

PY2022 EM&V Key Findings and Recommendations: 2021-2024 CDM Energy Affordability Program (EAP)

| No. KEY FINDINGS | 2022 EM&V RECOMMENDATIONS | IMPACT | IESO RESPONSE |
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| <p>1. EAP saw 117 weatherization projects occur in PY2022, but on a per-project basis produced one-half the gross verified savings compared to PY2021 results from the Home Assistance Program (HAP, n=220) and EAP (n=20).</p> <p>Weatherization projects accounted for 2% of the program’s total claimed savings, up from 1% in PY2021. The PY2022 average of 1,827 kWh in gross verified savings per project was over 50% lower than the PY2021 EAP average of 4,141 kWh. Multiple factors likely contributed to this per-project decline in EAP savings, though the comparison with PY2021 is limited by small sample size (n=20). EAP per-project weatherization savings are also lower than the equivalent values from HAP evaluations from PY2019 through PY2021 (3,240 kWh, 3,669 kWh, and 4,333 kWh, respectively), which should be noted increased year-over-year and were based on larger sample sizes. Among individual PY2022 EAP weatherization measures, attic insulation showed the largest decline in verified energy savings per project of any weatherization measure compared to PY2021—a 64% drop compared to HAP and 68% drop compared to EAP. Attic insulation and draftproofing, which tend to have lower average savings than basement and wall insulation, accounted for a larger portion of verified weatherization energy savings in PY2022 EAP (69%) than PY2021 HAP (60%) and PY2021 EAP (62%).</p> | <p>Continue to position weatherization as a critical measure for EAP given its potential for high savings, non-energy benefits, and pairing with HVAC upgrades. Balancing increased uptake of weatherization projects with sustained per-project savings is key. Achieving this balance requires developing better estimates of potential weatherization savings in participant homes by expanding tracking data to better identify homes with electric baseboards and furnaces (see Recommendation 3a). Likewise, to sustain or increase uptake, the program should consider expanding the scope of program impacts to include potential greenhouse gas (GHG) emissions reductions from electrification and/or low-GHG insulative materials. Strategies to sustain or increase per-project savings include increasing the target of vented attic insulation from R51 to R60 or higher, subject to cost-effectiveness testing.</p> <p>Work with delivery agents to conduct longitudinal research on EAP and HAP weatherization model (Hot2000) inputs and outputs (e.g., type, R-value, and coverage area of pre-existing insulation) to monitor for trends and examine potential underlying causes of per-project declines in weatherization savings.</p> | <p>High</p> | <p>The IESO will conduct further analysis to understand the declining weatherization savings per project trend. The IESO will also assess comparability of the savings between years as there was a change to the incentive structure for weatherization measures in 2022.</p> |

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| <p>2. Energy Saving Kit (Tier 2) uptake remained low in PY2022, and opportunities remain to increase participation in future years. Kits were distributed to 103 participants and accounted for over 90,000 kWh of gross verified savings. This represents a sharp 58% decline in the total kits distributed to participants compared to PY2021. These kits provide an average of 890 kWh in gross verified savings per participant, compared to 437 kWh in average gross verified savings per Tier 1 project. However, participants are of moderate income and have a NTGR applied to account for net verified savings, which reduced savings down to 75,000 kWh. While most surveyed Energy Saving Kit (Tier 2) participants (five of seven) indicated that they were completely satisfied with the process of applying for and receiving the Energy Savings Kit, IESO staff expressed that the requirement to prove income qualification may have been a barrier to participation. Delivery vendors noted that customers' income levels tend to either make them eligible for Comprehensive Support (Tier 1) or ineligible altogether.</p> | <p>Expand income eligibility criteria for Energy Saving Kits (Tier 2) to be inclusive of more households.</p> <p>Consider enhancing the Energy Savings Kit to increase its appeal to customers and spark more interest in them. This could be done by including a higher quantity of the equipment with the highest participant satisfaction ratings (LEDs), replacing the measure with the participant lowest satisfaction rating (clothes drying rack) with a different model, or adding a higher value or more modern equipment type, such as smart thermostats.</p> <p>IESO's efforts to update Energy Saving Kit (Tier 2) eligibility and increase marketing should include developing and distributing educational materials (e.g., pictures, links to tutorial videos, or written guidance for measures) covering measure installation and/or maintenance, especially for measures that are not commonly installed (e.g., aerators, block heater timers). This may encourage greater installation rates of measures delivered through mailed kits. Installation rates were not assessed for the Energy Saving Kit (Tier 2) in the PY2022 or PY2021 evaluations due to low incidence. However, low measure installation rates could impact future savings potential, so the program should consider approaches like educational outreach to ensure high installation rates.</p> | <p>High</p> | <p>The IESO approved an outreach initiative to partner with social organizations, whose mandate is geared towards lower income constituents, to distribute Energy Savings Kits.</p> <p>Other options to minimize barriers to participation are also being explored to improve uptake such as streamlining the kit offering and configuration.</p> <p>The IESO is also investigating options to enhance education materials including infographic how-to sheets to accompany product kits.</p> |

