



**London Economics International LLC**

# **Framework for Energy Innovation ("FEI") Presentation**

**Prepared for:  
The Ontario Energy Board FEI Working Group**

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<b>1</b>	<b>Introduction</b>
<b>2</b>	<b>Example 1: New York</b>
<b>3</b>	<b>Example 2: California</b>
<b>4</b>	<b>Example 3: The United Kingdom</b>
<b>5</b>	<b>Summary of select incentives</b>

## To inform a discussion on potential incentive mechanisms, LEI will review examples from other jurisdictions

- ▶ **This presentation covers incentive mechanisms and innovative models used in three jurisdictions: New York, California, and the United Kingdom**
  - Approaches being used in these jurisdictions continue to be a work in progress, and no real magic bullet exists
  
- ▶ **Incentives and approaches discussed in this presentation serve as examples, but are not meant to be prescriptive or limiting**
  
- ▶ **At a high level, they include funding alternative solutions through deferral accounts, attaching financial incentives to performance metrics, and emergence of new revenue streams**

# Agenda

**1**

**Introduction**

**2**

**Example 1: New York**

**3**

**Example 2: California**

**4**

**Example 3: The United Kingdom**

**5**

**Summary of select incentives**

## Reforming the Energy Vision (“REV”) is New York’s multi-pronged strategic plan for motivating, among other things, DER deployment

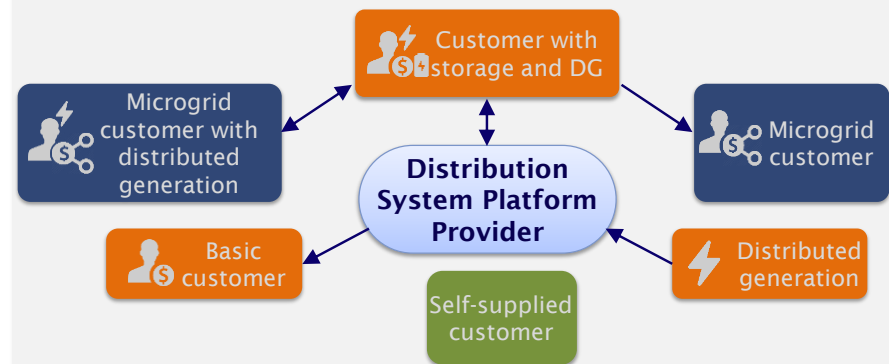
- ▶ REV is a strategy for New York to enable a clean, resilient, and more affordable energy system, while actively spurring energy innovation, bringing new investments into the state, and improving customer choice

### Objectives for the electricity distribution segment

- ▶ Exploring the utility’s evolving role as a distributed system platform provider (“DSPP”)
- ▶ Deferring/avoiding grid upgrades through distributed energy resources (“DERs”)
- ▶ Creating open markets for third-party competition
- ▶ Encouraging the adoption of DERs

### Expanding the traditional distribution utility model

Utilities act as DSPPs, incentivizing them to consider DER solutions as an alternative to traditional grid investments



## Under REV, utilities are required to provide DSPP services to enable third-party DER providers to create value for both customers and the system

- ▶ **Transforming utilities into DSPPs requires new and enhanced capabilities in the areas of distribution system planning, grid operations, and market development**
- ▶ **The process kicked off in 2015, when the New York Public Service Commission (“PSC”) ordered each utility to file a Distributed System Implementation Plan (“DSIP”)**
  - DSIPs are submitted on a two-year cycle with a 5-year planning horizon

### DSPP role

- ✓ **Coordinate customer activities** and their interaction with the bulk power system
- ✓ **Enable resource providers** (e.g., a customer with rooftop solar) **to monetize products** that provide value to the utility system
- ✓ **Integrate DERs as a primary means of meeting system needs**, supplementing traditional functions
- ✓ Responsible for **providing DER service pricing structures** reflecting their benefit to the system

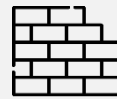
### DSPP development timeline



#### Design

(2016 to 2020)

Identify capabilities, develop roadmap and innovative projects



#### Build

(2021 to 2025+)

Deploy grid automation, advanced metering infrastructure, and other technologies



#### Optimize

(2026 and beyond)

