

Program	Key Findings	2016 EM&V Recommendation	Impact	IESO Response	Working Group Response
<p>Cross-cutting</p>	<p>Tracking data is highly in flux and exists in numerous, disparate sources.</p> <p>“Lower-priority” project parameters are sometimes not reported at all.</p> <p>Reporting errors are few, but can be highly impactful.</p> <p>Reported/ex-ante savings are not readily-apparent or included in a single database.</p>	<p>Request that IESO’s technical reviewer establish a live database of all projects across the Industrial Portfolio with a selection of specific key fields, including project status and anticipated, reported, and reviewed savings values (fields that could be referenced via query from existing tables). This database should be instantly accessible by IESO staff and capable of showing reported program savings at any point.</p>	<p>Low</p>	<p>Using the existing live database for the purpose of reporting to the Evaluations team would increase the risk of errors as many of the data points evolve and change throughout the life of a project.</p> <p>The IESO will work with the Technical Reviewer to improve the static reporting to the Evaluator by reflecting on the feedback received in 2016.</p>	<p>Accessibility to data, particularly live data, would greatly benefit LDCs and aid in tracking, forecasting, and ultimately target achievement.</p> <p>The development of an outward facing database/dashboard, to allow for submission of PSU and Energy Manager documentation, would eliminate the need for the IESO to develop a platform. Given that the current PSUP CRM system would be a challenge to modify it would be beneficial to add this database/dashboard to the technical reviewer duties. Recent additions to the technical reviewer’s reporting, such as monthly activity and direct engagement of LDC reps, has aided the timeliness of data access and customer engagement.</p>
		<p>Improve the Project List_Comprehensive LDC Report workbook to utilize standard measure and project IDs, engage with the LDCs on invoicing earlier in the reporting process, and finalize a version of this document when reported savings are established to prevent sampling projects that could end up being excluded from the population.</p>	<p>Low</p>	<p>Via E-Blast and Evaluation Plan webinars, LDCs have been made aware that project lists are reported to the IESO via LDC invoices and/or cut-off dates. Closer to the project cut-off dates, further on-going communications to the LDC community will be made.</p>	<p>In addition to the benefits noted above, standard measure and project IDs would help increase the reliability of the reporting.</p> <p>Additional communication by the IESO to LDCs to clarify project eligibility and timelines for annual evaluations will help LDCs prioritize their efforts to get eligible projects into the evaluation cycle.</p>

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Cross-cutting	Reported savings by program are not well-defined or easily accessible.	Assign the technical reviewer responsibility for supplying the reported savings and reporting them to IESO on pre-established dates to improve tracking and evaluability. This will also enable the TR to implement quality control measures to coincide with reporting dates.	Low	The IESO worked with both the Technical Reviewer and the Evaluator on a continuous basis to establish internal reporting deadlines for each data request in advance of the 2017 Evaluations cycle.	LDCs will require notification in advance of new or shifted 2017 deadlines.
Cross-cutting	In some cases, the resolution at which savings are being tracked and reported could be more precise.	Increase the resolution of tracked metrics (add decimal points or report at the highest-resolution unit, i.e., kWh and kW).	Low	The IESO will work with the Technical Reviewer to ensure data is reported at the appropriate resolution.	See comments above regarding merit and LDC support of a new database/dashboard LDCs will require notification in advance of new data requirements.
Cross-cutting	Small improvements to data tracking and project documentation can improve insight into program activities and facilitate program planning and evaluation.	<p>Implement the following minor changes to Industrial program data tracking:</p> <ul style="list-style-type: none"> ▶ Add behind-the-meter generation (BMG) indicators to application and project tracking systems. ▶ For BMG projects, request and track net gas consumption information that will impact GHG emissions. ▶ Utilize measure-level unique IDs across all data sets. Differences in LDC naming conventions, application vs. iCON IDs, etc. require data scrubbing and can lead to confusion. ▶ Add measure IDs and LDC names to the CDM Cost Effectiveness Tool. 	Low	Due to the complex and varied nature of measures implemented through the Process and Systems Upgrade Program, establishing pre-determine measure identifiers would not be appropriate.	<p>Agree with the Evaluator's recommendations. Clarification on variances in project IDs may be required, as once a PSUP or Energy Manager application is submitted, the project is issued a unique system generated code.</p> <p>Consideration could also be given to adding unique identifiers to tie activities. Examples:</p> <ul style="list-style-type: none"> • PSUP project incentive should be linked to a study • Energy Manager's activities could be linked to PSUP study and/or project application numbers, as well as Retrofit. <p>For future consideration, it would be beneficial to have the ability to map all Retrofit projects to a PSUP-funded study where one has been completed, as we know studies drive participations in both Programs.</p>

