



MEMORANDUM

To: Nick Warnecke, AIC, Seth Craigo-Snell, SCS Analytics, Nida Khan, CAMI Energy, and Elizabeth Horne, ICC Staff
From: The Opinion Dynamics Evaluation Team
Date: March 2, 2024
Re: Ameren Illinois Company Lighting Carryover Savings Claimable in 2023

This memo summarizes carryover savings claimable in 2023 from lighting distributed by Ameren Illinois Company (AIC) energy efficiency programs in prior years but not installed until 2023. The relevant initiatives include:

- Residential Program
- Retail Products Initiative (Point of Purchase, Online Marketplace, and Efficient Choice Tool channels)
- Direct Distribution Efficient Products Initiative (School Kits, High School Innovation, and Appliance Recycling Kits channels)
- Income Qualified Initiative (SAVE Kits, BN Community Kits, and Community Kits channels)
- Business Program
- Midstream Initiative (Midstream Lighting Channel)¹

METHODS

All 2023 carryover savings are estimated primarily based on assumptions outlined in the Illinois Technical Resource Manual Version 11.0 (IL-TRM V10.0) and finalized errata measures memo.

Exceptions to this include in-service rate (ISR) trajectories and net-to-gross ratios (NTGRs), which are determined by assumptions in place during the year of purchase. All relevant ISR trajectories reflect installations over a three-year period, but exact trajectories vary by lamp type, application, and delivery channel. Based on these three-year trajectories, savings are claimed the year that lamps are installed, meaning that savings from second-year installations of lamps rebated or distributed in 2022 and third-year installations of lamps rebated or distributed in 2021 are claimed as part of the 2023 AIC portfolio.

¹ Formerly Instant Incentives which was part of the Standard Initiative.

Table 1 below provides Retail Products Initiative LED installation trajectories by bulb type and application, highlighting installations that will occur in 2023.

Table 1. Retail Products Initiative LED Lighting ISR Trajectory

Year of Sale	Application	Measure Category	First Year	Second Year	Third Year	Cumulative
2022	Residential	Standard LED	76.0%	11.9%	10.1%	98.0%
2022	Residential	Specialty LED	81.5%	8.9%	7.6%	98.0%
2022	Residential	LED Nightlights	84.0%	7.6%	6.4%	98.0%
2022	Commercial	All ^a	82.5%	8.4%	7.1%	98.0%
2021	Residential	Standard LED	76.0%	11.9%	10.1%	98.0%
2021	Residential	Specialty LED	81.5%	8.9%	7.6%	98.0%
2021	Commercial	All	82.5%	8.4%	7.1%	98.0%

^a LED nightlights are assumed to be installed exclusively in residential applications and do not have associated commercial savings.

Table 2 below provides Direct Distribution Efficient Products Initiative LED installation trajectories by delivery channel, highlighting installations that will occur in 2023.

Table 2. Direct Distribution Efficient Products Initiative LED Lighting ISR Trajectory

Year of Sale	Delivery Channel	First Year	Second Year	Third Year	Cumulative
2022	School Kits	60.0%	13.0%	11.0%	84.0%
2022	High School Kits	60.0%	13.0%	11.0%	84.0%
2022	Community Kits	88.0%	4.0%	3.0%	95.0%
2022	Food Pantry Distribution – LED Nightlights	60.0%	13.0%	11.0%	84.0%
2022	Food Pantry Distribution – All Other	88.0%	4.0%	3.0%	95.0%
2021	School Kits	60.0%	13.0%	11.0%	84.0%
2021	Appliance Recycling Kits	66.0%	14.0%	12.0%	93.0%
2021	Appliance Recycling Kits – Income Qualified	68.0%	15.0%	12.0%	95.0%
2021	Community Kits	88.0%	4.0%	3.0%	95.0%
2021	Food Pantry Distribution	80.3%	9.6%	8.1%	98.0%

Table 3 below provides Income Qualified Initiative LED installation trajectories by delivery channel, highlighting installations that will occur in 2023.

