

MARKET RESEARCH THEMES

CONSERVATION FIRST FRAMEWORK MID-TERM REVIEW

Prepared for:



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1. INTRODUCTION

The purpose of this document is to map the themes and objectives identified through the Conservation Framework Mid-term Review current state summaries to the market research segments identified in the market research plan (e.g., Industrial Accelerator Program or medium to large commercial customer participants and non-participants). The next steps to this document will be to build out the discussion guides for each segment in preparation for the interview and focus group stages. The Mid-term Review market research plan can be referenced for details of the market research process. For reference, the key findings and next steps associated with each current state summary are outlined in the appendices. It is important to note that this document does not include the second phase of the climate change topic and budgets, targets, and cost-effectiveness topic findings from the Advisory Group meetings or discussion points from the IESO internal audit and standalone Non-Energy Benefits study.

The following topic numbers are used throughout the document to reference each topic:

- Topic 1: Customer and Market Engagement and Satisfaction
- Topic 2: Definition of CDM
- Topic 3: Collaboration
- Topic 4: Governance and Operations
- Topic 5: Planning Integration
- Topic 6: Climate Change
- Topic 7: Budgets, Targets, Cost-Effectiveness

1.1 Interviews

This section provides an outline of the themes and objectives associated with each segment to be included within the interview portion of the market research phase of the mid-term review. The interviewees will be Ontario-based senior executives or the appropriate level from their respective organizations.

1.1.1 Customer Interviews – Industrial Accelerator Program

Topic #	Research Objective
1	Gain a better understanding of the Industrial Accelerator Program barriers (and opportunities) and/or reasons for non-participation in the Industrial Accelerator Program.
1	Explore opportunities for improvement with the current framework in the 2018-2020 period for the Industrial Accelerator program from participants.
1	Explore opportunities for future considerations (to ensure a smooth transition to future programs beyond 2020) for the Industrial Accelerator program from participants.
1	Explore customers' satisfaction with the choice and availability of programs. <i>Seek to understand the challenges faced by the customer trying to understand and decide which of the multiple programs to participate in.</i>
1	Understand customer preferences on project-oriented models or something closer to strategic energy management looking at opportunities across the whole business.
2	Understand whether there are further technologies/approaches that should be included as part of the definition of CDM.
4	Investigate whether the views of customers are being captured in the decision-making process - during program design, while making changes to the programs, at the higher level of framework governance.

Topic #	Research Objective
4	Research additional insights from customers to assess the processes that support the Industrial Accelerator Program <u>(including application systems that support the program)</u> .
4	Investigate customer perceptions and feedback on the account management model for the Industrial Accelerator program.
4	Explore ways to better align the process of achieving Ontario's energy conservation with the priorities and processes of Ontario businesses.
4	Explore <u>alternate incentive structures</u> ways to reduce future reliance on incentives for conservation activities.
4	Explore the fit of IESO processes (and incentives) with the customer capital planning cycle.
4	Explore the concept of <u>combining incentives from multiple sources to advance conservation activities stacking/double-dipping</u> . Including the interaction between cap and trade, CCAP, natural gas DSM, and CDM, where applicable. <u>Whether customers in the IAP program should be allowed to double dip (participate in CCAP if they are eligible for cap & trade)</u> .
4	Explore some considerations to think beyond 2020 in the context of governance and operations - achieving's Ontario's electricity conservation goals, by whom/how should savings be delivered in the next framework.
5	Explore Industrial Accelerator customer insights into planning (regional and system) considerations.
6	Explore the impacts and interactions of sustainability (and cap and trade) and energy efficiency.
7	Explore opinions on the adoption of a pay for performance <u>incentive model (whereby customers receive incentives based on reductions in energy use, similar to the Energy Performance Program)</u> .

1.1.2 Customer Interviews – Medium to Large

Topic #	Research Objective
1	Explore customers' satisfaction with the choice and availability of programs (by sector). <i>Seek to understand the challenges faced by the customer trying to understand and decide which of the multiple programs to participate in.</i>
1	Understand customer preferences on project-oriented models or something closer to strategic energy management looking at opportunities across the whole business.
2	Understand whether there are further technologies/approaches that should be included as part of the definition of CDM.
4	Explore what improvements if any could motivate customer senior management to champion conservation, encourage program participation and make it an organizational priority.
4	Explore what improvements if any could motivate customer middle management to champion conservation and encourage program participation in their respective organizations.
4	<u>Explore alternate incentive structures for conservation activities</u> Explore ways to reduce future reliance on incentives for conservation activities.
4	Investigate whether the views of customers are being captured in the decision-making process - during program design, while making changes to the programs, at the higher level of framework governance.
4	Investigate whether Working Groups adequately facilitate the inclusion and consideration of the views of customers.

Topic #	Research Objective
4	Explore some considerations to think beyond 2020 in the context of governance and operations - achieving's Ontario's electricity conservation goals, by whom/how should savings be delivered in the next framework.
4	Research additional insights from customers to assess the processes that support the Conservation First Framework programs <u>(including application systems that support the program)</u> .
4	Explore ways to better align the process of achieving Ontario's energy conservation with the priorities and processes of Ontario businesses.
4	Explore the fit of IESO processes (and incentives) with the customer capital planning cycle.
4	<u>Explore the concept of combining incentives from multiple sources to advance conservation activities. Including the interaction between cap and trade, CCAP, natural gas DSM, and CDM, where applicable</u> Explore the concept of incentive stacking/double dipping (as it relates to CCAP and gas DSM).
5	Investigate how conservation and other non-wires alternatives solutions (e.g., CDM, DR, DERs) are discussed during the customer engagement process. <i>Explore ways in which customers can be better engaged in the planning process.</i>
6	Explore options for calculating the conservation effects of fuel switching. <i>Further explore the incentive structures – incentives for going above and beyond current codes and standards.</i>
Specific questions for multi-site customers:	
1	Explore opinions of customers with sites in multiple local regions on different incentive levels or program offerings in local areas of the province with an identified need to address growth or aging infrastructure.
1	Understand the implications on participation and satisfaction with delivery agents when program offering is geographically inconsistent.
1	Understand the implications on participation and satisfaction with channel/supply chain - service providers, contractors, distributors when program offering is geographically inconsistent.
3	Understand the value of the outcomes of collaboration to customers. <i>Substantiate whether these efforts are resulting in measurable improvements in customer convenience, especially for customers with multiple sites on different local regions.</i>
3	Explore whether conservation is delivered in a consistent manner for customers with sites in multiple local regions.

