

# **Market Transformation and Energy Efficiency Codes & Standards**

**Presented  
At  
The Sustainabuild Conference  
Vancouver, BC  
By**

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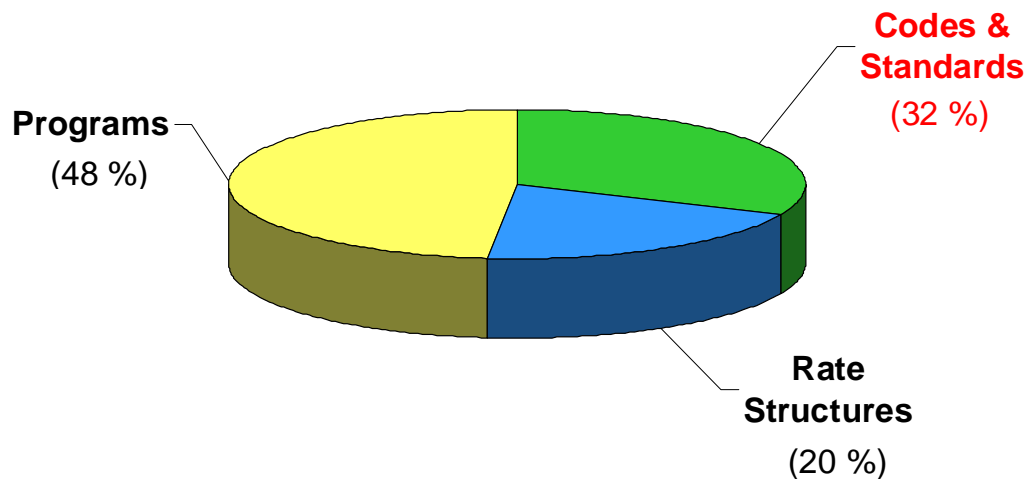
**November 24, 2009**

## Codes and Standards are effective tools for driving energy efficiency

California has aggressively pursued codes and standards for 30 years. The Energy Commission's 2007 Integrated Energy Policy Report finds:

**“California’s building and appliance standards have saved consumers more than \$56 billion in electricity and natural gas costs since 1978 and averted building 15 large power plants. It is estimated the current standards will save an additional \$23 billion by 2013.”**

Codes and standards make better energy performance mandatory, and not just for early adopters or self-selected consumers but for all users of regulated products and structures.



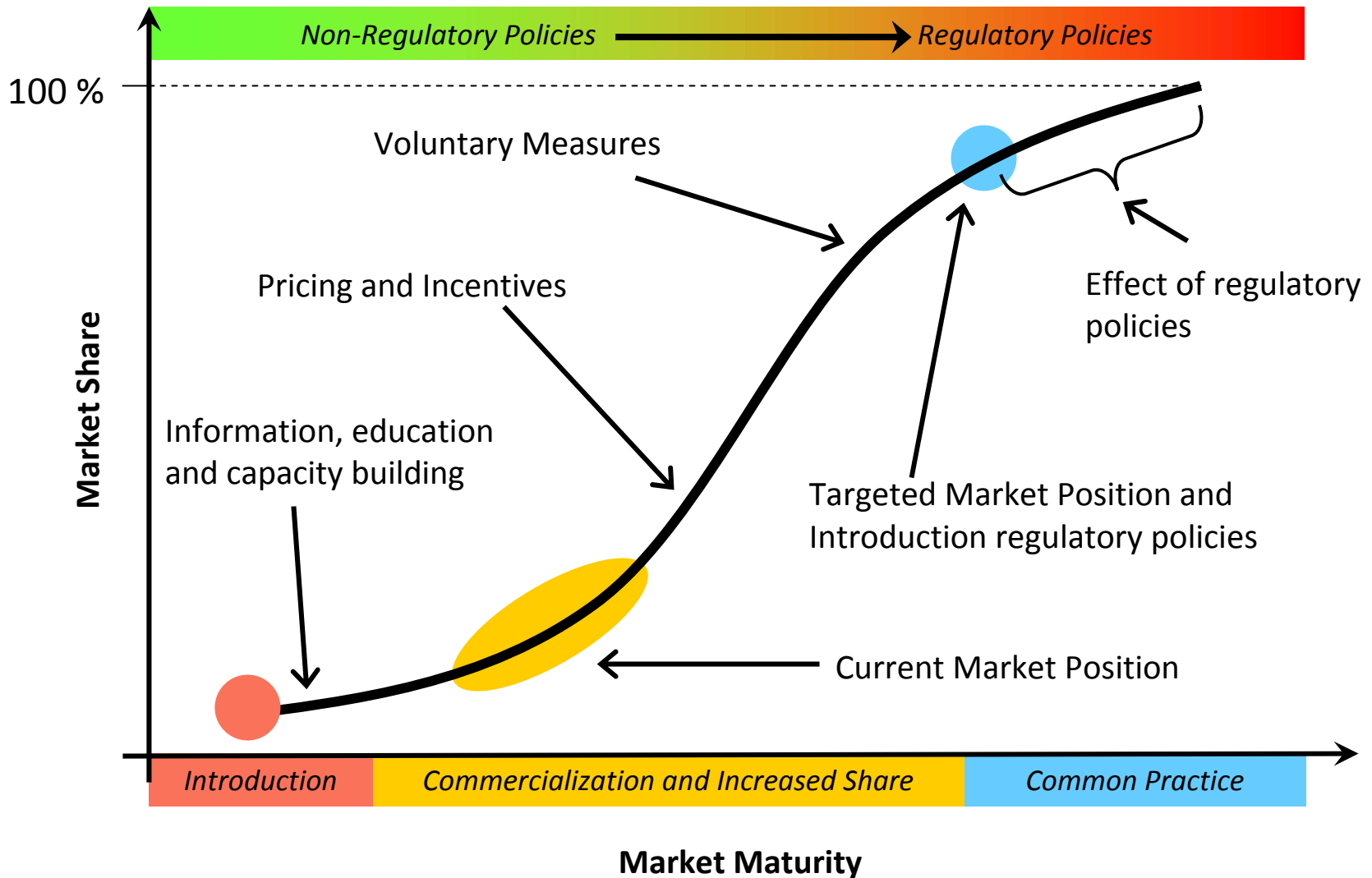
## BC Hydro's DSM Plan (evidentiary update):

