Goal	Program Participation YTD	Unit Definition
Retail – Market Rate	44,661	38%	Home Products: 51,923 Lighting: 2,191,661	Appliances; Light Bulbs
Retail – Income Eligible	2	<1%	Home Products: 945 Lighting: 214,153	Appliances; Light Bulbs
Product Distribution – Market Rate	617	29%	9,481	School Kits
Product Distribution – Income Eligible	31,735	23%	644,466	Bulbs and weatherization measures
Residential New Construction – Affordable Housing	784	42%	6	Projects
Residential New Construction – All Electric	48	20%	7	Homes
Heating and Cooling – Midstream/ Rebates	1,332	26%	1,368	Units

# C&I Implementation Programs

## Business Program Highlights

- Small Business (Private and Public)** – Additional customer campaigns were launched in Q2 including Schools & Libraries, Distressed Community Upgrades and Comprehensive Measures to increase project pipeline while addressing inflation and supply chain delays. The Comprehensive Measures campaign savings can be stacked on the Community Upgrades campaign to better assist customers located within targeted distressed communities. These 3 campaigns are forecasted to deliver over 20,000 Net MWh by September 15<sup>th</sup>.
- Standard** – Implemented a Spring Forward Campaign offering an additional 20% incentive for new and completed projects submitted in the campaign timeframe to address market challenges of increased costs and supply chain delays. This successful campaign resulted in the highest May and June for new incentive reservation requests and second highest June for final application incentive requests in the last 5 years.

Program	Net MWh YTD	% Savings Achieved to Plan Goal	Program Participation YTD	Unit Definition
<b>Small Business</b>	61,030	27%	2,165	Projects
<b>Small Business – Public</b>	14,789	37%	184	Projects
<b>Incentives – Standard</b>	47,249	22%	739	Projects
<b>Incentives – Standard – Public</b>	11,752	28%	280	Projects
<b>Standard – ComEd Streetlights</b>	3,838	47%	47	Projects

# C&I Implementation Programs

## Technical Program Highlights

- **Custom** – The screening process continues to be successful. This process helps customers identify if their projects are a good fit for the Custom or New Construction programs and prevents project overlapping between programs. 49 new projects have been received in Q2. 10 of these projects have a completion date before the end of the year and have an estimated 640,299 gross kWh in savings and \$62,748 in incentives.
- **Retro-Commissioning** – Continued strong Q2, especially in the Public Sector across all three program tracks (RCx Flex, MBCx, and VCx). The program achieved 15 GWh or 38% of annual goal.
- **Industrial Systems** – A continued strong Q2 has achieved 23.4 GWh in year to date savings, which is 34% greater than the June year to date goal and over 50% of 2022 goal. The Fix it Now Compressed Air leak repair projects have completed at a higher rate than forecasted for the first two quarters. The program has successfully transitioned from Franklin Energy to the new implementing contractor, Cascade Energy.
- **Strategic Energy Management** – Returning customers needing a new Treasure Hunt were recognized in order to identify quick wins, energy saving opportunities, and engagement. 16 Treasure Hunts were completed in Q2. Recruiting for SEM has been strong with 112 customers participating, including three 10+MW customers. 8 student interns from the ComEd service territory have been hired for Workforce Development and energy efficiency training, including one high school student. Nineteen individuals from our SEM wastewater cohorts received CEUs for training during SEM workshops.
- **C&I New Construction** – Completed training with 14 design firms on how to use the new on-line modeling tool (Sketchbox) and received positive feedback on the ease of use and features available with the tool. Currently 6 projects are enrolled under the High Performance Design incentive for meeting a green rating system (e.g., LEED, WELL, Living Building Challenge, Green Globes, Passive House).
- **Instant Discounts** – The ENERGY STAR fixture promotion that launched in early Q2 has increased unit sales of this measure 36% from Q1 with over 42,000 incentivized. Increased QA/QC of distributor performance resulted in the removal of one of the top annual distributors and a new top tier national lighting distributor was added immediately following this removal. To date, the program has processed and paid 9,578 transactions across 3,649 customers.

# C&I Implementation Programs

Program	Net MWh YTD	% Savings Achieved to Plan Goal	Program Participation YTD	Unit Definition
Incentives – Custom	2,816	15%	23	Projects
Incentives – Custom – Public	887	24%	4	Projects
Retro-commissioning – Private	6,980	19%	42	Projects
Retro-commissioning – Public	9,128	71%	48	Projects
Industrial Systems	23,399	52%	201	Projects
Midstream/Upstream – Private	56,442	33%	320,184	Lighting products; battery chargers; HVAC
Midstream/Upstream – Public	10,084	45%	100,347	Lighting products; battery chargers; HVAC
Strategic Energy Management – Private	0	0%	89	Participating Customers
Strategic Energy Management – Public	0	0%	23	Participating Customers
C&I New Construction – Private	4,560	50%	21	Projects
C&I New Construction – Public	85	7%	6	Projects

# C&I Implementation Programs

## Engineering Program Highlights

- **Facility Assessments/Operational Measures** – Operational measures are identified as a part of the Facility Assessment effort and are those measures that do not qualify for incentives but result in savings. Have added 4 GWh in pipeline in Q2, totaling nearly 9 GWh in operational savings pipeline built through facility assessments so far in 2022. Operational measures typically take a few months to be implemented after identification. Savings from these measures are anticipated in Q3 and Q4.

Program	Net MWh YTD	% Savings Achieved to Plan Goal	Program Participation YTD	Unit Definition
Assessments – Private	359	13%	16	Projects
Assessments – Public	185	21%	1	Projects

# Voltage Optimization

## Voltage Optimization Highlights

- Savings below are equivalent to 34.5 million pounds of carbon dioxide reduction or removing 3,400 passenger vehicles driven each year.