Optimize system assets, offer market services, enable DER value

# REV demonstration projects test new products, services, and approaches to DER adoption

- **REV demonstration projects are designed to** *“test how new business models and partnerships with third parties can harness the utility platform, expertise, and brand to reduce clean-energy costs and barriers to marketing, financing, and operations and maintenance while potentially providing new utility value streams”*

## Guiding principles for REV demonstration projects



Demos should include **partnership** between utility and third-party service providers



Utilities and service providers should propose **rules** (data, terms, standards, etc.) to create competitive markets



The utility should identify questions/problems it hopes to answer, and the market should respond with **solutions**



Demos should inform **pricing** and **rate modifications**



Demos should delineate how the **economic value** is divided between the customer, utility, and third-party provider



Utility and third-party providers should consider deploying **advanced distribution systems**



The market for grid services should be **competitive**



Utilities should explore opportunities to work with various residential, commercial, institutional, and industrial **customers**

## Value of Distributed Energy Resources (“VDER”) provides guidance on the tariff framework needed to support third-party owned DERs

- ▶ The VDER initiative tackles the evolving role of the distribution utility and the monetization of DERs for utilities and third-parties
- ▶ The “Value Stack” compensation methodology represents a step to replace net energy metering with a more accurate valuation and compensation of DERs
  - The Value Stack *“compensates projects based on when and where they provide electricity to the grid and compensation is in the form of bill credits”*
  - Compensates DERs for the following benefits: avoided carbon emissions, cost savings to customers and utilities, and other savings from avoiding expensive capital investments
  - Applies to projects sized up to 5 MW

### Value Stack components

#### Energy value

Based on the **energy commodity purchase requirements** offset by each kWh injected

#### Capacity value

Based on the **installed capacity (“ICAP”) purchase requirements** offset by injections

#### Environmental value

Based on the **Renewable Energy Credit (“REC”) compliance cost** offset by each kWh injected

#### Demand reduction value

Based on the **distribution costs** offset by injections, averaged across the service territory

#### Locational system relief

Available only in **certain locations** where identified needs can be addressed by DERs

#### Community credit

An additional credit for certain **community distributed generation (“CDG”)** projects



# The New York PSC also made regulatory adjustments and created financial incentives for utilities to achieve REV objectives

- ▶ With REV, the New York PSC also issued a new order meant to incentivize utilities *“to take actions to achieve REV objectives by better aligning utility shareholders’ financial interests with customers’ interests”*
- ▶ The order augmented conventional cost-of-service ratemaking by adding:
  - **Platform Service Revenues (“PSR”)** which are market-based platform earnings, where utility earnings are tied to operating and facilitating distribution-level markets
    - Utilities may generate revenues by replacing traditional infrastructure with non-wires alternatives; as a *starting point*, the PSC established an allocation of 80% to ratepayers and 20% to utility shareholders
  - **Earning Adjustment Mechanisms (“EAM”)\***, which are outcome-based incentives that provide incentives for utilities to achieve metrics and targets they propose (and the PSC approves) in the categories listed below

Category	Description
<b>System efficiency and peak reduction</b>	Improve overall system efficiency to reduce capital investment, including peak reduction and load factor improvement
<b>Energy efficiency</b>	Support greater overall energy efficiency savings and the transition to market-based approaches
<b>Interconnection</b>	Improve processes for the interconnection of distributed generation (“DG”) projects, measured by a DG developer satisfaction survey
<b>Customer engagement</b>	Increase customer uptake in specific innovative programs

\* EAMs are similar to Ontario’s performance scorecard metrics, with the added financial implications  
 Source: NY PSC. *Order Adopting a Ratemaking and Utility Revenue Model Policy Framework. Case 14-M-0101*. May 19, 2016; REV Connect. [Track Two: REV Financial Mechanisms](#)

# Agenda

1

Introduction

2

Example 1: New York

3

Example 2: California

4

Example 3: The United Kingdom

5

Summary of select incentives

## California's DER Action Plan seeks to align a DER "vision" with actions, and "ensure" coordination across various related proceedings

- ▶ In July 2021, the California Public Utilities Commission ("CPUC") released its **Draft DER Action Plan 2.0**
  - The Plan is intended to "*coordinate development and implementation of policy related to DERs*" over the 2021-2026 timeframe, and builds on the CPUC's previous DER Action Plan (2016)
  - The Plan is **not** intended to determine outcomes of individual proceedings
- ▶ **The Action Plan includes four tracks:**