**9,600 GWh/yr by 2020**

Fills ~75% of energy gap in  
F2020

Codes & Standards are critical  
to the plan

# Market Transformation Approach to advancing government policies



## Federal Energy Efficiency Act



- Passed in 1992 and regulations in effect since 1995
- Regulations amended 10 times since – latest in Dec '08
- The Act is managed by the OEE in NRCan
- Key purpose - eliminate shipment of inefficient, energy-using products that are either (1) imported into Canada, or (2) manufactured in Canada and transported between provinces for the purpose of sale or lease.
- Setting min. energy-performance standards (MEPS) for products, such as, lighting, appliances, etc.;

## The BC Energy Efficiency Act



- Similar to the Federal EE Act
- Regulate the sales and disposal of energy using products in BC
- Min. energy efficiency requirements for products in the BC Act could be more stringent or in advance of the Federal EE Act

# Estimated Savings From EE Product Regulations

Amendment 10	Amendment 11	Amendment 12	BC
December 2008	2009	2010	various dates
1050 GWh in 2020	TBD	TBD	Approx. 400 GWh in 2020
Incandescent lighting	Standby power	Set-top boxes	Windows
Ceiling fans	External power supplies	Furnace blower motors	Incandescent lighting
Torchieres	Large motors	Hot tubs	Large Motors
Ice-cube makers	Large air-conditioners	Battery chargers	Water Heaters
Dishwashers	ER/BR Incandescent Lamp'	HID lamps and ballasts	White Goods Package
Commercial clothes washers	Medium Voltage Dry Transformers	Packaged terminal air-conditioners	
Traffic Signals	Liquid and MV Transformers		

## The current “green” BC Building Code



For large commercial & high-rise multi-residential (Part 3) buildings:

- References ASHRAE Std. 90.1-2004 Energy Standards for Buildings Except Low-Rise Residential Buildings

For residential buildings:

- EnerGuide for New Homes (EGNH) rating of 77

## The current City of Vancouver Building Bylaw



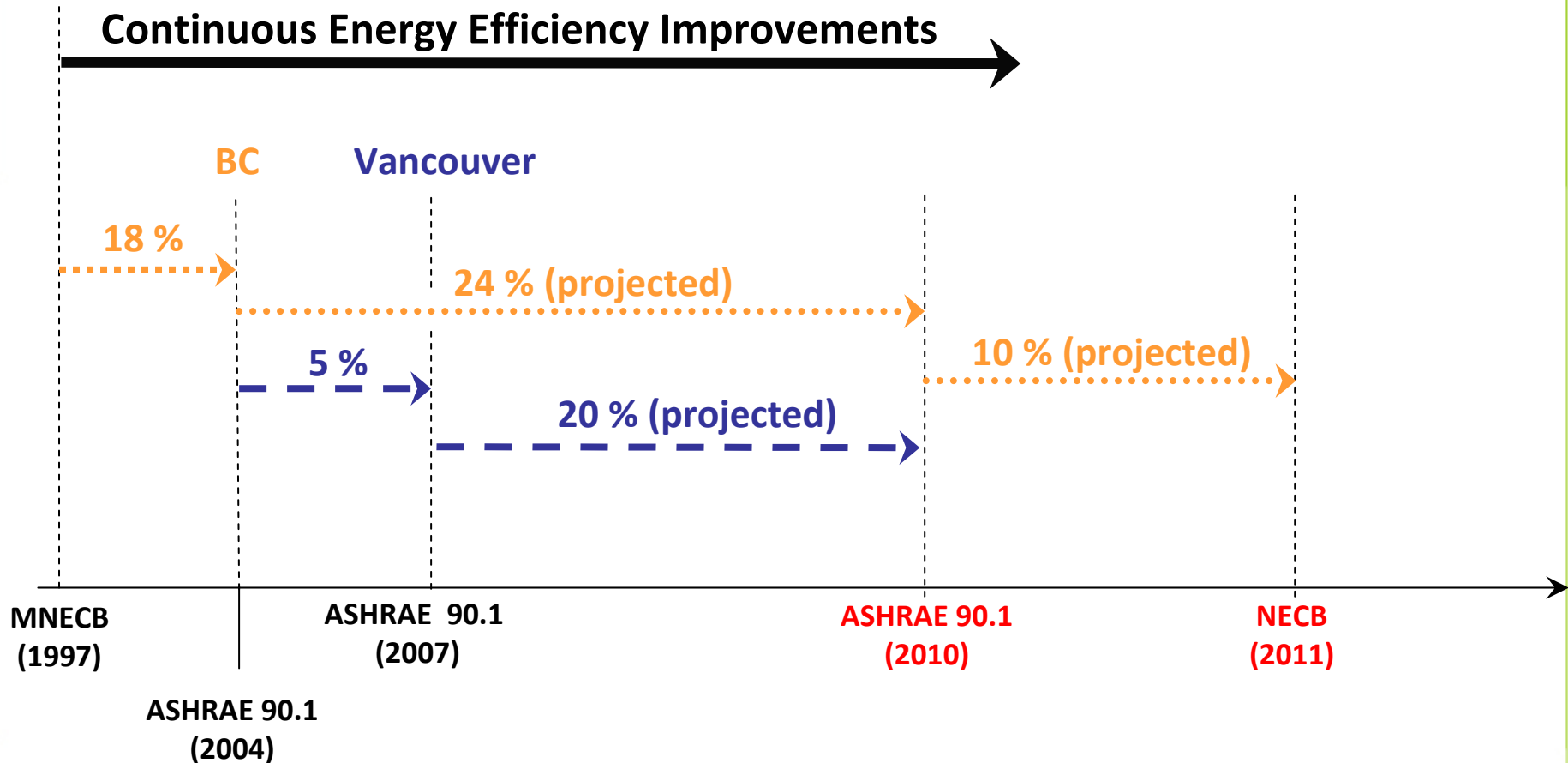
For commercial buildings:

- References ASHRAE Std. 90.1-2007

For residential buildings (one and two family dwellings):