Program	Net MWh YTD	% Savings Achieved to Plan Goal	Program Participation YTD	Unit Definition
Voltage Optimization	22,141	13%	5 stations; 53 feeders	Stations Activated; Feeders Activated

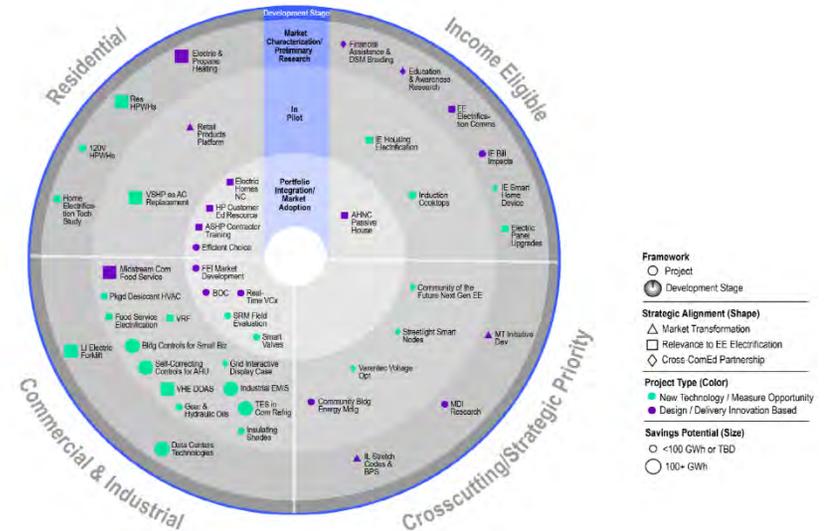
# Emerging Technologies and Market Transformation (“R&D”)

## R&D Highlights

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 *R&D Summary* section in the Appendix for a summary of active Emerging Technologies and Market Transformation projects.

## ComEd Energy Efficiency Program R&D Portfolio Summary 2022 Q2



This visualization provides an overview of the R&D Team's selected research concepts for 2022, organized by stage of research and relevant customer segment. Further information about each concept may be found in the following table.

# Marketing Education & Awareness

There are no campaign updates for Q2.

# Stipulations

## Plan 6 Stipulations

As part of the Revised 2022-2025 Energy Efficiency & Demand Response Plan (Revised Plan 6), ComEd has agreed to report out on the following stipulations:

**§ IV (A-6b) Mapping of Assistance Needs and Targeting Delivery of Weatherization Services:** During the Plan 6 Period, ComEd will collect a variety of data for purposes of mapping areas of financial assistance needs and targeting energy efficiency and weatherization efforts. Data will be reported quarterly in the ICC-filed Quarterly Report and updates on targeting efforts will be provided in the ICC-filed Quarterly Report, and at least annually at joint SAG and Committee meetings, with commitment to seek input from interested stakeholders.

### Q2 Updates

- In Q2, a campaign was launched to reach customers experiencing hardship and connect them to energy efficiency program offerings and services to help them manage and reduce their energy bills. The target audience includes customers located in zip codes that have a high volume of disconnect notices or are predominantly income eligible (at least 50% of households at or below 80% AMI) or income eligible customers experiencing an arrearage. The campaign includes email and social media tactics that will change either monthly or quarterly. The following table (*Table 1*) includes the list of top 20 zip codes to receive disconnect notices and services and the year to date participation in the various income eligible EE programs.

Table 1

Top 20 disconnect zip code (as of May 2022)	Community/ City name	# of Single Family Income Eligible Retrofit Participants (YTD)	Single Family Income Eligible Retrofit Energy Savings (MWh YTD)	Multi- Family Income Eligible & Public Housing Energy Savings (MWh YTD)	Other Income Eligible EE Program Energy Savings (MWh YTD)	Total Income Eligible Energy Savings (MWh YTD)
60411	Chicago Heights	3	24	1	40	65
60419	Dolton	10	47	1	22	70
60426	Harvey	5	33	-	17	50
60429	Hazel Crest	2	23	-	13	36
60471	Richton Park	4	8	-	15	23
60472	Robbins	1	1	-	6	6
60617	Chicago	28	94	8	83	186
60619	Chicago	35	70	5	79	154
60620	Chicago	43	126	49	203	379
60621	Chicago	4	16	-	40	56
60623	Chicago	4	4	3	67	75
60624	Chicago	3	10	15	53	78
60628	Chicago	33	88	344	98	530
60636	Chicago	9	16	1	46	62
60637	Chicago	3	12	17	53	81
60644	Chicago	9	14	60	52	126
60649	Chicago	9	16	18	40	74
60651	Chicago	15	22	1	59	82
60827	Riverdale	7	20	81	21	121
61101	Rockford	0	-	-	13	13

# Stipulations

**§ IV (A-7a,7b)** ComEd will track bill impacts and reduced energy burden based on deemed savings across all IE customers, for each IE offering. ComEd will also pilot ways to track actual bill impacts and reduced energy burden for a portion of IE Single-Family and Multi-Family customers, which will be for the purpose of facilitating follow up with customers to determine if actual savings were in line with projections. This pilot initiative and its associated data are for research and development purposes, and parties acknowledge that the pilot results are not intended or designed to inform changes to the IL-TRM. However, to the extent the pilot results are relevant and applicable, nothing in this Revised Stipulation would preclude consideration of the results in shaping future evaluation activities. ComEd will provide updates on this pilot in its ICC-filed Quarterly Reports, including, but not limited to, an overall comparison of deemed savings projections with actual bill impacts broken out between Single Family and Multi-Family. ComEd will work with interested stakeholders at the SAG to define energy burden and discuss ideas for piloting the tracking of EE bill impacts and related reduced energy burden. The funds spent on the pilot(s) will be considered IE R&D funds.

## Q2 Updates

- The joint-utility analysis being led by research vendor Resource Innovations is underway and data sharing from all sponsoring utilities is nearly complete. A survey has been developed and will be sent in Q3 to other utility program administrators with bill impact tracking efforts. Survey results will be used to inform program design recommendations. Once all customer billing data is received and collated, the research vendor will conduct the billing analysis in Q3.

**§ V (D-1b)** ComEd commits to providing the following IE Multi-Family reporting metrics in its ICC-filed Quarterly Reports:

- Actuals (YTD)
  - Participation – buildings by zip code and apartment units
  - Spending – incentives, non-incentives, total
  - Savings (1st year) – MWh, therms

## Q2 Updates

- Participation – buildings by zip code and apartment units**  
In Q2 of 2022, the Multi-Family Energy Savings program served verified income eligible (IE) and public housing (PH) multi-family

properties in 96 unique zip codes throughout ComEd’s service territory. In total, 810 IE and PH buildings participated with 4,531 tenant units receiving free products such as smart thermostats, LEDs, low flow showerheads and faucet aerators. Following table (*Table 2*) shows the breakout of the number of buildings and tenant units served, by program component (income eligible, public housing) and by zip code.

- # of Building Participants (Income-Eligible & Public Housing):** Assuming each building under an account is participating, including both direct install and rebate projects with a date install of 2022.
- # of Apartment Units:** Each project with a recorded project type of “Direct Install” represents a unit served.

