

## VERSION NOTES

- Changes to the version presented August 24, 2017 based on Advisory Group feedback are described below

| Slide # | Advisory Group Feedback                                                                                                                                                                          | Action        |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 10      | Note the vintage of the policy and framework direction to communicate how the policy has evolved                                                                                                 | Slide updated |
| 12, 14  | The legacy extension spending for 2015 should be added to the graphs that depict spending                                                                                                        | Slide updated |
| 12, 14  | A note should be added to all slides that display the CFF budget to state if the presented number includes central services in the total                                                         | Slide updated |
| 17      | Size of the circles in the graph should be reflective of the size of the LDC when showing LDC progress (budgets and targets)                                                                     | Slide updated |
| 19 - 22 | Challenges should be updated to include other challenges and their impacts, including the Fair Hydro Plan, the reduction of the ICI threshold, greenhouse gas targets and the affordability fund | Slide updated |
|         | Clarity that the legacy framework savings and CHP were always considered as progress to targets                                                                                                  | Slide updated |
|         | Comment that fairness associated with over/under achievement relative to APS is not an issue for LDCs                                                                                            | Slide updated |
| 10, 82  | Clarification on policy associated with climate change                                                                                                                                           | Slide updated |
| 39      | New Directives added                                                                                                                                                                             | Slide updated |

- All slide changes are marked with

CHANGES TO SLIDE

# CONSERVATION FRAMEWORK MID-TERM REVIEW

---

BUDGETS, TARGETS, COST  
EFFECTIVENESS – PHASE 1

AUGUST 24, 2017

NAVIGANT



## DISCLAIMER

This report was prepared by Navigant Consulting Ltd. (Navigant) for the Independent Electricity System Operator. The work presented in this report represents Navigant's professional judgment based on the information available at the time this report was prepared. Navigant is not responsible for the reader's use of, or reliance upon, the report, nor any decisions based on the report. **NAVIGANT MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED.** Readers of the report are advised that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, or the data, information, findings and opinions contained in the report.

# TABLE OF CONTENTS

|                                             |    |
|---------------------------------------------|----|
| 1. Discussion Slides.....                   | 4  |
| 2. Introduction.....                        | 34 |
| I. Policy Context                           |    |
| II. Introduction and Methodology            |    |
| 3. Current State .....                      | 40 |
| I. CFF Target Reallocation                  |    |
| II. CFF Target Metrics                      |    |
| III. Funding Mechanisms                     |    |
| 4. Summary Observations and Next Steps..... | 71 |
| Appendix A: Policy Mapping.....             | 77 |
| Appendix B: Glossary.....                   | 83 |



## SECTION 1: DISCUSSION SLIDES

NAVIGANT

IESO-N-0027134

## PHASED APPROACH TO BUDGETS, TARGETS, COST EFFECTIVENESS

This current state summary for the **Budgets, Targets, and Cost Effectiveness** topic is segmented into two phases. The table below outlines a description of the information presented during each phase. The current state summary reflects data available as of early August 2017. All results presented are net and expressed at the end-user level.

| Phase                | Information Presented                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phase I (August)     | <ul style="list-style-type: none"> <li>• Focus on Conservation First Framework, including a review of:               <ul style="list-style-type: none"> <li>• Current Province-wide progress (budgets and targets)</li> <li>• Guidelines and documentation supporting budget and target setting methodologies, target exchange, and performance incentives</li> </ul> </li> <li>• Discussion of potential options for target and budget reallocation and target metrics</li> </ul>                                                                                                   |
| Phase II (September) | <ul style="list-style-type: none"> <li>• Review:               <ul style="list-style-type: none"> <li>• Detailed/Granular Conservation First Framework results</li> <li>• Industrial Accelerator Program results</li> <li>• Cost effectiveness results</li> <li>• Industry benchmarking against verified results</li> <li>• Scorecard for budgets, targets, cost effectiveness</li> </ul> </li> <li>• Discussion of the impact of alternate approaches on cost-effectiveness</li> <li>• Discussion of methodologies to move away from traditional incentives to customers</li> </ul> |

## FOCUS AREAS AND KEY QUESTIONS

This current state summary will analyze available information and begin to explore the issues and opportunities of the key questions and focus areas listed below pertaining to the **Budgets, Targets, and Cost Effectiveness** topic.

### Key Questions

#### Phase I

- Are the metrics that measure success aligned with goals and policy objectives?
- Should targets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?
- Should budgets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?

#### Phase II

- Do the detailed results provide any additional insights that might change how to adjust targets or budgets?
- What are some alternate approaches and what could be the impact on cost effectiveness? Are these approaches appropriate for the second half of the framework? Beyond 2020?
- What are some methodologies to reduce reliance on incentives? Are these methodologies appropriate for the second half of the framework? Beyond 2020?

### Focus Areas

#### I. Conservation First Framework:

- Mechanism to support reallocation
- Options to enable target exchange amongst LDCs
- Funding mechanism review
- Pay-for-Performance (P4P) obstacles
- Budget/target allocation across segments
- Options for competitive procurement

#### II. Industrial Accelerator Program:

- Provincial adjustments, options for adjustment

ARE THE METRICS THAT  
MEASURE SUCCESS  
ALIGNED WITH GOALS AND  
POLICY OBJECTIVES?

# BROADER POLICY AND SPECIFIC OBJECTIVES WITH GOVERNMENT DIRECTION INFORM THE CONTRACTUAL REQUIREMENTS FOR IESO AND LDCS



## Sets broad objectives and longer-term goals

Generally, **softer policy**/broadly defined goals, for example:

- Continuing to provide access to conservation programs
- Ensuring LDCs have support in CDM plan submission and flexibility in program administration

## Specific objectives to agencies

Generally, fall into two categories:

### (1) Complete/not, for example:

- Allowing LDCs to make changes to their CDM plans at least once per year

### (2) Targets, for example:

- Develop a methodology to allocate the 7 TWh consumption reduction target among LDCs

## Implementation of policy goals and Directions

Generally, set forth specific accountabilities, for example:

- The LDC will prepare and deliver a CDM Plan to the IESO in accordance with the CDM Plan Submission and Review Criteria Rules
- The IESO will create and post a province-wide Save on Energy website

# MAJORITY OF POLICIES AND MINISTERIAL DIRECTIONS ARE NOT METRIC OR TARGET BASED

CHANGES TO SLIDE

- The policies (Long-term Energy Plan 2013 and Climate Change Action Plan) and Ministerial Directions that guide or influence CDM in Ontario were summarized into eight categories and classified into three types:
  - Complete/not:** policies and Directions require a certain action that is either complete or incomplete
  - Target:** a quantitative metric is stated in the policy or direction, e.g., energy savings, cost-effective
  - Soft policy:** policy or Direction is vague and provides an over-arching or aspirational

| Category            |                           | The Policies and Directions were segmented into 60 individual items and categorized and sorted into three types: |        |             | Metrics tracked by IESO |
|---------------------|---------------------------|------------------------------------------------------------------------------------------------------------------|--------|-------------|-------------------------|
|                     |                           | Complete/not                                                                                                     | Target | Soft policy |                         |
| Initial Objectives  | Cost efficiency           | 5                                                                                                                | 3      | 3           | 6                       |
|                     | Customer Choice           | 7                                                                                                                |        | 4           | 3                       |
|                     | Energy savings            | 4                                                                                                                | 3      | 5           | 9                       |
|                     | Innovation                | 1                                                                                                                |        | 1           | 0                       |
|                     | Integration with Planning | 1                                                                                                                |        | 2           | 2                       |
|                     | Market Transformation     | 1                                                                                                                |        | 2           | 2                       |
| Evolving Objectives | Energy Affordability      | 3                                                                                                                |        | 4           | 2                       |
|                     | Greenhouse gas reductions | 6                                                                                                                | 3      | 2           | 1                       |



## POLICY AND DIRECTIONS WERE REVIEWED TO DETERMINE WHAT GOALS AND OBJECTIVES ARE TIED TO METRICS

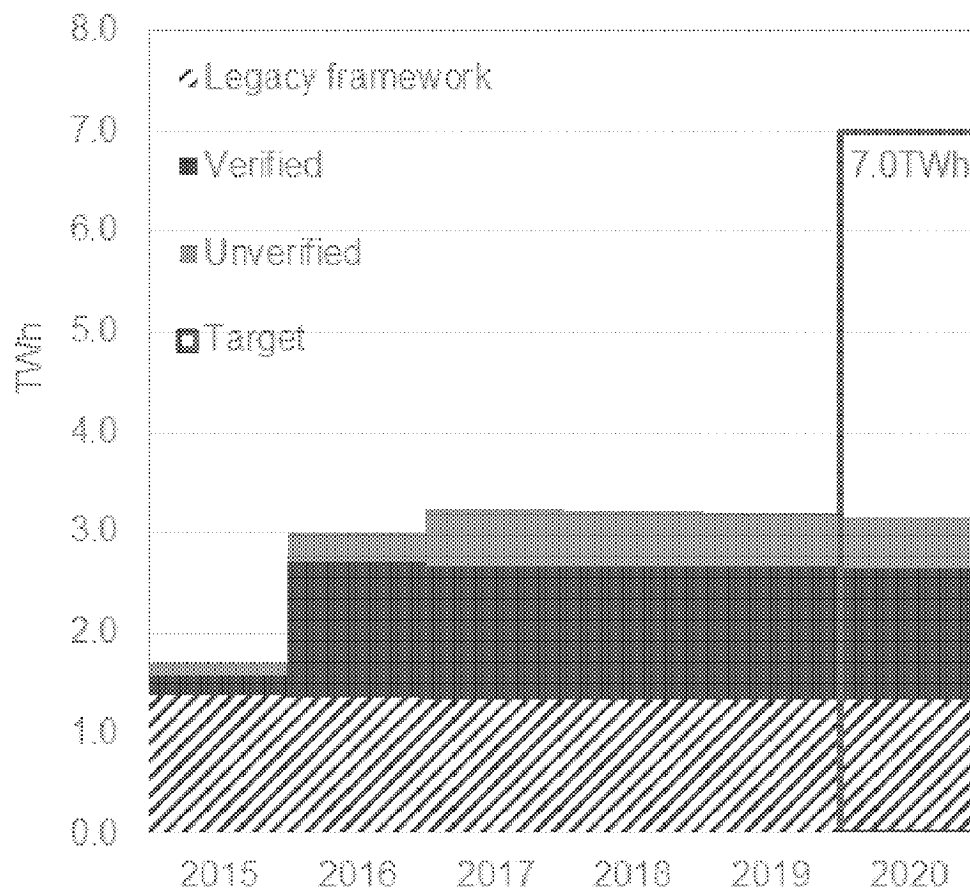
CHANGES TO SLIDE

- Most policy objectives were complete (Yes/No) or soft policy objectives
- The following nine policies are tied to metrics (budgets, targets, cost-effectiveness) that are reflected in the Energy Conservation Agreement
- Metrics associated with the Climate Change Action Plan are also shown for reference

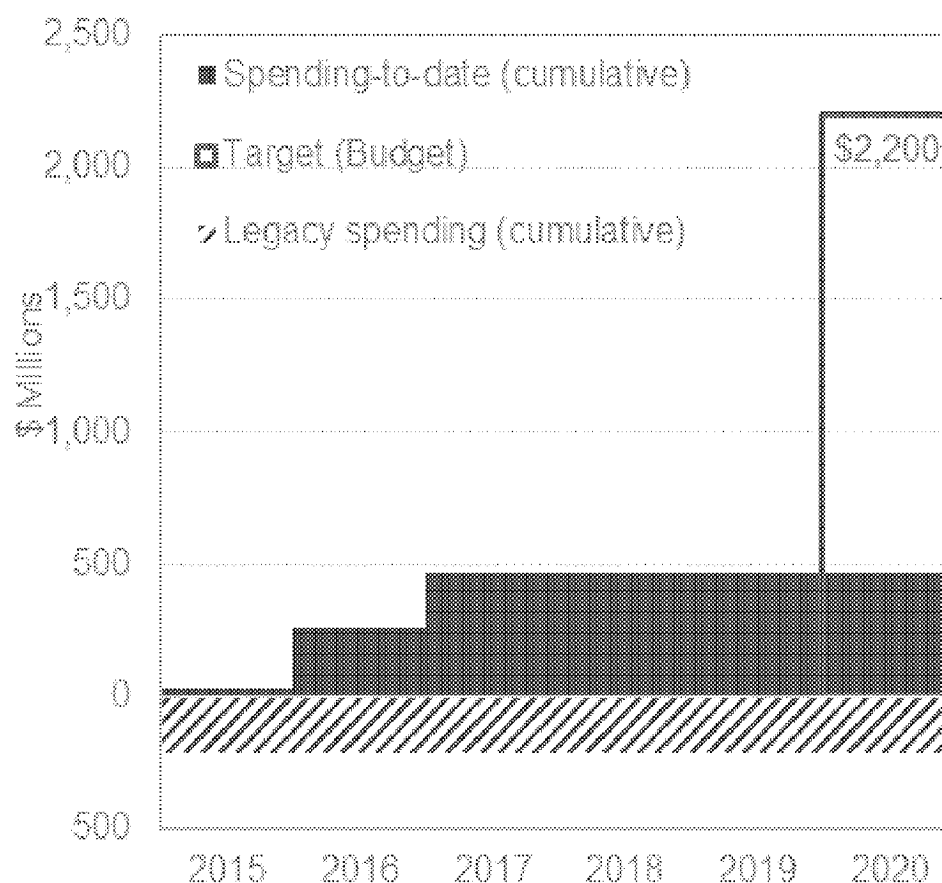
| Category                  | Metric (target) based Policy/Direction                                                                                                                                           |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cost efficiency           | Offsetting growth in electricity demand to 2032, with a conservation target of 30 TWh (a 16% reduction in gross demand) in 2032, lessening the need for new supply               |
|                           | Using TRC and PAC tests to ensure positive benefit-cost of programs, and establishing hurdle rates to consider cost of program delivery against avoided cost of procuring supply |
|                           | Using TRC and PAC tests to ensure positive benefit-cost of the Industrial Accelerator Program                                                                                    |
| Energy savings            | Coordinating, supporting and funding the delivery of CDM programs through distributors to achieve 7 TWh of consumption reduction between 2015 and 2020                           |
|                           | Develop a methodology to allocate the 7 TWh consumption reduction target among LDCs                                                                                              |
|                           | Establishing a budget to achieve targeted 1.7 TWh of savings through the Industrial Accelerator Program by 2020                                                                  |
| Greenhouse gas reductions | Making government operations carbon neutral                                                                                                                                      |
|                           | Reducing GHG emissions by 50% below 2006 levels by 2030 (Ontario Public Service)                                                                                                 |
|                           | Reducing GHG emissions by 9.8M tonnes in 2020                                                                                                                                    |

# AS OF 2017 45 PERCENT OF THE 2020 CFF TARGET HAS BEEN MET WITH 21 PERCENT OF THE FULL 2015 TO 2020 BUDGET

## Net Annual Energy Savings (TWh)



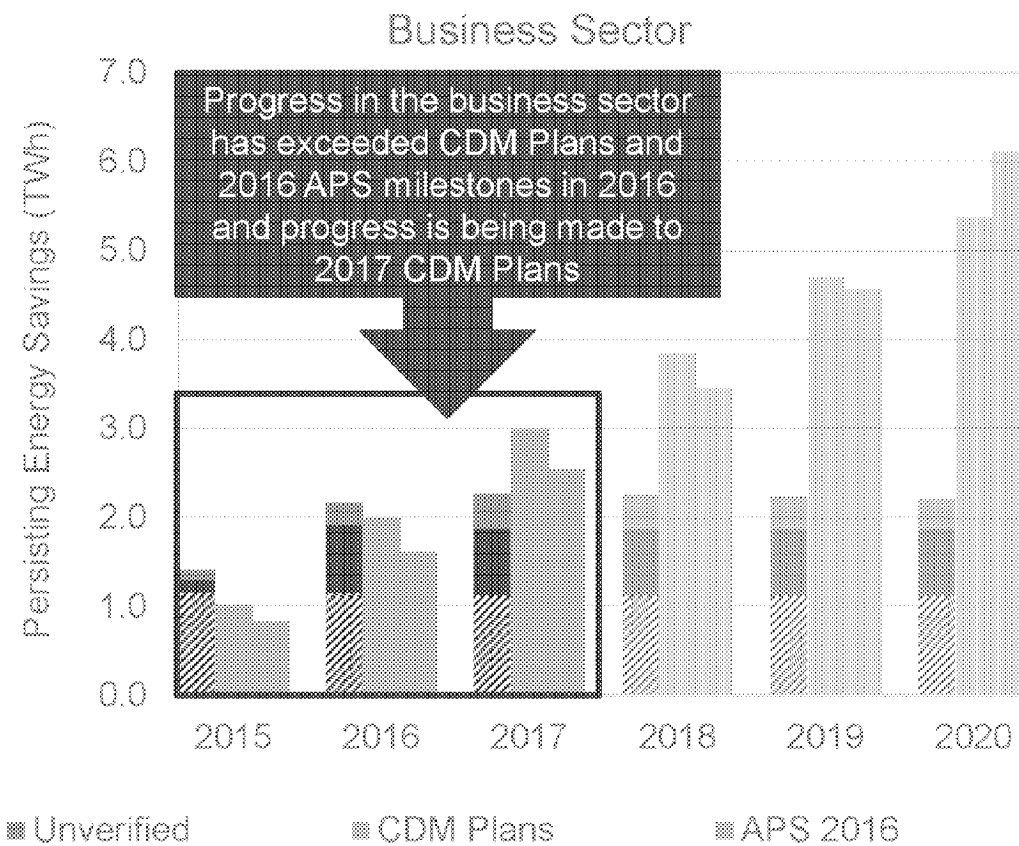
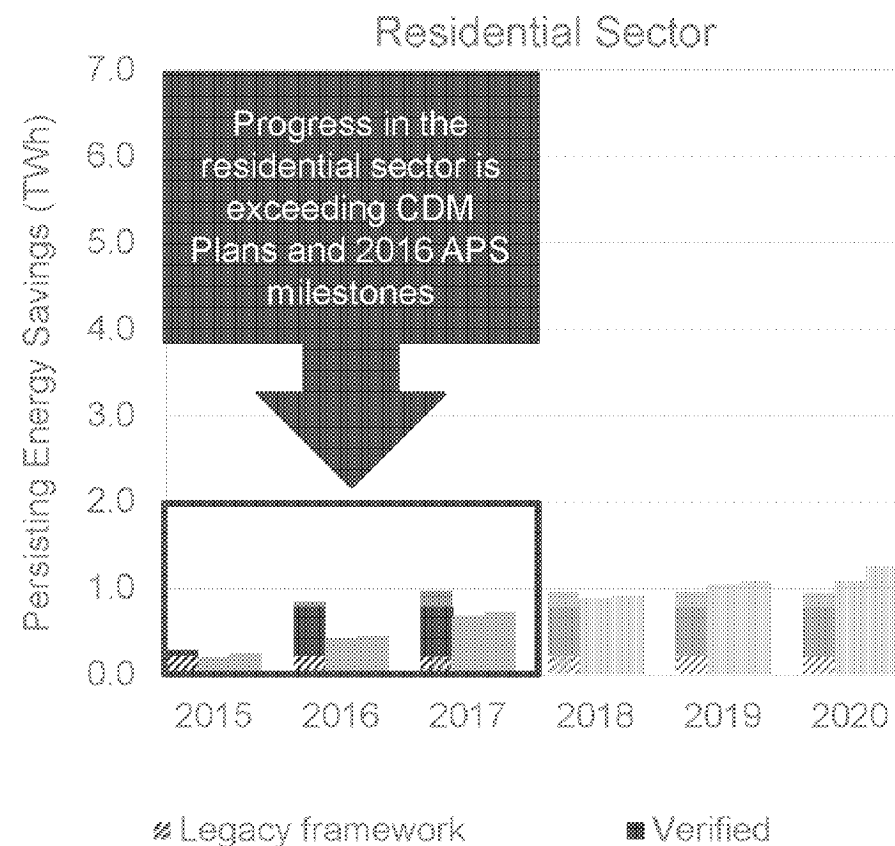
## Cumulative Spending Towards Budget\*



Note: Legacy framework includes savings achieved in 2015 from the 2011 to 2014 Framework towards CFF targets, but does not consider funding associated with those savings; Unverified results are typically lagged at least 6 months; 2017 unverified progress only represents 6 months of data

\*Includes Central Services, legacy spending is not counted towards the CFF budget

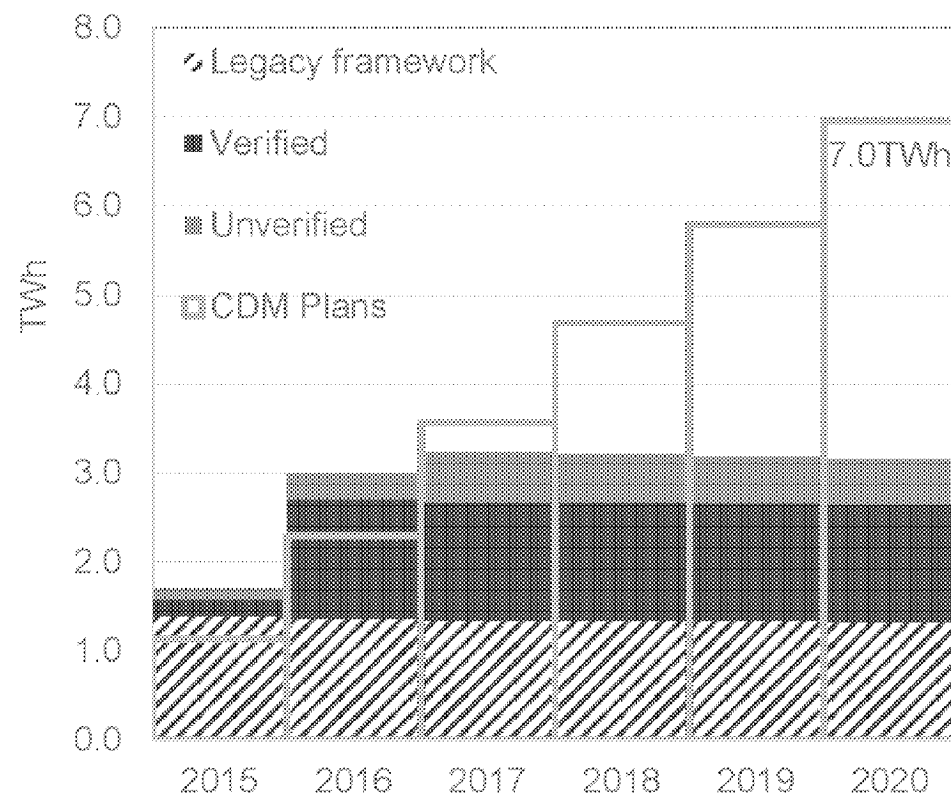
# PROGRESS IN BOTH THE RESIDENTIAL AND BUSINESS SECTORS EXCEEDED CDM PLANS AND 2016 ACHIEVABLE POTENTIAL STUDY (APS) IN 2016