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		Standardize IESO tools across evaluation objectives to include consistent measure-level unique IDs, LDC indicators, Framework Indicators, and other common components. Tools for consideration include the IESO Reporting Template, Cost-Effectiveness Tool, Program status and reported savings tracking databases, and LDC invoice tracker(s).	Low	During program year 2017 the IESO worked with the Technical Reviewer to make modifications to the report template issued to LDCs in order to ensure consistency between what the LDC/EM is reporting. The IESO has stressed that the kWh and incentive project IDs should always match.	Agreed. See comments above.
Cross-cutting	Behind-the-meter generation (BMG) projects account for 71% of gross verified savings and account for the majority of savings in both LDC-administered and IESO-administered programs.	Continue to identify BMG projects and maintain BMG tracking and reporting alongside Energy Efficiency projects, both to understand what portion of Industrial portfolio savings results from BMG, and for understanding net changes to natural gas consumption and other factors that may heavily influence emissions.	Low	Agreed, the IESO will continue to track and identify BMG projects separately from energy efficiency projects.	Agreed
Cross-cutting	Involvement of IESO decision-makers early in the PSU working group process will save time and effort by including IESO's perspectives on acceptable changes and required data up front.	<i>Preliminary Process Recommendation:</i> Ensure that IESO decision-makers are involved early in the PSU working group as they prepare for writing and submitting the business case for PSU changes.	Low	This recommendation has been initiated as of Q2 2017.	IESO provided resources to the PSUP redevelopment team, early in 2017. As part of the current discussions to re-structure the Working Groups (as per the Mid-Term Review Final Report), consideration should be given to the role and responsibilities of the IESO decision-makers, timeliness of feedback provided, and extent to which they are able to represent the IESO.
Process & Systems Upgrades	The current practice of deducting the study incentive from the project incentive is not in line with North American industry best practices as it can discourage participation. Revising the structure will help motivate	<i>Preliminary Process Recommendation:</i> Restructure the engineering study funding mechanism so that it requires customer co-funding followed by a full or partial refund once the study converts into a	Low	The engineering study funding mechanism was included in the program re-designed business case which was submitted to the	Agreed. This was built into the PSUP redesign submitted to IESO for Approval in Q4 2017 to re-define the study as an enabling