Table 2

Zip Code	# of Building Participants (Income-Eligible)	# of Apartment Units Served (Income-Eligible)	# of Building Participants (Public Housing)	# of Apartment Units Served (Public Housing)
60628	242	336	1	0
60615	13	160	0	0
60640	7	69	0	0
60626	18	80	0	0
60435	4	0	7	0
60644	21	170	0	0
60642	2	225	0	0
60649	20	228	0	0
60411	3	4	0	0
60652	2	9	0	0
60619	9	66	0	0
60620	13	268	0	0
60419	7	0	0	0
60406	3	0	0	0
60637	14	245	0	0
60617	10	20	0	0
60629	9	43	0	0
61108	5	17	0	0
61109	25	76	0	0
61107	9	89	0	0
60171	2	3	0	0
60645	14	72	0	0
61111	7	15	0	0
61008	42	54	0	0
60409	2	4	0	0
60438	4	4	0	0
60660	4	31	0	0
60085	8	35	0	0
60608	7	35	26	0
60612	6	6	0	0
61114	5	39	0	0
60643	2	23	0	0
60202	2	2	0	0
60623	6	17	0	0
60625	2	4	0	0
60651	4	12	0	0
60639	5	19	0	0

# Stipulations

Zip Code	# of Building Participants (Income-Eligible)	# of Apartment Units Served (Income-Eligible)	# of Building Participants (Public Housing)	# of Apartment Units Served (Public Housing)
60067	31	6	0	0
60090	14	279	0	0
60659	4	24	0	0
60432	0	0	1	0
60016	6	0	0	0
60077	2	0	0	0
60624	12	225	0	0
60160	1	10	0	0
60616	4	98	0	0
60707	2	69	0	0
60106	2	141	0	0
60131	1	8	0	0
60638	1	3	0	0
60201	1	3	0	0
60647	2	29	0	0
60302	1	27	0	0
60607	1	3	0	0
60517	1	6	0	0
60010	1	98	0	0
60115	25	227	0	0
60453	1	4	0	0
60542	1	45	0	0
60804	3	48	0	0
60074	1	65	0	0
60133	21	266	0	0
60050	1	25	0	0
61103	4	64	0	0
60104	1	11	0	0
60402	1	7	0	0
60025	2	8	0	0
61081	1	32	0	0
60126	1	80	0	0
60621	10	109	0	0
60636	1	4	0	0
60641	1	3	0	0
60653	1	3	0	0
60618	1	7	0	0
60187	0	0	0	0
60173	0	0	0	0
60148	0	0	0	0
60031	0	0	0	0
60613	0	0	0	0
60614	0	0	0	0
60611	0	0	0	0
60657	0	0	0	0
60559	0	0	0	0
60056	2	0	0	0
60181	1	0	0	0
60110	37	0	0	0
60005	2	0	0	0
60415	2	0	0	0
60827	1	0	0	0
60609	1	0	0	0
60690	1	0	0	0
61764	0	0	2	0
61101	0	0	1	0
60501	0	0	1	0
60634	1	0	0	0
60302-4064	1	14	0	0

- **Spending – Incentives, non-incentives and 1<sup>st</sup> year savings by MWh and Therms**

In total in Q2, the Multi-Family Energy Savings program allocated \$2,931,604 in ComEd incentives for efficiency upgrades within income eligible and public housing buildings and achieved 3,242 net MWhs and 81,376 net therms (to be converted to MWhs). Below (*Table 3*) is a breakout of savings and spend by program component (income eligible, public housing).

- The incentive and savings data is specific to ComEd and not the full program (the gas incentives and savings have been removed.)

*Table 3*

	Incentive Spend (\$)	Non-Incentive Spend	Net MWh Savings Achieved	Net Therms Achieved
<b>Income-Eligible</b>	\$ 2,522,611.72	\$ 1,560,329.00	2,167	81,376
<b>Public Housing</b>	\$ 408,992.71	\$ 391,751.00	1,075	0

# Stipulations

§ V (D-3a) ComEd commits to providing the following in its ICC-filed EE Quarterly Reports:

- 1) Number or proportion of diverse vendors by category (i.e., MBE, WBE and VBE), as well as by primary contractors and subcontractors, and network service providers)
- 2) Breakdown of diverse vendors by category (i.e., MBE, WBE and VBE)
- 3) Percent of or amount of portfolio dollars (excluding pass-through incentives) for diverse spend, by category (i.e., MBE, WBE and VBE)

## Q2 Updates

- The following tables (*Table 4* and *Table 5*) show a breakdown of vendor diversity and spend, by category.

Table 4

Tier 1		
Diverse Category	Spend (\$)	# of Vendors
WBE	\$ 2,435,218.66	9
MBE	\$ 3,373,291.08	4
<b>Total</b>	<b>\$ 5,808,509.74</b>	<b>13</b>

Table 5

Tier 2		
Diverse Category	Spend (\$)	# of Vendors
WBE	\$ 4,148,119.98	41
MBE	\$ 2,933,400.17	27
VOSB	\$ 1,086,290.83	4
<b>Total</b>	<b>\$ 8,167,810.98</b>	<b>72</b>

- **Data Definitions:**
  - **Tier 1 vendors:** Prime contract spend with a diverse supplier
  - **Tier 2 vendors:** 2 Subcontracted spend by a non-diverse prime contractor with a diverse supplier
  - **Minority-owned Business Enterprise (MBE):** A for-profit enterprise, regardless of size, physically located in the United

States, which is 51% owned, operated, and controlled by minority group members, defined by the following:

- **Asian-Indian-owned business enterprise:** A U.S. citizen whose origins are from India, Pakistan, or Bangladesh
- **Asian-Pacific-owned business enterprise:** A U.S. citizen whose origins are from Japan, China, Indonesia, Malaysia, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Thailand, Samoa, Guam, the U.S. Trust Territories of the Pacific, or the Northern Marianas
- **African-American-owned business enterprise:** A U.S. citizen having origins in any of the Black racial groups of Africa
- **Hispanic-owned business enterprise:** A U.S. citizen of Hispanic heritage, from any of the Spanish-speaking areas of the following regions: Mexico, Central America, South America, or the Caribbean Basin
- **Native-American-owned business enterprise:** A person who is an American Indian, Eskimo, Aleut, or Native Hawaiian, and is regarded as such by the community of which the person claims to be a part
- **Woman-owned Business Enterprise (WBE):** An independent business concern that is at least 51% owned and controlled by one or more women who are U.S. citizens or Legal Resident Aliens; whose business formation and principal place of business are in the U.S. or its territories; and whose management and daily operation is controlled by one or more of the women owners
- **Veteran-owned Small Business (VOSB):** A business that is at least 51% owned, operated, and controlled by one or more veterans

# Stipulations

**§ V (D-4a)** ComEd commits to annually providing the following Health & Safety-related metrics for IE Whole Building Retrofit Programs at joint SAG and Committee meetings, in 4th quarter quarterly SAG reports, and in ICC-filed Annual Reports.