### 1. Load Flexibility & Rates

*Focused on improving demand-side resource management through more effective, integrated demand response and retail rate structures that promote widespread, scalable, and flexible load strategies enabled by electrification and DER deployment opportunities*

### 2. Grid Infrastructure

*Focused on CPUC actions to guide utility infrastructure planning and operations to maximize the value of DERs interconnected to the electric grid*

### 3. Market Integration

*Focused on efficient integration of BTM and FTM DERs into wholesale markets to support renewable integration, GHG reduction, and grid reliability. Addresses how market-integrated DERs connected to the customer, distribution, and transmission grid "domains" can be harnessed and compensated to produce multiple streams of benefits*

### 4. DER Customer Programs

*Focused on improving coordination, planning and developing consistent metrics across DER proceedings related to customer programs to maximize their contributions to GHG reductions and other state energy goals*

## The CPUC's Integrated DER incentive pilot is an example of removing utility DER ownership bias and compensating utilities for new responsibilities

- ▶ In December 2016, the CPUC adopted an Integrated DER incentive pilot mechanism to encourage the three largest investor-owned utilities in the State to invest in pilot DER projects
- ▶ Through the incentive mechanism, the CPUC's aim was to encourage the deployment of DERs as an alternative to additional capital expenditures on traditional distribution infrastructure
  - Incentive was set at a 4% pre-tax basis applied to the annual payment for the DERs which are alternative to the traditional distribution investment
  - Incentive allows the utility to record the value (of the incentive) in a balancing account for later recovery

### Summary of key steps involved in CPUC's incentive pilot mechanism

#### Project identification

Utilities have four months to **identify** at least one **project for Incentive Pilot** via a Distribution Planning Advisory Group

#### Complete solicitation process

Utilities have 14 months to complete a **solicitation process to contract DER projects** (by issuing a request for offers)

#### Recovery of incentive

In the case of successful solicitations (i.e., deferral of the traditional distribution expenditure is achieved), utilities **record the value of the incentive for recovery in an Energy Resource Recovery Account** compliance application