Table 3. Income Qualified Initiative LED Lighting ISR Trajectory

Year of Sale	Delivery Channel	First Year	Second Year	Third Year	Cumulative
2022	Mobile Home Kits	88.0%	4.0%	3.0%	95.0%
2022	SAVE Kits (Verified)	88.0%	4.0%	3.0%	95.0%
2022	SAVE Kits (Unverified)	88.0%	4.0%	3.0%	95.0%
2021	SAVE Kits (Verified)	68.0%	15.0%	12.0%	95.0%
2021	SAVE Kits (Unverified)	68.0%	15.0%	12.0%	95.0%
2021	BN Community Kits	68.0%	15.0%	12.0%	95.0%

Table 4 below provides the Midstream Lighting Channel’s LED installation trajectories, highlighting installations that will occur in 2023.

Table 4. Midstream Initiative – Lighting Channel LED Lighting ISR Trajectory

Year of Sale	Measure Category	First Year	Second Year	Third Year	Cumulative
2022	Linear LED	83.1%	8.1%	6.8%	98.0%
	Mogul LED	82.5%	8.4%	7.1%	
	Specialty LED				
2021	Linear LED	82.5%	8.4%	7.1%	98.0%
	Mogul LED				
	Specialty LED				

ANNUAL SAVINGS

The Retail Products Initiative achieved 13,194 MWh and 1.72 MW in verified net carryover savings in 2023, as shown in Table 5. Standard LEDs account for slightly over one-half of energy and demand savings from 2021 and 2022 purchases.

Table 5. Retail Products Initiative Carryover Savings Claimable in 2023

Year	Delivery Channel	Measure Category	Verified Gross Energy Savings (MWh)	Verified Gross Demand Savings (MW)	NTGR	Verified Net Energy Savings (MWh)	Verified Net Demand Savings (MW)
2022	Point of Sale and Online Marketplace	Standard LED	7,257	0.93	0.812	5,893	0.75
		Directional LED	1,845	0.24	0.794	1,465	0.19
		Decorative LED	2,291	0.30	0.785	1,799	0.24
		LED Fixture	153	0.04	0.914	140	0.03
		LED Outdoor Fixture	1	0.00	0.690	0	0.00
		LED Nightlight	42	0.00	0.974	41	0.00
	ECT	LED Lighting	11	0.00	0.676	7	0.00
2021	Point of Sale and Online Marketplace	Standard LED	1,398	0.18	1.000	1,398	0.18
		Directional LED	1,557	0.21	0.751	1,170	0.15
		Decorative LED	1,770	0.23	0.715	1,265	0.17
		LED Fixture	12	0.00	1.000	12	0.00
		LED Outdoor Fixture	1	0.00	0.690	1	0.00
		LED Nightlight	12	0.00	0.821	10	0.00
	ECT	LED Lighting	6	0.00	0.758	4	0.00
Total			16,355	2.13	0.807	13,206	1.72

The Direct Distribution Efficient Products Initiative achieved 1,245 MWh and 0.14 MW in verified net carryover savings in 2023, as shown in Table 6.

Table 6. Direct Distribution Efficient Products Initiative Carryover Savings Claimable in 2023

Year	Delivery Channel	Measure Category	Verified Gross Energy Savings (MWh)	Verified Gross Demand Savings (MW)	NTGR	Verified Net Energy Savings (MWh)	Verified Net Demand Savings (MW)
2021	School Kits	Standard LED	155	0.02	1.000	155	0.02
	Appliance Recycling Kit - IQ	Standard LED	21	<0.01	1.000	21	<0.01
	Appliance Recycling Kit - non-IQ	Standard LED	31	<0.01	0.840	26	<0.01
	Food Pantry Distribution	Standard LED	470	0.06	1.000	470	0.06
	Food Pantry Distribution	LED Nightlight	77	<0.01	1.000	77	<0.01
	Community Kits	Standard LED	30	<0.01	1.000	30	<0.01
	Community Kits	Decorative LED	5	<0.01	1.000	5	<0.01
	Community Kits	Decorative LED	4	<0.01	1.000	4	<0.01
	Community Kits	LED Desk Lamp	1	<0.01	1.000	1	<0.01
2022	School Kits	Directional LED	269	0.03	1.000	269	0.03
	High School Innovation	Directional LED	59	0.01	1.000	59	0.01
	Community Kits	Standard LED	28	<0.01	1.000	28	<0.01
	Food Pantry Distribution	Decorative LED	28	<0.01	1.000	28	<0.01
	Food Pantry Distribution	Standard LED	25	<0.01	1.000	25	<0.01
	Food Pantry Distribution	LED Nightlight	23	<0.01	1.000	23	<0.01
	Food Pantry Distribution	Directional LED	20	<0.01	1.000	20	<0.01
Total			1,245	0.14	0.996	1,240	0.14