- 4) Number of properties deferred because of health and safety issues and general trends in the type of related H&S issues (will also be provided in ICC-filed Quarterly Reports)
- 5) The percentage and/or dollar amount of the Health and Safety Fund that has been spent down (will also be provided in ICC-filed Quarterly Reports).

## Q2 Updates

- The following tables (*Table 6* and *Table 7*) show a breakdown of health and safety related deferrals and total spend year to date for IE retrofit programs. The type of health and safety issues identified to lead to deferrals include:
  - Structural issues
  - Roof issues
  - Mold
  - Clutter
  - Standing Water

*Table 6*

Health and Safety Related Deferrals	
Home Energy Savings	17
Multi-Family Energy Savings	2

*Table 7*

Health and Safety Related Spend YTD
\$728,279.85

**§ VIII (B-3)** ComEd will report to the ICC in its ICC-filed Quarterly Reports on the progress of the Market Development Initiative (MDI) with the ICC-filed Annual Reports summarizing annual progress.

## Q2 Updates

- This research will produce a roadmap to inform the launch and execution of ComEd’s Market Development Initiative (MDI) for 2022-2025. The aim of the MDI is to increase EE portfolio contracting opportunities for diverse business enterprises and CBOs and improve the diversity and inclusiveness of ComEd EE supplier workforce. Research vendor Griffin & Strong (with subcontractor Emerald Cities Collaborative) was selected via RFP in late 2021 jointly with Nicor Gas, Peoples Gas and North Shore Gas. In Q1 2022 the team finalized an assessment plan, began interviews with internal and external stakeholders and completed necessary data requests. In Q2 the team completed interviews and the policy analysis and developed a comprehensive survey that will inform the landscape assessment of diverse businesses. This survey will be launched in early Q3. The final roadmap deliverable is expected in October. Concurrently in Q3, ComEd will develop and release an RFP aimed at identifying an implementation contractor partner for the MDI. The goal is to select and onboard this partner by the time the MDI research project concludes with the roadmap deliverable.

# Total Resource Cost

## CY2022 New Measures

All measures in the table below were launched in CY2022.

Sector	Program	Measure	IL TRC	Justification for TRC < 1.00
Business	Standard	High Efficiency Hand Dryer	2.03	
Business	Standard	Ag Fan Thermostat Controller	26.24	
Business	Standard	Ag LED Indoor Grow for Light	6.01	
Business	Standard	Grocer Automatic Door Closer	2.74	
Business	Standard	Grocer VFD for Condenser Fans	0.87	This measure was brought over from the previous grocery program in order to provide customers and service providers with continuity of incentive opportunities.
Business	Standard	Switch Peripheral Equipment Consolidation	2.28	
Business	Standard	Chiller with integrated VSD	18.66	
Business	Standard	Oil-free Bearing Chiller	36.69	
Business	Small Business	Energy Efficient Hand Dryer	3.10	
Business	Small Business	Low/No Anti-Sweat Heaters for Coolers	0.24	This measure comes from the Standard offering, and the Small Business offering is testing if small business customers would also consider this measure when offered. Prior to offering this measure, service provider feedback indicated it could be a viable measure.
Business	Small Business	Low/No Anti-Sweat Heaters for Freezers	0.78	Same as above
Business	Small Business	Insulation of Bare Refrigeration Lines	3.92	
Business	Small Business	Beverage & Snack Machine Controls	0.44	This measure is newly created; however, it is a combination of three previously offered Small Business offering measures [Direct Install Reach-in (Novelty) Cooler Controls, Snack Machine Controls, and Beverage Machine Controls] which had to be merged into a single measure in 2022 to align with TRM v10.0. This is expected to be a viable measure for small business customers.

# Appendix: Program Descriptions

## Program Descriptions

### Home Energy Savings (Single-Family Upgrades)

#### Home Energy Assessments (Market Rate & Income Eligible), Retrofits (Income Eligible)

Overview: Under the Home Energy Savings program, ComEd provides three offerings for single family residential customers: Home Energy Assessments (HEA) - Market Rate, HEA - Income Eligible, and Income Eligible Retrofits. These offerings are closely linked through a centralized intake process and coordinated customer journey. Single family includes single family detached, vintage homes (30+years), manufactured homes, condo units, townhomes, two-flats, and duplex. The program offers free assessments and installation of energy savings products such as LEDs, water-saving devices, water heater pipe wrap, advanced power strips and thermostats with income eligible customers receiving all products installed for free. Certain income-eligible customers also receive comprehensive weatherization services. The program is delivered jointly with the Northern Illinois Gas Utilities (Nicor Gas, People Gas and North Shore Gas).

### Multi-Family Energy Savings (Multi-Family Upgrades)

#### Market Rate, Income Eligible, Public Housing

Overview: The Multi-Family Energy Savings (MFES) program is a single comprehensive program offering that provides a full range of multi-family energy efficiency services. The MFES program consists of three offerings for 2022: Income Eligible, Public Housing, and Market Rate. This program offers efficiency upgrades for multi-family properties, including gas and electric measures for tenant units and common areas. This program offering is delivered jointly with the Northern Illinois Gas Utilities (Nicor Gas, Peoples Gas, and North Shore Gas). Income Eligible, Public Housing, and Market Rate Property owners/managers who complete weatherization and other energy efficiency improvements enjoy reduced operating costs, increased comfort in tenant spaces, increased occupancy rates, and improved property value. Additionally, building tenants experience increased comfort and reduced energy costs.

### 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.

## Retail

### Market Rate, Income Eligible

Overview: ComEd offers residential delivery customers rebates on select ENERGY STAR® certified appliance, home products and lighting products. Deeper discounts are available to income eligible customers on select products via instant discount at retail locations within zip codes where at least 60% or more of the households are at or below 80% Area Median Income (AMI) or through customized discount channels to pre-qualified income eligible customers, like Limited Time Offers (LTOs)

## Product Distribution

### Food Bank (Income Eligible), IE Kits (Income Eligible), School Kits (Market Rate and Income Eligible)

Overview: Product Distribution includes kits (Market Rate and Income Eligible school kits and Income Eligible kits distributed through Community Action Agencies and other partners) and distribution of products through Food Banks, Food pantries and other partners. By providing free energy efficiency products and education distributed through trusted channels, ComEd can reach more customers, particularly those most in need and introduce them to the wide-ranging benefits of energy efficiency including reduced energy usage, reduced energy costs, improved their quality of life and reduced environmental impacts.

