

Fred James

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March 26, 2019

Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Fiscal 2020 to Fiscal 2021 Revenue Requirements Application (Application)
Supplemental Information**

BC Hydro writes to provide a copy of both the Summary Audit Report – Demand Side Management Audit (Q1 F2017) (Attachment 1) and the Management Audit Report – Demand Side Management Audit (Q1 F2017) (Attachment 2). This internal audit was referenced in Chapter 10, section 10.6.3 and Appendix HH, section 2.2 of the Application.

As discussed in the Application, the objective of this internal audit was to assess whether effective processes and controls were in place for our Demand Side Management activities and programs. The audit concluded that processes and controls are in place for Demand Side Management planning, program development, implementation and evaluation.

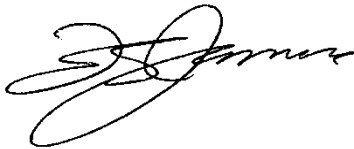
Internal Audit Reports are a culmination of a combined effort between BC Hydro internal audit staff and retained external subject matter experts, in cases where such expertise is retained.

For this internal audit, BC Hydro's Audit Services Department engaged a subject matter expert from GDS Canada Consulting Ltd. with over 40 years of experience including performing impact, process and market effects evaluations, and managing energy efficiency programs. The subject matter expert was also a Certified Measurement and Verification Professional.

March 26, 2019
Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Fiscal 2020 to Fiscal 2021 Revenue Requirements Application (Application)
Supplemental Information

For further information, please contact Chris Sandve at 604-974-4641 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Fred James
Chief Regulatory Officer

cs/rh

Enclosure

**Fiscal 2020 to Fiscal 2021
Revenue Requirements Report**

Attachment 1

**Summary Audit Report
Demand Side Management Audit
(Q1 F2017)**



SUMMARY AUDIT REPORT

CORPORATE AFFAIRS

DEMAND SIDE MANAGEMENT AUDIT

Q1 F2017

AUGUST 10, 2016

AU1703CA

Prepared By:

GDS Canada Consulting Ltd.

J. Coles-Nash

I. Portnova

K. Chan


P. Howard

A. Lagnado

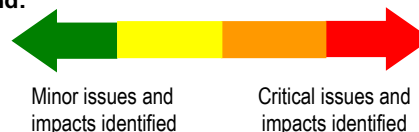
Distributed To:	S. Hobson	C. Richards
	C. Yaremko	
	J. Fraser	
	J. McDonald	
	Audit & Finance Committee	

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Demand Side Management Audit F2017

AUDIT TYPE	AUDIT RATING
RISK BASED	

Legend:



Audit Objective

- ❑ Assess whether effective processes and controls are in place over Demand Side Management activities and programs.
- ❑ The audit team was supplemented by a subject expert from GDS Canada Consulting Ltd. The expert is a certified measurement and verification professional with 40 years of experience managing energy efficiency programs.
- ❑ This audit was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing.

Background

- ❑ BC Hydro strives to explore the full potential to develop and foster a conservation culture in British Columbia. The province's Clean Energy Act requires the utility to reduce by at least 66% of the expected increase to electricity demand through conservation by 2020.
- ❑ Conservation & Energy Management, previously known as Power Smart, is responsible for leading conservation and energy efficiency efforts through a Demand Side Management Plan for residential, industrial, and commercial customers.
 - ◆ Since 2007, BC Hydro and its customers have saved approximately 5,000 gigawatt hours per year of energy, enough to power approximately 480,000 homes a year.
 - ◆ Programs include financial incentives to customers, structuring conservation rates, and providing input into building codes and product standards.
- ❑ To serve customers, the Conservation & Energy Management Group has four areas of focus:
 - ◆ Strategic Planning – engaging with internal and external stakeholders to perform long term planning and liaising with the British Columbia Utilities Commission.
 - ◆ Marketing – developing and marketing of programs for customers.
 - ◆ Operations Engineering – implementing programs by accepting customer applications, reviewing customer projects and approving incentive payments.
 - ◆ Evaluation, Measurement and Verification – performing program and project evaluations, and quantifying energy savings resulting from the projects.
- ❑ In June 2015, a process was initiated to modernize and improve the cost-effectiveness of Demand Side Management programs to leverage new technologies and respond to customer expectations and system needs.
 - ◆ As a result of this review and given the reduction in the rate of growth of demand for electricity in the short term, a range of options was developed to update the Demand Side Management Plan. The option selected reduces spending to an average of \$125 million per year from F2017 to F2019 while still meeting Clean Energy Act targets.