The Income Qualified Initiative achieved 737 MWh and 0.09 MW in verified net carryover savings in 2023, as shown in Table 7.

Table 7. Income Qualified Initiative Carryover Savings Claimable in 2023

Year	Delivery Channel	Measure Category	Verified Gross Energy Savings (MWh)	Verified Gross Demand Savings (MW)	NTGR	Verified Net Energy Savings (MWh)	Verified Net Demand Savings (MW)
2021	Unverified SAVE Kit	Standard LED	194	0.02	1.000	194	0.02
	Unverified SAVE Kit	Decorative LED	113	0.01	1.000	113	0.01
	Unverified SAVE Kit	Directional LED	95	0.01	1.000	95	0.01
	Unverified SAVE Kit (No APS)	Standard LED	115	0.01	1.000	115	0.01
	Unverified SAVE Kit (No APS)	Decorative LED	67	0.01	1.000	67	0.01
	Unverified SAVE Kit (No APS)	Directional LED	56	0.01	1.000	56	0.01
	Verified SAVE Kit	Standard LED	15	<0.01	1.000	15	<0.01
	Verified SAVE Kit	Decorative LED	9	<0.01	1.000	9	<0.01
	Verified SAVE Kit	Directional LED	7	<0.01	1.000	7	<0.01
	BN Community Kit	Standard LED	14	<0.01	1.000	14	<0.01
	BN Community Kit	Decorative LED	5	<0.01	1.000	5	<0.01
	BN Community Kit	Directional LED	5	<0.01	1.000	5	<0.01
2022	Mobile Home Kit	Standard LED	1	<0.01	1.000	1	<0.01
	Unverified SAVE Kit	Standard LED	20	<0.01	1.000	20	<0.01
	Unverified SAVE Kit	Decorative LED	12	<0.01	1.000	12	<0.01
	Unverified SAVE Kit	Directional LED	10	<0.01	1.000	10	<0.01
	Verified SAVE Kit	Standard LED	0.02	<0.01	1.000	0.02	<0.01
	Verified SAVE Kit	Decorative LED	0.01	<0.01	1.000	0.01	<0.01
	Verified SAVE Kit	Directional LED	0.01	<0.01	1.000	0.01	<0.01
Total			737	0.09	1.000	737	0.09

The Midstream Initiative achieved 4,890 MWh and 1.16 MW in verified net carryover savings in 2023, as shown in Table 8.

Table 8. Midstream Initiative Carryover Savings Claimable in 2023

Year	Delivery Channel	Measure Category	Verified Gross Energy Savings (MWh)	Verified Gross Demand Savings (MW)	NTGR	Verified Net Energy Savings (MWh)	Verified Net Demand Savings (MW)
2021	Midstream Lighting	Linear LED	3,008	0.72	0.813	2,446	0.58
		Mogul LED	189	0.05	0.813	154	0.04
		Specialty LED	272	0.06	0.813	221	0.05
2022		Linear LED	1,788	0.43	0.913	1,633	0.39
		Mogul LED	350	0.08	0.913	319	0.08
		Specialty LED	127	0.03	0.913	116	0.03
Total			5,735	1.36	0.853	4,890	1.16

CUMULATIVE PERSISTING ANNUAL SAVINGS

The following tables provide cumulative persisting savings (CPAS) associated with total carryover savings and carryover savings from each Initiative.