## Residential New Construction

### Affordable Housing New Construction, Electric Home New Construction

Overview: Residential New Construction consists of two offerings for 2022: Affordable Housing New Construction (AHNC) and Electric Homes New Construction (EHNC). The AHNC Program offering provides technical support and incentives for whole-building energy efficiency for 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 Nicor Gas. The EHNC Program promotes high performance all-electric homes that allow ComEd customers to stack the benefits of all-electric energy efficiency, demand-response, electric vehicles, solar, and new rate structures. Program works with local builders and Home Energy Rating System (HERS) raters to ensure that new homes exceed the requirements of the state's energy code for increased energy savings.

# Appendix: Program Descriptions

## Heating and Cooling

Overview: ComEd offers Heating & Cooling incentives to ComEd residential delivery customers that replace existing heating and cooling equipment with qualifying, high-efficiency central air conditioners, air source heat pumps, ductless mini-split heat pumps, geothermal (ground source) heat pumps, furnace blower motors (ECMs), or smart thermostats. Measures including central air conditioning (CAC), air source heat pump, and ductless mini-split heat pumps, are offered through a distributor (midstream channel). Measures including furnace blower motors (ECMs), smart thermostats, duct sealing, CAC tune ups, air source heat pump tune ups, and geothermal heat pumps, are offered by Energy Efficiency Service Providers (contractors) to residential customers and are downstream measures (incentives paid to customers through the participating EESP). Also offered downstream are incentives for new and replacement geothermal heat pumps that involve full loop systems.

## Small Business

### Private, Public

Overview: Offers private and public sector small business customers cost-effective turn-key energy efficiency retrofit and replacement services. These customers are typically underrepresented in energy efficiency programs due to limited staff and resources, lack of capital, and leased instead of owned facilities. For 2022, the former stand-alone Small Business Kits and Public Buildings in Distressed Communities offerings have now been incorporated into the Small Business offering. 2022 promotional incentives for specific projects are offered in the following categories: Public sector Early Bird bonus, 100-200 kW peak demand, Virtual Energy Consultations, Public Libraries, Distressed Communities, Public schools, and Non-Lighting. Incentives are calculated based on a per unit basis.

## Standard Incentives

### Private, Public, ComEd Streetlights

Overview: The Standard Program provides monetary incentives to customers on a “Standard” fixed or per-unit basis. Standard offers incentives for common energy-efficiency improvements including: Indoor and outdoor lighting equipment (including networked lighting and LED streetlights), HVAC equipment (e.g., variable speed drives, chillers, roof-top units), commercial appliances including industrial and laboratory equipment, compressed air equipment, and Energy Management Systems (EMS).

## Custom Incentives

### Private, Public

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, IT equipment upgrades, process cooling, compressed air, VFDs on large motors, free cooling systems, refrigeration improvements, wastewater treatment plants, combined heat and power, and other measures not covered in the Standard offering.

## Retro-Commissioning (RCx)

### Private, Public

Overview: The RCx program provides customers with a fully funded engineering study to help business and public-sector customers optimize operations of existing building systems to reduce energy usage while continuing to maintain desired environmental conditions. Common energy conservation measures focus on control of HVAC and lighting using building automation systems. Typical participants include commercial office buildings, hospitals/health care facilities, and higher education buildings. RCx options include RCx Flex and a Monitoring-Based Commissioning (MBCx). Each conduct an engineering study identifying ECMs. Additionally, RCx includes a Virtual Commissioning (VCx) option which offers free identification of energy-saving measures and remote technical assistance for implementation. VCx focuses on smaller customers in which smart meter interval usage data is used to remotely identify operational savings opportunities.

## Industrial Systems

Overview: The Industrial Systems program assists industrial customers to optimize and/or identify energy efficiency measures to improve the performance of the following systems or processes: Compressed air, process cooling, industrial refrigeration, water and wastewater treatment plant, process efficiency for heating and cooling in production.

## Midstream/Upstream

### Private, Public

Overview: ComEd provides point-of-sale discounts on commercial LED lighting and HVAC equipment, as well as industrial forklift battery chargers. Purchasers can verify customer and product eligibility through participating distributors using a full-service webtool, which reimburses distributors for incentives instantly provided to eligible purchasers.

## Strategic Energy Management (SEM)

### Private, Public

Overview: SEM helps organizations embed energy efficiency into their operations and company culture. Efforts ultimately allow for organizations to establish energy policies, improve operating efficiencies, and build budgets for energy efficiency efforts. SEM

# Appendix: Program Descriptions

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 provides incentives for behavioral energy savings as well as operational measures.

consistently deliver only the voltage each customer requires while providing energy savings.

## **C&I New Construction**

### **Private, Public**

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.