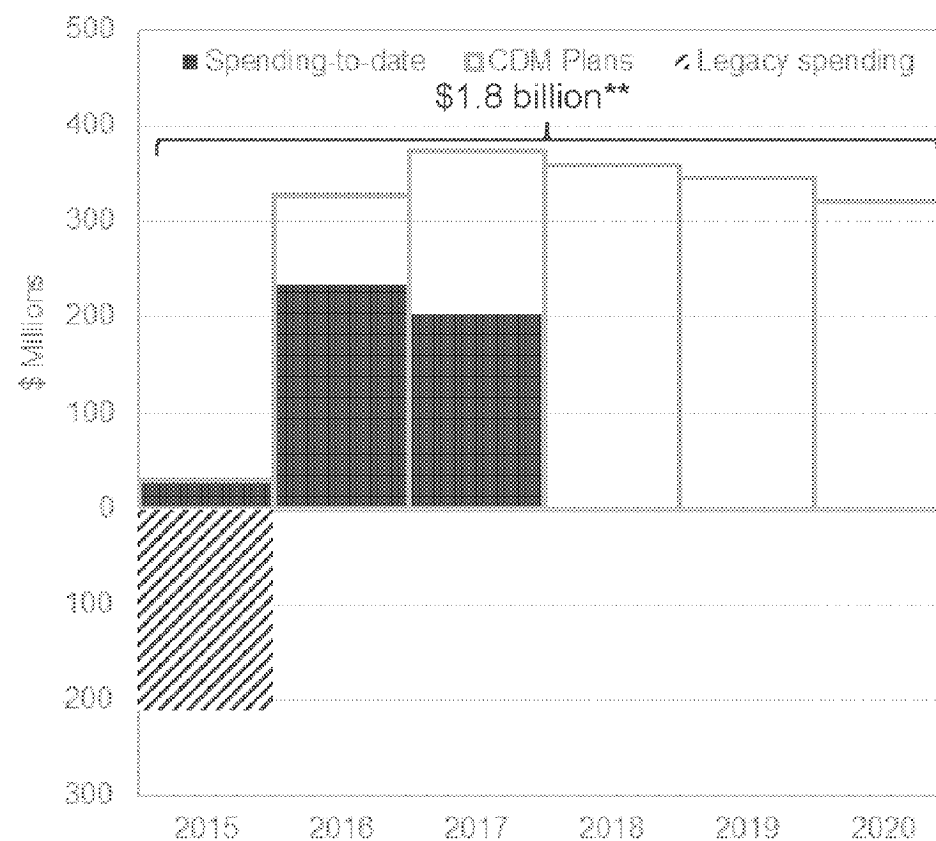
*Note: Legacy framework includes savings achieved in 2015 from the 2011 to 2014 Framework towards CFF targets, but does not consider funding associated with those savings; Unverified results are typically lagged at least 6 months; 2017 unverified progress only represents 6 months of data, the CDM Plans and APS 2016 represent the anticipated full year of savings*

# CFF PROGRESS IS TRACKING AHEAD OF CDM PLANS IN TERMS OF ENERGY SAVINGS AND TRACKING WELL BEHIND BUDGET EXPECTATIONS

Net Annual Energy Savings (TWh)



Year-over-Year Spending Against CDM Plans\*

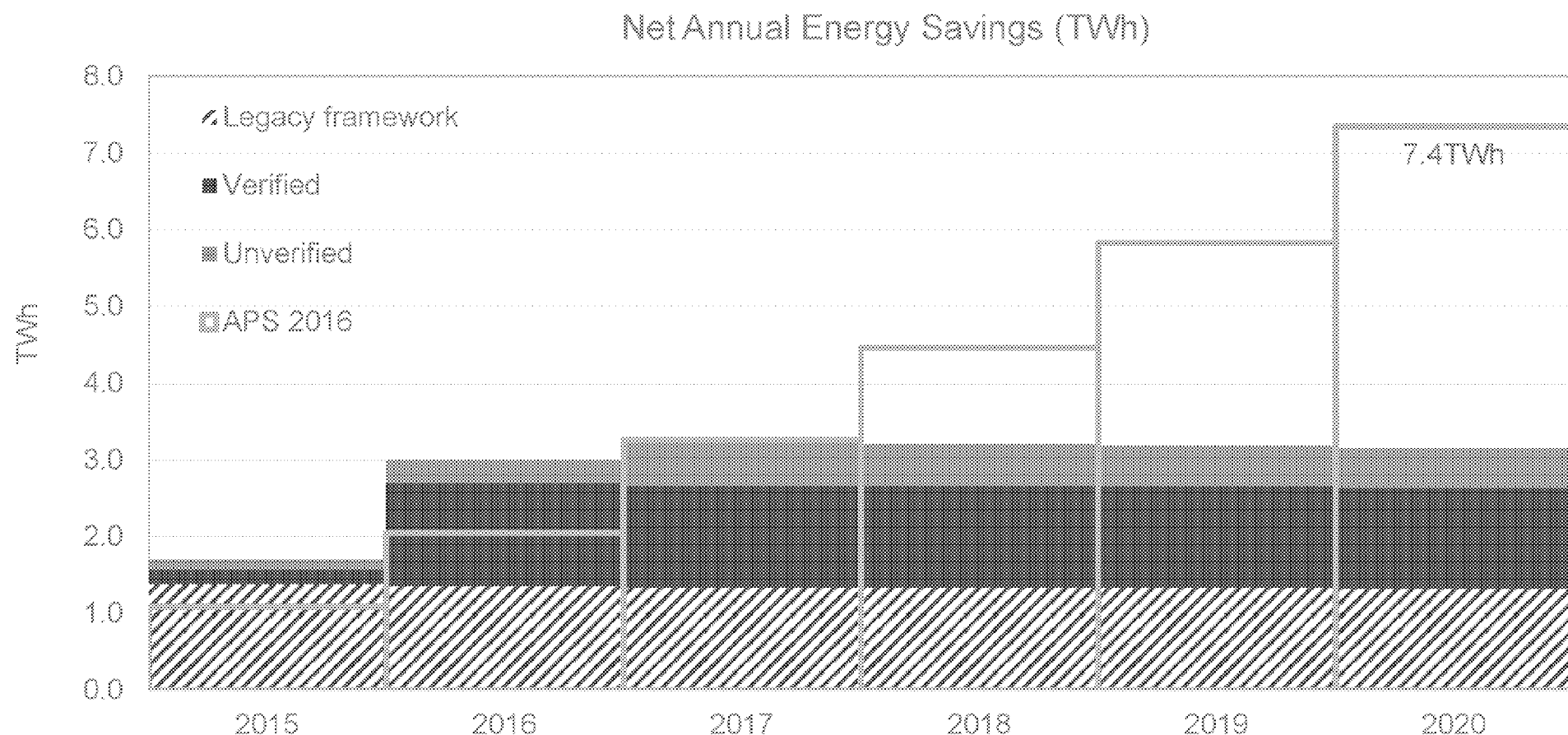


Note: Legacy framework includes savings achieved in 2015 from the 2011 to 2014 Framework towards CFF targets, but does not consider funding associated with those savings; Unverified results are typically lagged at least 6 months; 2017 unverified progress only represents 6 months of data, the CDM Plans the anticipated full year of savings

\*Does not include Central Services, legacy spending is not counted towards the

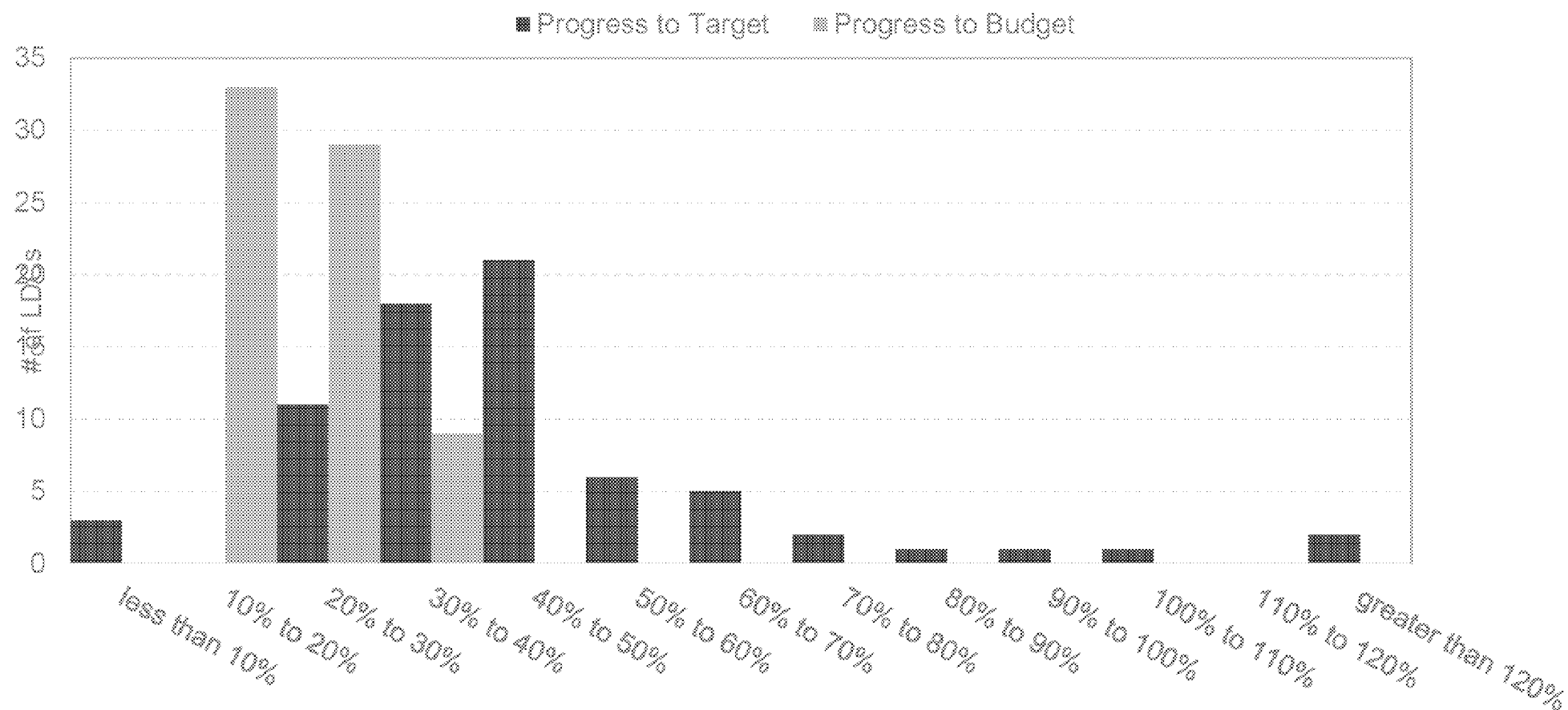
\*\*The full \$1.8 billion is not yet allocated within CDM Plans

# CFF PROGRESS IS TRACKING AHEAD OF THE EXPECTATIONS IN THE 2016 ACHIEVABLE POTENTIAL STUDY (APS 2016)



*Note: Legacy framework includes savings achieved in 2015 from the 2011 to 2014 Framework towards CFF targets, but does not consider funding associated with those savings; Unverified results are typically lagged at least 6 months; 2017 unverified progress only represents 6 months of data, the APS 2016 the anticipated full year of savings*

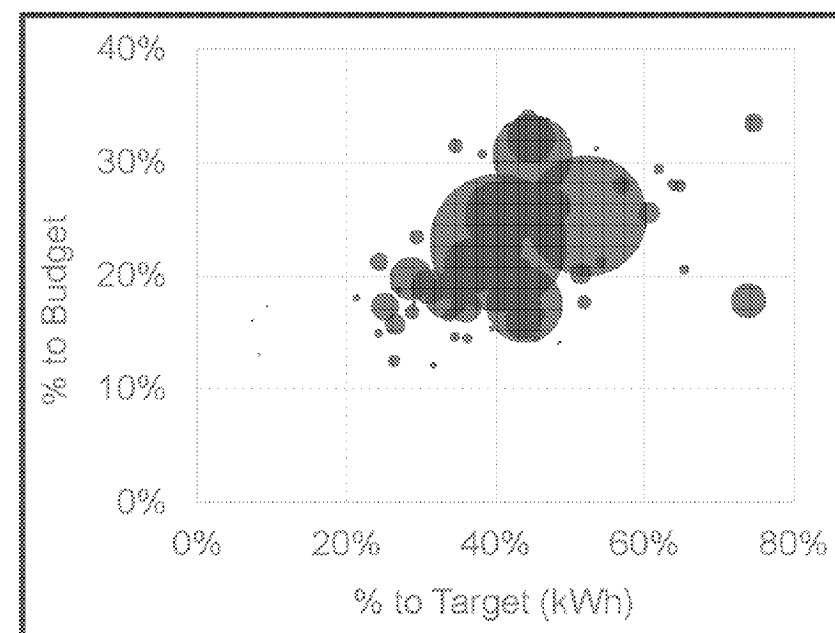
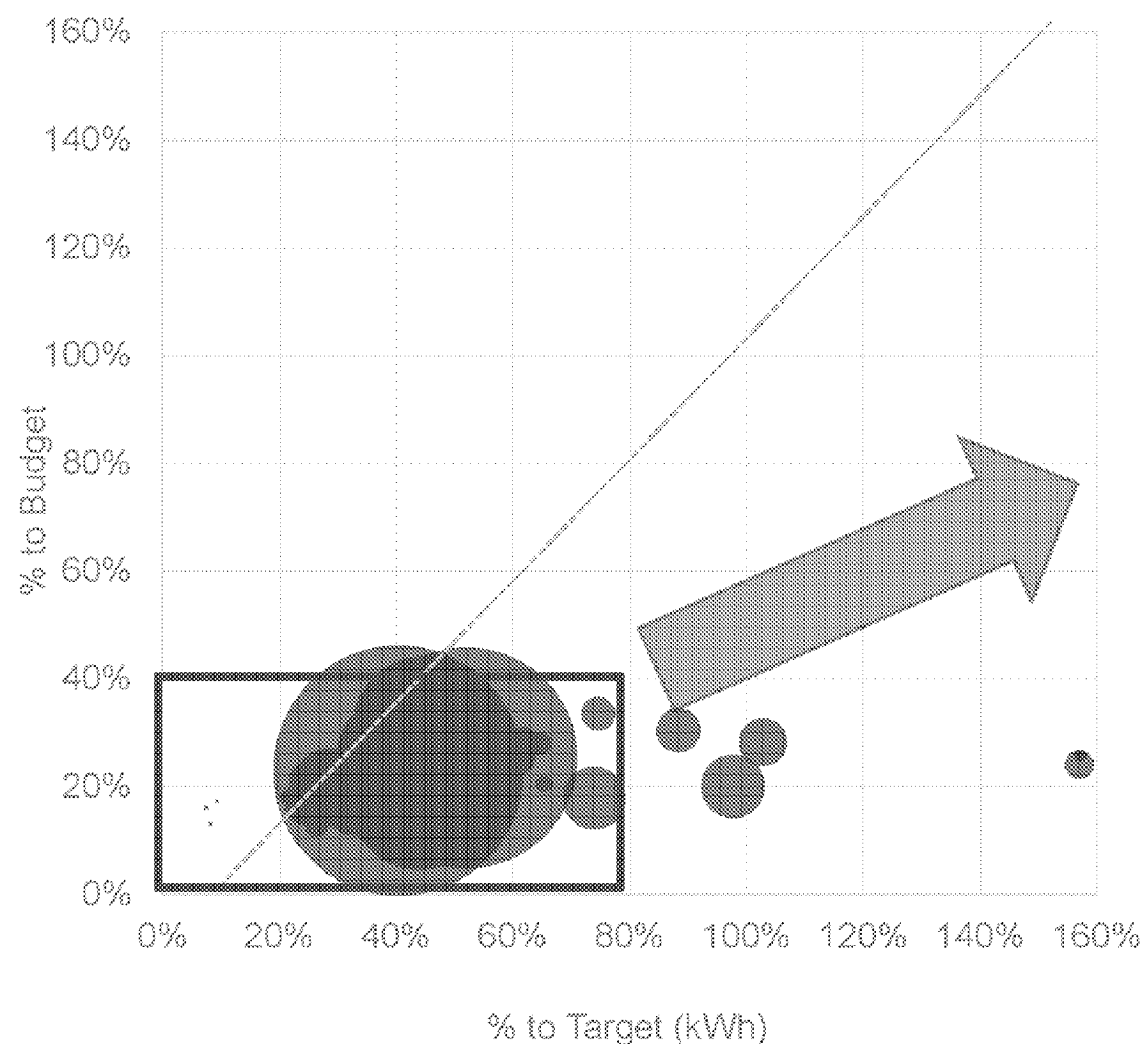
# CFF PROGRESS TO ENERGY TARGETS IS OUTPACING BUDGET, SOME LDCS HAVE ACHIEVED THEIR TARGET AND ARE UNDERSPENT



Progress to Target (verified 2015 and 2016 results, unverified 2017 results)

# MOST LDCS HAVE USED LESS THAN 40 PERCENT OF THEIR TOTAL ALLOCATED BUDGET

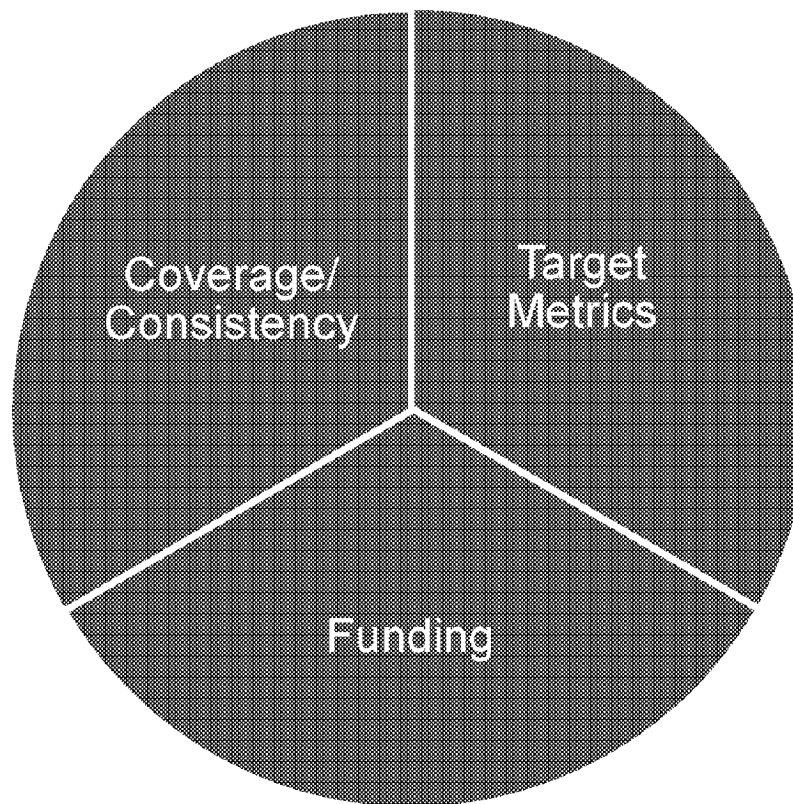
CHANGES TO SLIDE



Note: Bubble size depicts LDC size

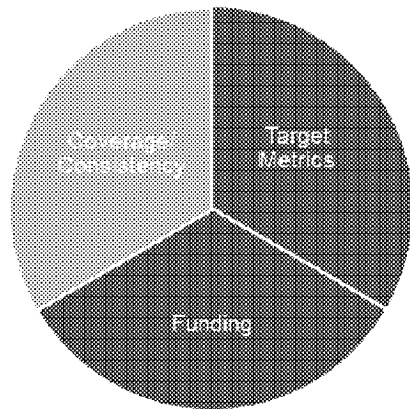
## CHALLENGES IN THE EARLY YEARS OF CFF WERE IDENTIFIED THAT CAN BE SOLVED THROUGH MODIFICATION OF BUDGETS AND TARGETS

- A preliminary list of current challenges was developed under the three categories in the figure below
- Within each category issues are sorted into challenges that could be influenced by mechanisms and structures, general observations, and items specifically related to regional and provincial planning





## CHALLENGES – COVERAGE/CONSISTENCY



## Due to Existing Rules &amp; Contract

- LDCs may reject projects due to, for example, low cost-effectiveness benefit, not enough energy savings to support the cost of the project incentive. Is this appropriate?
- Once an LDC has met their allocated CDM target prior to 2020, will CDM programs continue to be made available to their customers? Who will deliver and fund these programs if the LDC does not receive additional target (and, if required, budget?)
- LDCs can only be eligible for savings within their own service territory (e.g., credit cannot be allocated for supporting/funding projects outside of their service territory)

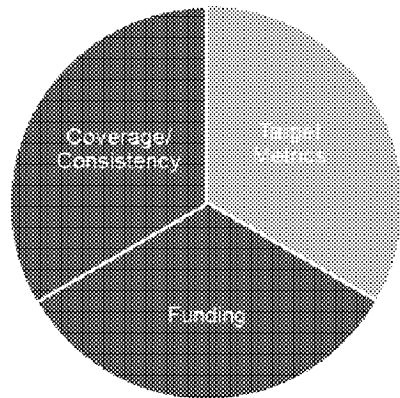
## General Observations

- Customers have expressed varying delivery agent preferences (e.g., LDCs, IESO, contractors)
- Some customers operating in multiple LDC territories have expressed challenges working with multiple utilities and inconsistent delivery of programs
- Ministerial Direction to provide province-wide coverage (equitable access), limited ability within the Energy Conservation Agreement to require LDCs to actively promoting and supporting all province-wide programs and IESO is responsible to deliver should the LDC choose not to offer all programs (51 LDCs offering all province-wide programs and 14 LDCs are not offering one or more province-wide program)