Demand Side Management Audit F2017

Key Findings

- ❑ Processes and controls are in place for Demand Side Management planning, program development, implementation and evaluation. Key areas for improvement include simplifying the planning process, documenting assumptions and processes, and developing a central assumptions database.

Governance

- ❑ BC Hydro is compliant with key British Columbia government energy efficiency laws, regulations and policies including the Clean Energy Act and the Utilities Commission Act - Demand-Side Measures Regulation.
- ❑ There is strong governance of Demand Side Management programs including an oversight committee and reporting to the British Columbia Utilities Commission, the Board and executive team. The Conservation & Energy Management Group is highly experienced with clear roles, responsibilities and accountabilities.
- ❑ The 20 year Demand Side Management Plan is developed through an integrated effort from several business groups. However, there is duplication of effort around developing the Plan, program business cases and marketing plans. Management is looking at streamlining this process.

Program Development

- ❑ Comprehensive and clear business cases are developed to support the programs however key assumptions are not fully documented or centrally filed.
 - ◆ Program assumptions define the terms of the program and are key inputs to the overall Demand Side Management Plan.
- ❑ Programs are managed to be cost effective and meet business case objectives. Cost effective tests are performed to ensure benefits are greater than the cost of the investment.

Program Implementation

- ❑ Program implementation is effective with well established processes and spending which aligns with the business case. Opportunities exist to strengthen the invoice review process.
 - ◆ Program applications are approved and credit worthiness verified before a customer project can proceed.
 - ◆ Authorized payments are not released until project completion is verified. For two programs, customers receiving incentives are not required to submit invoice copies unless requested by the engineers or selected for random sampling.
 - ◆ Program spend is continuously monitored by Finance and Conservation & Energy Management.

Program Evaluation

- ❑ Evaluations of overall programs and the measurement and verification of individual projects are effective. Standard industry protocols are followed for all work. Energy savings are verified with the repayment of incentives when required.
- ❑ Evaluation, and measurement and verification work is performed in a reasonable time period based on complexity and duration of data collection.

Demand Side Management Audit F2017

- ❑ Energy savings are manually tracked however, an initiative is underway to automate the process. To ensure continuous improvement, action plans are developed to address findings from program evaluations.

Management Comments and Action Plans

- ❑ Management agrees with the recommendations in the audit report and has agreed to take action to address the recommendations by September 30, 2017.

**Fiscal 2020 to Fiscal 2021
Revenue Requirements Report**

Attachment 2

**Management Audit Report
Demand Side Management Audit
(Q1 2017)**

MANAGEMENT AUDIT REPORT

CORPORATE AFFAIRS

DEMAND SIDE MANAGEMENT AUDIT

Q1 F2017

AUGUST 10, 2016

AU1703CA

Prepared By:

GDS Canada Consulting Ltd.

J. Coles-Nash

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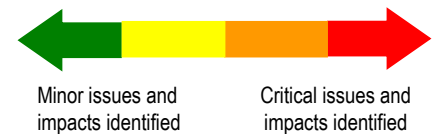
Distributed To:	D. Warner	C. Richards
	S. Hobson	
	C. Yaremko	
	J. Fraser	
	J. McDonald	

Demand Side Management Audit F2017

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Legend:



Demand Side Management F2017

1a. Executive Summary

- ❑ For each audit, Audit Services provides two separate Audit Reports. The first report is a Summary Audit Report prepared for Senior Management and the Audit & Finance Committee (AFC) of the Board. This Management Audit Report provides additional information and related audit recommendations for management purposes and will not be presented to the AFC.
- ❑ Management should also refer to the Summary Audit Report for high level conclusions and findings.