## **Assessments**

### **Private, Public**

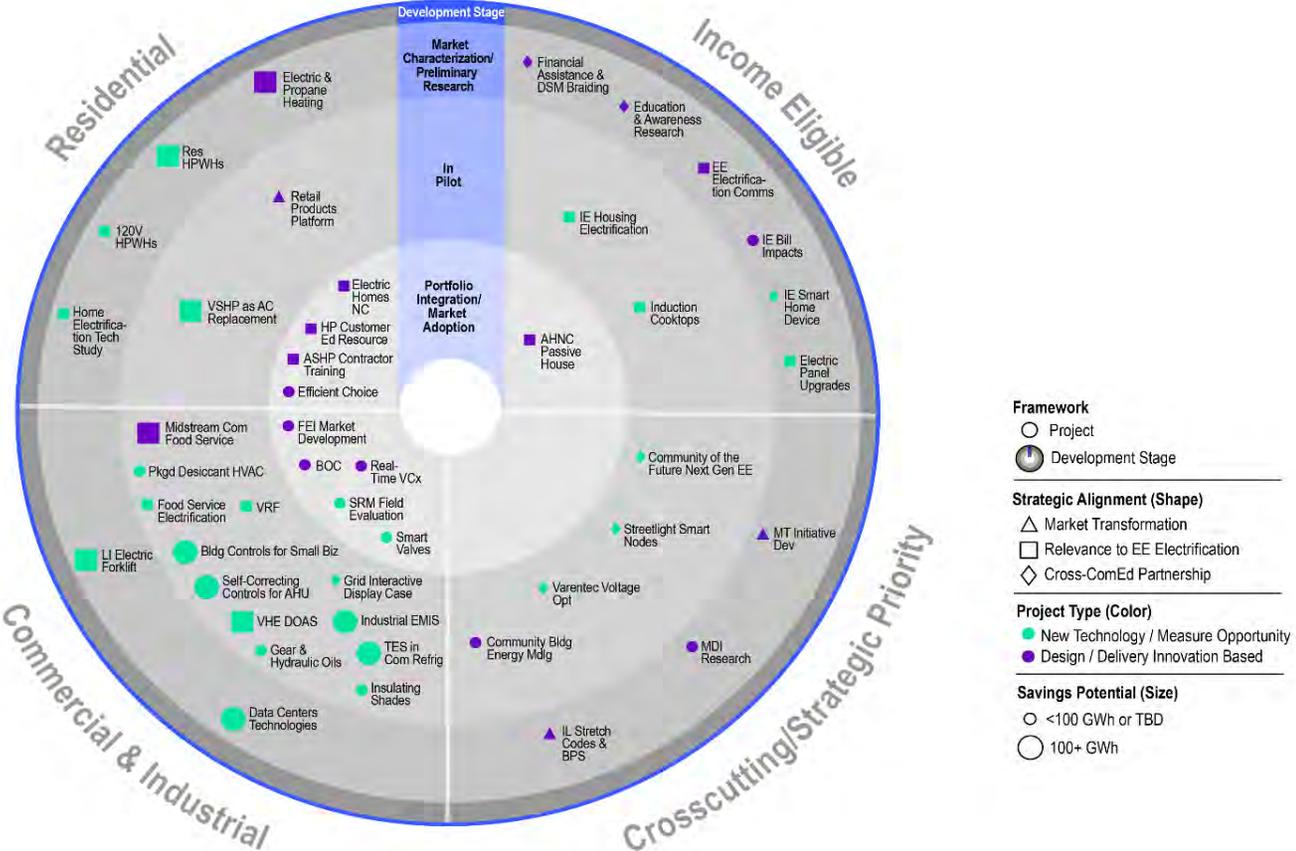
Overview: Assessments identify energy saving measures (capital cost and operational) and provide information on available financial incentives for energy efficient equipment upgrades and retrofits. Assessments save energy annually and lower operating expenses through implementation of recommended measures. The free Facility Assessment is a tool that helps customers take the first step toward making their facility more efficient by identifying opportunities to participate in the various programs within the EE portfolio. The assessments involve an initial site visit (in-person or virtual) where an engineer collects data regarding a facility. After the site visit, the engineer compiles all the opportunities with their estimated savings, costs, incentives, and simple paybacks into a report that is presented to the customer. Customers >10 MW (except for private commercial accounts that have opted out) are now eligible to have a free assessment and for the portfolio to claim operational savings measures.

## **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

# R&D Summary

# ComEd Energy Efficiency Program R&D Portfolio Summary 2022 Q2



This visualization provides an overview of the R&D Team's selected research concepts for 2022, organized by stage of research and relevant customer segment. Further information about each concept may be found in the following table.

## R&D Portfolio Summary 2022 Q2

Concept	Work Description	Partners	Customer Segment	End Date	Status Update	Potential Impact Estimate	Web Link
<b>Portfolio Integration and Market Adoption</b>							
<b>Affordable Housing New Construction Passive House</b>	Integration of a PHIUS+ incentive tier into the affordable housing new construction offering.	Slipstream	Income Eligible	2023 Q4	The Passive Building Pathway has six active projects enrolled; two are expected to begin construction later this year. The R&D Team is providing marketing and incentive funding as well as evaluation support.	3 GWh	<a href="#">Link</a>
<b>Air Source Heat Pump Training</b>	Series of educational activities designed to develop the EESP market for heat pumps.	Slipstream, CEE	Residential	2023 Q2	The project team is continuing to expand the training with new resources and training events available to contractors. An interim memo outlining recommendations for further intervention planning for ComEd's review based on contractor/distributor feedback and pilot findings to date.	Supports the expansion of heat pumps offerings and success of new electrification efforts	<a href="#">Link</a>
<b>Building Operator Certification</b>	Training program to support commercial building staff in identifying operational energy efficiency opportunities.	Midwest Energy Efficiency Alliance	Commercial	2022 Q4	Additional classes are being scheduled for 2022, with plans to migrate the offering to the EE portfolio (under the RCx program) by the end of 3Q.	1 GWh	<a href="#">Link</a>
<b>Efficient Choice</b>	Integration of new choice engine website into the residential portfolio.	Enervee	Residential	Ongoing	After transferring the website to the Channels team after a successful 2021 pilot, R&D is providing support on evaluation and portfolio integration. The number of product categories available to customers has been expanded.	<1 GWh	<a href="#">Link</a>
<b>Electric Homes New Construction</b>	Integration of all-electric homes standards into residential new construction offering.	Slipstream	Residential	2022 Q4	After transferring the EHNC pilot to the Channels team, this new offering is on track to meet goals for 2022 despite issues with the new housing market regionally. The R&D Team is supporting on evaluation and strategy needs.	5 GWh	<a href="#">Link</a>
<b>Fan Energy Index Market Development</b>	Integration of savings algorithm to Illinois TRM and new savings opportunity for C&I offering.	Slipstream	Cross Cutting	2023 Q1	This project kicked off in early July and the team is preparing contractor training materials and interviewing supply chain actors to aid adoption of the Fan Energy Index.	79 GWh	<a href="#">Link</a>
<b>Heat Pump Customer Education Resource</b>	Preparation of a web-based resource for customers and contractors to learn about the energy and bill impacts of switching to heat pumps.	TBD	Residential	TBD	The R&D Team is preparing an RFP with plans to release in Q3.	Supports the expansion of heat pumps offerings and success of new electrification efforts	TBD
<b>Switched Reluctance Motors</b>	Testing energy savings and customer experience in real-world conditions.	TBD	Commercial	TBD	The R&D Team is soliciting feedback from the Standard and other implementation teams on additional research needs for this technology. A TRM measure is under review.	89 GWh	<a href="#">Link to previous project</a>
<b>Water Savings in Strategic Energy Management</b>	Integration of water savings opportunities into existing SEM offering.	CLEAResult	Commercial	Ongoing	The CLEAResult SEM program implementation team is working with ComEd to integrate the Water SEM offering into the current SEM program.	3 GWh	<a href="#">Link</a>
<b>In Pilot</b>							
<b>Commercial Food Service Electrification</b>	Promoting electrification opportunities within a high-potential commercial customer segment.	TBD	Commercial	TBD	This new initiative will build on the successful joint-utility CFS midstream pilot and aim to promote high efficiency electric CFS equipment. A scope of work is under development. Pilot launch expected Q3 2022.	TBD	TBD
<b>Commercial Interior Insulating Shades</b>	Testing energy savings and customer experience in real-world conditions.	TBD	Commercial	TBD	The R&D Team is developing a scope of work for further research on this technology, including additional field evaluation of savings in other building types.	TBD	<a href="#">Link to previous project</a>
<b>Communities of the Future Next Generation HVAC Demonstration</b>	Testing energy savings and customer experience in real-world conditions.	Slipstream	Commercial	2023 Q4	Installation of next-gen HVAC technology at a church in the Bronzeville neighborhood is in progress at the end of Q2. Additional buildings in Bronzeville and in Rockford are in the design consultation phase.	Supports strategic goals such as Communities of the Future and electrification	<a href="#">Link</a>