## Related to Planning

- In some regions, increasing CDM targets above allocated kWh may not be effective in meeting provincial reliability needs due to transmission limitations (e.g., Northwestern Ontario) or may not have any local reliability value whereas in other regions, there may be both provincial and local benefits to additional conservation above target but challenges exist in both funding and implementing these opportunities

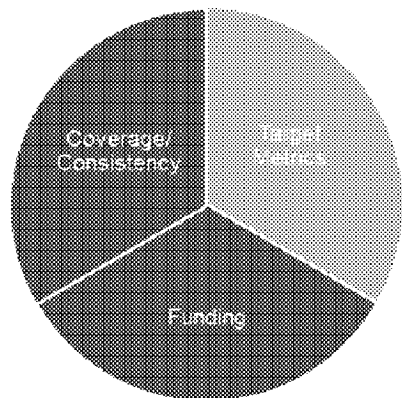
## CHALLENGES – TARGET METRICS



## Due to Existing Rules &amp; Contract

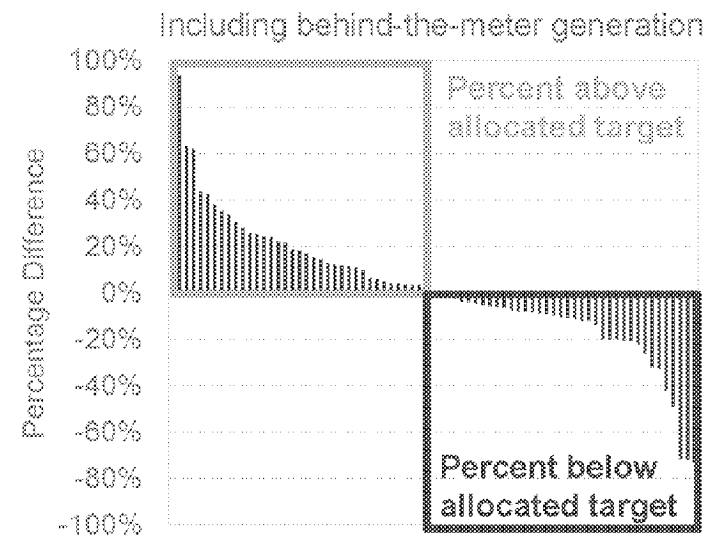
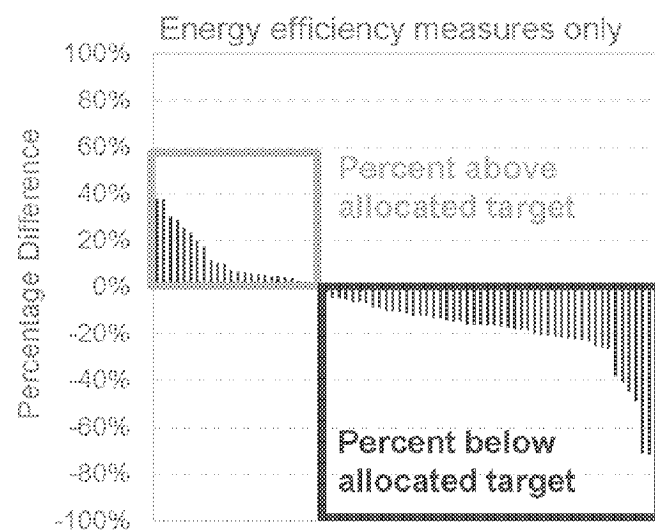
- Based on number of policy decisions, LDCs receive credit for savings towards targets from initiatives not contemplated in the original allocation of LDC CDM targets and in some cases are not being funded from their CDM budget. For example:
  - Dx customers moving projects through IAP (same owner as Tx) – paid by IAP budget
  - Whole home Program and Energy Performance Program savings to be allocated to LDCs but paid through central services; anticipated to achieve 0.9 percent of 7 TWh target
  - Savings from Conservation Fund and Innovation Fund pilots counting toward targets; 1 percent of persisting savings achieved to date (current savings to date (June 30, 2017); savings results from pilots are not received during the year except for verified results reporting, i.e. December 31, 2016, for LDC Innovation Fund Pilot Programs)
- The framework began with the understanding that the following savings would be considered as progress to targets:
  - Legacy program savings year (2015); 42 percent of persisting savings achieved to date
  - CHP projects were not initially considered in 2014 APS used to set targets (only EE measures were considered); 7 percent of persisting savings achieved to date (in-service projects only, the savings to date (June 30, 2017); no change from verified 2016 results based on December 31, 2016)
- There are other exogenous factors that could impact the realization of savings potential determined during the 2016 APS:
  - Fair Hydro Plan increases the payback of energy efficiency projects for residential and small business customers
  - Affordability Fund can shift customer priorities away from electric CDM
  - The expansion of the Industrial Conservation Initiative (ICI) could influence customers' desire to participate in CDM programs (though the regulation allows customers to remain eligible for ICI if a CDM program has caused ineligibility)
  - Climate Change Action Plan can shift customer priorities away from electric CDM or could increase electric loads leading to increased opportunities for certain end uses
  - Other programs impact paybacks, for example, Industrial Efficiency Incentive or Industrial Conservation Initiative

## CHALLENGES – TARGET METRICS CONT...



## General Observations

- 2016 APS illustrates higher or lower potential compared to existing LDC target for some LDCs; no mechanism to adjust or transfer target (and budget) to reflect the updated study

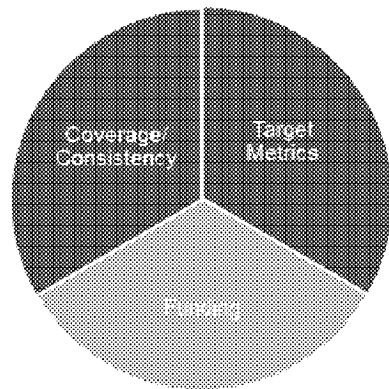


- There continues to be unassigned savings of CDM plans; 0.7 percent of the 7 TWh target (based on CDM Plans received as of August 14, 2017, also considers proposed programs or pilots that are currently not approved)

## Related to Planning

- From a system planning perspective, CDM may have a higher local reliability value in certain parts of the province than in other parts of the province

## CHALLENGES – FUNDING



## Due to Existing Rules &amp; Contract

- Some LDCs have met their allocated CDM targets well under their allocated budgets and there is no mechanism for IESO to release/reallocate these funds until the end of the framework (represents 3 percent of Ontario customers)
- Cost efficiency benefits of joint CDM plans Is not tracked or measured; are joint plans truly joint plans or only in place to achieve higher incentives?

## General Observations

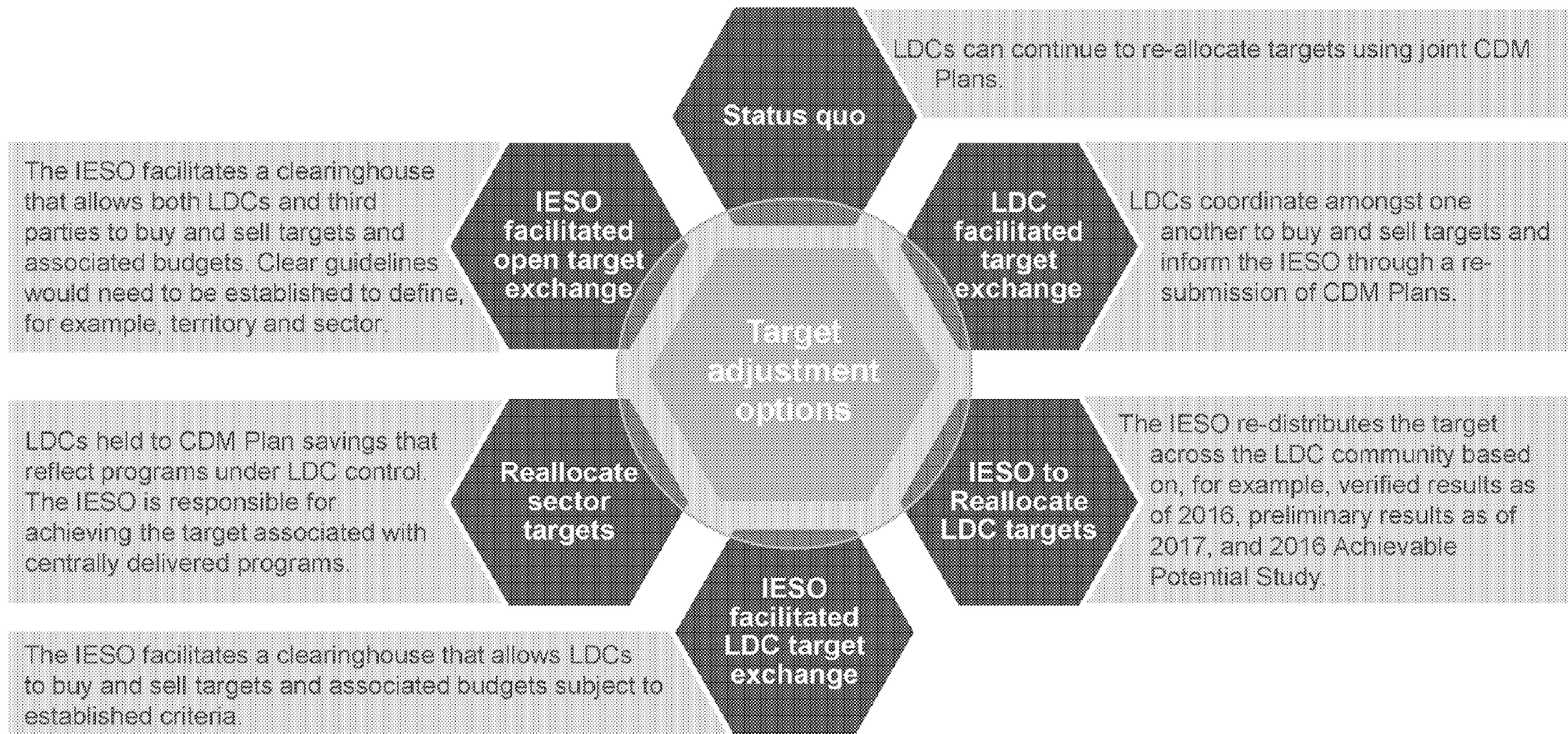
- Most LDCs are trending low on their budget spending in relation to the savings achieved (due in part to large CHP projects or legacy framework in 2015)
- Some LDCs are relying primarily on centrally delivered programs (with little to no incremental offering to customers), but continue to be eligible to earn performance incentives; centrally delivered program represent 28% of persisting savings to date (savings from January 1, 2015 to June 30th 2017, centrally delivered programs consist of the province-wide Coupons program; and Heating & Cooling program regardless of framework)
- Very little uptake of P4P funding by LDCs, only full cost recovery. Some LDCs have been able to enter P4P contracts with delivery agents. Is current risk allocation balance between ratepayer and market appropriate?

1. Electricity savings from January 1, 2015 to June 30th 2017, centrally delivered programs consist of the province-wide Coupons program; and Heating & Cooling program regardless of framework

SHOULD TARGETS BE  
ADJUSTED GIVEN  
FRAMEWORK GOALS AND  
POLICY OBJECTIVES? IF  
SO, HOW? WHAT ABOUT  
BEYOND 2020?

## TARGET REALLOCATION OPTIONS

- The following slide provides a description of some potential target reallocation options
- Combinations of options may also assist in solving the challenges identified



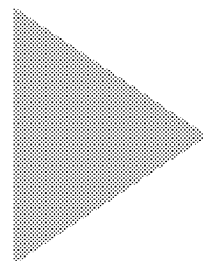
# EXAMPLES OF TARGET REALLOCATION CONSIDERATIONS

## POTENTIAL CHALLENGES

## POTENTIAL OPPORTUNITIES

### STATUS QUO

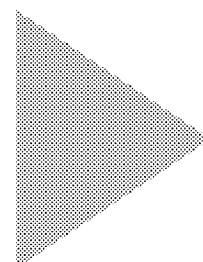
- **Coverage/consistency** (LDCs that have met targets may not continue to offer CDM programs, no mechanism to reallocate budget)
- **Over/under achievement** (not addressed)



- Minimal disruption
- Can focus on other issues
- No impact on planning

### LDC FACILITATED TARGET EXCHANGE

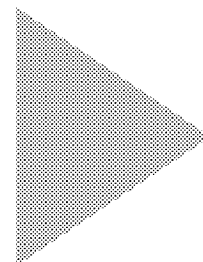
- **Coverage/consistency** (less visibility to IESO to monitor)
- **Planning** (could reallocate to regions that don't need additional CDM)
- **Admin/Infrastructure** (additional administrative efforts for LDCs)



- Terms can vary and are controlled by each LDC
- Can balance over/under achievement
- Minimal administrative effort for IESO

### IESO TO REALLOCATE LDC TARGETS

- **Control over goals** (LDCs cannot control how their CDM goals change)
- **Transparency** (methodology would need to be clear)
- **Admin/Infrastructure** (could require new strategies and be time-consuming)



- Could more easily integrate APS, planning, and achievement to date
- Can balance over/under achievement
- Minimal infrastructure required by IESO



# EXAMPLES OF TARGET REALLOCATION CONSIDERATIONS

## POTENTIAL CHALLENGES

## POTENTIAL OPPORTUNITIES

### IESO FACILITATED LDC TARGET EXCHANGE

- **Admin/Infrastructure** (could involve high infrastructure efforts)
- **Buyers and sellers** (does a market exist)

- Can balance over/under achievement
- Could layer in regional and other factors through, for example, adders

### REALLOCATE SECTOR TARGETS

- **Over/under achievement** (not addressed)
- **Coverage/consistency** (does not address, could reduce local support for residential customers, may need modifications to incentives)

- Align targets with control
- Could lead to less uncertainty in CDM plans
- Reduces complication of value added services

### IESO FACILITATED OPEN TARGET EXCHANGE

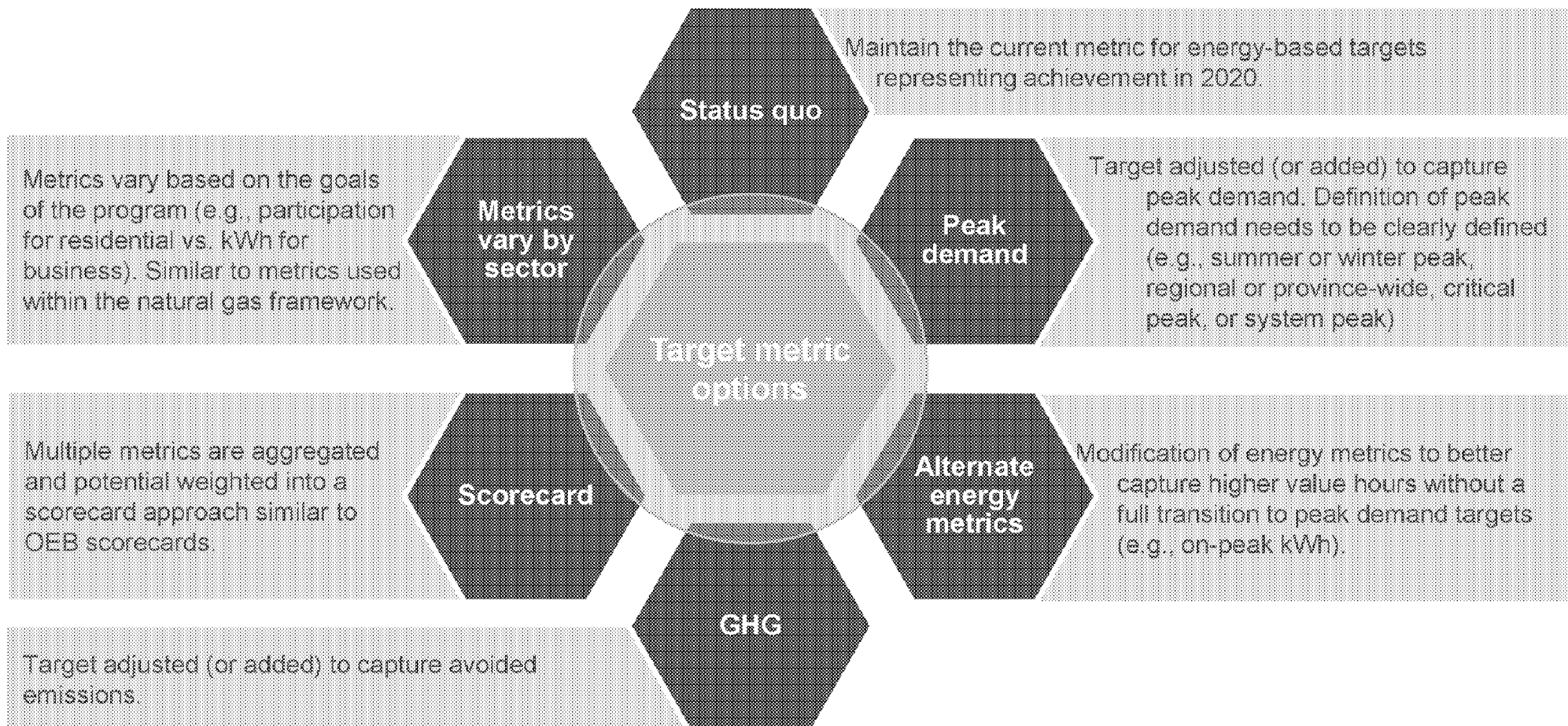
- **Admin/Infrastructure** (could involve high infrastructure efforts)
- **Buyers and sellers** (does a market exist)
- **Customer confusion** (possible cannibalization and confusion if programs/delivery agents vary)

- Can balance over/under achievement
- Could plug gaps if LDC reallocation is less than 7 TWh target
- Could lead to higher cost efficiency



## TARGET METRIC OPTIONS

- The following slide provides a description of some potential target metric options
- Combinations of options may also assist in solving the challenges identified



# EXAMPLES OF TARGET METRIC CONSIDERATIONS

## POTENTIAL CHALLENGES

## POTENTIAL OPPORTUNITIES

### STATUS QUO

- **Policy alignment** (low alignment with planning and climate)

- Minimal disruption
- Minimal impact on program design
- No need to adjust plans, directives, or additional admin

### PEAK DEMAND

- **Past experience** (removed from prior frameworks, low capacity needs)
- **Planning** (many definitions of peak that can vary by region)
- **Direction modification** required

- Better policy alignment (planning and climate change)

### ALTERNATE ENERGY METRICS

- **Program updates** (may be needed)
- **Administrative** (new allocations, additional information needed about measures to target)
- **Direction modification** possible

- Better policy alignment (planning and climate change)
- Could be less disruptive than full transition to peak demand

## EXAMPLES OF TARGET METRIC CONSIDERATIONS

## POTENTIAL CHALLENGES

## POTENTIAL OPPORTUNITIES

GHG

- **Program updates** (may be needed)
- **Administrative** (methodologies to calculate, track, and report)
- **Direction modification** required

- Better policy alignment (planning and climate change)

SCORECARD

- **Policy alignment** (may not improve)
- **Administrative** (potentially complex, changes to performance incentives)
- **Shift in focus** (away from 7 TWh is possible)
- **Direction modification** possible

- Could capture additional policy goals that are currently not tracked and measured

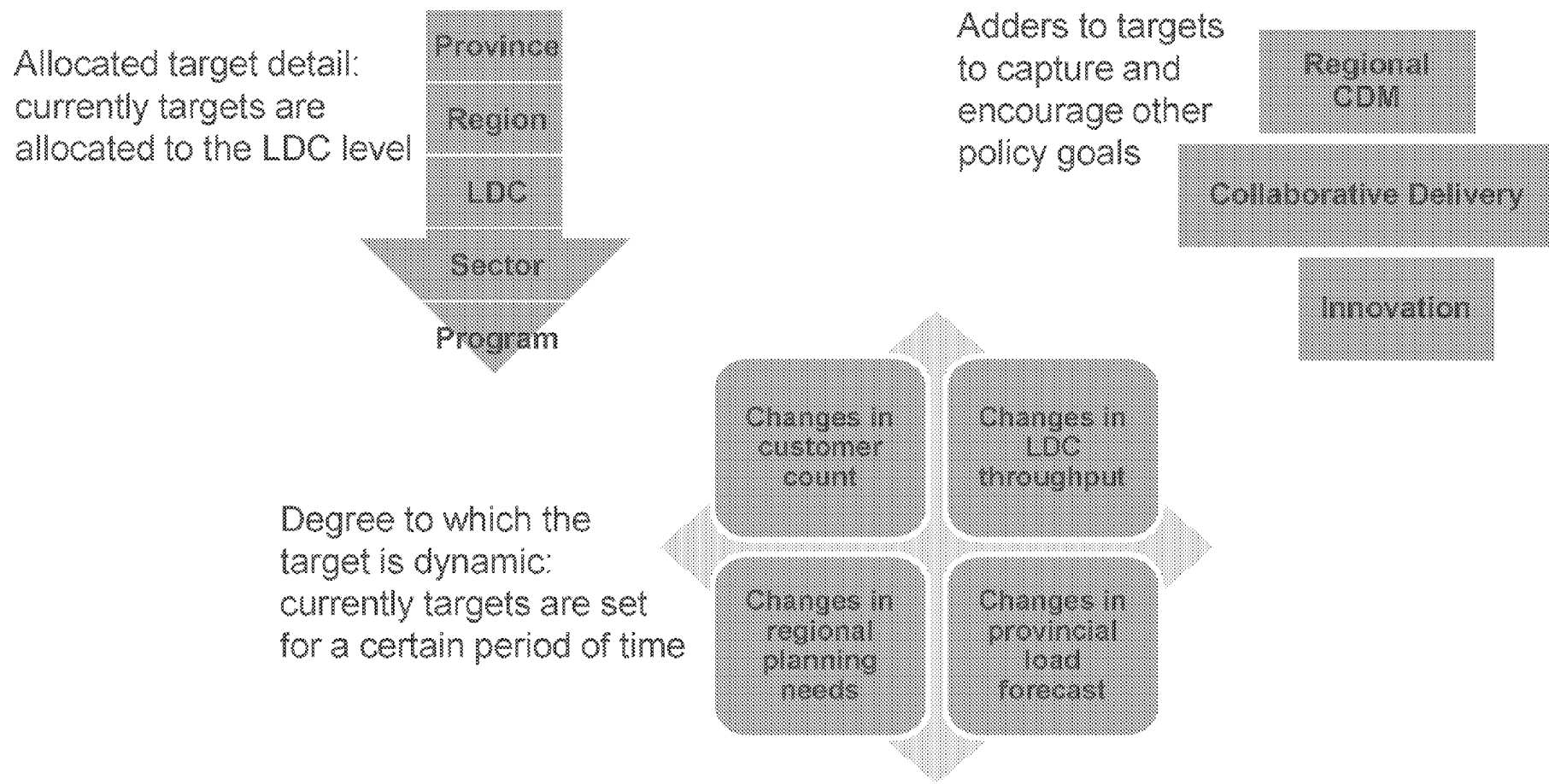
METRICS  
VARY BY  
SECTOR

- **Policy alignment** (may not improve)
- **Administrative** (changes to performance incentives)
- **Shift in focus** (away from 7 TWh is possible)
- **Direction modification** possible