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	study conversions into projects.	project, and eliminate the clawback mechanism.		IESO for review in Q4 2017.	tool, rather than a penalty against the incentive.
Process & Systems Upgrades	Many peer programs offer variable incentive structures and other financial incentives/disincentives to encourage participants to meet their expected targets.	<p><i>Preliminary Process Recommendation:</i> Survey the incentive structures of other successful related conservation programs for comparison to PSU's current incentive structure.</p> <ul style="list-style-type: none"> ▶ Specific areas of research could include: <ul style="list-style-type: none"> ○ Financial incentives/disincentives used to encourage compliance with targets, including caps and/or thresholds in use ○ Comparison of other incentive schemes with PSU and how they achieve their desired effects ○ Opportunities and avoidance mechanisms for incentive "gaming" 	Medium	An incentive restructuring was included in the program re-design business case which was submitted to the IESO for review in Q4 2017.	<p>Agreed. The following elements have been incorporated into the PSUP redesign submitted to IESO Q4 2017:</p> <p>Moving towards a performance based incentive to encourage participants to over-perform on savings estimates through commissioning and fine tuning as part of Year 1 Measurement & Verification. Additional incentives of up to 20% of the estimated incentive are being proposed. Similarly, under-performing projects will be incented proportionately to the percentage of savings generated, correcting the 100% payment for 80% of estimated savings achieved.</p>
Process & Systems Upgrades	The length and complexity of the contract document is a commonly cited barrier in program participation by LDCs and participants, as it often requires a legal advisor to read and can delay the project. No other program that the evaluators are aware of have agreements that long. Provided that the program's requirements are still met, there is no reason why the contract document should not be made more palatable.	<i>Preliminary Process Recommendation:</i> Simplify and shorten the participation agreement text.	Medium	A streamlined participant agreement and approval process was included in the program re-design business case submitted to the IESO for review in Q4 2017.	<p>Agreed. The PSUP redesign submitted to the IESO Q4 2017 included streamlining the contractual documents (Program Rules and Participant Agreement).</p> <p>Additional focus on reduced contract terms, and reduced M&V requirements are proposed under the redesign.</p>
Process & Systems Upgrades	BMG-specific application materials will ensure that the TR has all data necessary and that the customer is also aware of all data and process needs for such a system upfront.	<i>Preliminary Process Recommendation:</i> Develop BMG-specific application materials and agreement to improve understanding and data quality.	Low	A streamlined participant agreement and approval process was included in the program re-design business case submitted to the IESO for review in Q4 2017.	Agreed. The PSUP redesign is not looking at a separate agreement for BMG. Instead, a section specific to BMG projects has been proposed.

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<p>Process & Systems Upgrades</p>	<p>Customers that more clearly understand the application requirements will be less likely to submit poor quality ones, and the LDCs will also be in a better position to work with a customer to turn in an application that has a higher chance of being approved quickly. The guidance should also be used to clarify engineering study requirements, since much of the key data is from the study.</p>	<p><i>Preliminary Process Recommendation:</i> Develop additional educational materials for customers to clarify program requirements and data/application needs, including checklists of required application/M&V information.</p>	<p>Low</p>	<p>The Business Working Group should engage the Marketing and Sales Working Group to assist in the development of marketing and education collateral to align with the program re-design.</p>	<p>Agreed. Journey Mapping and LDC experience have highlighted the need for the following; a Program Guide for LDCs, new marketing literature, process flows for participants, and potential improvements to the provincial website to eliminate confusion.</p> <p>A proposed redesign of the Engineering Study Scope of Work is also included in the PSUP redesign. The intent is to provide less rigid requirements and focus on scalable study requirements which allow for flexibility between customer segments and size.</p>
<p>Energy Manager Non-Incented Measures</p>	<p>Energy Manager program tracking data is somewhat less reliable than the data tracked for the other Industrial programs</p>	<p>Remind Energy Managers and technical reviewers that participant cost information is important for program tracking and evaluation purposes, and should be entered into tracking databases and supported with invoices and other documentation.</p>	<p>Low</p>	<p>The IESO will work with the Technical Reviewer to clarify what data points are required and to ensure those requirements are being communicated to Energy Managers and their LDCs.</p> <p>Expanding the data requirements can be further explored with the Business Working Group to ensure that an appropriate balance is struck between the added value of tracking new data and the additional administrative burden placed on program participants.</p>	<p>The Business Working Group will consider the value of data collected, and the burden placed on Energy Managers and, more importantly, customers.</p>
		<p>Require that all key tracking parameters (in-service date, project cost, kWh, kW, and EUL) are completed for all measures and that zero values actually reflect the absence of participant cost or</p>	<p>Low</p>	<p>The IESO will work with the Technical Reviewer to clarify what data points are required for tracking and reporting period</p>	<p>The Business Working Group will consider the value of data collected, and the burden placed on Energy Managers and, more</p>