1.1.3 LDC Interviews

Topic #	Research Objective
2	Explore better ways to meet customer needs through CDM offerings <i>(CEO interviews)</i> .
2	Explore what should and should not be included under the definition of CDM <i>(CEO interviews)</i> .
4	Explore changes to the account manager model that will encourage the participation of more mid-market customers (lower incentives per project). <i>(LDC account management interview)</i> .
4	Investigate whether processes and accountabilities (related to CDM programs, Conservation First Framework) in place are clear, effective and, efficient. <i>Specifically - the effectiveness of the process to make program changes understanding of working group activities.</i>
4	Explore the values, challenges with, and opportunities for LDC collaboration.

Topic #	Research Objective
4	Explore the value of cross fuel collaboration, the openness to collaborate, challenges and opportunities from the perspective of the LDC.
4	Explore some key considerations with respect to governance and operations beyond 2020. <i>Specifically gather feedback on considerations that will allow for a smooth transition period from current framework to the next framework.</i>
4	Explore ways to align CFF programs delivered by the IESO vs LDCs (or delivery of the same program by multiple LDCs).
4	Explore ways to align incentive programs (e.g., funding from IESO, NRCan, MOECC, other sources of government funding) to identify efficiencies and resolve any competing sources for funding (CDM vs renewables).
4	<u>Explore the concept of combining incentives from multiple sources to advance conservation activities. Including the interaction between cap and trade, CCAP, natural gas DSM, and CDM, where applicable</u> Explore the concept of incentive stacking/double-dipping.
5	Understand how CDM programs and the Conservation First framework fit into the regional planning process. <i>Investigate whether LDCs consider CDM during regional planning.</i>
5	Explore ways in which CDM activities can be designed to provide further value (and address barriers) to assess regional needs especially in the context of approach, performance metrics, measurement and governance.
6	Investigate opportunities to integrate climate policy and plans with energy efficiency programs, what the integration could look like, and what structures could support this integration.
7	Investigate whether performance incentives are aiding LDCs in meeting targets, efficiently delivering programs, driving innovation to encourage more/broader participation in CDM in Ontario.
7	Explore the need (and reasons for/against) for a target exchange mechanism that is facilitated and overseen by the IESO.
7	Explore opportunities and barriers associated with the pay for performance <u>funding model (whereby LDCs are funded based on an established \$/kWh rate at the program level).</u>
7	Explore incentive structures for electric vehicles that contribute to energy efficiency and peak savings targets.

1.1.4 Associations

Themes and- objectives will be drawn from the other customer interviews with specific questions targeted at the association. For example, an objective for small business association interviews will be: further investigation into meaningful gaps in both programming and framework e.g. are small business and residential programs sufficient to reach potential and meet customer needs. APS indicates available energy efficiency opportunity in the residential sector with possible limitations in the short term for business sectors.

1.1.5 Other Groups

Themes and objectives will be drawn from the other customer interviews with specific questions targeted at specific groups such as the financing or insurance sectors.

1.2 Interviews/Focus Groups

This section provides an outline of the themes and objectives associated with each segment to be included within the interview/focus group portion of the market research phase of the mid-term review.

1.2.11.1.6 Channel Participants

Channel participants are entities between the IESO or LDC and customer that may or may not be directly involved with the programs, for example, consultants, contractors, manufacturers, retailers etc.

Topic #	Research Objective
1	Understand the value of the outcomes of collaboration to channel participants. Substantiate whether these efforts are resulting in measurable improvements to delivery cost efficiencies and customer convenience.
1	Understand the challenges for channel participants serving customers in multiple distribution territories and multiple sites.
1	Explore opinions of channel participants on demand targets or GHG targets, especially since participants understand customers from the whole building perspective and not just electricity.
2	Investigate whether customers are asking for additional technologies that are not supported by the current definition of CDM.
4	Understand the barriers that affect the engagement of channel participants with conservation programs. <i>Specifically explore incentive models that might encourage contracts to become more engaged (advocates for) with conservation programs.</i>
4	Explore how third parties can be better leveraged to deliver energy conservation savings in Ontario.
4	Investigate whether the views of channel participants are adequately captured and reflected in the decision making during program design, while making changes to the programs and at the higher level of framework governance.
4	Investigate whether Working Groups adequately facilitate the inclusion and facilitation of the views of channel participants.
4	Explore some considerations to think beyond 2020 in the context of governance and operations - achieving's Ontario's electricity conservation goals, by whom/how should savings be delivered in the next framework.
4	Explore options for calculating the conservation effects of fuel switching. <i>Further explore the incentive structures – incentives for going above and beyond current codes and standards.</i>
4	<u>Explore the concept of combining incentives from multiple sources to advance conservation activities. Including the interaction between cap and trade, CCAP, natural gas DSM, and CDM, where applicable</u> Explore the concept of incentive stacking/double-dipping.
6	Explore incentive structures for electric vehicles that contribute to energy efficiency and peak savings targets.
7	<u>Explore alternate incentive structures for conservation activities.</u> Explore ways to reduce future reliance on incentives for conservation activities.
7	<u>Explore opinions on the adoption of a pay for performance incentive model (whereby customers receive incentives based on reductions in energy use, similar to the Energy Performance Program).</u> Explore opportunities and barriers associated with the pay for performance model.