- Could more accurately reflect the goals of certain programs

## OTHER TARGET OPTIONS FOR CONSIDERATION

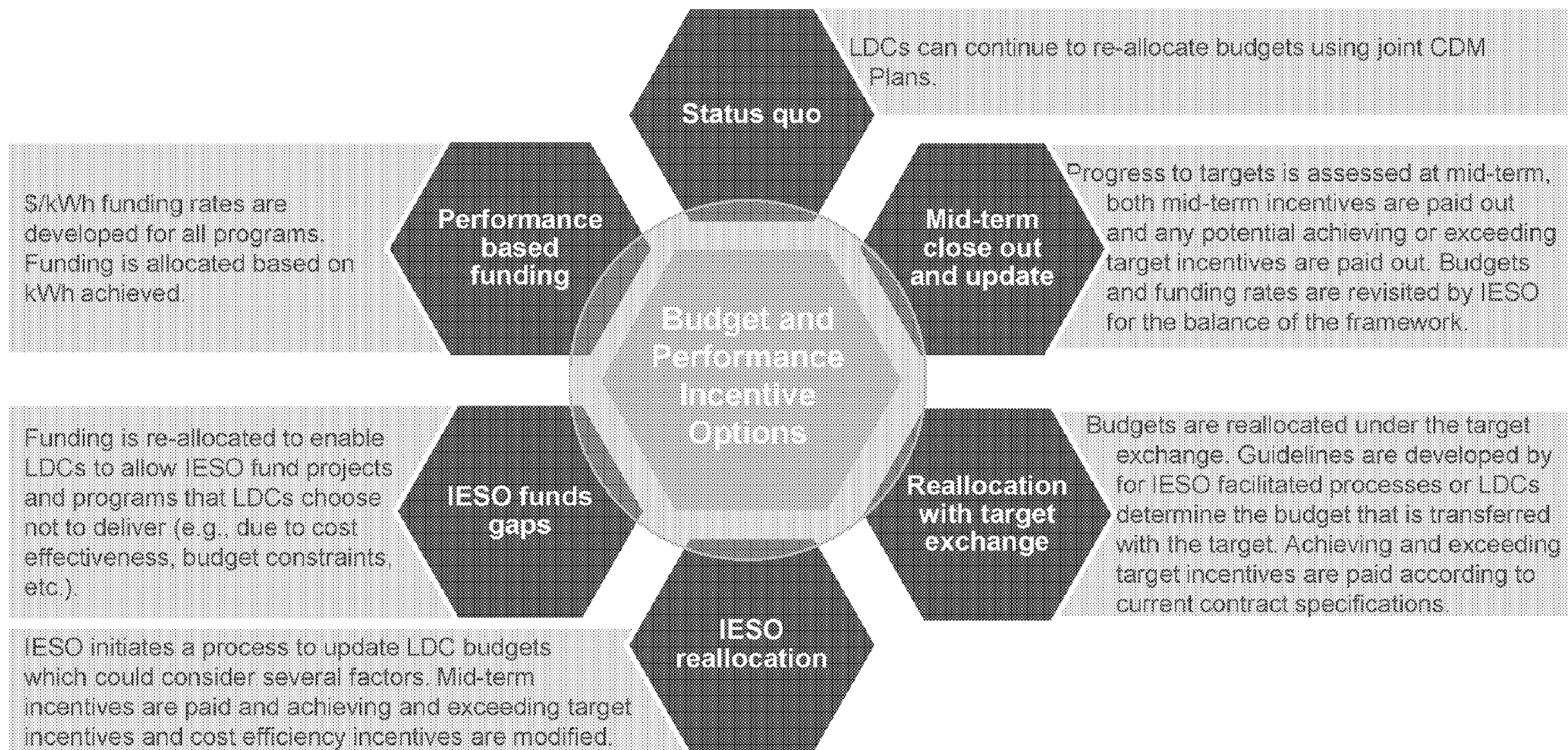
- There are other modifications that could be made to targets that do not fit neatly into the two categories identified (re-allocation and metrics)
- Some examples are outlined below



SHOULD BUDGETS BE  
ADJUSTED GIVEN  
FRAMEWORK GOALS AND  
POLICY OBJECTIVES? IF  
SO, HOW? WHAT ABOUT  
BEYOND 2020?

## BUDGET AND PERFORMANCE INCENTIVE MODIFICATION OPTIONS

- The following slide provides a description of some potential budget and performance incentive modification options
- Combinations of options may also assist in solving the challenges identified



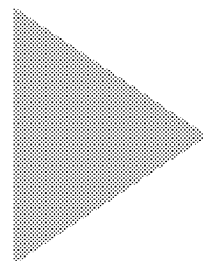
# EXAMPLES OF BUDGET AND PERFORMANCE INCENTIVE CONSIDERATIONS

## POTENTIAL CHALLENGES

## POTENTIAL OPPORTUNITIES

### STATUS QUO

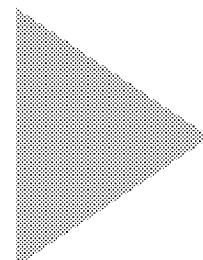
- **Coverage/consistency** (not addressed)
- **Incentives** (if already exceeded target little benefit of addition achievement, incentives paid even if target met through centrally delivered programs)



- LDCs tracking to CDM plans can maintain their strategies and expectations

### MID-TERM CLOSE OUT AND UPDATE

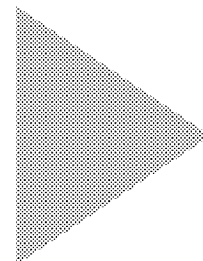
- **Disruption** (to strategies)
- **Incentives** (if already exceeded expectations there may be less motivation to earn more)



- Could maintain interest in delivering CDM
- Could reduce the need for IESO to maintain provincial coverage
- Ability to modify incentives to reflect framework experience so far

### REALLOCATI ON WITH TARGET EXCHANGE

- **Coverage/consistency** (partially addressed)
- **Incentives** (reluctance to exchange with existing incentive structure, incentives paid even if target met through centrally delivered programs)



- Aligned processes (targets and budgets)
- LDCs tracking to CDM plans can maintain their strategies and expectations



# EXAMPLES OF BUDGET AND PERFORMANCE INCENTIVE CONSIDERATIONS

## POTENTIAL CHALLENGES

## POTENTIAL OPPORTUNITIES

### IESO REALLOCATION

- **Transparency** (methodology would need to be clear)
- **Disruption** (to strategies and incentive expectations)

- Simpler process, less infrastructure required

### IESO FUNDS GAPS

- **Funding** (central services could be insufficient, reallocation of LDC budgets)
- **Disruption** (IESO would need sufficient notice to fund/deliver)
- **Attribution** (would need to be determined)

- Allows LDCs to focus on most valuable projects or programs while maintaining coverage/consistency

### PERFORMANCE BASED FUNDING

- **Past experience** (low uptake to date)
- **Degree of control** (may need to be modified)
- **Underachievement** (of 7 TWh possible)

- Continuous opportunity to earn performance incentives
- Encourages cost efficiency





## SECTION 2: INTRODUCTION

- I. Policy Context
- II. Introduction and Methodology

## TOPIC 8: BUDGETS, TARGETS AND COST EFFECTIVENESS

**Policy Context – 2013 Long-Term Energy Plan & Conservation First Framework/Industrial Accelerator Program Ministerial Directions**

**LTEP 2013 provides context around the long-term conservation target to 2032 as well as cost-effectiveness testing:**

- “The province expects to offset most of the growth in electricity demand to 2032 using programs and improved codes and standards. This will lessen the need for new supply. Our long-term conservation target of 30 TWh in 2032 represents a 16% reduction in forecast gross demand for electricity — the equivalent to more than all the power used by the City of Toronto in 2012 — an improvement over the 2010 LTEP.”
- “Our agencies and partners will achieve this goal with a combination of tools, including the Total Resource Cost Test, the Program Administrator Cost Test and a hurdle rate, to screen program proposals. A hurdle rate would consider the cost of delivering a conservation program against the avoided cost of procuring supply.”

**The OPA’s role to develop Target and Budget Allocation was defined in the March 2014 Conservation First Framework Direction:**

- “[...]I hereby direct the OPA to coordinate, support and fund the delivery of CDM programs through Distributors to achieve a total of 7 TWh of reductions in electricity consumption between January 1, 2015 and December 31, 2020 [...]”
- “The OPA, in consultation with Distributors, shall develop an allocation methodology to allocate the full 7 TWh among Distributors. The allocation methodology may take into consideration Distributor CDM potential at a local and/or regional level as identified in the OPA’s 2014 energy efficiency achievable potential study, and other factors, as appropriate.”
- “The OPA shall establish a budget allocation for each Distributor in consideration of the Distributor CDM Target and CDM Plan [...]”

## TOPIC 8: BUDGETS, TARGETS AND COST EFFECTIVENESS (CONT)

**Policy Context – 2013 Long-Term Energy Plan & Conservation First Framework/Industrial Accelerator Program Ministerial Directions****March 2014 Conservation First Framework Direction addresses cost effectiveness testing and exceptions:**

- “The OPA shall ensure there is a positive benefit-cost analysis of each CDM Plan and each Province-Wide CDM Program and Local Distributor CDM Program utilizing the OPA's Total Resource Cost Test and the Program Administrator Cost Test found in the OPA's Cost-Effectiveness Guide [...] The OPA will establish hurdle rates to consider the cost of delivering Province-Wide Distributor CDM Programs against the avoided cost of procuring supply.”
- “The OPA shall [despite previous section] allow Distributors to apply to the OPA for approval of Province-Wide Distributor CDM Programs and Local Distributor CDM Programs where cost effectiveness is not demonstrated if the program is: a) targeted to on-reserve First Nation customers, b) designed for educational purposes, c) a low-income CDM program”

**The July 2014 Industrial Accelerator Program Direction addresses budget, target and cost-effectiveness:**

- “The OPA shall establish a budget to achieve a target of 1.7 TWh of savings through the Industrial Accelerator Program to be met through projects approved on or before December 31, 2020.”
- “The OPA shall evaluate achievement of electricity savings achieved through the Industrial Accelerator Program on an annual incremental basis, based on the OPA's standard [EM&V protocols]...”
- “The OPA shall ensure that there is a positive cost-benefit analysis for the Industrial Accelerator Program utilizing the OPA's Total Resource Cost (TRC) Test and the Program Administrator Cost (PAC) Test found in the OPA's Cost Effectiveness Guide [...]”

## TOPIC 8: BUDGETS, TARGETS AND COST EFFECTIVENESS (CONT)

**Policy Context – 2013 Long-Term Energy Plan & Conservation First Framework/Industrial Accelerator Program Ministerial Directions**

*This topic area will also explore funding mechanisms, delivery models, financing and resource acquisition*

**LTEP 2013 outlines a need for financing mechanisms for conservation:**

- “The government will work to make new financing tools available to consumers starting in 2015. These tools will include on-bill financing to help them with the upfront cost of making energy efficiency retrofits to conserve electricity and natural gas. The government has already enabled municipal governments to offer Local Improvement Charges to recover energy efficiency and renewable energy investments with repayment through property taxes. This allows consumers to save money on their energy bill and pay off conservation investments over time as they receive the benefits of conservation.”

**The July 2014 Industrial Accelerator Program Direction also includes a mention of flexible financing:**

- “The OPA shall facilitate flexibility in financing for Industrial Accelerator Program projects”
- (Mid-term Review) “review of the Industrial Accelerator Program in regards to [...] lessons learned with respect to financing mechanisms.”

**The March 2014 Conservation First Framework Direction outlines options for funding mechanisms and encourages innovation:**

- “The OPA shall, in consultation with Distributors, develop a cost recovery and performance incentive mechanism for Distributors for making Province-Wide Distributor CDM Programs and/or Local Distributor CDM Programs available to customers in their service areas.”
- [Full cost recovery (with tiered performance incentive mechanism) and pay for performance (paid based on a pre-specified value for each verified kilowatt hour of electricity savings achieved) are described in further detail following this section]
- “Innovation and adoption of new technologies will be encouraged.”

## TOPIC 8: BUDGETS, TARGETS AND COST EFFECTIVENESS (CONT)

**Policy Context – 2013 Long-Term Energy Plan & Conservation First Framework/Industrial Accelerator Program Ministerial Directions**

*This topic area will also explore funding mechanisms, delivery models, financing and resource acquisition*

**The June and December 2016 Directions focus on delivering pay-for-performance based programs to non-residential customers:**

- “The IESO shall, in consultation with Distributors, centrally design, fund and deliver two CDM programs (“Centrally-Delivered Programs”): a. A province-wide pay-for-performance CDM program for Multi-Distributor Consumers (“Multi-Distributor Program”) [...]”

**Amendment to July 2014 Industrial Accelerator Program Direction:**

- “The IESO shall undertake a pay-for-performance pilot program for customers that are eligible for the Industrial Accelerator Program that is consistent with the Centrally-Delivered Pay-for-Performance Multi-Distributor CDM Program.”

**December 2016 Directive to IESO to fund distribution-connected sites as part of Industrial Accelerator Program:**

- “The IESO shall allow transmission-connected customer with distribution-connected sites to elect to have their transmission-connected and distribution-connected sites administered through the Industrial Accelerator Program... Any associated electricity savings... shall count toward Distribution CDM Targets under the Conservation First Framework Directive”

**August 2017 Directive for IESO delivery of low income programs:**

- “...The IESO shall centrally design, fund and deliver across all Distributors’ licensed service areas a Provincewide CDM Program(s) targeted to the low-income customer segment..., beginning January 1, 2018, within the budget established under section 1.4 of the CFF Direction.”
- “...reductions achieved through IESO-delivered Provincewide Low-Income CDM Program(s) shall not count towards a Distributor’s CDM Target.”
- “...IESO may continue to allow a Distributor to deliver, funded through their allocated CDM budget...”

## MID-TERM REVIEW

Navigant was engaged by the IESO to complete the mid-term review for the Conservation First Framework and Industrial Accelerator Program. Issues were identified by the IESO and grouped into eight major topics that will guide the Framework Review through four key activities outlined below. This report is the current state summary for the **budgets, targets, cost-effectiveness** topic.

| Current State Summaries                         |                           | Market Research                                                                                                                                        |                                                                                                                                                                                            | Opportunities                                                                                                                                                                      | Final Study Report                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topics                                          | Report Date               | Current State Summaries:                                                                                                                               | Objectives:                                                                                                                                                                                | Research, analysis, market research inform potential modifications                                                                                                                 | Consolidation of findings, feedback, and identification of issues and opportunities                                                                                                                                                                                                                                                                    |
| Customer and market engagement and satisfaction | March 16                  | Summarize the current state of each theme (e.g., existing operations, policies, progress, decisions, etc.) and are used as a basis for market research | <ul style="list-style-type: none"> <li>To confirm and enhance content of the topic reports</li> <li>To gather insights into future framework improvements, design, and delivery</li> </ul> | Cost-benefit and gap analysis to scope opportunities<br><br>Consolidated list of medium-term (before 2020), and long-term (post 2020) opportunities for prioritization by the IESO | Methodologies and approach clearly discussed<br><br><b>Out of Scope:</b> <ul style="list-style-type: none"> <li>New mass market research</li> <li>2011-14 framework in-depth analysis</li> <li>New program design</li> <li>LDC Mid-term incentive</li> <li>Evaluation Measurement &amp; Verification protocols</li> <li>Codes and Standards</li> </ul> |
| Definition of CDM                               | April 20                  |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Collaboration                                   | April 20                  |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Governance & operations                         | May 18                    |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Planning integration                            | June 15                   |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Climate change                                  | July 13                   |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Budgets, targets, cost effectiveness            | August 17<br>September 14 |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Non-energy impacts                              | October 12                |                                                                                                                                                        |                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
|                                                 |                           |                                                                                                                                                        | May to August                                                                                                                                                                              | September/October                                                                                                                                                                  | November to February                                                                                                                                                                                                                                                                                                                                   |



## SECTION 3: CURRENT STATE

- I. CFF Target Reallocation
- II. CFF Target Metrics
- III. Funding Mechanisms



## I. CFF TARGET REALLOCATION

- i. Current construct
- ii. Potential options
- iii. Outside Ontario

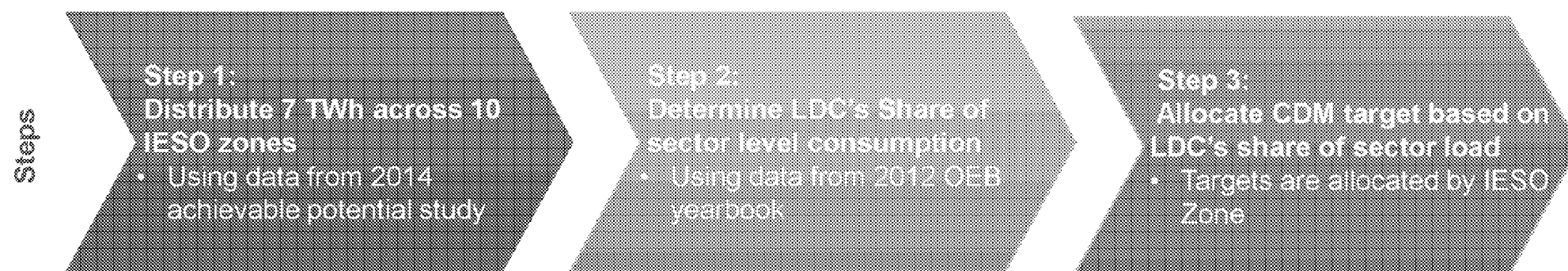


## I. CFF TARGETS » CURRENT CONSTRUCT

## LDC CDM TARGETS WERE ALLOCATED BY IESO ZONE AND LDCS' SHARE OF LOAD WITHIN THEIR ZONE

When CDM targets were allocated, sector- and regional-level results from the 2014 Achievable Potential Study were used

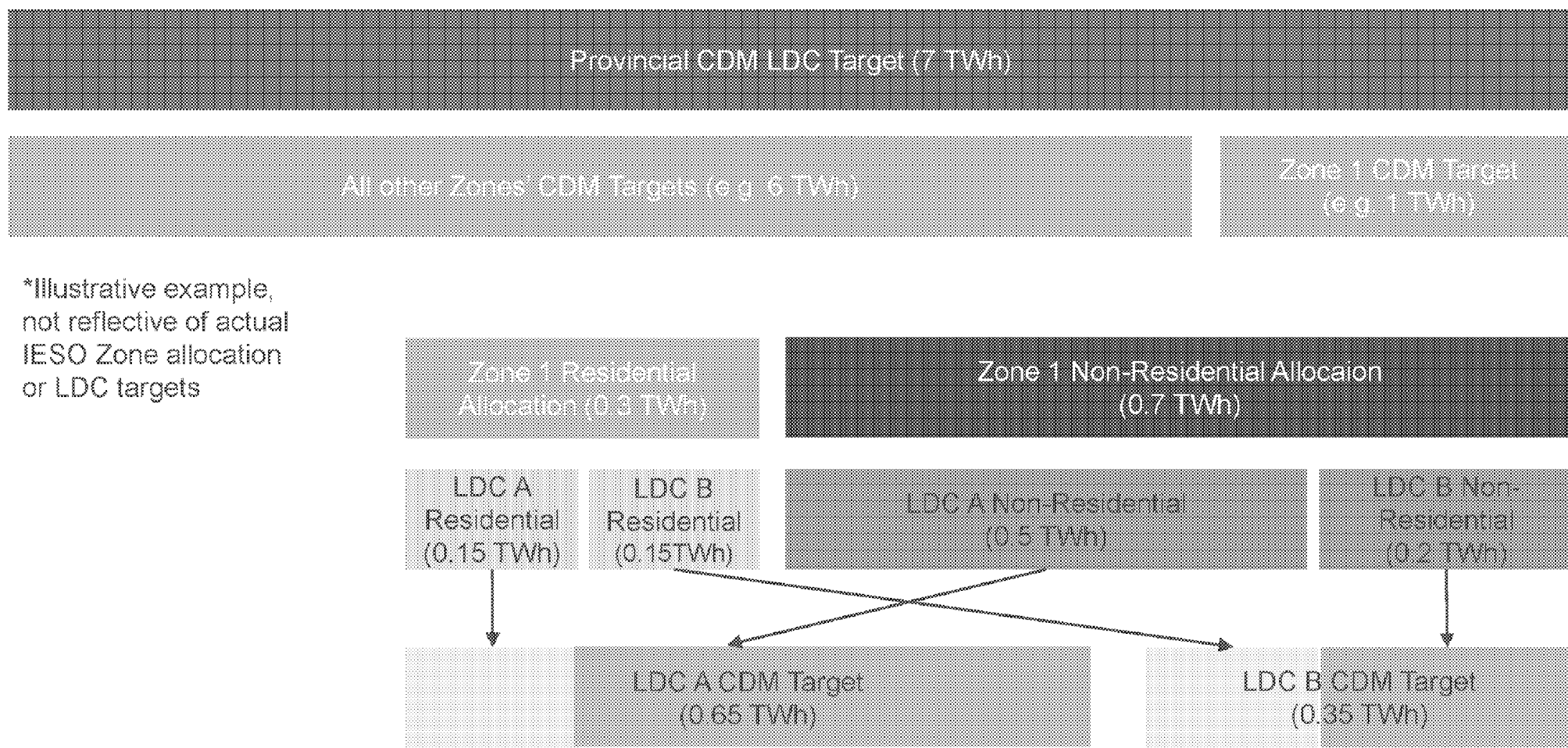
- The 7 TWh provincial Conservation First Framework target was allocated by IESO zone and sector