Table 9. 2023 AIC Portfolio Carryover CPAS and WAML

Initiative	WAML	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
Retail Products Carryover	9.6	16,355	0.807	13,206	13,206	13,206	13,206	...	8,035	...	107,077
Direct Distribution Carryover	9.8	1,245	0.996	1,240	1,240	1,240	1,240	...	978	...	11,361
Income Qualified Carryover	10.0	737	1.000	737	737	737	737	...	555	...	6,826
Midstream Lighting Carryover	14.3	5,735	0.853	4,890	4,890	4,890	4,890	...	4,554	...	69,304
2023 CPAS		24,072	0.834	20,073	20,073	20,073	20,073	...	14,122	...	194,567
Expiring 2023 CPAS				0	0	0	0	...	2,351	...	
Expired 2023 CPAS				0	0	0	0	...	5,951	...	
WAML	10.8										

Table 10. 2023 Retail Products Initiative Carryover CPAS and WAML

Measure Category	Measure Life	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
2022 Standard LED - Residential Non-IQ	2.0	3,121	0.690	2,154	2,154	2,154	2,154	...	732	...	13,008
2022 Standard LED - Residential IQ	8.0	3,662	0.916	3,354	3,354	3,354	3,354	...	2,717	...	31,632
2022 Standard LED - Commercial	2.0	474	0.812	385	385	385	385	...	0	...	1,742
2022 Reflector LED - Residential Non-IQ	2.0	815	0.690	563	563	563	563	...	343	...	4,309
2022 Reflector LED - Residential IQ	8.0	798	0.901	719	719	719	719	...	525	...	6,605
2022 Reflector LED - Commercial	2.0	232	0.794	184	184	184	184	...	0	...	1,065
2022 Specialty LED - Residential Non-IQ	2.0	1,017	0.690	702	702	702	702	...	491	...	5,756
2022 Specialty LED - Residential IQ	8.0	986	0.883	871	871	871	871	...	583	...	7,844
2022 Specialty LED - Commercial	2.0	288	0.785	226	226	226	226	...	0	...	1,016
2022 LED Fixture - Commercial	14.8	153	0.914	140	140	140	140	...	85	...	1,477
2022 LED Outdoor Fixture - Commercial	11.6	1	0.690	<1	<1	<1	<1	...	<1	...	4

Measure Category	Measure Life	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
2022 LED Nightlight - Residential Non-IQ	8.0	3	0.690	2	2	2	2	...	2	...	18
2022 LED Nightlight - Residential IQ	8.0	39	0.998	39	39	39	39	...	39	...	309
2022 ECT Lighting	2.0	11	0.676	7	7	7	7	...	3	...	46
2021 Standard LED - Residential IQ	8.0	1,307	1.000	1,307	1,307	1,307	1,307	...	1,059	...	12,329
2021 Standard LED - Commercial	2.0	91	1.000	91	91	91	91	...	0	...	412
2021 Reflector LED - Residential Non-IQ	2.0	958	0.690	661	661	661	661	...	403	...	5,062
2021 Reflector LED - Residential IQ	8.0	406	0.896	364	364	364	364	...	265	...	3,342
2021 Reflector LED - Commercial	2.0	194	0.751	146	146	146	146	...	0	...	843
2021 Specialty LED - Residential Non-IQ	2.0	1,195	0.690	825	825	825	825	...	577	...	6,762
2021 Specialty LED - Residential IQ	8.0	354	0.798	283	283	283	283	...	189	...	2,548
2021 Specialty LED - Commercial	2.0	221	0.715	158	158	158	158	...	0	...	708
2021 LED Fixture - Commercial	14.8	12	1.000	12	12	12	12	...	7	...	123
2021 LED Outdoor Fixture - Commercial	11.6	1	0.690	1	1	1	1	...	0	...	6
2021 LED Nightlight - Residential Non-IQ	8.0	7	0.690	5	5	5	5	...	5	...	39
2021 LED Nightlight - Residential IQ	8.0	5	1.000	5	5	5	5	...	5	...	41
2021 ECT Lighting	2.0	6	0.758	4	4	4	4	...	2	...	31
2023 CPAS		16,355	0.807	13,206	13,206	13,206	13,206	...	8,035	...	107,077
Expiring 2023 CPAS				0	0	0	0	...	1,744		
Expired 2023 CPAS				0	0	0	0	...	5,171		
WAML	4.9										