4.31.2 Workshops

The sections below outline initial objectives for the workshops, however, much of the content will come from the findings from the market research phase. IESO workshops are anticipated to address most of the themes and objectives highlighted within this document. The workshops will be used to gauge different stakeholder reactions to potential opportunities to modify the framework.

4.3.11.2.1 IESO/OEB

Topic #	Research Objective
3	Explore what can be done to support collaboration across natural gas and electric utilities to better deliver CDM and DSM to customers.
4	<u>Explore the concept of combining incentives from multiple sources to advance conservation activities. Including the interaction between cap and trade, CCAP, natural gas DSM, and CDM, where applicable</u> Explore the concept of incentive stacking/double dipping. Whether customers in the IAP program should be allowed to double dip (participate in CCAP if they are eligible for cap & trade), interactions between CCAP and CDM programs.
5	Explore opportunities for further integration of CDM solutions in the IRRP development Process. <i>Explore any barriers to CDM integration that might exist.</i>
5	Understand the implications of aligning metrics between CDM and planning and investigate the desire to do this.
5	Investigate how Local Advisory Committee feedback is integrated into regional planning.
5	How can CDM activities be designed to provide further value (and address barriers) to assess regional needs especially in the context of approach, performance metrics, measurement and governance?
5	Seek to understand OEB perspective on CDM as part of the distribution planning and implications on regulatory matters.
3	Explore structural changes that can be addressed in the current or future frameworks beyond 2020- specifically structural changes that will remove barriers to collaboration (LDC and Gas collaboration separately) in the context of realization of advantages of scale.

4.3.21.2.2 LDCs/Gas Utilities

Topic #	Research Objective
LDCs and Gas Utilities:	
3	Understand barriers to LDC collaboration and cross-fuel collaboration.
3	Explore how these barriers can be addressed or removed.
3	Explore structural changes that can be addressed in the current or future frameworks beyond 2020- specifically structural changes that will remove barriers to collaboration (LDC and Gas collaboration separately) in the context of realization of advantages of scale.
LDCs only:	
4	Identify and refine which processes that support the Conservation First Framework are working well and which ones need to be improved.
4	PLACEHOLDER: Opportunity to test out some of the recommendations from the IESO internal audit and EM&V reports before implementation.

Topic #	Research Objective
7	Investigate whether allocated targets and budgets are appropriate to achieve framework objectives. <i>Explore potential adjustments if needed.</i>
7	Explore whether joint CDM Plans are an effective method of target re-allocation.
7	Explore the need (and reasons for/against) for a target exchange mechanism that is facilitated and overseen by the IESO.
7	Explore whether the idea of a target exchange "clearing house" be supported. Determine which parties should be eligible to participate in target exchange. Explore other forms of target exchange mechanisms.

4.41.3 Other Methods

4.4.11.3.1 LDCs

The following objectives will be achieved through surveys to LDCs.

Topic #	Research Objective
2	Explore any off-the-books <u>non-IESO funded</u> collaboration undertaken by utilities.
3	Investigate whether expected outcomes of delivery efficiencies (\$/kWh acquisition cost or \$/kWh Levelized <u>U</u> nit Energy cost) been achieved through collaborative activities taken by LDCs to date.
3	Understand the value of the outcomes of collaboration to LDCs. <i>Substantiate whether these efforts are resulting in measurable improvements to delivery cost efficiencies.</i>
3	Explore whether collaboration funding has resulted in ongoing collaboration activities i.e., <i>Collaboration continuing beyond the funding window.</i>
4	Investigate which tools are working well. <i>Explore additional tools and/or changes to existing tools that can better support framework objectives.</i>
4	Explore the satisfaction of LDCs with the information and tools provided to help them choose a funding mechanism. <i>Further explore the benefits and drawbacks of the P4P and Full Cost Recovery models. Investigate whether these funding mechanisms play a role in the customer business models.</i>

APPENDIX A. CUSTOMER AND MARKET ENGAGEMENT AND SATISFACTION

A.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
How do customers view the Save on Energy brand? How can customers' perception of the Save on Energy brand be improved?	- Brand awareness was high as of December 2016 (at 69% of the general residential population surveyed). - Brand trustworthiness as of 2016 continues to be high (at 89% of those surveyed). - Save on Energy Brand Image remains very positive among Ontarians aware of the brand (55% to 81% of Ontarians agree to positive statements about the attributes of Save on Energy).	- Preliminary research provides a good foundation of the pulse of brand awareness and trustworthiness. - Further research on the brand will not be necessary under the Mid-term Review as IESO's tracking studies will continue through to 2020 (Mid-term Review: continue to monitor results of IESO research)
Are programs meeting the needs of the customer? How can the customer experience be improved?	- Retrofit program customer satisfaction scores remain high – scores of 94% in 2014 and 92% in 2016. - Large businesses know what it takes to conserve - 87% state they are at least somewhat knowledgeable about what it takes to reduce electricity consumption - Research is showing strong customer satisfaction metrics for consumer programs over the past three years (Heating & Cooling – 92% and Coupons – 92%, average over 3year period). 76% of Heating & Cooling participants and 76% of Coupon participants were likely to participate in Save on Energy programs the future.	- Preliminary research begins to identify areas of focus for further research (e.g., barriers). - Potential for further investigation into programs not investigated through existing IESO commissioned market research (i.e., all programs with the exception of Retrofit, Coupons, and Heating & Cooling).
Are there any customer or sector specific gaps in the framework?	- There are programs available to all segments (residential, small commercial, large commercial). - CDM plans focus target achievement (energy savings) on business customers. - Small business customers are 5% of anticipated target achievement (energy savings from the small business lighting program and other local/regional programs targeted towards small businesses). - Business customers (not including small business) are anticipated to capture 76% of target achievement (energy savings) as per CDM Plans.	- Preliminary research provides a baseline understanding from a program and general awareness/ attitudes perspective (e.g., when customers think of energy efficiency and Save on Energy, what are they thinking of, how do they obtain program information, etc.). - Potential for further investigation into meaningful gaps in both programming and framework (e.g., are small business and residential programs sufficient to reach potential and meet customer needs).