1b. Background

- ❑ BC Hydro strives to explore the full potential to develop and foster a conservation culture in British Columbia. The province's Clean Energy Act requires the utility to reduce by at least 66% of the expected increase to electricity demand through conservation by 2020.
- ❑ Conservation & Energy Management, previously known as Power Smart, is responsible for leading conservation and energy efficiency efforts through a Demand Side Management Plan for residential, industrial, and commercial customers.
 - ◆ Since 2007, BC Hydro and its customers have saved approximately 5,000 gigawatts hour per year of energy, enough to power approximately 480,000 homes a year.
 - ◆ Programs include financial incentives to customers, structuring conservation rates, and providing input into building codes and product standards.
- ❑ To serve customers, the Conservation & Energy Management Group has four areas of focus:
 - ◆ Strategic Planning – engaging with internal and external stakeholders to perform long term planning and liaising with the British Columbia Utilities Commission.
 - ◆ Marketing – developing and marketing of programs for customers.
 - ◆ Operations Engineering – implementing programs by accepting customer applications, reviewing customer projects and approving incentive payments.
 - ◆ Evaluation, Measurement and Verification – performing program and project evaluations, and quantifying energy savings resulting from the projects.
- ❑ In June 2015, a process was initiated to modernize and improve the cost-effectiveness of Demand Side Management programs to leverage new technologies and respond to customer expectations and system needs.
 - ◆ As a result of this review and given the reduction in the rate of growth of demand for electricity in the short term, a range of options was developed to update the Demand Side Management Plan. The option selected reduces spending to an average of \$125 million per year from F2017 to F2019 while still meeting Clean Energy Act targets.

Demand Side Management Audit F2017

1c. Audit Objective and Scope

Objective

- ☐ To assess whether effective processes and controls are in place over Demand Side Management (DSM) activities and programs.

Scope

- ☐ Governance – strategic planning, targets, roles and responsibilities, monitoring and reporting, regulatory environment
- ☐ Program Development – business case objectives and assumptions, marketing, program level management
- ☐ Program Implementation – customer applications, potential energy savings, incentive payments and operation costs
- ☐ Program Evaluation – program evaluations, energy savings verification, alignment with industry practices

Subject Matter Expert

- ☐ The audit team engaged a subject matter expert from GDS Canada Consulting Ltd. with over 40 years of experience including performing impact, process and market effects evaluations, and managing energy efficiency programs. The subject matter expert is also a Certified Measurement and Verification Professional.

Criteria

- ☐ Criteria included BC Hydro policies, standards and procedures, and industry practices and protocols such as International Performance Measurement & Verification Protocol and the U.S. Department of Energy Uniform Methods Project Protocols.
- ☐ This audit was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing.

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1d. Findings, Recommendations and Management Action Plans

Summary

Processes and controls are in place for DSM planning, program development, implementation and evaluation. Key areas for improvement include simplifying the planning process, documentation of assumptions and processes and developing a central assumptions database.

Governance

Overall Conclusion

The overall DSM program is aligned with corporate and regulatory policies. Oversight is in place with clear roles and responsibilities, monitoring, and reporting. The planning process is inefficient due to multiple planning streams and limited documentation on how plans are integrated.