## I. CFF TARGETS » CURRENT CONSTRUCT

CDM TARGETS ARE ALLOCATED BY SECTOR, BUT LDCS ARE ONLY REQUIRED TO MEET THEIR TOTAL CDM TARGET

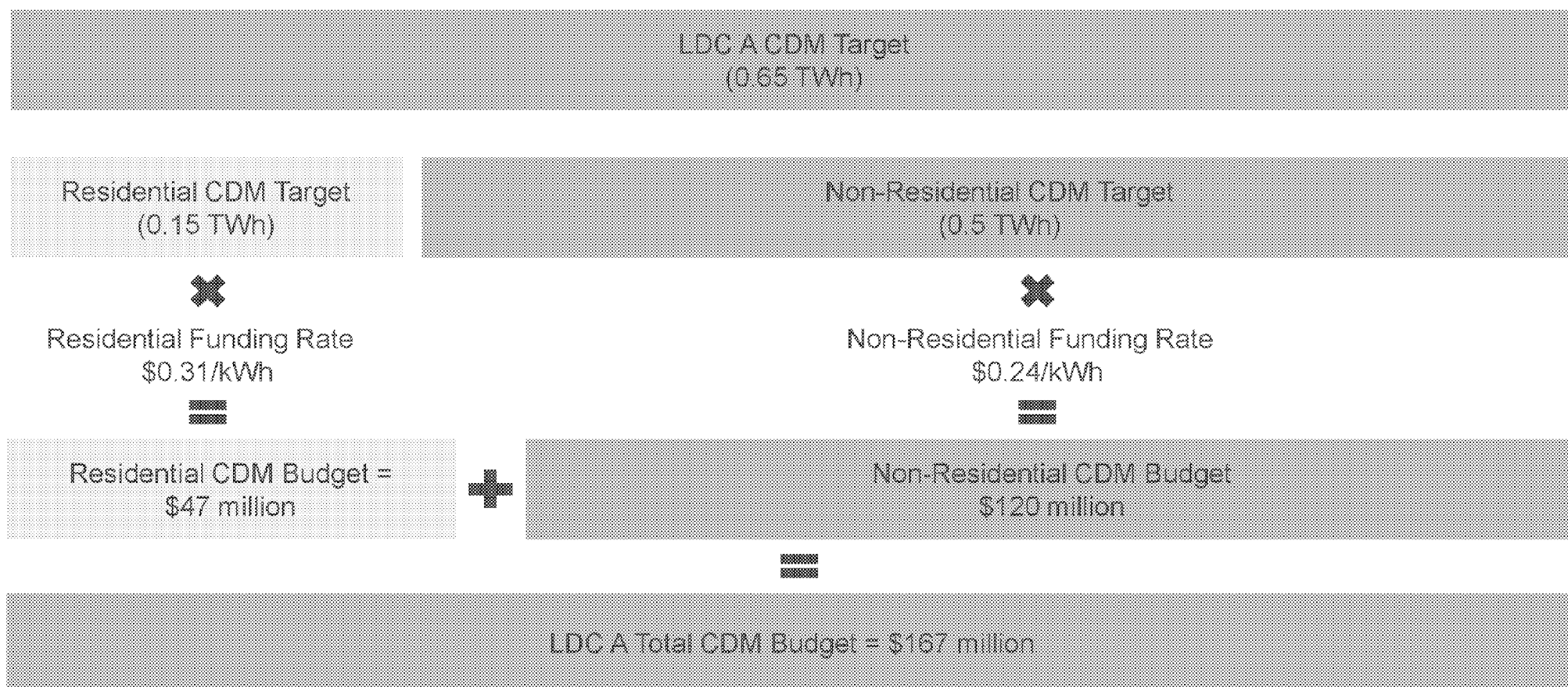
- CDM Targets are allocated based on residential and non-residential consumption, specific to each LDC
- LDCs are responsible only for meeting the total target, i.e. they do not need to meet sector specific targets



## I. CFF TARGETS » CURRENT CONSTRUCT

## CDM BUDGETS ARE ALLOCATED BY SECTOR, BUT LDCS CAN SPEND THEIR TOTAL BUDGET AS THEY SEE FIT

- Residential and non-residential funding rates are used only for budget allocation purposes
- LDCs are provided with a **total** CDM budget for 2015-2020
  - LDCs have the ability to manage their total CDM budget as they see appropriate
  - LDCs are responsible for all costs including LDC administrative costs and customer incentives

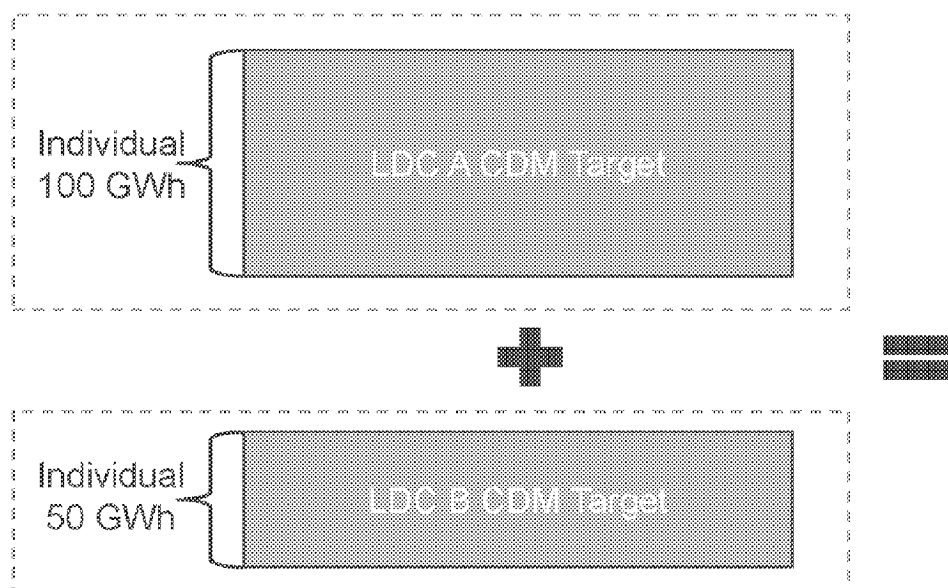


## I. CFF TARGETS » CURRENT CONSTRUCT

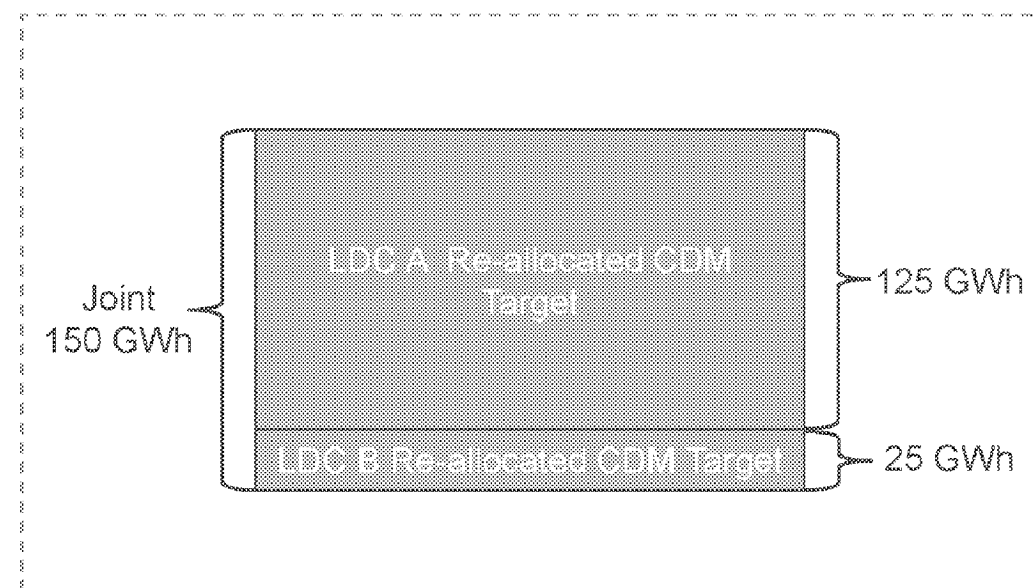
## CDM TARGETS AND BUDGETS CAN BE RE-ALLOCATED THROUGH JOINT CDM PLANS

- Reallocation of budgets and targets is currently possible through joint plans, but only for members of the plan
  - The LDC may submit a joint CDM Plan in cooperation with one or more other distribution companies
  - The LDC and the other participating distribution companies may at any time reallocate as between themselves any portion of their respective CDM Plan Targets or CDM Plan Budgets or both by submitting an amended joint CDM Plan
  - Performance incentives will be assessed with reference to the aggregate performance of all participants in the joint CDM Plan
- Joint CDM Plans have a higher mid-term incentive amount and achieving target incentive amount (1¢/kWh vs 1.5¢/kWh)

Individual CDM Targets



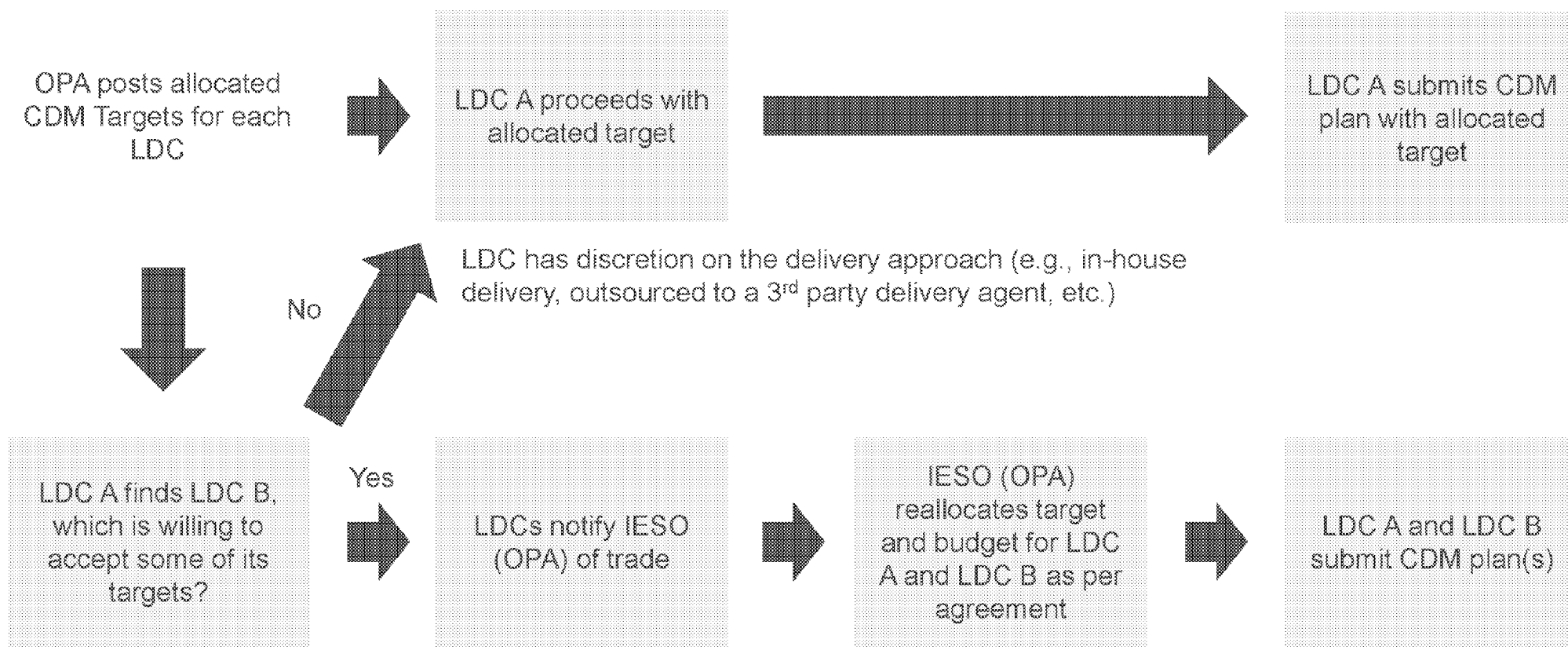
Joint CDM Plan Targets



## I. CFF TARGETS » CURRENT CONSTRUCT

## GUIDELINES INDICATE THAT AN LDC IS ABLE TO EXCHANGE A PORTION OF ITS CDM TARGET WITH ANOTHER WILLING LDC

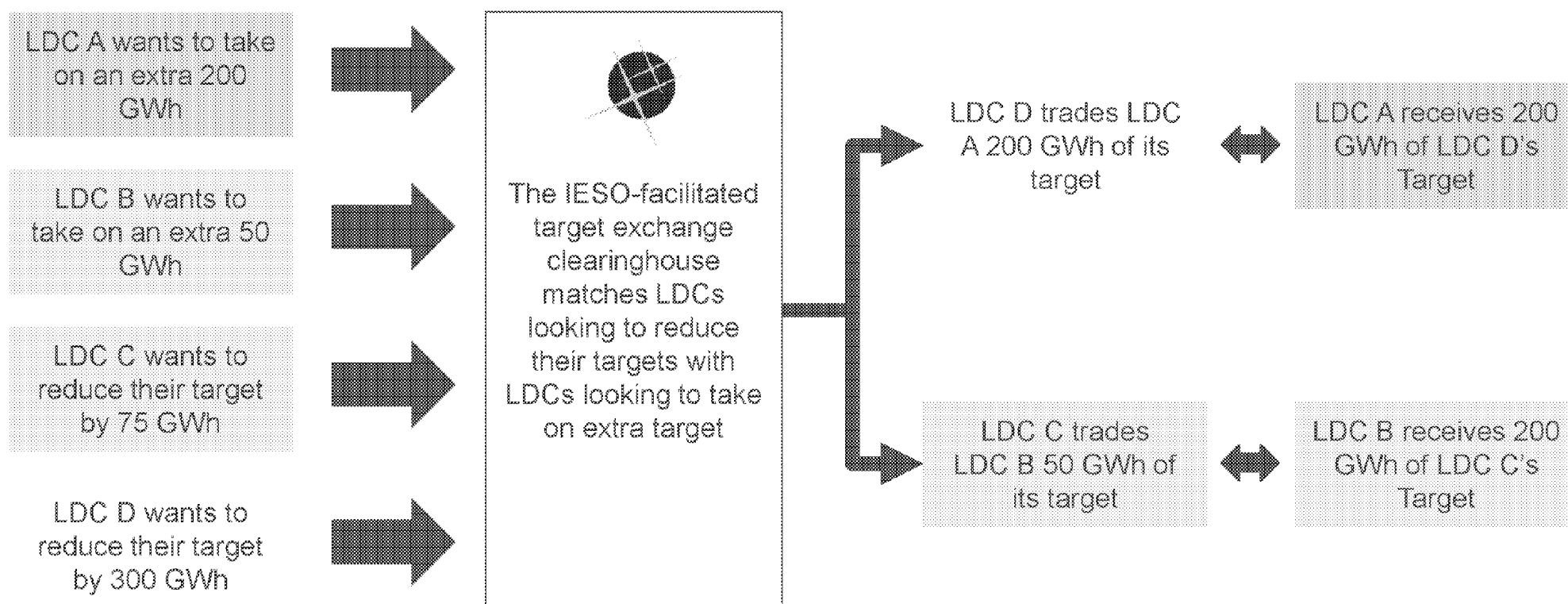
- Initial guidelines for target exchange were released early in the framework, **however, a formal exchange is not yet developed**
- Each LDC is responsible for achieving its allocated 2015-2020 CDM target
- However, as per IESO target exchange guidelines, an LDC may exchange or trade a portion of its CDM target throughout the term of its Energy Conservation Agreement (ECA) with another LDC
- **Note: an LDC cannot allocate all of its target to another LDC**



## I. CFF TARGETS » CURRENT CONSTRUCT

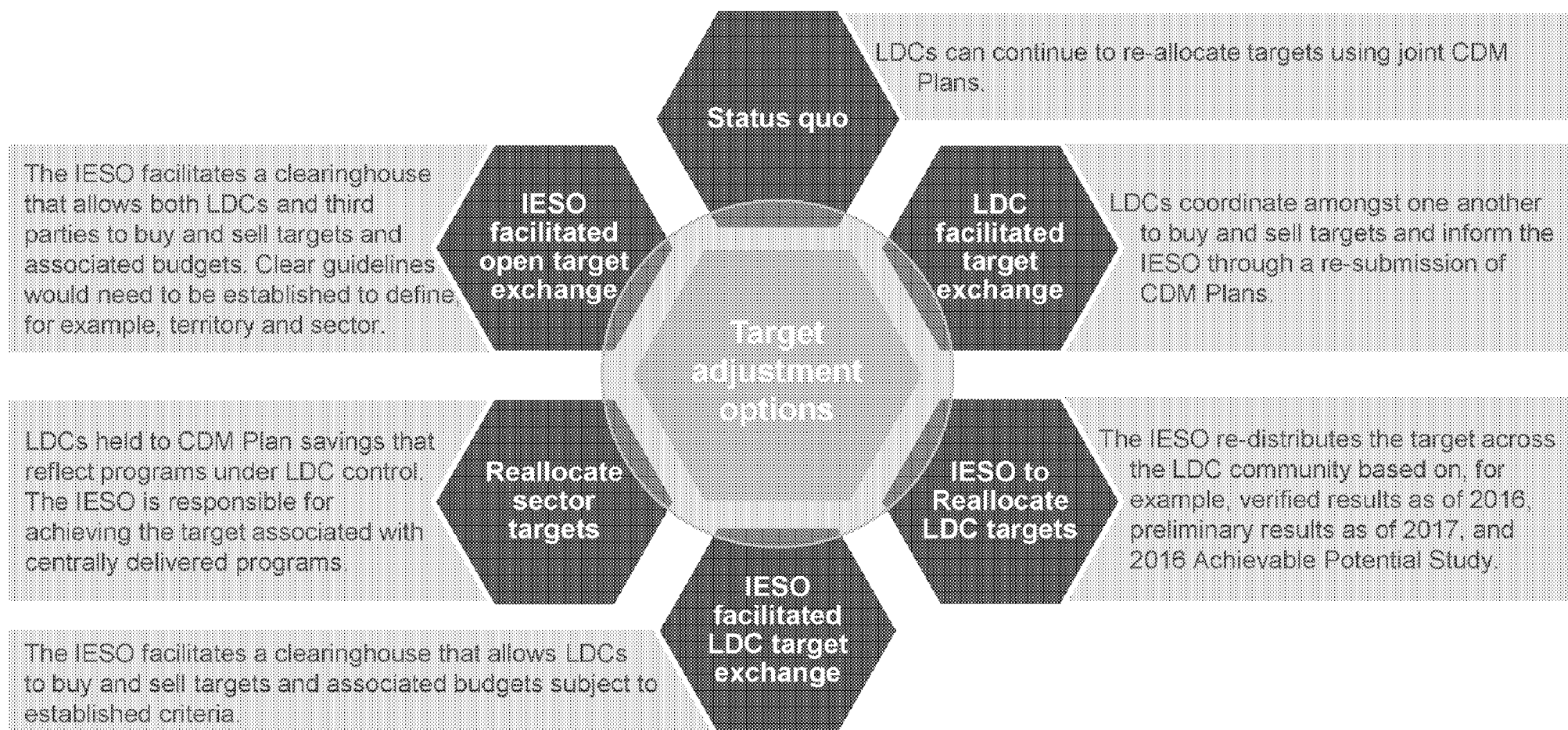
## ACCORDING TO THE TARGET EXCHANGE GUIDELINES, A CLEARINGHOUSE HAS BEEN CONSIDERED BY THE IESO FOR USE IN ONTARIO

- The IESO stated in 2015 (target exchange guidelines) that it was reviewing the potential for establishing a "clearinghouse" for facilitating target exchange among LDCs
- This clearinghouse would assist LDCs seeking to reduce their CDM target (based either on an identified gap in CDM target achievement within their service territory or to reduce their risk of underperformance) to be matched with LDCs seeking to increase their CDM target
- Accordingly, LDCs that can take on more target will be enabled to achieve greater savings in their service territory and increase their potential for performance incentives under the higher incentive rate, as outlined in the ECA



## TARGET REALLOCATION OPTIONS

- The following slides provide a description of some potential target reallocation options
- Combinations of options may also assist in solving the challenges identified



## STATUS QUO: MAINTAIN CURRENT TARGETS

**Status quo**

The 7 TWh target is maintained. LDCs can continue to re-allocate targets using joint CDM Plans.

**Challenges**

- Does not address LDCs that have met their targets and could result in low to no program availability in some regions (consistency/coverage)
- No mechanism to reallocate budgets if an LDC has met their target and wishes to hold their budget and/or runs out of budget
- Does not address LDCs that are underachieving

**Opportunities**

- Minimal disruption to LDCs and no change to performance incentive expectations
- Can focus on other issues such as improving existing systems
- No impact on planning

**LDC facilitated target exchange**

The 7 TWh target is maintained. LDCs coordinate amongst one another to buy and sell targets and inform the IESO through a re-submission of CDM Plans.

**Challenges**

- Targets could be reallocated to regions that do not need additional CDM (regional planning constraints)
- Less visibility for IESO to monitor program coverage across the province
- Iterative process if IESO does not accept re-submitted LDC CDM plan
- Additional administrative efforts for LDCs

**Opportunities**

- LDCs that need additional targets and budgets can set the terms of their agreements in such a way that makes sense for each counterparty
- Under and over achievement can be balanced
- Minimal administrative effort for IESO



## STATUS QUO: MAINTAIN CURRENT TARGETS

**IESO to Reallocate  
LDC targets**

The 7 TWh target is maintained. The IESO re-distributes the target across the LDC community based on, for example, verified results as of 2016, preliminary results as of 2017, and 2016 Achievable Potential Study.