Question	Preliminary Observations	Key Findings/Next Steps
	The Achievable Potential Study indicates available energy efficiency opportunity in the residential sector with possible limitations in the short-term for the business sectors.	Potential to complete further research into opportunities beyond the business segment.
Is the framework itself creating challenges for the customer or market participants who could support CDM/DSM?	- There appears to be increased engagement in the business sector through energy managers, channel, and multi-site customers (82% of large companies in 2015 reported to have paid attention to managing their electricity annually or more, which is up 5% from 2014). 46% of large customers hear about business programs from channel and supply chain (contractors and distributors).	- Preliminary research provides a baseline understanding of select program barriers and attitudes (e.g., decision-makers thoughts about managing energy use). - Potential to investigate any challenges and satisfaction among market participants serving customers with properties in multiple territories. - Seek to understand Industrial Accelerator Program non-participant barriers and/or reasons for non-participation in the Industrial Accelerator Program.

A.2 Follow-up Items for Market Research

Based on the preliminary assessment of the current state of customer and market engagement and satisfaction, the following areas will be considered in the market research phase:

- Determine how collaboration is impacting customer satisfaction.
- Investigate customers' satisfaction with the choice and availability of programs (by sector).
- Seek to understand Industrial Accelerator Program non-participant barriers and/or reasons for non-participation as well as Industrial Accelerator Program satisfaction among participants.
- In addition to Industrial Accelerator Program, seek further input on satisfaction, barriers and opportunities with customers (small and large), including those with businesses in multiple territories (i.e. those that interact with multiple LDCs or both electric and gas utilities).
- Determine the implications on participation and satisfaction with delivery agents when program offering is geographically inconsistent.
- Interaction of other topics and customer and market engagement and satisfaction.

A.3 Key Themes from Advisory Group Meeting

- Need to clearly map policy objectives from 2013 LTEP and Conservation directives to the mid-term review objectives
- Need for specific, quantitative policy goals for conservation/DSM in Ontario
- Need to incorporate both participant and non-participant feedback
- How Conservation and Demand Management is considered in the context of Regional Planning and challenges with metrics (e.g., Conservation and Demand Management is measured in terms of energy savings whereas regional planning considers peak demand savings)
- Bill savings are an important outcome of participation from a customer perspective
- Definition of Conservation and Demand Management, what is/should be included? What is not/should not be included? What are the impacts on participants and non-participants?
- Capturing regional differences in metrics and analysis

APPENDIX B. DEFINITION OF CDM

B.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
How has the definition of CDM changed over time in Ontario?	- Targets have shifted from province-wide peak demand to LDC-level energy targets driven by larger policy goals which, in turn, lead to government directives - In the past (pre-2008), progress included savings funded outside of IESO (then OPA) CDM programs (Renewable Energy Standard Offer Programs, Enwave, third tranche funding for LDCs) - Combined Heat and Power was formally added to be considered as progress to targets - Savings from time-of-use was previously included	The definition of CDM that is counted towards targets has changed over time and targets have shifted from broad, province-wide energy and demand reduction targets to localized, LDC energy targets
Is the current definition appropriate to achieve the policy objectives of the framework and to align with Ontario's broader GHG reduction goals?	- There are several technologies and approaches currently not included in the definition of CDM that have both customer and system benefits and align with one or more of the Government's policy objectives - Interactions with other policies must also be taking into consideration (e.g., net metering, industrial conservation initiative)	- All technologies and approaches align with some policy objectives, but not all align with GHG reduction goals - Interaction with other policies should be considered
How does the definition of CDM in Ontario align with the definition of CDM/DSM in other jurisdictions?	- IESO is unique among system operators given its oversight of DSM activities conducted by constituent LDCs - In other jurisdictions (not Ontario), DSM plans and the funding allocated to them, focus primarily on energy efficiency and demand response programs, although CHP may be included as well as pilot/R&D budgets - In other jurisdictions (not Ontario), DR investments are typically part of DSM plans, including e.g. direct load control programs, smart appliance programs, and behavioural programs - DER investments are supported most commonly by a combination of ratepayer (operating expense, specific/required funding request*, or surcharge) and public (e.g. provincial/state/federal) clean energy grants and funds, as well as non-utility revenue streams and operational cost savings. *E.g. requirements to develop and submit 'smart grid' or 'grid modernization' - In most other jurisdictions, Voltage reduction (VR) is funded outside of DSM budgets, and is generally viewed by regulators as a prudent operational enhancement and not a DSM activity. In Massachusetts VR has been funded as part of 'grid	- Generally, DSM includes the technologies included under energy efficiency and demand response (as defined in this report) - DER and smart grid investments are typically funded outside of DSM - The treatment of both combined heat and power and voltage reduction varies across jurisdiction

Question	Preliminary Observations	Key Findings/Next Steps
	modernization', and in California, where many utilities have been actively pursuing voltage reduction for decades, voltage reduction studies to find additional incremental savings have been part of smart grid pilot initiatives. Navigant is aware, however, of jurisdictions/utilities that have included CVR in DSM budgets (e.g. PECO in Pennsylvania)	

B.2 Follow-up Items for Market Research

Based on the preliminary assessment of the current state of definition of CDM, the following areas will be considered in the market research phase:

- Understand the interactions between this report and other topic reports (e.g., collaboration, climate change, planning integration, budgets and targets)
- Consider policy interactions during market research phase (e.g., net metering and Industrial Conservation Initiative) and the impact on adoption of different technologies and approaches
- Where a technology/approach should be funded is not a simple policy question and there are many considerations, for example:
 - Scale (cross with topic 3 - collaboration):
 - DERs are promoted in many jurisdictions through both government and private funding which may require scale to successfully promote adoption
 - Demand response can be funded both locally and through the IESO with different objectives. The structure of the jurisdiction and local vs. system needs have a large impact on how the funding/program administration is structured
 - Cost/benefit equity (alignment between those who fund a resource and those benefit from a resource on a time and geographic scale)
 - Market/System (cross with topic 5 - planning integration):
 - The degree to which (1) the resource is needed (e.g., renewable integration and the need for balancing resources); and (2) the market can support the ability to earn revenues (e.g., capacity costs and reserve margins, ancillary services markets, technology to provide automated demand response, dynamic pricing (rate structures)
 - Policy goals (cross with climate change + planning integration):
 - Is grid modernization a goal and/or promoted elsewhere?
 - What is the role of the regulator?