Key Conclusions and Findings

- ❑ BC Hydro is compliant with key British Columbia energy efficiency laws, regulations and policies. These include the Clean Energy Act, and the Utilities Commission Act - Demand-Side Measures Regulation.
 - ◆ The Clean Energy Act requires BC Hydro to conserve energy and reduce the expected increase in electricity demand by at least 66% by the year 2020. Based on savings achieved and projections of DSM plan energy savings over the next five years, BC Hydro is set to significantly exceed this target.
 - ◆ With demand slowing in recent years due to economic conditions in the oil, natural gas, and mining sectors, the target for gigawatt savings from DSM programs has also declined.
 - ◆ Testing also confirmed compliance with the Demand-Side Measures Regulation requiring programs to be cost effective.
- ❑ Strong oversight exists over the DSM programs. The Conservation & Energy Management group has responsibility for the program with input from both internal and external stakeholders. A number of committees oversee progress and evaluation of the implemented programs.
 - ◆ A Management Steering Committee with cross functional representatives oversees programs from inception through to post implementation.
- ❑ Conservation & Energy Management group is highly experienced with clear roles, responsibilities and accountabilities. The team comprises of engineers, strategic planners, and a seasoned leadership team.
 - ◆ While a RACI matrix is not in place, interviews indicate roles are clear. Roles and responsibilities are also not documented for stakeholders such as Energy Planning, Rates & Regulatory, Corporate Finance and Key Account Management.
- ❑ Internal and external monitoring and reporting is effective including reporting to the British Columbia Utilities Commission (BCUC), BC Hydro Board (Board) and executive team.

Demand Side Management Audit F2017

- ◆ Reporting requirements to the BCUC are being met. These include the Annual Report on DSM Activities which includes cost effectiveness and energy savings information, the Annual Report on DSM Evaluation Summary and annual expenditures.
- ◆ The Board receives quarterly reports, and the executive and leadership team receives monthly updates.
 - Program completion reports are submitted to the Management Steering Committee within three months of program completion. Audit review of two programs confirmed the program completion reports included all the required elements.

Demand Side Management Plan

The Demand Side Management Plan reflects the long term expected energy savings and costs from delivering residential, commercial and industrial programs that promote conservation. Detailed business cases are developed for each program including program assumptions. The assumptions are key inputs to the overall Demand Side Management Plan. Marketing plans based on the business cases are created for program implementation.

- Significant integrated effort goes in to develop the 20 year DSM Plan. Short and long term planning is performed by a strategic planning group, with input from various groups, and trade-offs between resources from independent power producers and DSM activities are analyzed.
 - ◆ The recent reduction in the load forecast required an integrated effort between several groups to update the DSM Plan.
- However, the process to update the DSM Plan in the system is not formalized. Large volumes of program assumptions and other information are entered into software to generate the 20 year DSM Plan. While employees updating the Plan are experienced and processes appear to be in place, Audit Services was unable to verify steps performed.
 - ◆ The 20 year DSM Plan is updated annually and whenever there are significant changes to plan inputs such as the load forecast. Checklists guide the work however are not formally completed or reviewed.
 - ◆ BC Hydro is at risk of losing valuable institutional knowledge should veteran employees no longer be involved.
- The DSM Plan, program business cases and marketing plans are not well aligned from a timing perspective and results in duplication of effort as well as challenges in reporting. This impacts plan flexibility and makes it difficult to define the DSM Plan. A WorkSmart initiative is underway to improve the planning process.
 - ◆ As a result of the timing differences there is no single, high level document or report that provides the description of all of the programs and budgets. The DSM Plan components are located in multiple documents and worksheets.
 - The DSM Plan consists of three spreadsheets showing energy savings, expenditures and cost effectiveness ratios. The spreadsheets are a high level view of information from the software used to generate the cost effectiveness.
 - The narrative explaining the DSM Plan is in different places including several chapters of the Revenue Rate Application, budget summaries and excerpts from the Integrated Resource Plan

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- ◆ Business cases are prepared for new and existing programs throughout the year. The time frame of the business cases may not coincide with the DSM plan or cover totally different time periods. Separate marketing plans are developed to guide implementation.
- The SME suggested that BC Hydro move towards a single, coordinated annual DSM planning process. A detailed DSM plan covering all programs would be prepared once a year, with a three-year planning horizon.
- Information required for the development of the long term load forecast and revenue forecast projections beyond the three years should be less detailed.