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		peak demand savings.		<p>and ensure the requirements are being communicated to Energy Managers.</p> <p>Expanding the data requirements can be further explored with the Business Working Group to ensure that an appropriate balance is struck between the added value of the new data and the additional administrative burden placed on program participants.</p>	<p>importantly, customers.</p> <p>Specifically, Energy Managers may not be familiar with EULs. Responsibility of this data point should be discussion with the Business Working Group and IESO.</p>
Energy Manager Non-Incented Measures	Minor improvements to the Energy Manager tracking system and databases could increase transparency into program performance and facilitate evaluation.	Require the Technical Reviewer to calculate and report annualized savings for all projects. Observed savings for a subset of a year can be additionally recorded if they are required to track the performance for the Energy Manager in that year.	Low	The IESO provided the Technical Reviewer instruction on the program template. Changes were made to add a unique ID to the non-incentive savings project associated with the energy managers and to make the Unique ID consistent between savings and incentives.	Further exploration of this recommendation may be required, weighing the benefit against commercial reasonability.
Energy Manager Non-Incented Measures	The technical review process did not always improve the accuracy of savings estimates.	When the technical reviewer and Energy Manager analyses produce divergent savings estimates for large projects, involve the evaluation team to resolve methodological differences.	Low	The Technical Reviewer is the independent authority within the program. Disputes should be managed between the Energy Manager, the Technical Reviewer, and the applicable LDC.	<p>Agree with IESO comments. Solutions for divergent savings should involve the Technical Reviewer, LDC, and Energy Manager to ensure that all parties are in agreement with the reported information in EM Quarterly Reports.</p> <p>The Technical Reviewer may also discuss the Energy Manager's need with the LDC, which may be able to offer additional technical guidance.</p>

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Energy Manager Non-Incented Measures	Energy Manager savings estimates included a mix of prospective savings estimates developed prior to project implementation and retrospective analyses developed using measurements or trend data following the upgrade	Discourage the acceptance of prospective savings calculations and encourage Energy Managers to update their savings calculations using actual observations of measure performance after the upgrade is complete.	Low	The Technical Reviewer should not be accepting prospective savings calculations and should only be reporting verified savings to the Evaluator. The IESO will follow up with the Technical Reviewer to ensure this process is followed.	Agree with IESO comments. Training of Technical Reviewer may be required.
Energy Manager Non-Incented Measures	The second-largest non-incented project of 2016 did not receive a technical review and the Energy Manager was unable to provide supporting calculations in time for inclusion in the evaluation.	Establish a threshold above which a savings claim automatically triggers a technical review (perhaps 1,000 MWh). Similarly, require Energy Managers to submit supporting documentation to CLEAResult for all claims above 50-100 MWh/year even if the project is not selected for technical review so that supporting documentation is collected in a central repository earlier in the process	Low	The IESO will investigate the data to determine the variation in project sizes and discuss what threshold, if any, would be appropriate with the Technical Reviewer and Business Working Group.	Agree. Further Energy Manager training, and reminder of reporting requirements, may be required.
Energy Manager Non-Incented Measures	Many of the non-incented Energy Manager projects relied on IPMVP Option C – whole facility billing analysis. These analyses used a variety of different tools and were executed with varying levels of technical expertise.	Consider a billing analysis training session, or development of a standardized MS Excel tool for use by EMs and technical reviewers.	Low	A service provider was contracted in 2017 to deliver this training program.	Consider promoting the merits of the CMVP designation to Energy Manager requirements, to ensure knowledge of IPMVP, and continue the RETScreen training, and facility baseline and modeling being assisted/conducted by the Technical Reviewer.