## R&D Portfolio Summary 2022 Q2

Concept	Work Description	Partners	Customer Segment	End Date	Status Update	Potential Impact Estimate	Web Link
<b>Community Building Energy Modeling</b>	Testing applicability of software to support customer targeting.	Palmetto	Cross Cutting	Q2 2022	The pilot team delivered efficiency upgrade scores for buildings in the study area (Rockford) along four upgrade dimensions: lighting, air leakage, wall insulation, and windows.	Supports strategic goals such as Communities of the Future	<a href="#">Link</a>
<b>Gear and Hydraulic Oils</b>	Testing energy savings and customer experience in real-world conditions.	Leidos, ExxonMobil	Industrial	2023 Q3	Due to supply chain issues, accessing the necessary products to conduct the field evaluation has been a challenge. As a result, pilot recruitment has been paused until the issues are resolved. This will cause a delay in the pilot timeline.	28 GWh	<a href="#">Link</a>
<b>Grid Interactive Display Case</b>	Testing energy savings and customer experience in real-world conditions.	National Renewable Energy Laboratory (NREL)	Commercial	2022 Q3	Results from laboratory evaluation are scheduled for delivery at the end of Q3.	TBD	<a href="#">Link</a>
<b>Income Eligible Whole Home Electrification</b>	Testing energy savings, costs, and customer experience in real-world conditions.	Elevate and Slipstream	Income Eligible	2022 Q4	Retrofits in the initial building are still awaiting equipment delivery. Elevate is also conducting an additional 100 electrification retrofits by the end of the year; the project team will monitor energy and bill savings from these installations as well as additional monitoring topics.	TBD	<a href="#">Link</a>
<b>Induction Cooktops for Income Eligible Customers</b>	Induction cooktop for residential income eligible customers. Research on consumer report on usage of units.	TBD	Income Eligible	2022 Q4	Developing an RFP to identify a vendor that can assist in studying customer barriers and perceptions around residential induction cooking equipment.	TBD	TBD
<b>Industrial Energy Management Information System (EMIS)</b>	Testing energy savings and customer experience in real-world conditions.	Leidos, EPS Energie	Industrial	2024 Q1	Installation is underway at 4 locations with an estimated completion date at the end of Q3. As equipment is installed, the project team is developing energy savings solutions for relevant facility components.	369 GWh	<a href="#">Link</a>
<b>Lithium Ion Electric Forklift</b>	(In development) Testing energy savings and customer experience in real-world conditions and developing a scalable program design.	DNV	Industrial	2023 Q2	The R&D Team is currently working with the Midstream team to support a customer case study of Li-ion forklift trucks.	TBD	TBD
<b>Midstream Commercial Food Service</b>	Testing of the midstream program design for increasing participation in food service measures.	GTI, Frontier Energy	Commercial	2022 Q4	The pilot sponsors updated the implementation plan in Q4 2021 based on performance to date. Some incentives are being updated to accommodate electrification opportunities.	506 GWh	<a href="#">Link</a>
<b>Packaged Desiccant HVAC</b>	(In development) Testing energy savings and customer experience in real-world conditions.	National Renewable Energy Laboratory (NREL)	Commercial	2022 Q2	Results from laboratory evaluation are scheduled for delivery in Q3, at which point the team will determine a design for real-world testing.	Unknown	TBD
<b>Pressure Independent Control Valves Smart Retrofits</b>	Testing energy savings and customer experience in real-world conditions.	Slipstream	Commercial	2023 Q3	This project kicked off in June. The project team will monitor the retrofit of PICVs with additional smart controls, seeking to quantify savings from resulting operational changes.	300 GWh	<a href="#">Link</a>
<b>Real-Time Virtual Commissioning (VCx)</b>	Testing energy savings and customer experience in real-world conditions.	Power TakeOff	Commercial, Public Sector	2023 Q2	The project team has completed all real-time installations and additional controls from the original project. Additional installations are also expected in 2022, with savings results for the original and expanded pilot expected in 2023.	50 GWh	<a href="#">Link</a>
<b>Retail Products Platform</b>	Testing of a national Market Transformation program delivery model.	NEEA	Residential	2022 Q4	The project team continues to participate in ongoing discussions with Guidehouse and the SAG Market Transformation Working Group on evaluation issues and long-term planning.	100 GWh	<a href="#">Link</a>
<b>Self-Correcting Controls for Air Handling Units</b>	(In development) Testing energy savings and customer experience in real-world conditions.	TBD	Commercial	TBD	The R&D Team has identified a host building for a potential field study using AHU controls and is currently finalizing an RFP to identify a vendor that will be released in Q3.	1918 GWh	TBD
<b>Smart Controls for Small and Medium Commercial Buildings</b>	Testing a two-tiered energy management system offering for small business customers.	Resource Innovations	Commercial	Q3 2023	ComEd and the pilot team are finalizing the details of the SOW for a EMS field installation pilot for small business customers and preparing to kick off the pilot.	108 GWh	<a href="#">Link to previous project</a>