# Agenda

1

Introduction

2

Example 1: New York

3

Example 2: California

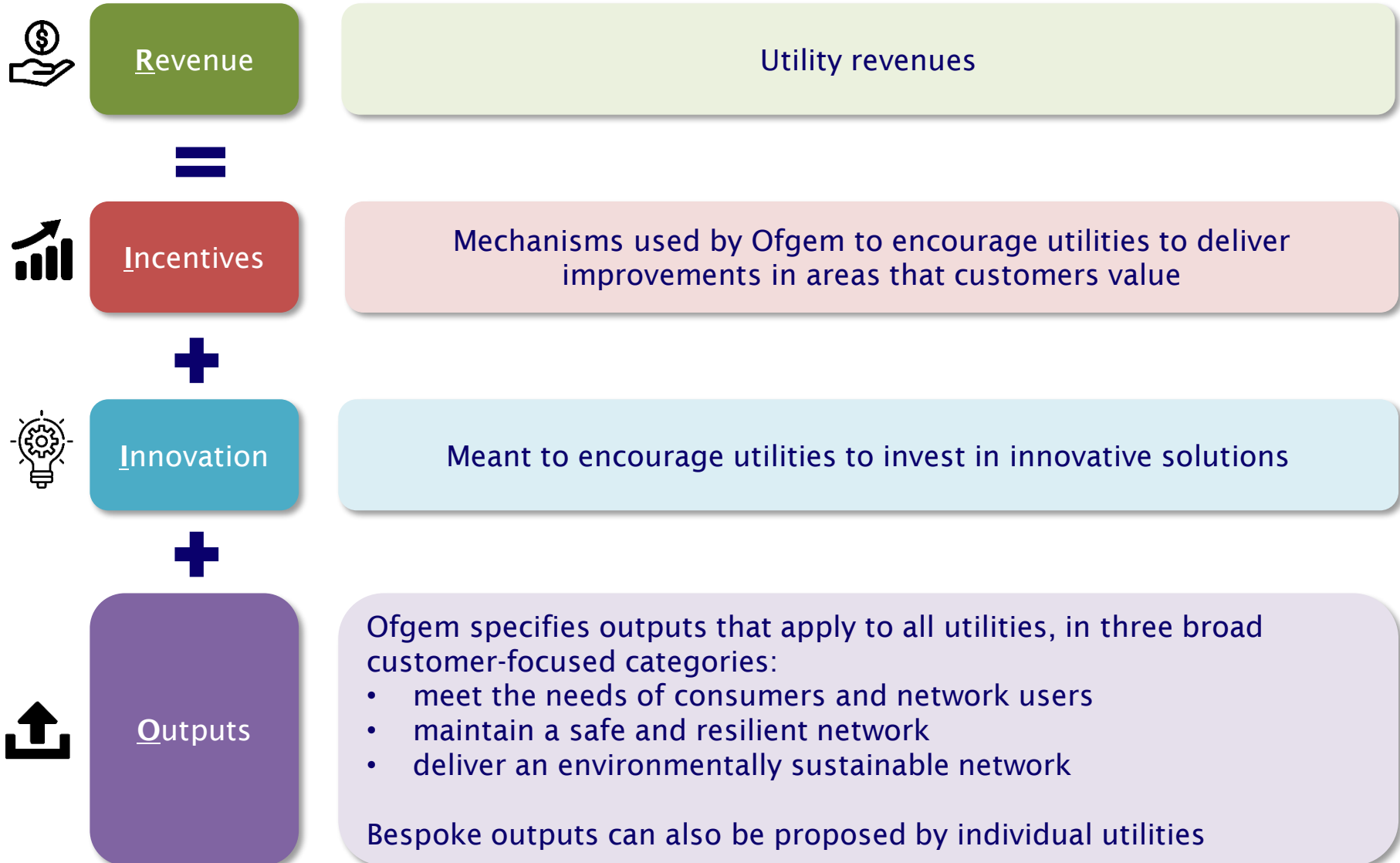
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Example 3: The United Kingdom

5

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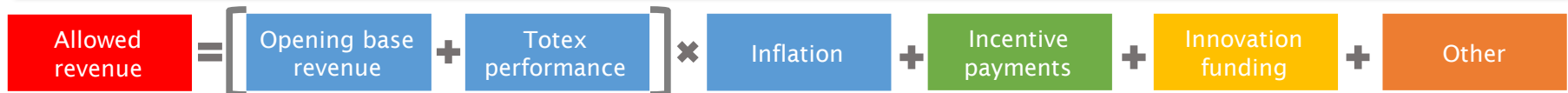
# Ofgem's RIIO (Revenue = Incentives + Innovation + Outputs) is an example of a framework focused on outcomes or outputs



## RIIO provides a model of how a totex approach can be implemented

- ▶ **RIIO is a performance-based regulatory model underpinned by a focus on total expenditure (“totex”)**
  - The totex approach combines a portion of utility capital expenditures (“capex”) and operating expenditure (“opex”) solutions into one regulatory asset that allows a rate of return on both
  - Under the totex approach, utilities are incentivized to consider whole life costs, rather than driven to choose between opex and capex, and are thus encouraged to choose the most overall cost-effective solution
  
- ▶ **Totex is comprised of “fast” money and “slow” money**
  - **Fast money** represents the money funded in the year incurred, and is equivalent to the opex
  - **Slow money** represents the money added to the regulatory asset value (“RAV”) that is funded over time through allowances for depreciation and return on capital, and is equivalent to the capex

### Simplified process for calculating allowed revenue



- ▶ **By 2020, actual totex for distributors was around 5% lower than allowed totex**
  - Under the RIIO framework, customers will receive ~44% of this “underspend”, with the distributor retaining the remaining ~56%

## RIIO defines numerous outputs that Ofgem expects distributors to deliver, along with associated incentive arrangements (including financial incentives)