B.3 Key Themes from Advisory Group Meeting

- Need to change the wording, scoring and structure of the scorecard to better reflect the objectives of the review
- Need a jurisdictional review where appropriate to provide comparables for a better sense of how the Conservation First Framework is performing
- The review should consider the impact of government policy/announcements e.g., 25% reduction for electricity bills, greenhouse gas and climate change initiatives
- Market research should include consulting engineers and agencies that represent different customer segments

APPENDIX C. COLLABORATION

C.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
Have the expected outcomes of 1) delivery efficiencies and 2) customer convenience been achieved through collaborative efforts undertaken to date?	- There is no clear delivery efficiency (as measured by \$/kWh acquisition cost or \$/kWh Levelized unit Energy Cost) as a result of LDCs undertaking joint vs. individual CDM Plans - Further, there is limited ability to assess what the cost of each LDC's delivery would have been had it opted not to be part of a joint plan) - Quantitative outcomes (delivery efficiencies and customer convenience) were not defined or measured as part of the Collaboration Fund requirements	- Preliminary research begins to identify the level of delivery efficiencies for LDC collaboration – efforts will be made to expand upon this analysis in market research - Defined metrics to understand the delivery efficiencies and customer convenience that have been or will be achieved through collaborative efforts will be helpful in understanding whether or not policy objectives have been met - Market research will help understand the value of the outcomes of collaboration to customers, channel participants, IESO, and LDCs; however it may be difficult to substantiate whether or not these efforts are resulting in measurable improvements to 1) delivery cost efficiencies and 2) customer convenience
What other outcomes has collaboration generated?	- Almost all LDCs (97 percent) have participated in some form of funded collaboration, indicating that a culture of collaboration has been fostered in some way - The majority (54 percent) of approved Collaboration Fund budget has gone to human resource related projects (e.g., energy managers, sales support, etc.) - IESO and other Government organizations could lead to additional collaborative activities both within the Conservation First Framework and with other entities - Limited collaboration with other entities is occurring through the conservation fund	- Market research will identify further outcomes of collaboration and attempt to discern whether collaboration funding has resulted in ongoing collaboration activities (i.e., collaboration continuing beyond the funding window) - Further definition of anticipated outcomes would be helpful to understand the outcomes and benefits of funded collaboration activities
Should additional collaboration be enabled? If so, how? If not, why not?	- Collaboration beyond working group participation could be improved and, if it is improved, should be done in a way that provides measurable results towards the stated policy goals of 1) improved delivery cost efficiencies and 2) customer convenience - There is, in particular, a lack of cross-fuel collaboration	Further investigation into the barriers of LDC collaboration and cross-fuel collaboration and opportunities to remove them will be investigated through market research
What are the barriers to collaboration and	Some aspects of natural gas and electric utility frameworks are aligned (e.g., evaluation), but other aspects	Barriers to collaboration between electric LDCs will be investigated in market research

Question	Preliminary Observations	Key Findings/Next Steps
what are some options to tackle these barriers?	could create barriers to collaboration (e.g., plan modification/approvals)	Barriers to collaboration between electric LDCs and natural gas utilities will be investigated in market research
If collaboration should be encouraged, are there structural changes that can be addressed in the current or future frameworks (2020+)?	- Plan approvals for gas and electric utilities differ greatly, and could be an opportunity for alignment during the current or future framework - Government entities are also involved in CDM activities that may provide opportunities for collaboration or competition for customer attention and investment	- Potential structural changes will be identified to address barriers to collaboration in the context of the advantages of scale that have and could be realized - Market research will identify these opportunities

C.2 Follow-up Items for Market Research

Based on the preliminary assessment of the current state of collaboration, the following areas will be considered in the market research phase:

- Investigate non IESO-funded collaboration
- Investigate Collaboration Fund activities that have resulted in ongoing collaboration (i.e., benefits are such that it is worthwhile to continue without supplementary funding)
- Barriers to collaboration between electric utilities experienced as it relates to the framework and possible solutions
- Barriers to collaboration experienced and possible solutions specifically related to natural gas and electric collaboration.
- Uncover more information on the value of collaboration (savings – both kWh and \$ and customer satisfaction/engagement)
- Investigate opportunities to leverage other conservation efforts that are outside of the Conservation First Framework (e.g. Climate Change Action Plan, federal programs or initiatives, etc.)

C.3 Key Themes from Advisory Group Meeting

- Market research should strive to capture multiple perspectives from the channel (e.g., participants and non-participants)
- The definition of CDM must be considered within the broader climate policy
- The context of fuel switching has changed over time (away from electricity when the system was capacity constrained to more recent policy push towards electrification) and will need to be discussed in more detail during the climate change topic
- Lack of measurement and data for collaboration
- It will be valuable to demonstrate achievement of the policy objectives: delivery efficiencies and customer convenience and understand the barriers and opportunities stemming from the industry structure within Ontario