	Recommendations	Management Action Plans
	Governance	
1	□ Implement a RACI matrix including all stakeholders.	□ A well-defined RACI matrix will be completed by September 30, 2017.
2	□ Develop a document that describes what the DSM Plan entails, and how it is developed and updated. □ Improve retention of supporting documentation for changes to the DSM Plan.	□ A document will be prepared that describes what the DSM Plan entails and how it is developed and updated by December 31, 2016. □ All supporting documentation for the DSM plan update will be controlled, and records of updates will be stored. Target for completion is December 31, 2016.
3	□ Act on recommendations from the WorkSmart Initiative related to simplifying the planning process and eliminating duplication of effort.	□ An implementation Plan has been developed as an output of the WorkSmart initiative and approval from the Executive will be sought by September 30, 2016.

Program Development

Overall Conclusion

Program development and management is effective however the majority of business cases have limited use after approval and underlying assumptions are not fully documented.

Key Conclusions and Findings

- Programs are managed to be cost effective and meet business case objectives. Various cost effectiveness tests are run for each program to ensure that the initiatives benefits are greater than the cost of the investment.
 - ◆ The subject matter expert confirmed the calculations follow DSM regulations and BC Hydro guidelines, and verified that cost effectiveness ratios matched information reported to the BCUC.
 - ◆ Software is used to generate the cost effectiveness data and the accuracy was last verified by Corporate Finance in 2006. An Excel model was created to mimic the cost effectiveness formula and tests run in parallel to demonstrate the software accuracy.

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- A copy of the formula used during the analysis was not available during the audit, however management and a senior technical advisor independently confirmed the cost effectiveness formula has not changed since 2006.

Business Cases

- ❑ Comprehensive and clear program business cases are developed but may be too detailed.
 - ◆ The four business cases reviewed contained all key elements and were consistent with program best practices in other provinces and the United States. The subject matter expert identified that as business cases have limited use after funding is approved, there is an opportunity to reduce the level of detail required.
 - ◆ Authorizations for program spending were approved according to BC Hydro's Financial Approval Authority Procedure, except for one program. An executive had approved \$75.8M a month prior to receiving delegation from the Board to approve \$71M and the difference related to a project reserve.
- ❑ Key assumptions for each DSM business case are not fully documented. Assumptions included individual annual kWh and kW savings, and energy efficiency measure costs. Testing identified measure assumptions are based on professional judgement and not always documented.
 - ◆ Approximately 40% of supporting documentation was not provided for three commercial and industrial energy efficiency programs tested. The majority of documentation was available to support the residential retail program tested.
 - Where documentation was provided, the assumptions were credible and based upon sound engineering and economic data or sound economic forecasts.
 - ◆ For measures where full documentation was not available, savings information was provided. Engineers indicated savings information is reviewed and adjusted but not documented. Factors considered in adjusting the savings information include:
 - Savings from projects during the most recent and prior program year, discussions with key account managers, feedback provided by plant managers and consideration of current economic conditions.
- ❑ An electronic technical reference manual is not in place to store all measures in one data base. A technical reference manual centrally stores program assumptions allowing for standardized calculations of energy savings. Currently documentation of assumptions is in numerous Excel files and could not be accessed efficiently.
- ❑ The majority of reporting requirements are being followed. Business cases and the associated programs are monitored by the Management Steering Committee through a four gate governance process. For completed programs over \$50 million, management is required to submit a Project Completion Evaluation Report to the Board six months after program completion.
 - ◆ Testing identified that for one program there was no evidence that the business case had been approved by some Committee members and another program had not provided updates to the Committee since program inception in 2014.
 - ◆ A Project Completion Evaluation Report was not prepared for the one project completed since 2008 that exceeded \$50 million. Management did prepare a completion report with similar content to a Project Completion Evaluation Report but this was not submitted to the Board.