**Challenges**

- LDCs cannot control the additional targets they are assigned
- Methodology must be clearly communicated and fair to LDCs and IESO
- Could require all LDCs to reconsider CDM Plans and strategies
- Could be a time consuming process

**Opportunities**

- Considerations for regional planning, APS, and progress to date could be taken into account
- Under and over achievement could be balanced
- Simpler from an infrastructure perspective (exchange methodology and process not required)

**IESO facilitated LDC  
target exchange**

The 7 TWh target is maintained. The IESO facilitates a clearinghouse that allows LDCs to buy and sell targets and associated budgets subject to established criteria.

**Challenges**

- Could involve high infrastructure efforts to facilitate
- Would require both willing buyers and sellers, unclear what would occur if there are not enough buyers

**Opportunities**

- Under and over achievement can be balanced through a market mechanism
- IESO could layer in regional planning and other considerations through, for example, adders

## STATUS QUO: MAINTAIN CURRENT TARGETS

**Reallocate sector targets**

LDCs held to CDM Plan savings that reflect programs under LDC control. The IESO is responsible for achieving the target associated with centrally delivered programs.

**Challenges**

- Does not address LDCs that have met their targets and could result in low to no program availability in some regions
- Does not address LDCs that are underachieving
- Could decrease local promotion efforts, support, and LDC engagement with residential customers
- Modifications of performance incentives may be needed
- Some LDCs are primarily residential customers

**Opportunities**

- LDCs could focus on the savings associated with the programs they have greater control over
- Reduced uncertainty in achievement against LDC CDM Plan
- IESO would hold the budget associated with centrally delivered programs and could modify as needed

**IESO facilitated open target exchange**

The IESO facilitates a clearinghouse that allows both LDCs and third parties to buy and sell targets and associated budgets. Clear guidelines would need to be established to define, for example, territory and sector.

**Challenges**

- Cannibalization of LDC targets could materialize if clear rules for third parties are not developed
- Could involve high infrastructure efforts to facilitate
- Would require both willing buyers and sellers, unclear what would occur if there are insufficient buyers
- Would need to ensure provincial consistency
- Could lead to customer confusion

**Opportunities**

- Under and over achievement can be balanced
- Could plug any gaps in buyers and sellers from LDC only target reallocation
- Could result in higher cost efficiency

## 1. CFF TARGETS » OUTSIDE ONTARIO

# ENERGY SAVINGS CERTIFICATES (ESCS) ALLOW UTILITIES TO TRADE ENERGY SAVINGS FROM VERIFIED PROJECTS

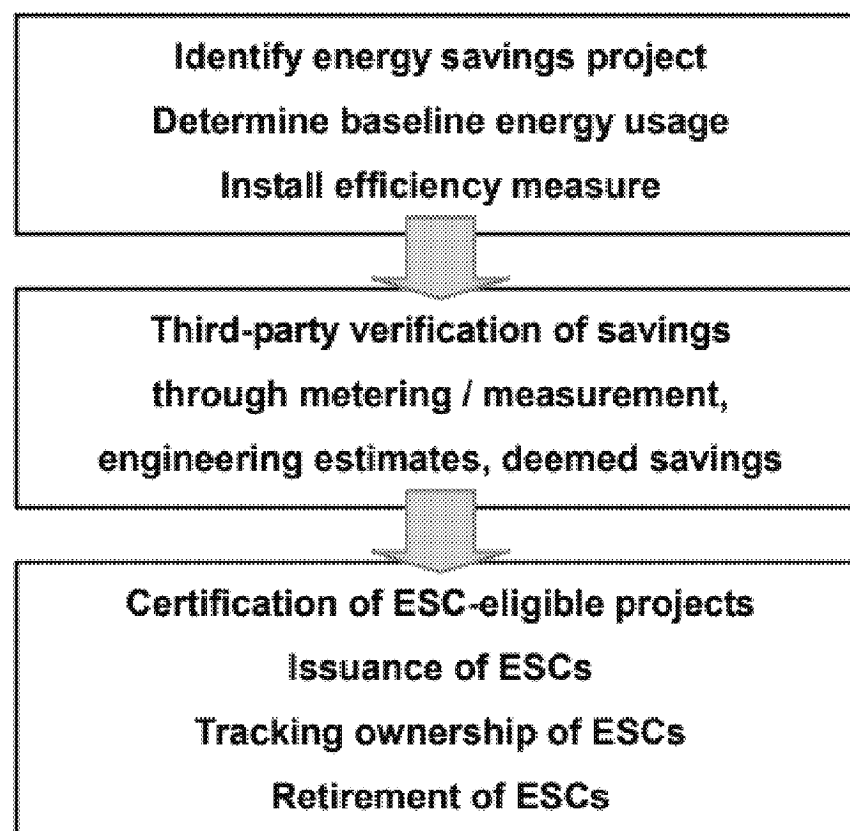
- Energy Savings Certificates (ESCs) are certificates that utilities can trade to represent one megawatt-hour of energy efficiency savings
- The main benefit of ESCs is their potential to free market forces to drive capital and capabilities to energy savings opportunities

- NREL states:

*"An ESC is an instrument representing a unit of energy savings that has been measured and verified. ESCs allow parties to trade the attributes of energy savings, representing an ownership right to the bundle of societal and environmental benefits created by the fixed quantity of energy savings with which the ESC is associated."*

- In different jurisdictions, ESCs are used differently, and sometimes apply to different projects, the diagram to the right shows some of the different steps in ESC trading schemes
- Some jurisdictions allow ESCs to include projects with CHP, solar hot water systems, geothermal heat pumps, smart metering, sensors, remote monitoring, demand response, and/or other load management measures
- Each ESC trading program has developed its own measurement and verification protocols

## Steps in ESC Trading Schemes:



## I. CFF TARGETS » OUTSIDE ONTARIO

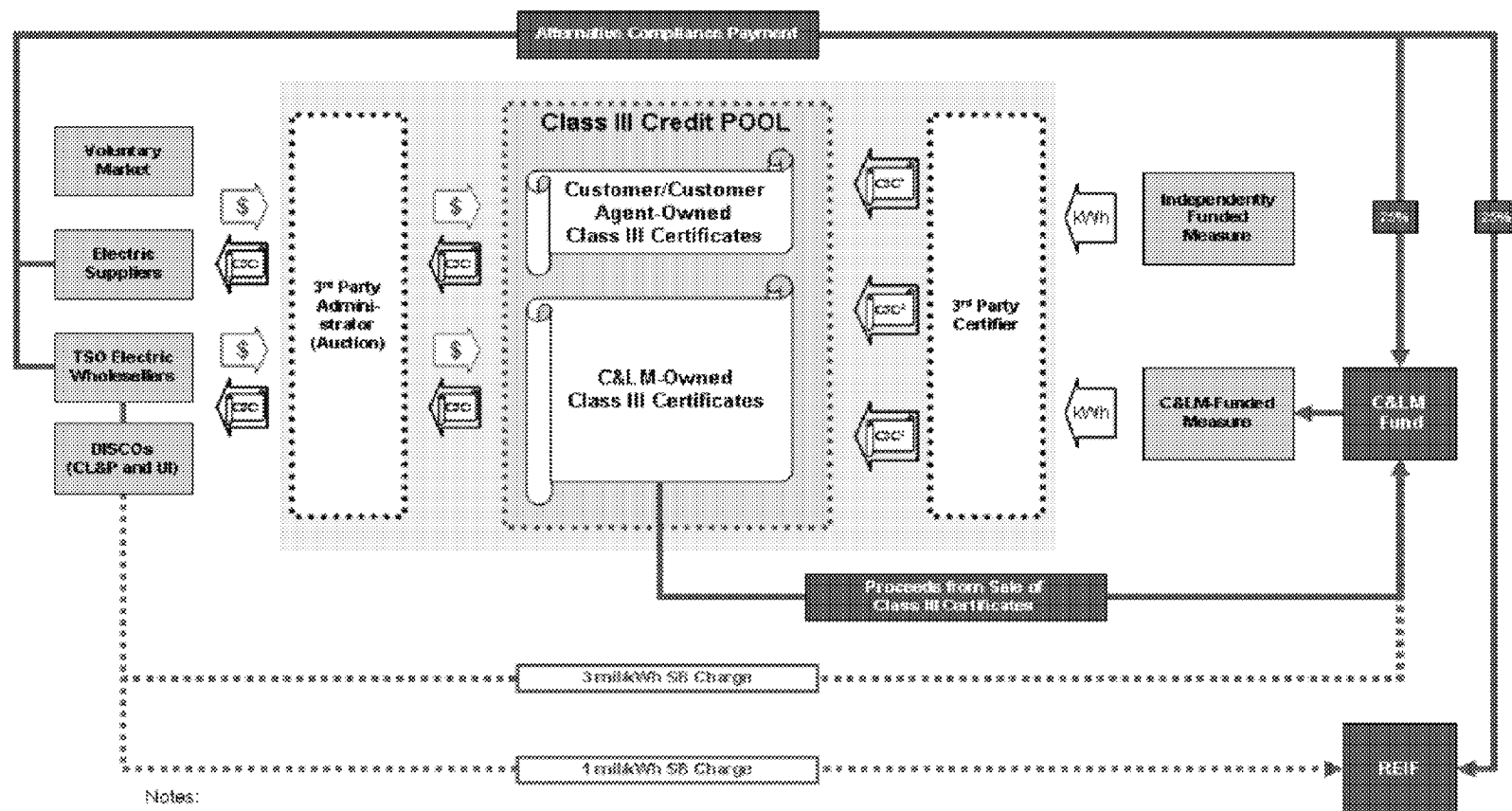
## CONNECTICUT WAS THE FIRST STATE IN THE UNITED STATES TO ADOPT AN ENERGY SAVINGS CERTIFICATE (ESC) TRADING SCHEME

- ESCs are used in some parts of the U.S. (Connecticut, Nevada, and Pennsylvania), Australia, France, Italy, and the U.K.

**Connecticut (CT), USA example:**  
The flow of ESCs in the Connecticut Compliance Trading Scheme

CT was the first state in the US to adopt a trading ESC market

The targets include a broad array of eligible savings projects (includes CHP, load management, demand response, and certain waste heat recovery systems)



Notes:

C3C stands for Class III Credit

<sup>1</sup> Credits generated by projects financed through Independent Funding are allocated 100% to the Customer / Customer Agent.

<sup>2</sup> Credits generated by projects financed through the C&LM Fund are allocated 100% to the C&LM fund.

<sup>3</sup> Credits generated by CHP projects are allocated 100% to the Customer / Customer Agent.

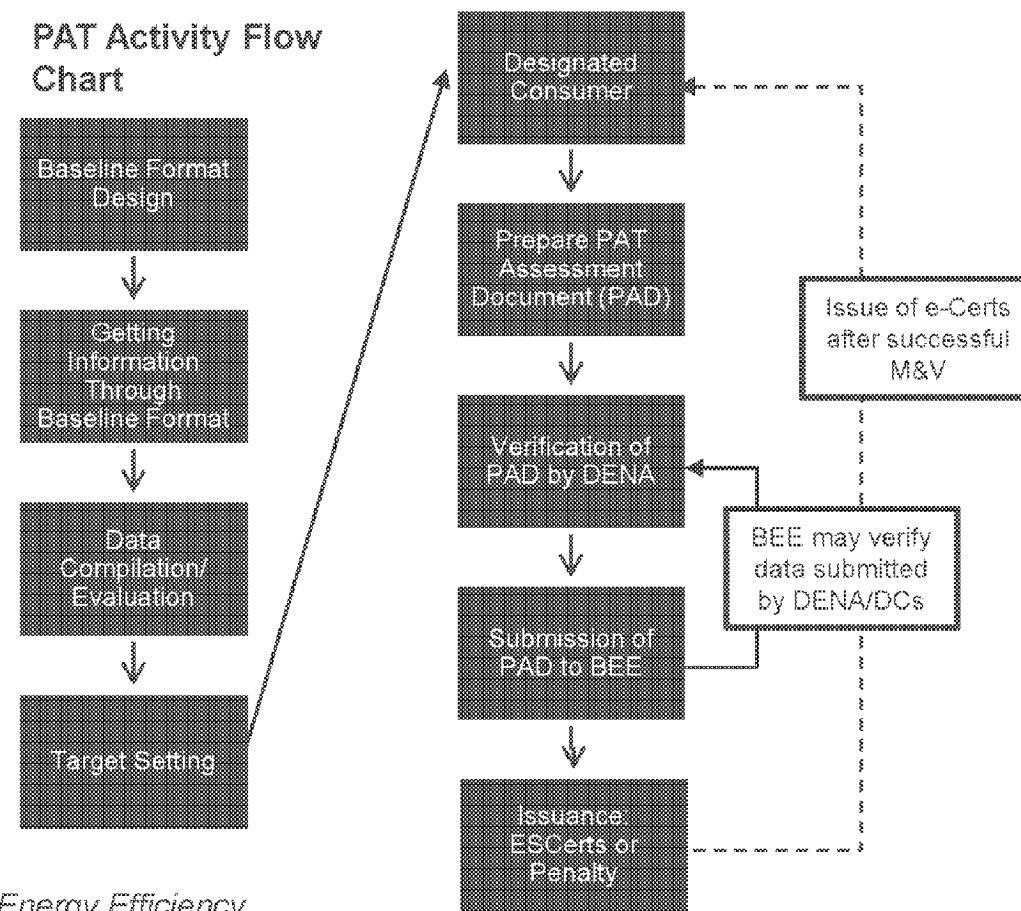
## I. CFF TARGETS » OUTSIDE ONTARIO

## INDIA HAS A TARGET EXCHANGE MECHANISM ALLOWING OVERACHIEVING UTILITIES TO TRADE WITH UNDERACHIEVING UTILITIES

- India also has a target exchange mechanism, Perform, Achieve, & Trade (PAT), which is a market-based mechanism that allows energy efficiency overachieving utilities to trade savings to the underachieving utilities
- This was created under the Indian National Mission on Enhanced Energy Efficiency (NMEEE) in the National Action Plan on Climate Change (NAPCC), aimed to improve energy efficiency in industry by trading energy certificates

- PAT mechanism rewards overachievers, and penalizes underachievers
- Designated to 8 consumer sectors (all high energy users): thermal power plants, steel, cement, fertilizer, pulp & paper, textile, aluminum, and chloralkali industries
- The program is audited by independent agencies to monitor, verify, and certify the PAT certificates

PAT Activity Flow Chart



*DENA = Designated Energy Auditors; BEE = Bureau of Energy Efficiency*



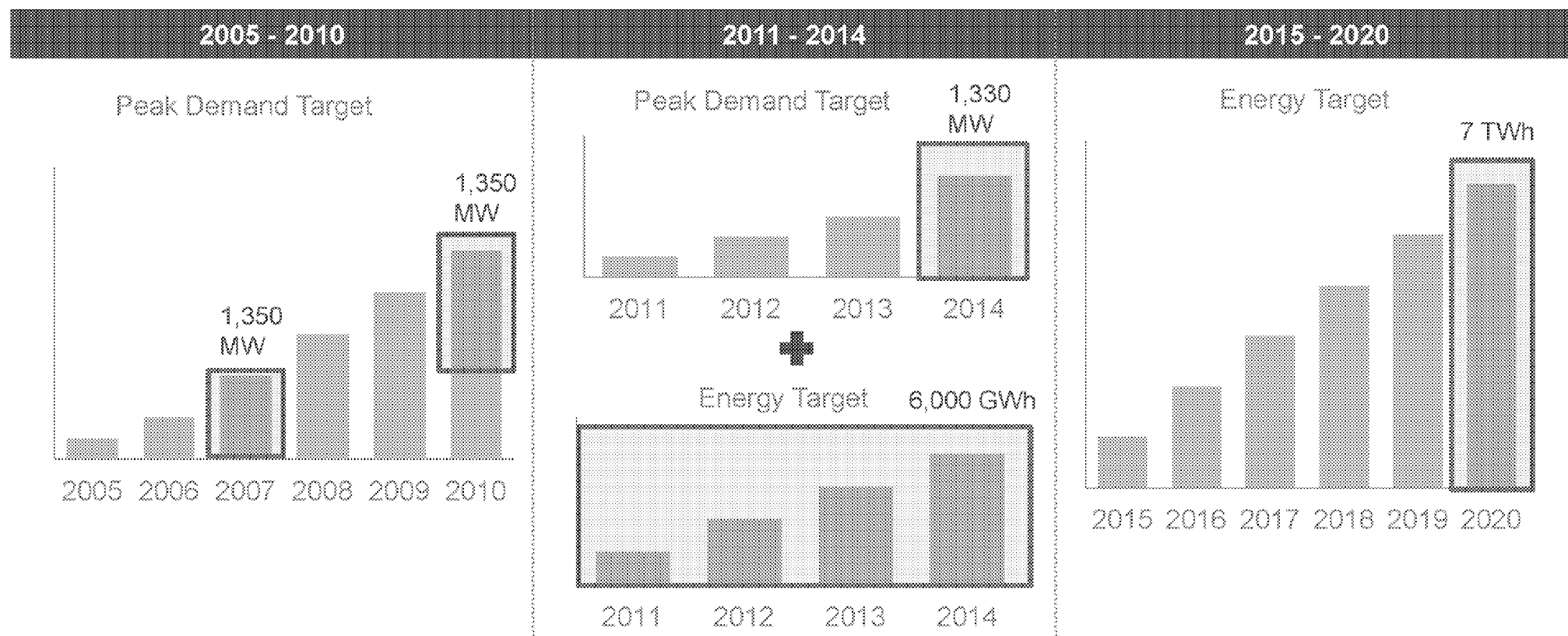
## II. CFF TARGET METRICS

- i. Current construct
- ii. Potential options

# CDM TARGETS IN ONTARIO CHANGED FROM DEMAND-BASED TO DEMAND AND ENERGY-BASED TO THE CURRENT ENERGY-ONLY TARGET

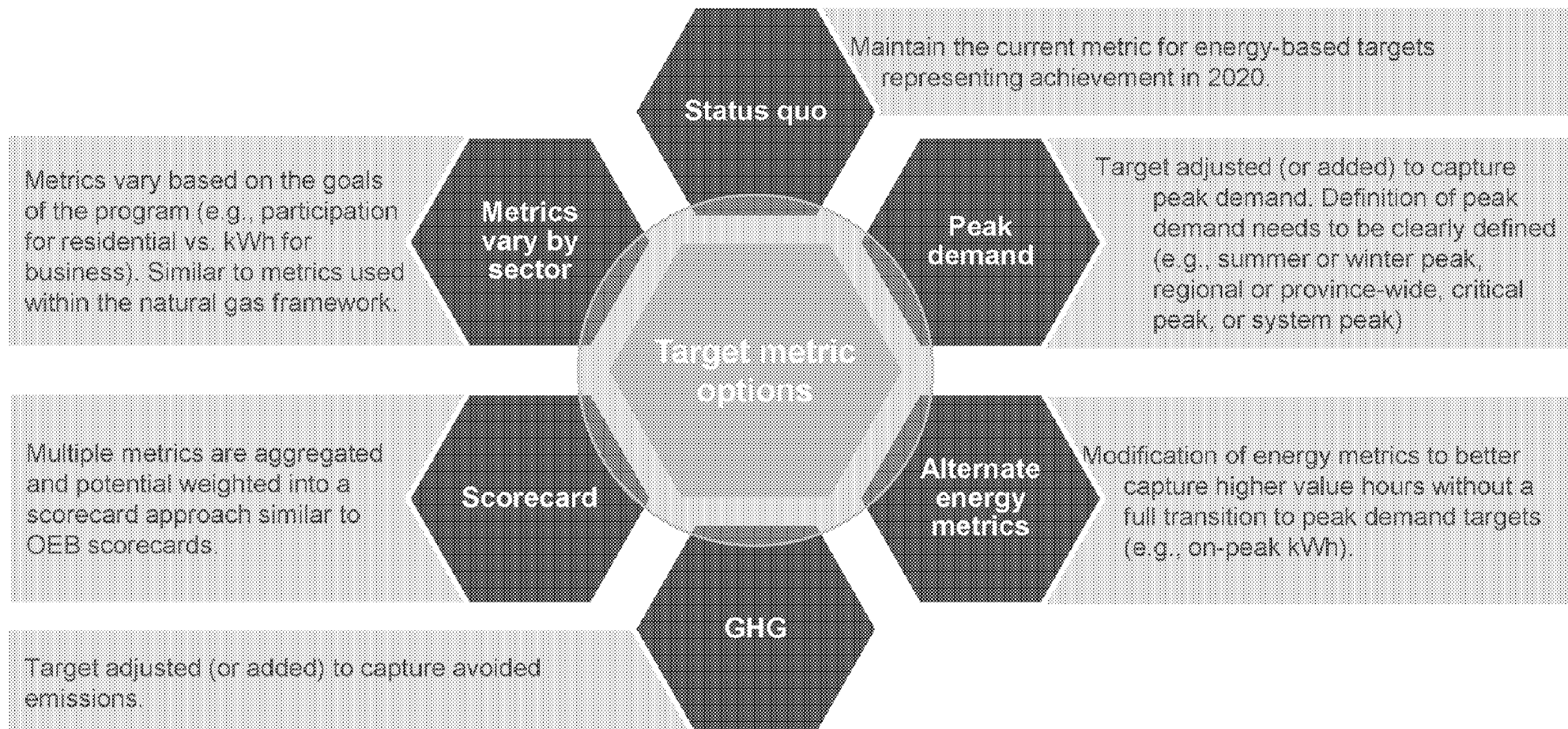
- Target metrics for IESO and LDCs have changed over time from a peak demand target to an energy target
- The blue shaded area illustrates the target metric used (e.g., annual peak demand, cumulative energy, etc.)

|         | 2005-2007 | 2008-2010           | 2011-2014              | 2015-2020     |
|---------|-----------|---------------------|------------------------|---------------|
| Targets | 1,350 MW  | Additional 1,350 MW | 1,330 MW and 6,000 GWh | 7 TWh by 2020 |



## TARGET METRIC OPTIONS

- The following slides provide a description of some potential target metric options
- Combinations of options may also assist in solving the challenges identified





## TARGET METRIC OPTIONS: DESCRIPTIONS AND CONSIDERATIONS

**Status quo**

Maintain the current metric for energy-based targets representing achievement in 2020.