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| <p>3. Discrepancies in the demand factor used to calculate savings were the main driver of the overall demand RR of 87%, and multiple measures' demand RRs of 50% or below. The MAL specifies use of the summer peak demand factor (SPDF) from a particular load profile for each program measure. However, desk reviews turned up instances of winter peak factors used without justification to calculate claimed demand savings. Elsewhere, the demand factors used did not match the heating/cooling system recorded in project files and/or were inconsistently applied to measures. Some of the data that would help to reduce discrepancies in demand savings calculations are already collected in data collection forms, such as building or equipment type.</p> | <p>Work with program staff, program delivery vendors, auditors, and contractors to consistently incorporate information already collected on-site (e.g., building type, mechanical equipment, and heating fuel) into tracking data. Where feasible, expand tracking data to include additional specifications (e.g., equipment efficiency, capacity).</p> <p>Develop protocols to validate delivery agents' reported savings for measures whose substantiation sheets have different reported savings depending on building type, cooling system, etc. Ensure that the MAL also documents these different reported savings.</p> <p>Align future updates to the peak demand savings calculations in the substantiation sheets with the load profiles assigned for each program measure in the latest MAL.</p> <p>Establish data validation protocols to flag which demand factor is used to calculate savings provided to program vendors via IESO Measure Lists. Likewise, establish transparent criteria for claiming peak demand savings during the winter peak period, e.g., the Ontario electric system experiences winter peaks in two consecutive years.</p> | <p>High</p> | <p>The IESO has addressed this recommendation. The appropriate demand factor has been provided to calculate savings.</p> <p>The IESO will also carry out a MAL review in 2023/2024 as well as a review of the savings data reporting.</p> |

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| <p>4. Altogether, 1% of the EAP PY2022 program population was flagged in tracking data as having a health and safety upgrade. By comparison, desk reviews of 130 EAP project files turned up seven cases (5%) where on-site auditors and contractors documented health and safety barriers such as clutter and/or moisture. Five of these seven cases lacked any flag indicating the presence of a barrier. Tracking health and safety barriers is key to improving occupant comfort and understanding the potential for increasing the uptake of high-savings measures like weatherization. Previous evaluations¹ have recommended an emphasis on weatherization upgrades due to high per-unit savings and co-benefits of increased occupant comfort and improvements in indoor air quality.</p> | <p>Improve the quality and comprehensiveness of health, safety, and comfort data collected on-site and contained in the program tracking data. This could include additional required fields in program tracking data for any projects where auditors and contractors identify a health and safety barrier (e.g., what barrier[s] did they observe, what measures were they unable to install as a result).</p> <p>Develop a participant journey map for homes with observed health and safety barriers. Equip auditors and contractors with the time and resources to provide guidance on how participants can remediate any observed health and safety barriers. This could include referrals to contractors that could conduct the necessary remediation, and program incentives specifically tied to these steps. In addition, these journey maps can extend into follow-up plans for participants to receive certain energy-efficiency measures that weren't installed due to health and safety concerns after remediation has occurred.</p> | <p>High</p> | <p>The IESO will develop guidance to assist contractors with reporting on health and safety upgrades accurately and consistently.</p> <p>A participant journey map can be developed to assist auditors and contractors with remediating issues they encounter on-site. The journey map/guide may include follow-up plans and referral information on how to assess and rectify issues within the scope of EAP.</p> |

¹ See Finding 1 in the 2021-2024 CDM Framework: PY2021 Energy Affordability Program Evaluation Report; see also Recommendation 2a in the Interim Framework: First Nations Conservation Program Evaluation Report.