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	Recommendations	Management Action Plans
	Program Development	
4	<input type="checkbox"/> Consider aligning business cases with simplified annual DSM planning process to address timing differences.	<input type="checkbox"/> This is a key recommendation of the WorkSmart initiative and will be implemented to appropriately address this issue. WorkSmart initiative approval from the Executive will be sought by September 30, 2017.
5	<input type="checkbox"/> Require business case assumptions to be fully documented. <input type="checkbox"/> Consider developing a centralized electronic database (technical reference manual) to record assumptions.	<input type="checkbox"/> The need for a centralized electronic database for assumptions was identified while developing the “future state” in the Assumptions Process review performed earlier in 2014. C&EM will complete identification phase by March 31, 2017.
6	<input type="checkbox"/> Review the process to ensure that Management Steering Committee approval and reporting requirements are met for all projects.	<input type="checkbox"/> A process review initiative is currently underway that will ensure this issue is addressed. Target for completion is March 31, 2017.
7	<input type="checkbox"/> Confirm whether a Project Completion Evaluation Report will be prepared for completed programs exceeding \$50 million.	<input type="checkbox"/> Project Completion Evaluation Report preparation is an output of the WorkSmart initiative. WorkSmart initiative approval from the Executive will be sought by end of September 30, 2016.

Program Implementation

Overall Conclusion

Program implementation is effective with well established processes and spending aligns with the business case. However while payments are reviewed and approved, some customers receiving incentives are not required to submit invoice copies unless requested.

Audit reviewed four programs. Forty samples were selected for end to end testing of commercial, industrial, and residential program applications and other program expenditures.

Key Conclusions and Findings

Commercial and Industrial Programs

- ☐ Controls are in place to approve program applications and verify credit worthiness before projects can proceed. Applications can be for an energy savings incentive or subsidy for an energy efficiency study or retaining an energy manager.
 - ◆ Engineering reviews potential energy savings and energy efficiency study proposals. Incentive calculations are independently approved before projects can proceed.
 - ◆ Energy managers are retained at customer sites to develop and implement strategic energy management plans. Key Account Managers and Program Managers review potential candidates for energy manager positions.

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- ❑ The Conservation & Energy Management group track key projects and final energy savings using a newly implemented system. Automated controls ensure approvals are in place before projects can proceed. Documentation is easily located including summary reports identifying review and approval activities.
- ❑ Controls exist to ensure payments are not released until the project completion is verified. Submission of invoices is required for most programs. However for two incentive based programs customers are not required to submit invoices. Customers are required to keep all invoices for potential review.
 - ◆ During the post implementation review, invoices may be requested by engineering. Of the 15 incentive payments sampled, engineers requested invoices to support 11 projects, and one project was part of the random invoice sampling process.
 - ◆ The subject matter expert indicated 14 utilities surveyed require customers to submit invoice copies with proof of project completion for all programs.
- ❑ When mandatory submission of invoices is not required, a random invoice sampling process is in place. There is no criteria for sample selection and customers are notified at the start or mid-way through equipment installation that supporting invoices will be required. There could be potential manipulation knowing invoices will not be selected for review.
 - ◆ Each month, 20% of new applications are randomly selected for invoice review. Of the selected projects, participants are required to submit all related invoices.

Residential Programs

- ❑ Incentives to retailers are paid after Program Managers review retailer summary reports for reasonableness. The review is based on historical sales and knowledge of products and retailers. High or abnormal sales are investigated to ensure discounts are only claimed for qualified products and during the promotional period.
- ❑ Appliance rebates paid to customers are supported, reviewed, and approved. Rebate incentives are supported by applications and receipt of purchase. Applications are reviewed by Program Administrators to ensure purchases are made for qualified products and within the program timeframe.

Program Spend

- ❑ Program spend is continuously monitored by Finance and Conservation & Energy Management. Finance prepares monthly summaries which are reviewed with Program Managers to monitor actual spend versus the approved budget and compare the percentage of budget spent to the program estimated end date.
 - ◆ The Management Steering Committee reviews the reports to assess if the program should continue, be terminated due to lower than expected participation, or extended due to higher than expected participation.
- ❑ Non-incentive program expenditures are properly authorized, relate to the programs charged and are incurred in the open period of the business cases. Non-incentive payments reviewed include advertising, consultants, contractors, and other non-labour expenditures.