**Challenges**

- Low alignment with planning and climate policy

**Opportunities**

- Minimal disruption
- No need to change program design to align with new metrics
- LDCs do not need to re-assess CDM Plans, staffing, etc.
- IESO does not need to develop new targets and allocate them to LDCs
- Directive modification not required

**Peak demand**

Target adjusted (or added) to capture peak demand. Definition of peak demand needs to be clearly defined (e.g., summer or winter peak, regional or province-wide, critical peak, or system peak).

**Challenges**

- Prior frameworks focused on peak demand and decision was made to move to energy only targets
- Minimal capacity needs currently in Ontario
- Many definitions of peak that can vary by region (e.g., winter vs. summer)
- Does not value measures with low peak alignment (e.g., streetlighting)
- Directive modification would be required

**Opportunities**

- Better (but not perfect) alignment with planning
- Better (but not perfect) alignment with climate policy (gas generation is typically the resource avoided or offset during on-peak hours)

## TARGET METRIC OPTIONS: DESCRIPTIONS AND CONSIDERATIONS

**Alternate energy metrics**

Modification of energy metrics to better capture higher value hours without a full transition to peak demand targets (e.g., on-peak kWh).

**Challenges**

- Updated program design and/or new programs may be needed
- New targets and allocations would be required
- Additional information needed about measures to determine which to focus on
- Directive modification may be required

**Opportunities**

- Potentially less disruptive transition
- Better (but not perfect) alignment with planning
- Better (but not perfect) alignment with planning
- Better alignment with climate policy (gas generation is typically the resource avoided or offset during on-peak hours)

**GHG**

Target adjusted (or added) to capture avoided emissions.

**Challenges**

- Methodology to measure, track, and value GHGs would need to be developed, communicated and reported
- Updated program design and/or new programs may be needed
- Directive modification would be required

**Opportunities**

- Better (but not perfect) alignment with planning
- Better alignment with climate policy (gas generation is typically the resource avoided or offset during on-peak hours)

## II. CFF TARGETS &gt; POTENTIAL OPTIONS

## TARGET METRIC OPTIONS: DESCRIPTIONS AND CONSIDERATIONS

**Scorecard**

Multiple metrics are aggregated and potential weighted into a scorecard approach similar to OEB scorecards.

**Challenges**

- Complex methodology that can be difficult/cumbersome to track and monitor
- Need to redesign/revisit performance incentives
- May not improve alignment with planning and climate policy
- Does not reflect which metric is more or less important and may take focus away from the global target
- Directive modification may be required

**Opportunities**

- Could capture the additional policy goals and objectives that are currently not tracked to measure success

**Metrics vary by sector**

Metrics vary based on the goals of the program (e.g., participation for residential vs. kWh for business). Similar to metrics used within the natural gas framework.

**Challenges**

- Does not tie to provincial 7TWh goals and more complex to assess LDC performance when program/sector mix varies
- Need to redesign/revisit performance incentives
- May not improve alignment with planning and climate policy
- Directive modification may be required

**Opportunities**

- May more accurately reflect the goals of certain programs (e.g., low income)



### III. FUNDING MECHANISMS

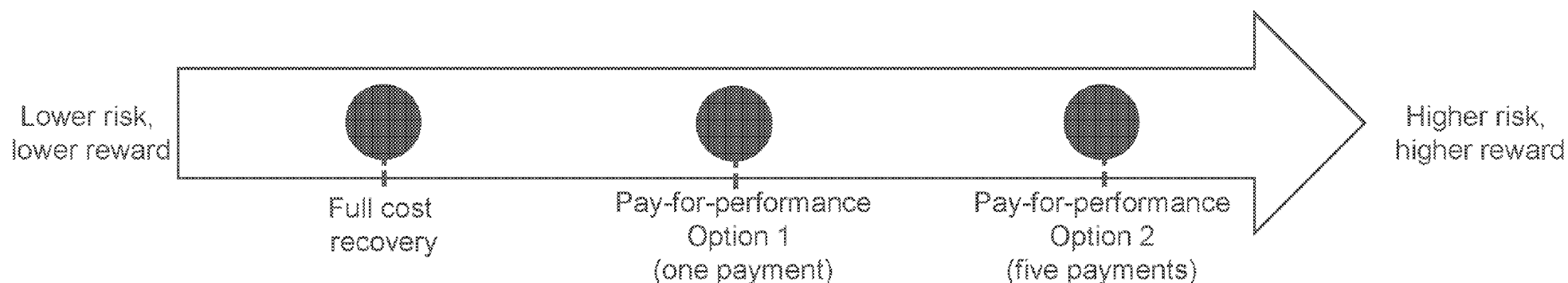
- i. Current construct
- ii. Reallocation options
- iii. Outside Ontario

## IV. FUNDING MECHANISMS » CURRENT CONSTRUCT

## THERE ARE TWO FUNDING MECHANISMS AVAILABLE TO LDCS: PAY FOR PERFORMANCE (P4P) AND FULL COST RECOVER (FCR)

- There is only one program available for P4P funding (Retrofit), and P4P is a more risky mechanism than Full Cost Recovery
- There has only been one program for one LDC funded under P4P

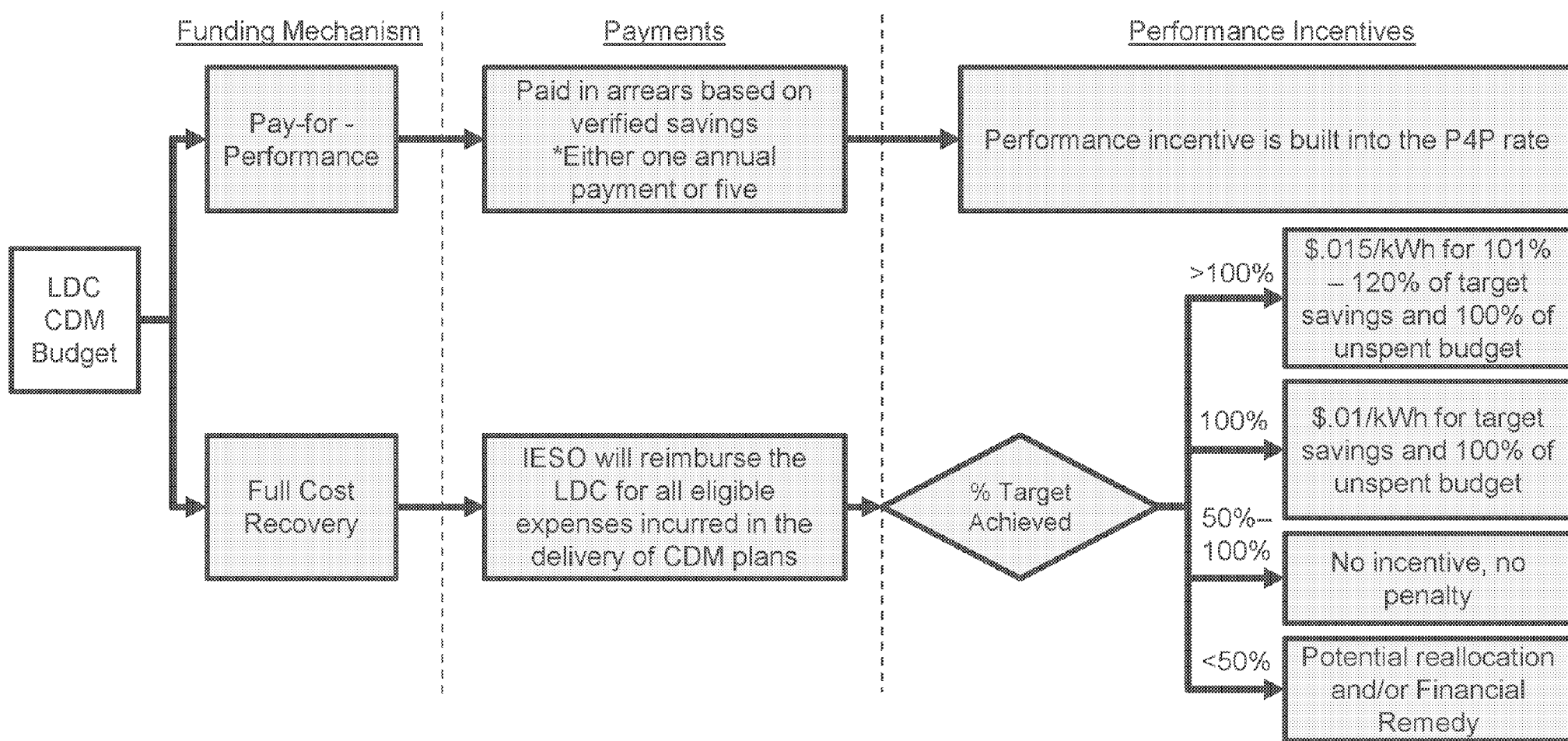
| Funding Mechanism   | Rewards                                                                                                                                            | Risks                                                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Full Cost Recovery  | <ul style="list-style-type: none"> <li>• Incentives for meeting and exceeding target</li> <li>• Retain un-spent CDM budget</li> </ul>              | <ul style="list-style-type: none"> <li>• Budget reallocation if achieved target is below 50% in 2015 through 2017</li> <li>• Financial remediation if achieved target is less than 35% in a given year</li> </ul>                                                                              |
| Pay-for-performance | <ul style="list-style-type: none"> <li>• Eligible for an incentivized rate applicable to all verified savings associated with a program</li> </ul> | <ul style="list-style-type: none"> <li>• Administrative risk of switching between mechanisms</li> <li>• Rate risk of the P4P rate changing every year</li> <li>• Performance risk of estimating higher than actual savings</li> <li>• Only one program offers a P4P rate (Retrofit)</li> </ul> |



## IV. FUNDING MECHANISMS » CURRENT CONSTRUCT

# THE FUNDING MECHANISM SELECTED DETERMINES PERFORMANCE INCENTIVES AVAILABLE

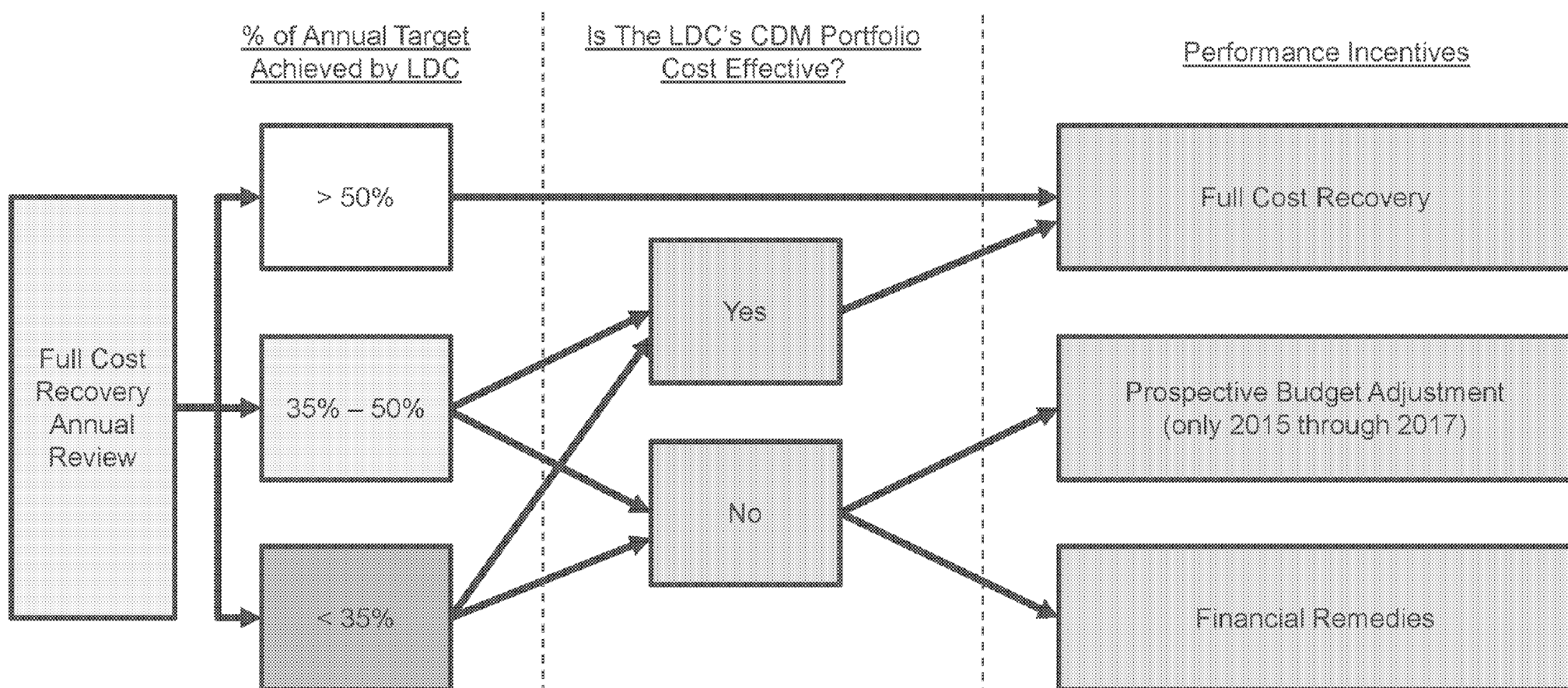
- Under FCR, LDCs are compensated for all eligible expenses and will receive performance incentives based on the % of target that they achieve, and under P4P, LDCs receive a higher incentivized rate for all verified energy savings
- LDC's may change their selection for each Program once during the term by amending the CDM Plan



## IV. FUNDING MECHANISMS » CURRENT CONSTRUCT

## UNDER FULL COST RECOVERY, LDCS WILL RECOVER ALL COSTS IF MORE THAN 50% OF TARGET IS ACHIEVED

- LDCs will only have their CDM budgets potentially adjusted if they achieve less than 50% of their annual target and are not cost effective within either 2015, 2016 or 2017
- LDCs will face financial remedies if they achieve less than 35% of their target and are not cost effective, in any given year of the CFF



## IV. FUNDING MECHANISMS » CURRENT CONSTRUCT

## PAY-FOR-PERFORMANCE SHIFTS RISK TO THE LDC, BUT PROVIDES A HIGHER PROFIT POTENTIAL THAN FULL COST RECOVERY

- LDCs are allowed to chose from three options under pay-for-performance that range from lower risk and reward (Option 1) to higher risk and reward (Option 2 or 3)
- All pay-for-performance options are deemed higher risk, but potentially more profitable, than full cost recovery

| Payment Option | Description                                                                                                                                                                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option 1       | A single payment in arrears following initial verification of the net lifetime electricity savings <ul style="list-style-type: none"> <li>• Rates under Option 1 must not give the LDC an internal rate of return (IRR) that exceeds 12%</li> </ul>                                                          |
| Option 2       | Five annual payments in arrears following the annual verifications of actual net electricity savings <ul style="list-style-type: none"> <li>• Rates under Option 2 must not provide the LDC with an IRR that exceeds 20%</li> </ul>                                                                          |
| Option 3       | A number of periodic payments specified in the Program Rules following the verification of actual net electricity savings at the same frequency as the periodic payments <ul style="list-style-type: none"> <li>• For Option 3, the IRR limits will be chosen by the IESO on a case-by-case basis</li> </ul> |



## IV. FUNDING MECHANISMS » CURRENT CONSTRUCT

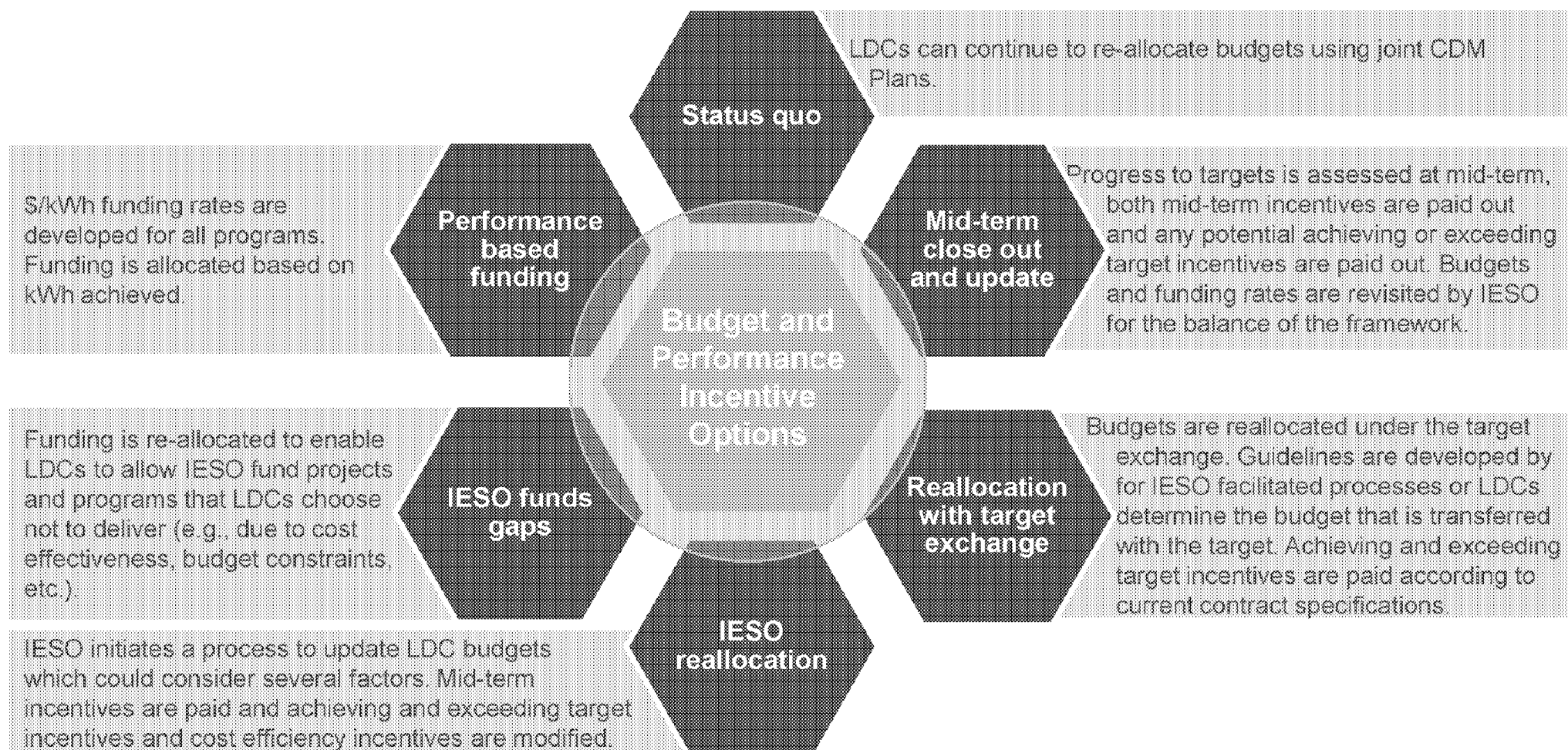
## THERE ARE A NUMBER OF RISKS AND CHALLENGES INHERENT WITH PAY-FOR-PERFORMANCE

- Pay-for-performance (P4P) is a riskier mechanism for LDCs than full cost recovery
- IESO has only posted P4P rates for the Retrofit program, but only one LDC has opted to use P4P for one program
- IESO is currently in discussion with LDCs to assess the design of P4P

| Risk/Challenge       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Administrative Risk  | <ul style="list-style-type: none"> <li>• LDCs incur a risk if they chose pay-for-performance, and later decide to switch to full cost recovery</li> <li>• In order to make this switch, the LDC must have adequate records to be able to distinguish, on a project by project basis, between expenses incurred as part of pay-for-performance and those incurred during full cost recovery</li> </ul>                                                                                                                       |
| Rate Risk            | <ul style="list-style-type: none"> <li>• The IESO sets a P4P rate given current assumptions about measures' load profiles, which could lead to the rate being too high</li> <li>• The IESO reserves the right to change the P4P rate at their discretion (although it is not expected to change more than once per year)</li> </ul>                                                                                                                                                                                         |
| Performance Variance | <ul style="list-style-type: none"> <li>• The LDC bears the risk if they estimate a higher volume of participants, projects, measures and quantity of energy savings than are realized</li> <li>• The LDC bears this entire risk and P4P rates will not be adjusted retroactively</li> </ul>                                                                                                                                                                                                                                 |
| Limited Budget       | <ul style="list-style-type: none"> <li>• LDC budgets are set, and if there is greater-than-anticipated participation in a Program that receives pay-for-performance funding, a local distribution company may entirely deplete the portion of its CDM Plan Budget that has been allocated to pay-for-performance Programs and then begin depleting the remaining portion of the CDM Plan Budget that has been allocated to full cost recovery Programs</li> <li>• However, the LDC will not receive extra budget</li> </ul> |
| Limited Programs     | <ul style="list-style-type: none"> <li>• Only the retrofit program has a designated P4P rate</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                     |

## BUDGET AND PERFORMANCE INCENTIVE MODIFICATION OPTIONS

- The following slides provide a description of some potential budget and performance incentive modification options
- Each option is characterized in terms of its impact to customers, LDCs, channel, and implications for policy and transition



## I. CFF TARGETS » POTENTIAL OPTIONS

BUDGET AND PERFORMANCE INCENTIVE MODIFICATION OPTIONS:  
DESCRIPTIONS AND CONSIDERATIONS**Status quo**

LDCs can continue to re-allocate budgets using joint CDM Plans.

**Challenges**

- Does not tackle the issues identified
- Some LDCs have already met targets with budget remaining and may suspend CDM operations
- Little to no incentive to achieve greater than 120 percent of target
- Some LDCs relying solely on centrally delivered programs and would continue to be eligible for performance incentives

**Opportunities**

- LDCs with progress tracking to CDM plans can maintain their strategies and performance incentive expectations

**Mid-term close out  
and update**

Progress to targets is assessed at mid-term, both mid-term incentives are paid out and any potential achieving or exceeding target incentives are paid out. Budgets and funding rates are revisited by IESO for the balance of the framework.