## R&D Portfolio Summary 2022 Q2

Concept	Work Description	Partners	Customer Segment	End Date	Status Update	Potential Impact Estimate	Web Link
<b>Smart Nodes</b>	(In development) Testing energy savings in real-world conditions.	TBD	Public	TBD	The R&D Team is working with the ComEd Smart Grid team to finalize the pilot plan and cost estimates.	8 GWh	TBD
<b>Thermal Energy Storage in Commercial Refrigeration</b>	Testing energy savings and customer experience in real-world conditions.	Slipstream	Commercial	2023 Q3	The project team is discussing installations with a few potential site owners and aiming for at least one installation in 2022.	100 GWh	<a href="#">Link</a>
<b>Variable Refrigerant Flow HVAC</b>	Testing energy savings and customer experience in real-world conditions.	Slipstream	Commercial	2022 Q3	Site monitoring continues on schedule.	14 GWh	<a href="#">Link</a>
<b>Variable Speed Heat Pump as AC Replacement</b>	Testing energy savings and customer experience in real-world conditions.	Center for Energy and Environment	Residential	2023 Q2	The project team has completed installations for approximately half of the target customers and is continuing to recruit customers and install the VSHP systems. The team has decided to conduct continuous monitoring at customer homes rather than short term monitoring to improve the accuracy in estimating performance curves, seasonal behavior, and increase confidence in project conclusions	231 GWh	<a href="#">Link</a>
<b>Very High Efficiency Dedicated Outdoor Air System</b>	Testing energy savings and customer experience in real-world conditions.	IMT, Slipstream, Ventacity	Cross cutting	2023 Q4	Customer sites are in the process of design and modeling for eventual installations and monitoring, and agreements have been reached with several participants for installations in 2022. As these are whole system replacements at larger buildings, the recruitment and installation timeline is longer than usual.	300 GWh	<a href="#">Link</a>
<b>Voltage Optimization (Varentec/Sentient)</b>	Testing installation needs and energy savings in real-world conditions.	Sentient Energy (formerly Varentec)	Cross cutting	2022 Q4	All hardware units were successfully installed by early Q1 (Crystal Lake, Chicago South and Bolingbrook). Monitoring and testing will continue into Q3 2022.	TBD	<a href="#">Link</a>

## Market Characterization and Preliminary Research

<b>120V Heat Pump Water Heater Research</b>	Research of market for 120V HPWHs in ComEd service territory	Slipstream	Residential	2022 Q3	The project team started their research into market barriers and submitted a market readiness memo.	TBD	<a href="#">Link</a>
<b>Income Eligible Customer Education &amp; Awareness Research</b>	(In development) Research best practices for increasing inclusiveness of EE programs.	TBD	Income Eligible	TBD	The R&D Team plans to launch this research in Q3.	TBD	TBD
<b>Electric &amp; Propane Heating</b>	(In development) Market characterization of ComEd's residential electric and propane heating customers.	Slipstream	Residential	2022 Q3	A project SOW has been finalized.	779 GWh	TBD
<b>Energy Efficient Electrification Customer Communication Best Practices</b>	Research of outreach tactics to provide customers with savings information.	ILLUME Advising	Income Eligible	2022 Q3	The project team presented interim results in June regarding strategies for customer communication. Customer surveys will take place in Q3.	Supports the development of IE housing electrification program	<a href="#">Link</a>
<b>Income Eligible Customer Financial Assistance &amp; DSM Braiding</b>	(In development) Assessment of financing and funding tools that may be available to support IE customers in participating in EE programs.	TBD	Income Eligible	TBD	The R&D Team plans to launch this research in Q3.	Supports a Stipulation Agreement requirement	TBD
<b>Income Eligible Smart Home Device</b>	Market research and initial testing of home energy monitoring systems not requiring broadband access.	Slipstream	Income Eligible	2022 Q3	After further technology development, the project team will conduct market research to assess the need and function of non-broadband smart home devices for residential customers.	Supports the Innovation Lab and potential IE housing electrification program	TBD
<b>Heat Pump Rating Representativeness</b>	Research partnership to refine savings calculations for heat pumps.	NEEP	Residential, Commercial	2023 Q2	The project team completed mobile home setup and calibration for field testing and has started on HP installation and field data collection.	TBD	<a href="#">Link</a>

## R&D Portfolio Summary 2022 Q2

Concept	Work Description	Partners	Customer Segment	End Date	Status Update	Potential Impact Estimate	Web Link
<b>Home Builder and HVAC Contractor Home Electrification Technology Study</b>	Interviews with HVAC contractors and home builders to better understand perceptions and barriers around electrification opportunities.	Rabin Research	Residential	Q4 2022	A survey instrument aimed a contractors has been developed and interview recruitment is underway.	Supports to the development of an enhanced heat pump strategy.	TBD
<b>Home Electrical Panel Upgrades</b>	Research on delivery models for a program regarding electrical panel upgrades.	Slipstream	Residential	2022 Q3	Slipstream delivered an interim memo outlining initial findings from literature reviews and analysis of market data. The project team is shifting focus now to primary research and will continue with research on electrification upgrade costs and technology solutions.	Supports the development of IE housing electrification program	<a href="#">Link</a>
<b>Illinois Stretch Codes &amp; Building Performance Standard</b>	Research to establish applicability and savings potential.	Slipstream, MEEA	Cross Cutting	2022 Q4	The project team continued outreach to municipalities across northern IL about long-term savings potential from stretch codes and building performance standards. They also continue to make progress on developing a stretch code attribution model to enable the measurement of savings, and have begun developing a building performance standard evaluation pathway as well.	16 GWh	TBD
<b>Income Eligible Bill Impacts</b>	Analysis of bill impacts of energy efficiency measures for income eligible customers.	Resource Innovations, Nicor, Peoples Gas/North Shore Gas	Income Eligible	2022 Q3	The project team submitted a project work plan and started review of initial program data.	Supports a Stipulation Agreement requirement	TBD
<b>Liquid Cooling in Data Centers</b>	Characterization of data centers market and assessment of applicable measures.	ERI	Commercial	2022 Q4	The project team submitted their first deliverable, an assessment of liquid cooling technologies and their applicability to ComEd customers, at the end of June.	7523 GWh	<a href="#">Link</a>
<b>Market Transformation Initiative Development</b>	(In development) Identification and development of new market transformation initiatives.	ILLUME Advising	Cross Cutting	2022 Q3	The R&D Team is working internally and holding periodic discussions with partners such as Nicor Gas, Ameren, NEEA, Illume Advising, and Apex Analytics on new market transformation initiative concepts. Concepts under final consideration include heat pumps, heat pump water heaters, luminaire level lighting control systems, and all-electric new home construction.	TBD	TBD
<b>Market Development Initiative Research</b>	Research to support development of a broad set of initiatives aimed at increasing diverse supplier utilization and associated workforce training.	Griffin & Strong P.C., Emerald Cities	Cross Cutting	2022 Q2	Finalized the study assessment plan in Q1 and the vendor has begun interviews with identified stakeholders. The diverse business landscape assessment survey has been finalized and will be released in Q3 2022.	Supports a Stipulation Agreement requirement	<a href="#">Link</a>
<b>Residential Heat Pump Water Heaters</b>	Ongoing concept development to assess opportunities and barriers presented by heat pump water heaters.	CLEAResult	Residential	Q2 2023	CLEAResult submitted a proposed SOW for a residential HPWH field installation pilot to launch in late summer 2022. The pilot will focus on contractor engagement and education, customer awareness and installations in a mix of 30-50 customer homes.	74 GWh	TBD