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	Recommendations	Management Action Plans
	Program Implementation	
8	<ul style="list-style-type: none"> ❑ Review the process requiring customers to submit invoice copies with project completion documentation. ❑ Re-visit the invoice sampling methodology. 	<ul style="list-style-type: none"> ❑ The current process will be reviewed and updated to ensure customers are required to submit invoices along with project completion documentation. All related documents such as “Agreements” will be updated for consistency with this requirement. Target for completion is December 31, 2016. ❑ As a consequence of the above revision, all customers will be notified of the requirement to submit invoices. Also, the rationale for sample size for post implementation review for each program/ sector/ end use will be documented. Target for completion is December 31, 2016.

Program Evaluation

Overall Conclusion

Measurement and verification of individual projects and evaluations of overall programs are effective. The energy savings reporting process is manual and an initiative is underway to improve the process.

Measurement and verification (M&V) work is performed for projects with energy savings over a certain threshold. Energy consumption is measured for a period of time after installing equipment to improve energy efficiency. Once complete, the tracking system is updated to reflect actual energy savings which is compared to the engineering estimate. Incentives are adjusted accordingly. Program Evaluations are performed periodically after a program has been completed and based on the annual evaluation work plan.

Key Conclusions and Findings

- ❑ The methodology for evaluation and M&V work follow standard industry protocols including International Performance Measurement and Verification protocols, U.S. Department of Energy Uniform Methods Project Protocols, and U.S. Federal Energy Management Programs.
- ❑ Energy savings are verified through M&V work over a certain threshold with the customer repayment of incentives when required. Sixty three M&V reports were prepared in the last two years to verify energy savings.
 - ◆ Ten projects were selected for review. Testing confirmed that BC Hydro was in the process of requesting repayment when initial incentive payments were too high.
- ❑ An energy savings reporting process is in place however it is highly manual and controls cannot be verified. Management is in the process of simplifying and automating parts of the process including a checklist to document key controls and steps performed.

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- ◆ While no issues were identified for the ten projects reviewed, there is no control to ensure the verified energy savings number aligns with the record in the system. As this number drives the incentive amount, this control would add rigour to the process.
- Evaluation and M&V work is performed in a reasonable time period. Audit Services sampled two evaluation reports and ten M&V reports. Based on the complexity of the projects, the reports were completed in a timely manner.
 - ◆ For evaluations, one-and-a-half to two years after the close of the program period is a considered a reasonable timeframe to complete the research design, sampling, data analysis, and report writing for a comprehensive report with extensive long-term metering.
 - ◆ The subject matter expert identified that while collecting one year of metered information is good practice, it may be excessive for certain measures such as lighting in a commercial office building.
- Continuous improvement processes are in place and are effective. Improvements are identified from evaluation reports. An Evaluation Oversight Committee, including independent members, is responsible for the approval of an annual work plan and subsequent evaluation reports. Approval of the annual evaluation work plan is not formally documented.
 - ◆ A Client Action Plan documents whether evaluation report recommendations have been accepted, the associated action plan, and when work will be completed.
 - ◆ For changes to business case assumptions, the Management Steering Committee approves a memo which is distributed to the Conservation & Energy Management leadership team for dissemination.

	Recommendations	Management Action Plans
	Evaluation, Measurement & Verification	
9	□ Document approval of the annual evaluation work plan.	□ Records of approval of the annual evaluation work plan will be documented starting with the next Evaluation Governance Committee meeting tentatively scheduled for October 2016.
10	□ Consider shorter measurement and verification periods (shorter than one year) for certain measures where appropriate.	□ Completed. The M&V policy has been updated to allow for consideration of shorter measurement and verification periods where appropriate.
11	□ Simplify the energy savings reporting process and implement controls to confirm estimated and actual energy savings.	□ The simplification of energy savings reporting is underway. The initiative will automate the process with appropriate controls. Target for completion is September 30, 2017.
12	□ Complete development of the checklist to document and verify key controls performed in the energy saving reporting process.	□ Completed. The checklist, which is an interim requirement until item 11 above is complete, has been implemented.