**Challenges**

- May disrupt LDC strategies
- If LDCs have earned expected performance incentives, there may be lower drivers to continue to offer CDM
- May diminish the benefit of the cost efficiency incentive (it is possible that given more time, the amount could have been spent)

**Opportunities**

- Could maintain interest in CDM delivery for LDCs that have exceeded targets
- Could reduce the need for IESO to maintain provincial program coverage
- Ability to modify the funding and performance incentives to reflect the observations in the early years of the framework

## I. CFF TARGETS » POTENTIAL OPTIONS

BUDGET AND PERFORMANCE INCENTIVE MODIFICATION OPTIONS:  
DESCRIPTIONS AND CONSIDERATIONS**Reallocation with  
target exchange**

Budgets are reallocated under the target exchange. Guidelines are developed by for IESO facilitated processes or LDCs determine the budget that is transferred with the target. Achieving and exceeding target incentives are paid according to current contract specifications.

**Challenges**

- Reluctance to exchange targets with existing performance incentive structures
- Some LDCs relying solely on centrally delivered programs that choose not to participate would continue to be eligible for performance incentives
- Could have program coverage issues if LDCs that have exceeded targets choose not to obtain additional budget and targets

**Opportunities**

- Aligned processes (targets and budgets)
- LDCs with progress tracking to CDM plans can maintain their strategies and performance incentive expectations

**IESO reallocation**

IESO initiates a process to update LDC budgets which could consider several factors. Mid-term incentives are paid and achieving and exceeding target incentives and cost efficiency incentives are modified.

**Challenges**

- Consultation and transparency would be needed
- LDCs may need to modify strategies and could delay target exchange process
- Achieving target, exceeding target, and cost efficiency incentives would change (changing expectations)

**Opportunities**

- Simpler process (less infrastructure required)

## I. CFF TARGETS » POTENTIAL OPTIONS

BUDGET AND PERFORMANCE INCENTIVE MODIFICATION OPTIONS:  
DESCRIPTIONS AND CONSIDERATIONS**IESO funds gaps**

Funding is re-allocated to enable LDCs to allow IESO fund projects and programs that LDCs choose not to deliver (e.g., due to cost effectiveness, budget constraints, etc.).

**Challenges**

- Need to determine where the additional funds come from (central services would be insufficient)
- IESO would need sufficient notice to prepare infrastructure/delivery support
- Need to determine where to credit the savings (is it appropriate to credit the LDC)
- If LDCs choose to continue to offer CDM programs to customers, no mechanism to reallocate funds to those LDCs

**Opportunities**

- Allows LDCs to focus on projects and programs that they deem the most valuable while providing customers with program coverage/consistency

**Performance based  
funding**

\$/kWh funding rates are developed for all programs. Funding is allocated based on kWh achieved.

**Challenges**

- Pay-for-performance has had little uptake to date
- Would need to consider modifying the ability for LDCs to control their risk (e.g., more flexibility in program delivery)
- Could result in underachievement of the 7TWh target

**Opportunities**

- Continuous opportunity to earn performance incentives
- Encourages cost efficiency



SECTION 4:  
SUMMARY  
OBSERVATIONS  
AND NEXT STEPS

NAVIGANT

IESO-N-0027134

## FOCUS AREAS AND KEY QUESTIONS

This current state summary will analyze available information and begin to explore the issues and opportunities of the key questions and focus areas listed below pertaining to the **Budgets, Targets, and Cost Effectiveness** topic.

### Key Questions

#### Phase I

- Are the metrics that measure success aligned with goals and policy objectives?
- Should targets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?
- Should budgets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?

#### Phase II

- Do the detailed results provide any additional insights that might change how to adjust targets or budgets?
- What are some alternate approaches and what could be the impact on cost effectiveness? Are these approaches appropriate for the second half of the framework? Beyond 2020?
- What are some methodologies to reduce reliance on incentives? Are these methodologies appropriate for the second half of the framework? Beyond 2020?

### Focus Areas

#### I. Conservation First Framework:

- Mechanism to support reallocation
- Options to enable target exchange amongst LDCs
- Funding mechanism review
- Pay-for-Performance (P4P) obstacles
- Budget/target allocation across segments
- Options for competitive procurement

#### II. Industrial Accelerator Program:

- Provincial adjustments, options for adjustment

## PRELIMINARY OBSERVATIONS

### Are the metrics that measure success aligned with goals and policy objectives?

#### Observations:

- 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

#### Next Steps:

- 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?

#### Observations:

- 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

#### Next Steps:

- 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)



## PRELIMINARY OBSERVATIONS

**Should budgets be adjusted given framework goals and policy objectives? If so, how? What about beyond 2020?**

**Observations:**

- 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

**Next Steps:**

- 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

## NEXT STEPS

**Based on the preliminary assessment of the current state of budgets, targets, and cost effectiveness, the following areas will be considered in the market research phase:**

- 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



## APPENDICES

- A. Policy mapping
- B. Glossary

## POLICY MAPPING: COST EFFICIENCY

| Mechanism | Policy                                                                                                                                                                                                                                          | Type         | Responsible |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Policy    | Offsetting growth in electricity demand to 2032, with a conservation target of 30 TWh (a 16% reduction in gross demand) in 2032, lessening the need for new supply                                                                              | Metric-based | MOE/IESO    |
|           | Promoting conservation and cost efficiency                                                                                                                                                                                                      | Soft policy  | IESO        |
|           | Using the TRC test, PAC test, and hurdle rate to screen program proposals                                                                                                                                                                       | Complete/not | IESO        |
| Direction | Accounting for non-energy benefits with a 15% adder applied to benefits in benefit-cost analyses performed on CDM programs                                                                                                                      | Complete/not | IESO        |
|           | Coordinating and integrating the IAP with NG distributor conservation programs                                                                                                                                                                  | Soft policy  | IESO        |
|           | Developing cost-recovery and performance incentives for LDCs that administer CDM programs                                                                                                                                                       | Complete/not | IESO        |
|           | Marketing province-wide CDM programs under the saveONenergy brand, working with distributors to realize economies of scale; also making the brand available to gas distributors                                                                 | Complete/not | IESO        |
|           | Requiring distributors to coordinate and integrate their CDM programs (including their low-income programs) with NG distributors' programs to achieve efficiencies and convenient integrated programs for electricity and natural gas customers | Soft policy  | IESO        |
|           | Streamlining and simplifying the IAP's administration                                                                                                                                                                                           | Soft policy  | IESO        |
|           | Using TRC and PAC tests to ensure positive benefit-cost of programs, and establishing hurdle rates to consider cost of program delivery against avoided cost of procuring supply                                                                | Metric-based | IESO        |
|           | Using TRC and PAC tests to ensure positive benefit-cost of the Industrial Accelerator Program                                                                                                                                                   | Metric-based | IESO        |

## POLICY MAPPING: CUSTOMER CHOICE

| Mechanism | Policy                                                                                                                                                                                                                                                                            | Type         | Responsible |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Policy    | Continuing to provide access to conservation programs for transmission connected customers                                                                                                                                                                                        | Soft policy  | IESO        |
|           | Giving consumers access to their energy data via mobile and web-based applications through the Green Button initiative                                                                                                                                                            | Complete/not | MOE         |
|           | Giving customers more program choice along with streamlined oversight and administration                                                                                                                                                                                          | Soft policy  | IESO        |
|           | Making financing tools available for programs                                                                                                                                                                                                                                     | Soft policy  | IESO/MOE    |
| Direction | Allowing Tx-connected customers with Dx-connected sites to have both Tx- and Dx-connected sites administered through the IAP, with the associated electricity savings from Dx-connected sites counting towards CDM targets                                                        | Complete/not | IESO        |
|           | Delivering CDM programs in a distributor's licensed service area if a distributor does not                                                                                                                                                                                        | Complete/not | IESO        |
|           | Designing, funding and delivering two centrally-delivered CDM programs, including in coordination with NG distributors: a pay-for-performance Multi-Distributor program as well as a province-wide whole-home residential CDM pilot program, both to commence by the fall of 2016 | Complete/not | IESO        |
|           | Employing the Industrial Accelerator Program to facilitate broad program choice and financing flexibility                                                                                                                                                                         | Soft policy  | IESO        |
|           | Establishing a pay-for-performance pilot program for customers that are eligible for the IAP (customer is paid based on a pre-specified value for each verified kilowatt-hour of electricity savings achieved)                                                                    | Complete/not | IESO        |
|           | Making the Industrial Accelerator Program available to new and existing grid-connected customers                                                                                                                                                                                  | Complete/not | IESO        |
|           | IESO to delivery Home Assistance Program to customers province-wide                                                                                                                                                                                                               | Complete/not | IESO        |

## POLICY MAPPING: ENERGY AFFORDABILITY

| Mechanism | Policy                                                                                                                                                                                               | Type         | Responsible |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Policy    | Enhancing the role of LDCs in delivering conservation programs to Aboriginal communities, particularly on-reserve communities                                                                        | Soft policy  | IESO        |
|           | Facilitating the installation/retrofitting of clean energy systems while helping to protect vulnerable consumers from the cost impacts of carbon pricing                                             | Soft policy  | MOECC       |
|           | Improving conservation programs for low-income residential customers                                                                                                                                 | Soft policy  | IESO        |
|           | Making financing tools available to consumers for energy efficiency and retrofits                                                                                                                    | Complete/not | MOE/IESO    |
|           | Providing information and incentives on efficient products; establishing minimum efficiency requirements for products                                                                                | Soft policy  | MOE         |
| Direction | Granting approval for programs deemed not cost-effective if they are either (a) targeted at on-reserve First Nation customers, (b) designed for educational purposes, or (c) low-income CDM programs | Complete/not | IESO        |
|           | Reviewing the Industrial Accelerator Program's financing mechanisms                                                                                                                                  | Complete/not | IESO        |

## POLICY MAPPING: ENERGY SAVINGS

| Mechanism | Policy                                                                                                                                                 | Type         | Responsible |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Policy    | Increasing the energy efficiency of new buildings and providing consumers with better information about their businesses' and homes' energy use        | Soft policy  | MOECC       |
| Direction | Allowing LDCs to make changes to their CDM plans at least once per year                                                                                | Complete/not | IESO        |
|           | Coordinating, supporting and funding the delivery of CDM programs through distributors to achieve 7 TWh of consumption reduction between 2015 and 2020 | Metric-based | IESO        |
|           | Develop a methodology to allocate the 7 TWh consumption reduction target among LDCs                                                                    | Metric-based | IESO        |
|           | Ensuring LDCs have support in CDM plan submission and flexibility in program administration                                                            | Soft policy  | IESO        |
|           | Ensuring that distributors are the face of electricity conservation to their customers in all sectors                                                  | Complete/not | IESO/ LDCs  |
|           | Establishing a budget to achieve targeted 1.7 TWh of savings through the Industrial Accelerator Program by 2020                                        | Metric-based | IESO        |
|           | Establishing budget allocations based on distributors' CDM goals                                                                                       | Complete/not | IESO        |
|           | Evaluating achievement of electricity savings through Industrial Accelerator Program on an annual incremental basis                                    | Complete/not | IESO        |
|           | Streamlining the review and approval process for CDM plans                                                                                             | Soft policy  | IESO        |
|           | Supporting distributors in program coordination and delivery                                                                                           | Soft policy  | IESO/ LDCs  |
|           | Supporting distributors in program design                                                                                                              | Soft policy  | IESO        |

## POLICY MAPPING: GREENHOUSE GAS REDUCTIONS

Note: many policies do not directly influence electricity, however, the activity in the climate change space and impact to customers is important to consider

| Mechanism  | Policy                                                                                                                                                                                                                                   | Type         | Responsible |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Regulation | Allowing facilities with annual GHG emissions between 10,000 and 25,000 tonnes to participate voluntarily in cap and trade                                                                                                               | Complete/not | MOECC/OEB   |
|            | Mandating certain entities to participate in cap and trade: electricity importers, facilities/natural gas distributors with annual GHG emissions exceeding 25,000 tonnes, fuel suppliers that sell more than 200 litres of fuel annually | Complete/not | MOECC/OEB   |
|            | Reducing market barriers to the deployment of low-carbon technologies through the Ontario Climate Change Solutions Deployment Corporation (OCCSDC)                                                                                       | Soft policy  | OCCSDC      |
| Policy     | Addressing climate change in partnership with First Nations and Metis communities, and helping them derive economic benefit from climate-change-fighting actions                                                                         | Soft policy  | MOECC       |
|            | Addressing GHG pollution from existing cars, increasing availability of EVs and increasing access to transit                                                                                                                             | Complete/not | MOECC       |
|            | Establishing a cap and trade program and investing auction proceeds in green projects                                                                                                                                                    | Complete/not | MOECC       |
|            | Investing \$325 million in the Green Investment Fund to support economically viable projects that fight climate change                                                                                                                   | Complete/not | MOECC       |
|            | Making government operations carbon neutral                                                                                                                                                                                              | Metric-based | MOECC       |
|            | Reducing GHG emissions by 50% below 2006 levels by 2030 (Ontario Public Service)                                                                                                                                                         | Metric-based | MOECC       |
|            | Reducing GHG emissions by 9.8M tonnes in 2020                                                                                                                                                                                            | Metric-based | MOECC       |
|            | Ensure Green Ontario Fund complements and builds on the success of CDM programs and support the achievement of efficiencies and customer-focused approach                                                                                | Soft policy  | IESO        |



# POLICY MAPPING: INNOVATION, INTEGRATION WITH PLANNING, AND MARKET TRANSFORMATION

| Category                  | Mechanism | Policy                                                                                                                            | Type         | Responsible |
|---------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Innovation                | Direction | Encouraging innovation and the adoption of new technologies                                                                       | Soft policy  | MOE/IESO    |
|                           |           | Establishing approval criteria for conservation programs                                                                          | Complete/not | IESO        |
| Integration with Planning | Direction | Incentivizing CDM measures with longer lifespans and energy savings persistence, and considering the system value of the measures | Complete/not | IESO        |
|                           |           | Increasing DR capability, developing new conservation initiatives and giving LDCs greater flexibility to address local conditions | Soft policy  | IESO        |
|                           |           | Promoting the development of regional CDM plans aggregating individual distributors' CDM targets                                  | Soft policy  | IESO        |
| Market Transformation     | Policy    | Deepening consumer awareness of conservation                                                                                      | Soft policy  | IESO        |
|                           |           | Providing long-term, stable conservation funding                                                                                  | Soft policy  | MOE         |
|                           | Direction | Ensuring funding is available for LDC's to implement and deliver programs                                                         | Complete/not | MOE         |

## GLOSSARY

| Term              | Description                                                                                                                                                                                                                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFF               | Conservation First Framework. Programs in market from 2015-2020 resulting from the March 31, 2014 CFF Ministerial Directive and funded separately from 2011-2014+2015 Extension Legacy Framework Programs.                                                                                                                                  |
| Adjustment        | Verified results that were achieved in previous years but were not provided in a previous years' Annual Verified Results Report.                                                                                                                                                                                                            |
| Allocated Budget  | Each LDC's assigned portion of the Province's \$ 1.835 billion CDM Plan Budget of the 2015-2020 Conservation First Framework.                                                                                                                                                                                                               |
| Allocated Target  | Each LDC's assigned portion of the Province's 7 TWh Net 2020 Annual Energy Savings Target of the 2015-2020 Conservation First Framework.                                                                                                                                                                                                    |
| Annual Savings    | The energy or peak demand savings that occur in a given year (includes resource savings from new program activity and resource savings persisting from previous years).                                                                                                                                                                     |
| APS               | Achievable Potential Study completed in 2016 stating the amount of energy efficiency that is possible within a given timeframe and a given budget.                                                                                                                                                                                          |
| CCAP              | Climate Change Action Plan. Document setting forth the policy for climate change in Ontario.                                                                                                                                                                                                                                                |
| CDM Plan          | Document developed by LDCs communicating anticipated energy savings and budgets for the 2015 to 2020 period.                                                                                                                                                                                                                                |
| Central services  | Services supporting CFF administered by the IESO under a funding envelope (\$400 million).                                                                                                                                                                                                                                                  |
| CHP               | Combined Heat and Power. Also called co-generation is behind-the-meter generation that involves the production of both electricity and useful thermal energy in an integrated system.                                                                                                                                                       |
| Conservation Fund | A source of funding external to the 2015-2020 CFF that provides financial support for innovative electricity conservation technologies, practices, research, and pilot programs. Savings from Conservation Fund pilot programs contribute to the LDCs savings targets based on the LDC service territory the pilot program is delivered in. |

## GLOSSARY

| Term                | Description                                                                                                                                                                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DR                  | Demand Response - Technology or approaches that enable energy shifting or reduction during certain times.                                                                                                                                                      |
| DSM                 | Demand Side Management – an umbrella term that typically refers to energy efficiency and demand response                                                                                                                                                       |
| Dx                  | Distribution                                                                                                                                                                                                                                                   |
| EE                  | Energy efficiency - Technology or approaches that result in less energy to perform the same function.                                                                                                                                                          |
| EM&V                | Evaluation, measurement and verification; the collection of methods and processes used to assess the performance of energy efficiency activities so that planned results can be achieved with greater certainty and future activities can be more effective    |
| ECA                 | Energy conservation agreement. Contractual document guiding LDC and IESO responsibilities within the Conservation First Framework.                                                                                                                             |
| Energy Savings      | Energy savings attributable to conservation and demand management activities.                                                                                                                                                                                  |
| ESCs                | Energy Savings Certificates. Certificates that utilities can trade to represent one megawatt-hour of energy efficiency savings.                                                                                                                                |
| FCR                 | Full Cost Recovery. CFF funding mechanism whereby LDCs are paid for the amount spent to administer CDM programs.                                                                                                                                               |
| Forecast            | An LDCs' forecast of program activity, savings, net-to-gross adjustments, expenditures and cost effectiveness as indicated in each LDC's submitted CDM Plan Cost Effectiveness Tools. Forecasts at the province wide level are the sum of all LDCs' forecasts. |
| GHG                 | Greenhouse gas. Gases that trap heat in the atmosphere such as CO <sub>2</sub> and N <sub>2</sub> O. Reduction in GHGs are typically the goals of climate change policies.                                                                                     |
| Incremental Savings | The energy or peak demand savings newly attributable to activity procured in a particular reporting period based on when the savings are considered to 'start'. Savings attributed to activity performed or completed in 2016 are presented as 2016 savings.   |

## GLOSSARY

| Term                  | Description                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LDC Innovation Fund   | A source of funding under the 2015-2020 Conservation First Framework separate from LDC CDM Plan Budgets that the IESO maintains to support LDC led program design and market testing of new initiatives. Savings from LDC Innovation Fund pilot programs contribute to the LDCs savings targets based on the LDC service territory the pilot program is delivered in. |
| Legacy Framework      | Programs in market from 2011-2015 resulting from the April 23, 2010 GEA CDM Ministerial Directive and funded separately from 2015-2020 Conservation First Framework Programs but whose savings in 2015 are attributed towards the 2015-2020 Conservation First Framework target.                                                                                      |
| Local Program         | Programs designed by LDCs to serve their communities and approved by the IESO.                                                                                                                                                                                                                                                                                        |
| LTEP 2013             | Ontario's Long-Term Energy Plan; a strategic plan developed by the Ministry of Energy to set the policy for Ontario's electricity system. The previous LTEP was released in 2013, with an update anticipated in 2017                                                                                                                                                  |
| Ministerial Direction | Documents issued by the Ministry to agencies with specific instructions and/or goals which enable action and authorize spending.                                                                                                                                                                                                                                      |
| MOE                   | The Ontario Ministry of Energy; tasked with developing the electricity generation, transmission and other energy-related facilities that power Ontario's economy                                                                                                                                                                                                      |
| MOECC                 | The Ontario Ministry of Environment and Climate Change; tasked with protecting Ontario's land, air, and water and coordinating climate policy                                                                                                                                                                                                                         |
| MW                    | Megawatt; a unit to measure electricity demand or supply                                                                                                                                                                                                                                                                                                              |
| Net Savings           | The energy or peak demand savings attributable to conservation and demand management activities, net of free-riders, spill over, etc.                                                                                                                                                                                                                                 |
| OEB                   | The Ontario Energy Board; Ontario's independent energy regulator, tasked with overseeing how energy companies operate to ensure the public interest is served                                                                                                                                                                                                         |

## GLOSSARY

| Term                   | Description                                                                                                                                                                                                                                                                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P4P                    | Pay for performance. CFF funding mechanism whereby LDCs are paid a \$/kWh rate for a particular program.                                                                                                                                                                               |
| Peak Demand Savings    | Peak Demand savings attributable to conservation and demand management activities, as determined by the IESO's EM&V Protocols.                                                                                                                                                         |
| Pilot Program          | A program pilot that may achieve energy or demand savings and is funded separately from an LDC's CDM Plan Budget.                                                                                                                                                                      |
| Policy                 | Government document that sets forth goals for a particular sector, for example, the energy sector's Long Term Energy Plan.                                                                                                                                                             |
| Program                | A Conservation & Demand Management offering focusing on a particular opportunity or customer end-use (e.g. Coupon; or Retrofit) from the 2015-2020 Conservation First Framework.                                                                                                       |
| Progress or Comparison | An assessment of actual results versus verified and unverified results.                                                                                                                                                                                                                |
| Province-Wide Program  | Programs available to all LDCs to deliver and that are consistent across the province.                                                                                                                                                                                                 |
| Regional Program       | Programs designed by LDCs to serve their region and approved by the IESO.                                                                                                                                                                                                              |
| Tx                     | Transmission                                                                                                                                                                                                                                                                           |
| Unverified             | Program activity savings and expenditures as determined by the LDC. For savings: 1) for prescriptive projects/programs: calculating quantity x prescriptive savings assumptions; and 2) for engineered or custom program projects/programs: calculated using prescribed methodologies. |
| Verified               | The IESO's annually EM&V assessed program activity, savings, net-to-gross, expenditures and cost effectiveness.                                                                                                                                                                        |