APPENDIX D. GOVERNANCE AND OPERATIONS

D.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
Are the structures, internal processes, and accountabilities in place clear, effective, and efficient?	- Accountability appears to be clear between the IESO, Conservation First Implementation Committee, Working Groups, and LDCs as indicated within the Energy Conservation Agreement and LDC Toolkit and Guidelines - The process to make program changes appears to be time consuming with multiple handoffs between stakeholders - Working groups appear to be meeting the priorities they set, however, there is a lack of understanding about working group activities among the broader LDC community	- Preliminary research begins to identify the baseline performance of existing processes and assessment with an objective view of public documents – efforts will be made to expand upon this analysis with experiences in market research - Data to support whether or not a process is efficient and effective would be helpful, market research will attempt to uncover additional evidence - Market research could confirm the process assessment (high impact and high frequency) and indicate which processes could move forward to a more robust process assessment which could include: - Mapping the “as-is” processes with stakeholders to understand frictions - Interviews with stakeholders that use these mapped processes to identify ideal state and opportunities for improvement - Mapping of the “to-be” processes - Identification of gaps between the “as-is” and “to-be” processes
What can be done to improve these structures?	- Further, there is opportunity to more formally link recommendations made through the Evaluation, Measurement, and Verification process to Working Group priorities - LDCs reported dissatisfaction with CDM Plan review processes	- There is an opportunity to make the IESO review process less time consuming - IESO is considering investing resources to investigate the program design phase (province wide programs), specifically the areas that relate to program changes or the development of new programs - IESO is conducting an audit to provide risk and control analysis on the CDM plan review and the program and pilot review process - There is an opportunity for Working groups to prioritize their efforts on tasks/projects with the highest impact - IESO is considering making changes to ensure that the next Working Group annual plans will more closely follow EM&V recommendations - There is an opportunity to streamline the program change process. - The process to make program changes involves multiple parties, reviews and handoffs which makes it cumbersome and time consuming
Are there additional tools and/or changes that can better support	There are opportunities apparent with multiple Conservation First Framework tools including the ability to integrate tools (CDM Plan and Business Case Template with Cost Effectiveness tool) and	Confirming the assessment of current tools as “used and useful” will help identify where changes to tools could occur

Question	Preliminary Observations	Key Findings/Next Steps
framework objectives?	- update data (Achievable potential calculator) - There are many tools that support the Conservation First Framework	Gaps that have been identified with multiple tools will be discussed in market research, and potential solutions will be sought
Are the views of interested stakeholders adequately being reflected in decision-making?	The views of LDCs, gas utilities, IESO, Ministry of Energy, Electric Distributor Association and the Ontario Energy Association are captured through the involvement of these parties in the Working Group and CFIC	Market research will help identify whether the views of other stakeholders are being captured and reflected
Do existing processes and Working Groups adequately facilitate the inclusion and consideration of the views of interested stakeholders?		Market research will help identify whether the Working Groups adequately include and consider the needs of stakeholders
What are some key considerations thinking beyond 2020?	Current percentage of non-incentive as a percentage of total program delivery costs (incentives + program costs) is higher than other jurisdictions	Market research and 2016 Evaluation, Measurement & Verification reports will help identify what is working well and where there are opportunities

D.2 Follow-up Items for Market Research

Based on the preliminary assessment of the current state of governance and operations, the following areas will be considered in the market research phase:

- Assessment of the tools that support the Conservation First Framework and identify where opportunities are for improvement in addition to what is working well
- Confirmation of the assessment of the processes that support the Conservation First Framework and identify where opportunities are for improvement in addition to what is working well
- Review process evaluation results and 2016 realization rates from evaluation reports when available
- Additional insights from customers to assess the processes that support the Conservation First Framework and Industrial Accelerator programs
- Perceptions and experience with the governance structures that support the Conservation First Framework to assess their effectiveness.
 - This is currently being explored by an IESO internal audit process, the results of which will inform the final version of this topic report.
- Perceptions and customer feedback on the account management model for Industrial Accelerator Program
- Explore how and where the Conservation First Framework and Industrial Accelerator Program can better leverage partners
- Examine the role of CFIC and evolution of the governance layers currently in place in the CFF
- Explore the value and application of KPIs and other tracking metrics in the CFF and IAP beyond budgets, targets and CE results

D.3 Key Themes from Advisory Group Meeting

- Key processes that have opportunities for improvement and potentially high impact: province-wide program changes and introduction of new province-wide programs, responsibility and authority, program operations (iCON, approvals prior to project initiation)
- Roles, responsibilities, and processes surrounding working groups and Conservation First Implementation Committee and where the voices of the customer, manufacturers, service providers and other interested stakeholders is appropriately captured and whether a more formal/different process is needed to ensure these perspectives are heard and considered in decision-making.
- Roles, responsibilities, and processes surrounding competition and innovation and how the framework can enable more innovation and what are the implications
- Processes and rules related to incentive staking and recognition that this will increase in the future with the Climate Change Action Plan
- Inconsistency across the province in terms of interpretation of program rules, results (specifically net-to-gross), and project approvals with specific discussions around the difference between project approvals between electricity and natural gas programs
- Other processes that could be improved with a smaller impact are: updated templates and processes for CDM plans, program business cases, customer interaction with Evaluation, Measurement, and Verification processes and IESO-LDC audits
- Future Advisory Group meeting format will be modified to increase focus on discussion rather than a review of the current state summary topic

APPENDIX E. PLANNING INTEGRATION

E.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
How do CDM programs and the Conservation First Framework fit into the broader planning context (today and in the short, medium, and long-term)?	- Programs and planned achievement are considered as part of the load forecast for planning purposes - Any incremental conservation (e.g., above planned achievement) is considered as part of the regional planning process, specifically when the need for an Integrated Regional Resource Plan is determined - Five achievable potential studies are being conducted to further explore the potential of non-wires options in specific regions - Ongoing pilots with a focus on understanding the feasibility of non-wires alternative include the Cecil demand response initiative and Brant local demand response* - The pilots/programs will provide insights to generate options for future integration of conservation into planning	Market research will explore LDC experience with the regional planning process as it relates to CDM
How can customers be better engaged in the various planning processes?	Customers are engaged in the Regional Planning process through normal business relationships with their LDCs and Local Advisory committees, and Bulk System Planning through stakeholder engagement (as part of the Long Term Energy Plan)	- Investigate how Local Advisory Committee feedback is integrated into regional planning - Investigate how conservation and other non-wires alternatives are discussed during customer engagement
What can be done to address barriers of implementing incremental CDM solutions from the IRRP? (specifically with respect to the approach, performance metrics, measurement, and governance)	- Many jurisdictions are undergoing exercises to standardize non-wires assessments to facilitate integration - Better alignment of planning considerations and factors for target achievement	- The observations from the five achievable potential studies currently under development will attempt to provide more insights into this key question - Market research will explore further insight into how CDM activities can be designed to provide further value to address regional needs
How can the opportunities for further	The process to integrate CDM into planning processes appears to be nascent for many jurisdictions, including Ontario	Market research will attempt to identify the implications of and desire to align metrics