Output name (by descriptive grouping)	Financial incentive summary*
<b>Deliver high quality customer service</b>	
<b>Customer Satisfaction Survey</b>	Overall incentive strength of +/-1% base revenue
<b>Complaints Metric</b>	Penalty only, financial exposure of -0.5%
<b>Provide a quality service for consumers seeking a connection</b>	
<b>Time to Connect</b>	Symmetrical financial exposure of +/-0.4% base revenue
<b>Improving Service Standards for Major Connection Customers</b>	Ex-post penalty or reward based on assessment of utility's overall delivery compared to expectations
<b>Support consumers in vulnerable situations</b>	
<b>Improving Service Standards for Vulnerable Customers</b>	Financial incentive when compared to Ofgem minimum requirement
<b>Maintain world class levels of reliability</b>	
<b>Interruptions Incentive Scheme</b>	Some incentives depending on interruption type (e.g., planned interruptions)
<b>Deliver an environmentally sustainable network</b>	
<b>Environmental framework, including Environmental Action Plans, Annual Environmental Report and Environmental Scorecard</b>	Includes ex-ante allowances (e.g., to manage network resilience against flooding), and financial incentive in form of scorecard tied to Environmental Action Plan

\*Note: High-level summary provided for illustrative purposes. Only outputs with financial incentives are shown in this figure. Please see Ofgem's decision for further details on incentives associated with all outputs.

Source: Ofgem. *RIIO-ED2 Methodology Decision: Overview*. December 17, 2020.



# Innovation is facilitated by encouraging increased utility investment through business-as-usual operations, and use of innovation-focused funding pots

## Innovation within business-as-usual activates

- In RIIO-ED2 (price controls for electricity distributors over the 2023-2028 period), utilities are expected to fund more innovation as part of their business-as-usual activities using their totex allowance
- This avenue is meant for lower-risk innovation investments, outside of those that would depend on/are funded through ring-fenced innovation pots

## Strategic Innovation Fund (“SIF”)

- Meant to support large-scale, strategic innovation projects; targets “future-facing strategic challenges”; and support strategic innovation that contributes to achieving Net-Zero emissions targets
- Designed with intention of enabling collaboration with third parties; according to Ofgem, £450 million (~\$760 million) will be made available through the SIF for electricity and gas distribution and transmission, although this amount may be increased

## Network Innovation Allowance (“NIA”)

- Meant to fund projects related to the energy system transition and/or consumer vulnerability, that involve third parties, and may allow successful solutions to be rolled out into wider business
- Individual allowances will be set by Ofgem for distributors, based on justification provided in their business plans. In 2019/2020, £24.8 million (~\$42 million) was spent by distributors to fund smaller scale research, development and demonstration projects

# Agenda

**1**

**Introduction**

**2**

**Example 1: New York**

**3**

**Example 2: California**

**4**

**Example 3: The United Kingdom**

**5**

**Summary of select incentives**

## Without being prescriptive or limiting, examples from other jurisdictions can provide thoughts on incentive mechanisms for utilities in Ontario

1

### Funding approved (pilot) projects through deferral accounts

- Pilot/demonstration projects can be helpful tools in understanding the implications of innovative alternatives to traditional solutions
- Payment structures can take the form of cost pass-throughs, with utility recording costs in deferral account for recovery
- Could also include incentive mechanism for utility, as was done in California pilots (4% applied to annual payment for the DERs)
- Same approach can be used for generic (non-pilot) third-party contracted assets

2

### Tying financial incentives to performance metrics

- Earnings Adjustment Mechanisms in New York, and Outputs and Incentives from the UK, provide examples of how defined metrics can be tied to financial incentives for utilities
- Ontario's utility scorecard performance categories can be tied to defined incentives (including financial incentives)
- Performance categories can also be expanded to include DER-specific items, such as DER connection time

3

### Emergence of new revenue streams

- Additional revenue streams for utility may emerge tied to operating and facilitating distribution-level markets, such as Platform Service Revenues in New York

## A margin targeting approach may create indifference between traditional utility solutions and non-traditional third-party solutions

- ▶ **A common theme in incentive structures is the inclusion of provisions meant to create some level of indifference between capital and operating cost solutions**
  - Designing a system where utilities are indifferent would require some level of margin targeting
  - This would allow a host utility to receive a minimum guaranteed margin on new investments that are ownership- and technology-neutral
- ▶ **Under a “margin-targeting” approach, the utility is compensated for its role in coordinating and managing assets rather than building and owning them**
  - As an example, starting margin could be based on historical utility return on assets (e.g., 3%), and modified over time
  - This is similar to the incentive mechanism used in California pilot programs for utilities procuring third-party solutions