Table 11. 2023 Direct Distribution Efficient Products Initiative Carryover CPAS and WAML

Measure Category	Measure Life	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
2021 School Kits Standard LED	10.0	155	1.000	155	155	155	155	...	125	...	1,461
2021 Appliance Recycling Kits Standard LED - IQ	10.0	21	1.000	21	21	21	21	...	17	...	196
2021 Appliance Recycling Kits Standard LED - non-IQ	10.0	31	0.840	26	26	26	26	...	9	...	157
2021 Food Pantry Distribution Standard LED	10.0	470	1.000	470	470	470	470	...	380	...	4,428
2021 Food Pantry Distribution LED Nightlights	8.0	77	1.000	77	77	77	77	...	77	...	616
2021 Community Kit Standard LED	10.0	30	1.000	30	30	30	30	...	24	...	280
2021 Community Kit ENERG STAR Desk Lamp	10.0	1	1.000	1	1	1	1	...	1	...	11
2021 Community Kit 4.5 W Globe	10.0	5	1.000	5	5	5	5	...	3	...	44
2021 Community Kit 8 W Globe	10.0	4	1.000	4	4	4	4	...	3	...	35
2022 School Kits Reflector LED	10.0	269	1.000	269	269	269	269	...	196	...	2,470
2022 High School Kit Reflector LED	10.0	59	1.000	59	59	59	59	...	43	...	545
2022 Community Kit Standard LED	10.0	28	1.000	28	28	28	28	...	22	...	261
2022 Food Pantry Distribution Standard LED	10.0	25	1.000	25	25	25	25	...	21	...	240
2022 Food Pantry Distribution Reflector LED	10.0	20	1.000	20	20	20	20	...	15	...	183
2022 Food Pantry Distribution Specialty LED	10.0	28	1.000	28	28	28	28	...	19	...	249
2022 Food Pantry Distribution LED Nightlights	8.0	23	1.000	23	23	23	23	...	23	...	185
2023 CPAS		1,245	0.996	1,240	1,240	1,240	1,240	...	978	...	11,361
Expiring 2023 CPAS				0	0	0	0	...	245	...	
Expired 2023 CPAS				0	0	0	0	...	262	...	
WAML	9.8										

Table 12. 2023 Income Qualified Initiative Carryover CPAS and WAML

Measure Category	Measure Life	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
2021 Unverified SAVE Kit - 9W LED	10.0	194	1.000	194	194	194	194	...	157	...	1,830
2021 Unverified SAVE Kit - 6W LED	10.0	113	1.000	113	113	113	113	...	76	...	1,021
2021 Unverified SAVE Kit - 8W LED	10.0	95	1.000	95	95	95	95	...	69	...	873
2021 Unverified SAVE Kit (No APS) - 9W LED	10.0	115	1.000	115	115	115	115	...	93	...	1,082
2021 Unverified SAVE Kit (No APS) - 6W LED	10.0	67	1.000	67	67	67	67	...	45	...	603
2021 Unverified SAVE Kit (No APS) - 8W LED	10.0	56	1.000	56	56	56	56	...	41	...	516
2021 Verified SAVE Kit - Standard LED	10.0	15	1.000	15	15	15	15	...	12	...	142
2021 Verified SAVE Kit - Specialty LED	10.0	9	1.000	9	9	9	9	...	6	...	78
2021 Verified SAVE Kit - Reflector LED	10.0	7	1.000	7	7	7	7	...	5	...	67
2021 BN Community Kit - Standard LED	10.0	14	1.000	14	14	14	14	...	11	...	132
2021 BN Community Kit - Specialty LED	10.0	5	1.000	5	5	5	5	...	3	...	41
2021 BN Community Kit - Reflector LED	10.0	5	1.000	5	5	5	5	...	4	...	50
2022 Mobile Home Kit - 9W LED	10.0	1	1.000	1	1	1	1	...	1	...	8
2022 Unverified SAVE Kit - 9W LED	10.0	20	1.000	20	20	20	20	...	16	...	188
2022 Unverified SAVE Kit - 6W LED	10.0	12	1.000	12	12	12	12	...	8	...	105
2022 Unverified SAVE Kit - 8W LED	10.0	10	1.000	10	10	10	10	...	7	...	89
2022 Verified SAVE Kit - Standard LED	10.0	0.02	1.000	<1	<1	<1	<1	...	<1	...	<1
2022 Verified SAVE Kit - Specialty LED	10.0	0.01	1.000	<1	<1	<1	<1	...	<1	...	<1
2022 Verified SAVE Kit - Reflector LED	10.0	0.01	1.000	<1	<1	<1	<1	...	<1	...	<1
2023 CPAS		737	1.000	737	737	737	737	...	555	...	6,826
Expiring 2023 CPAS				0	0	0	0	...	183	...	
Expired 2023 CPAS				0	0	0	0	...	183	...	
WAML	10.0										