Question	Preliminary Observations	Key Findings/Next Steps
integration of CDM solutions in the IRRP be encouraged from various stakeholders? What are the barriers to implementation?	- There are efforts underway in Ontario to better understand how to further integrate CDM - Planning considerations and factors for target achievement are not aligned	- between CDM and planning (and whether this can/should be done through targets) - Seek to understand OEB perspective on CDM as part of distribution planning and implications on regulatory matters

E.2 Follow-up Items for Market Research

Based on the preliminary assessment of the current state of planning integration, the following areas will be considered in the market research phase:

- Understand LDC experience with the regional planning process as it relates to CDM
- Understand barriers to planning integration as it relates to meeting specific needs
 - Is there sufficient knowledge, infrastructure, and data to design, deliver, and monitor CDM assets? Is enhanced Evaluation, Measurement and Verification needed when deferring a reliability asset?
- Identify implications of and desire to align metrics between CDM and planning
 - Local vs. provincial: How to determine who benefits? How does this impact cost recovery? How to appropriately express the value? How to balance provincial consistency and meeting local needs? What are the regulatory/policy barriers?
- Industrial Accelerator Program customer insights into planning considerations
- Understand OEB perspective on CDM as part of distribution planning and implications on regulatory matters

E.3 Key Themes from Advisory Group Meeting

- There is a conflict between the fact that energy targets are assigned in the Conservation First Framework and that planning is primarily focused on addressing peak demand. Implications are low encouragement and/or incentivization for incremental conservation to be used in planning.
- The timing of regional planning is not supportive of incremental conservation. Incremental conservation is not usually feasible to respond to short term needs. While it may be feasible for incremental conservation to respond to mid and long-term needs, cost effectiveness estimates are not given for those timeframes.
- LDC business models are not aligned with supporting incremental conservation. This is in part due to the accounting treatment of conservation projects in relation to traditional supply-side projects.
- Minimal coordination between gas and electricity planning could lead to integration issues and missed opportunities. This lack of integration is, in part, due to the different regulators, laws and planning processes for gas and electricity.
- Planning is primarily focused on the system-level, but the current regulatory environment causes incremental conservation to be seen as a local or regional solution. This causes tension between viewing planning through the "system lens" vs. the "customer/local lens."
- Many action items identified for improving planning in relation to conservation, may be better addressed through avenues outside of the Conservation First Framework.

APPENDIX F. CLIMATE CHANGE

F.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
What do Ontario's current climate policy and plans mean for the Conservation First Framework and the Industrial Accelerator Program?	• Overlap with existing programs and across agencies (LDCs, IESO, OEB – gas utilities) • Competition for sources of funding and budgets (energy efficiency, behind-the-meter generation, energy literacy, etc.) • Misalignment between government agencies regarding evaluation of cost-effectiveness, incentives, EM&V activities • At a minimum, there will be an increased need for collaboration and communication across entities, in particular with respect to the customer experience and communications	• Understand barriers to collaboration and communication (expanding on the efforts associated with the collaboration current state summary)
Is the current structure of CFF and IAP conducive to supporting Ontario's climate change policy objectives? Why or Why not?	• Strong areas of potential alignment could include: Fuel Switching, CHP / DER, Electrification, and Incentive Stacking • Again, collaboration and communication across entities will be critical	• Better understand the opportunities and what the roles of the various entities could be • Discuss potential coordination with other entities to identify how the areas of alignment could be realized (e.g., OEB, gas utilities, government)
Should CDM targets, budgets, and/or structure be adjusted in light of the Climate Change Action Plan (CCAP) and broader climate policy? If so, how? Should other aspects of the CFF and IAP be adjusted in light of Ontario's climate change policy objectives? If so, how?	• Incentive stacking and attribution will be key issues to tackle by various entities early on • If metrics to be adjusted they would need to reflect variability in load profiles among technologies and approaches and Ontario's changing supply mix using a consistent, transparent methodology • Ontario's electricity system intensity is lower than other jurisdictions and is a small percentage of total emissions in the province	• Considerations of the feasibility and impact of modifying the structures within the Conservation First Framework and Industrial Accelerator Program • Additional consideration of metrics to support integration/accounting of CCAP

Question	Preliminary Observations	Key Findings/Next Steps
What are the implications for customers with the introduction of CCAP?	- Strong areas of potential alignment could include: Fuel Switching, CHP / DER, Electrification, and Incentive Stacking - Again, collaboration and communication across entities will be critical	Through market research gage customer interest in areas of alignment and other potential opportunities

F.2 Follow-up Items for Market Research

Based on the preliminary assessment of the current state of climate change, the following areas will be considered in the market research phase:

- Understand barriers to collaboration and communication (expanding on the efforts associated with the collaboration current state summary)
- Better understand the opportunities between CCAP and Conservation First Framework and Industrial Accelerator Program and what the roles of the various entities could be
- Discuss potential coordination with other entities to identify how the areas of alignment could be realized (e.g., OEB, gas utilities, government)
- Considerations of the feasibility and impact of modifying the structures within the Conservation First Framework and Industrial Accelerator Program
- Additional consideration of metrics to support integration/accounting of CCAP
- Through market research gage customer interest in areas of alignment and other potential opportunities