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| <p>5. Additional program promotion opportunities exist. Auditors, contractors, IESO staff, and delivery vendor staff all recommended that the program conduct additional marketing efforts. Auditors and contractors cited marketing and outreach as the aspect in greatest need of program improvement (average rating of 2.9 on a scale from 1 to 5, where 1 meant “not at all satisfied” and 5 meant “completely satisfied”). Auditors and contractors also indicated that the greatest barriers to program participation were customer concerns about whether the program was real or a scam (mentioned by 87%) and lack of program awareness among customers (mentioned by 61%). To address these barriers, auditors and contractors most commonly recommended increasing outreach and marketing (mentioned by 35%). Some auditors and contractors provided specific recommendations, such as advertising the program’s legitimacy and coordinating with local municipalities to promote the program in remote communities, tailoring marketing by region and season, and involving community organizations in program outreach. IESO and delivery vendor staff suggested that, where feasible, the program consider reviving some of the targeted mass marketing strategies that were used in past program years, focusing additional effort on Energy Saving Kits, and coordinating marketing efforts with delivery vendors. Delivery vendor staff suggested region and season specific marketing efforts.</p> | <p>Increase and diversify marketing efforts to boost overall program awareness and reduce customer skepticism of the legitimacy of the program. This could also include reviving some mass marketing activities such as radio, TV, billboards, or print ads, as well as expanding on existing digital marketing activities like banner ads, video testimonials, and social media campaigns.</p> <p>Ensure marketing messaging includes direct language emphasizing the program’s safety and legitimacy, as well as its no-cost nature and energy-saving potential.</p> <p>Coordinate with local municipalities to promote the program regionally and/or in remote communities.</p> <p>Provide tailored marketing to specific regions or by season. Consider highlighting equipment of particular interest to a given region or employing messaging that may resonate the most during a given season.</p> <p>Continue collaborations with EAP Roundtable and community-based organizations to help promote the program and address concerns about the program’s legitimacy.</p> | <p>Medium</p> | <p>The IESO has increased marketing activity in 2023 to include digital ads, collaborative marketing that builds on a cobranded messaging with Enbridge’s Home Winterproofing Program, geo-targeted campaigns to income-qualified communities, as well as simplified messaging. These enhancements were informed through outreach with the EAP Roundtable.</p> |

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| <p>6. Additional opportunities for enhancing auditor and contractor training and education exist. While most auditors and contractors reported receiving training on the offerings associated with the program (78%) and program rules (78%), fewer received trainings on the application process (30%), marketing and outreach techniques (26%), or on customer service (4%). The most common requests for additional training or support from the auditors and contractors was to increase marketing and outreach support (mentioned by 29% of auditors and contractors), offering additional training and information (24%), better communication (24%), and receiving clarification on program rules and eligibility requirements (18%). Of the one-fifth (20%) of participants who took the opportunity to provide additional feedback about their experience with the auditor or contractor, over one-tenth (15%) indicated they had a negative experience with the auditor or contractor. Almost one-half (49%) of participants said the auditor did not provide educational materials during the site visit. Additionally, the second most recommended opportunity for program improvement mentioned by participants was to ensure auditors and contractors were properly trained.</p> | <p>Ensure program delivery vendors are offering frequent, consistent, and well-rounded training and support to program auditors and contractors through a variety of ways (e.g., in person, through follow-up questions, through online trainings, and sharing recordings from online trainings). Consider offering program-specific training on customer service and interactions and on the importance of providing educational materials to the customer while on site. This could boost the confidence of auditors and contractors who may have never received a training of this type before while improving the customer's experience with the program.</p> | <p>Medium</p> | <p>The IESO will suggest to the delivery vendors to provide continued training and support to the auditors and contractors that focuses on customer communication, and with the goal of ensuring program rules and requirements are clear.</p> <p>The IESO will remind the delivery vendors to continue to share their existing tip sheet as leave behind material that would benefit the participant.</p> |