Table 13. 2023 Midstream Initiative Carryover CPAS and WAML

Measure Category	Measure Life	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
2021 Linear LEDs	14.8	3,008	0.813	2,446	2,446	2,446	2,446	...	2,446	...	36,201
2021 Mogul LEDs	14.8	189	0.813	154	154	154	154	...	154	...	2,275
2021 Specialty LEDs	8.3	272	0.813	221	221	221	221	...	1	...	1,268
2022 Linear LEDs	14.8	1,788	0.913	1,633	1,633	1,633	1,633	...	1,633	...	24,165
2022 Mogul LEDs	14.8	350	0.913	319	319	319	319	...	319	...	4,728
2022 Specialty LEDs	8.4	127	0.913	116	116	116	116	...	1	...	666
2023 CPAS		5,735	0.853	4,890	4,890	4,890	4,890	...	4,554	...	69,304
Expiring 2023 CPAS				0	0	0	0	...	179	...	
Expired 2023 CPAS				0	0	0	0	...	335	...	
WAML	14.3										

APPENDIX: 2023 AND 2024 MIDLIFE ADJUSTMENTS FOR 2021 AND 2022 SALES

Guidance is provided in the IL-TRM V10.0 errata document that deferred installations of screw-based lamps from 2021 and 2022 occurring in 2023 and 2024 should use all assumptions in the IL-TRM V10.0 with the exception of the timing of the midlife adjustment. The errata document details how the timing of the midlife adjustment's application should be modified to account for deferred installation. For ease of review, we reproduce those details in Table 14.

Table 14. Mid-Life Adjustments for Screw-Based Lamps Sold in 2021 and 2022 and Installed in 2023 and 2024

Purchase Year	Lamp Type	Category	Measure Life	Install Year			
				2023		2024	
				Year Applied	Adjustment	Year Applied	Adjustment
2021	Omnidirectional	Income Qualified	10 ^b	2030	81%		
		All Others ^a	10 ^b	2027	34%		
	Decorative	Income Qualified	10 ^b	2030	67%		
		All Others ^a	10 ^b	2027	70%		
	Directional	Income Qualified	10 ^b	2030	73%		
		All Others ^a	10 ^b	2027	61%		
2022	Omnidirectional	Income Qualified	10 ^b	2030	81%	2031	81%
		All Others ^a	10 ^b	2027	34%	2028	34%
	Decorative	Income Qualified	10 ^b	2030	67%	2031	67%
		All Others ^a	10 ^b	2027	70%	2028	70%
	Directional	Income Qualified	10 ^b	2030	73%	2031	73%
		All Others ^a	10 ^b	2027	61%	2028	61%

Source: IL-TRM V10.0 errata document: https://www.ilsag.info/wp-content/uploads/v10.0_Errata_Measures_Memo_FINAL_09282022.pdf

^a Including nonresidential applications.

^b In residential applications. Nonresidential applications use calculated measure lives per IL-TRM V10.0.