F.3 Key Themes from Advisory Group Meeting

- Given the future supply mix in Ontario, increased electrification may result in increased greenhouse gas (GHG) emissions. In this scenario, conservation will be vital in meeting Ontario's climate change targets.
- There is an overlap between Conservation and Demand Management (CDM) and Demand Side Management (DSM) targets and future Climate Change Action Plan programs and targets. Communication to customers could be confusing if there is no integration.
- Collaboration is required for integration between the three frameworks, but there is little policy guidance on how this could be enabled.
- Collaboration should be driven from the top down (i.e., amongst the ministries) to reduce duplication of efforts and increase cost-effectiveness.
- If there is an overlap between climate change objectives and Conservation First Framework programs, the Conservation First Framework targets and budgets should be updated accordingly.
- It will be more cost-effective to modify existing programs than add new programs to meet climate change goals.
- There will be a learning curve for customers to understand greenhouse gas reduction goals (which could increase electricity use) versus electricity reduction goals.
- Harmonization of targets between frameworks may be necessary in achieving integration. However, these targets must be carefully designed and must be cost-effective.
- Conservation First Framework policy should be adjusted to include fuel-switching, and there is strong support for incentives for distributed energy resources.

APPENDIX G. BUDGETS, TARGETS, COST-EFFECTIVENESS

G.1 Observations and Next Steps

Question	Preliminary Observations	Key Findings/Next Steps
Are the metrics that measure success aligned with goals and policy objectives?	- The metrics that measure success (cost-effectiveness, kWh targets) are aligned with goals and policy objectives - Yes/no metrics supporting policy objectives are largely captured through the Energy Conservation Agreement and program rules and guidelines - Many policy objectives are softer and do not have metrics attached to them	Better understand the implications and opinions of the different options to modify metrics used to measure success within the framework
Should targets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?	- Some target reallocation will be necessary to tackle challenges identified in the early years of the framework - A combination of target reallocation methods may be necessary to tackle the challenges identified - Though modifying metrics may improve alignment with other policy goals, the modification may create challenges related to program design, delivery strategy, and add complexity - Coverage and consistency, administrative/infrastructure needs, and tackling over/under achievement are some considerations	- Determine whether additional challenges exist that could be alleviated by adjustments to targets - Obtain feedback on the options to modify targets in the short to medium term (within the framework) and beyond 2020 (the next framework)
Should budgets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?	- The status quo worsens many of the challenges identified in the early years of the framework - Modifications to budgets have several considerations including absolute budgets, performance incentives, cost efficiency incentives, and funding mechanisms	- Understand how performance incentives motivate LDCs and the implications of changing these incentives at the mid-term - Obtain feedback on the various options to modify budgets and performance incentives
Do the detailed results provide any additional insights that might change how to adjust targets or budgets?	TBD Phase II	TBD Phase II
What are some alternate approaches and what could be the	TBD Phase II	TBD Phase II

Question	Preliminary Observations	Key Findings/Next Steps
<u>impact on cost effectiveness? Are these approaches appropriate for the second half of the framework? Beyond 2020?</u>		
<u>What are some methodologies to reduce reliance on incentives? Are these methodologies appropriate for the second half of the framework? Beyond 2020?</u>	• TBD Phase II	• TBD Phase II

G.2 Follow-up Items for Market Research

- Better understand the implications and opinions of the different options to modify metrics used to measure success within the framework
- Determine whether additional challenges exist that could be alleviated by adjustments to targets
- Obtain feedback on the options to modify targets in the short to medium term (within the framework) and beyond 2020 (the next framework)
- Understand how performance incentives motivate LDCs and the implications of changing these incentives at the mid-term
- Obtain feedback on the various options to modify budgets and performance incentives
- Understand how project financing and capital budgeting for energy efficiency projects is currently working with customers and identify some options that align with Ontario customer needs
- Better understand some of the barriers to implementation of alternate funding mechanisms
- Phase II of this topic will investigate Ontario cost effectiveness performance against industry peers
- TBD Phase II

G.2G.3 Key Themes from Advisory Group Meeting

- Not all polices and Ministerial directives are tracked and measured.
- Constraints surrounding LDC budgets and targets can conflict with polices and directives (for example providing province-wide coverage for all programs).
- Many LDCs identified that their primary concern is running out of budget, as opposed to not meeting targets.
- There is support among many LDCs to provide continued conservation offerings to customers. However, LDCs believe budgets must be updated to allow for this.
- Progress to targets and budgets do not fully represent the true progress, as LDCs commit funds well in advance of savings being realized. A forecast by program taking into consideration acquisition cost trends and the pipeline committed and future projects of LDCs would provide a more accurate assessment.
- 2015 was a transition year for the framework, and should be judged accordingly, 2021 will also likely be a transition year with some projects likely to complete in the following framework.

- The 2020 energy target and need for LDCs to manage program first year acquisition costs (\$/kWh) results in less focus placed on projects that have long term persisting savings but may have higher acquisition costs.
- In general, LDCs are outperforming versus the 2016 achievable potential study (APS). There is higher progress relative to the APS in the residential sector than in the business sector (this may change as additional pipeline data becomes available).
- There are select LDCs that have “trapped” budgets, i.e. budgets allocated to an LDC that may not be spent within the 2015 to 2020 period and is not eligible for cost efficiency incentive. This could be addressed through a target/budget exchange mechanism.
- Minimal budget/target exchange activity between LDCs to date is in part due to uncertainty of the outcomes of the mid-term review process.
- Budget/target exchange could allow for LDCs or other organizations to gain incremental profits, and should be closely monitored.
- LDCs agreed that there is little need for a major change in the method for budget/target re-allocation, however there is concern with insufficient budget in the short-term for some LDCs that could be addressed through the current mechanism for exchange.
- A potential solution for the issue of LDCs running out of budgets is a form of floating budget, where LDCs can step in and help other LDCs meet their conservation target (this will be an area of discussion during the next Advisory Group meeting).
- TBD Phase II