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| <p>7. Measure eligibility criteria may be hindering the ability to achieve measure uptake targets and higher customer satisfaction. Many auditors and contractors (43%) reported that the program’s measure eligibility criteria affect the frequency with which some measure types are installed. To address this issue, auditors and contractors most commonly suggested offering a wider variety of equipment types and models (52%), reviewing equipment age requirements (39%), and relaxing the measure eligibility requirements in general (35%). Delivery vendors called for simplifying measure qualification requirements, such as setting a straightforward equipment age criterion for more measures. The most common suggestion for program improvement from participants was to relax the eligibility requirements for the program and/or specific measures.</p> | <p>Review existing equipment age and size requirements and consider setting more straightforward age criterion for more equipment types. Respondents recommended reviewing AC units and dehumidifiers.</p> <p>Refer also to Process Progress Update 2 related to Equipment Suggestions and offering additional equipment through the program and increasing equipment quality through offering a wider variety.</p> | Medium | <p>The IESO will review the governing EAP Audit and Retrofit Protocol document thresholds (outlines measure qualification thresholds) as well as the age thresholds as part of the 2023-2024 MAL review process.</p> |
| <p>8. The first year of collaboration with the Enbridge Home Winterproofing Program (HWP) was beneficial to EAP delivery. In PY2022, the IESO undertook a joint procurement with Enbridge Gas to offer customers a one-window approach to accessing the EAP and the Enbridge Home Winterproofing Program (HWP). Both IESO and delivery vendor staff reported that the launch of this co-delivery collaboration was successful and recommended further exploring co-marketing approaches in collaboration with Enbridge in the future.</p> | <p>Continue to build on the collaboration, further exploring co-marketing, co-branding, and increasing overall marketing coordination with Enbridge’s HWP.</p> | Medium | <p>See note #5 above</p> |

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| 9. | <p>The first year of offering the program through regional delivery vendors may have constrained PY2022 program results due to ramp up period.</p> <p>The transition to multiple delivery vendors with geographically distinct territories allowed the program to focus more on distinct regional needs; for example, some regions have a greater need to find delivery solutions for remote areas or translation of program materials. While IESO and delivery vendor staff viewed this transition favorably, they noted that it took more time than anticipated to ramp up program delivery. Additionally, the bankruptcy of one delivery vendor meant that the program needed to pivot quickly to ensure existing applications and participants continued to be served.</p> | <p>Continue to support, train, and communicate with delivery vendors as they strive to meet their delivery goals in future program years. For example, the IESO could coordinate with the delivery vendors to identify geographic areas or specific building types (e.g., social housing, home types beyond single-family homes, etc.) that may be experiencing lower uptake.</p> | Medium | <p>A new delivery approach was used in PY2022. The IESO will work with the delivery vendors to enable a positive and consistent customer experience.</p> |
| 10. | <p>Social housing providers generally found EAP easy to participate in but recommended additional assistance to further support tenants' needs. Social housing providers indicated that it was easy to participate in the program and that it benefits the tenants and the social housing groups. Distinct barriers include equipment model limitations, the cost of paying for tenant intervention services, and difficulty of transitioning between delivery vendors. Social housing providers recommended creating a fund to cover the cost of alternate equipment models not available through the program, providing financial assistance for tenant intervention services to help prepare for equipment installation, and offering large-ticket items (e.g., boilers, windows, insulation) through the program.</p> | <p>Consider opportunities to include equipment models not available through the program. For example, consider the feasibility of 1) creating a fund to cover these models, 2) incorporating additional models into the program where there is bulk demand, or 3) providing information or flyers pointing to other offerings from the Federal government or other provincial organizations.</p> <p>Consider the feasibility of providing financial assistance for tenant intervention services to help prepare for equipment installation (e.g., assistance with moving furniture or other items in the home).</p> <p>Refer also to Process Progress Update 2 related to Equipment Suggestions and including larger-ticket items.</p> | Medium | <p>The IESO will assess the feasibility of the suggested approaches alongside specific considerations for social housing projects.</p> |

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| <p>11. Income eligibility criteria present participation barriers for some customers. Both IESO and program delivery vendor staff reported that the income eligibility criteria present a barrier for some customers; for example, because it relies on the prior year's income information, customers who have had a change in financial circumstances may be ineligible until the following year.</p> | <p>Adjust the income verification process to be more permissive of certain customer application cases. For example, provide flexibility in enrolling customers who have had a change in financial circumstances that would allow them to apply to the program more quickly.</p> | <p>Medium</p> | <p>As mentioned in the IESO's response to Key Finding #2, the IESO is exploring adjusting the income verification process, particularly for the Tier 2 energy saving kits to reduce barriers to participation.</p> |