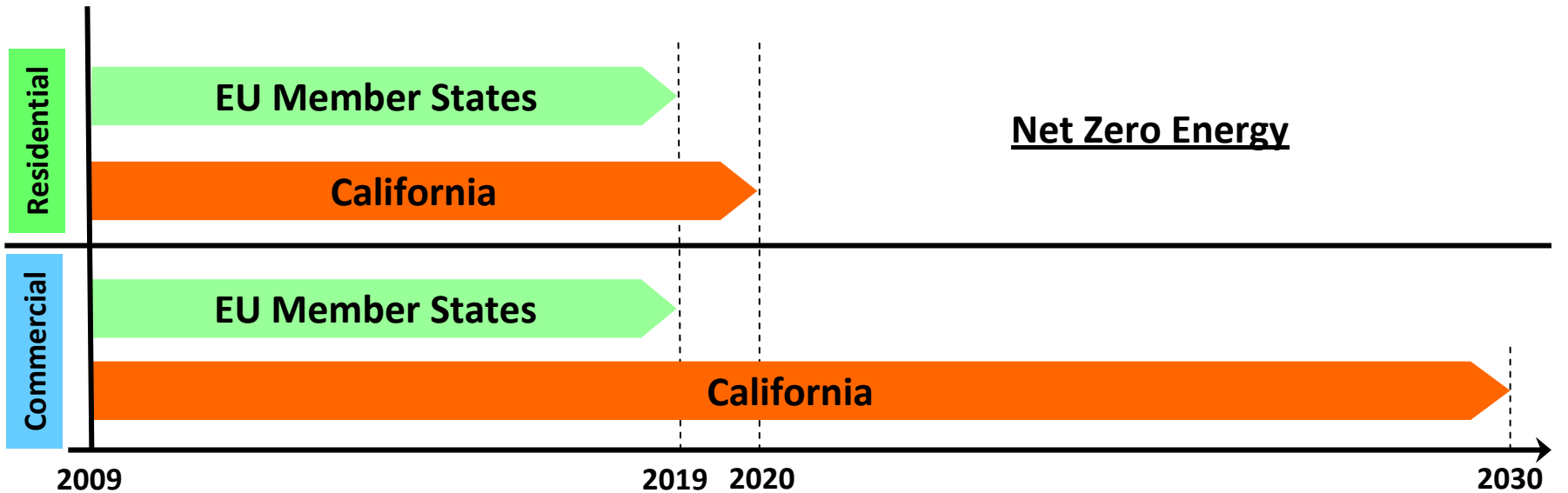
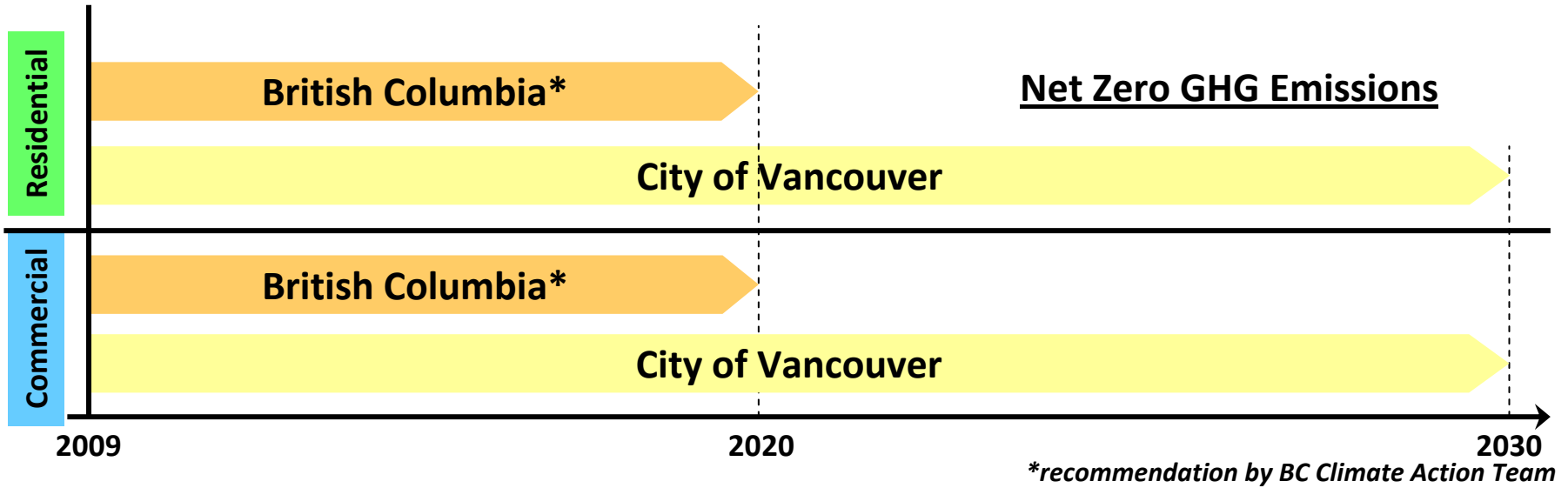
- Reference a set prescriptive requirements equivalent to achieving EGNH rating of between 80 and 82;
- Mandates use of hardwired compact fluorescent fixture in 40% of lights in the house.

# Comparison Chart: Commercial Building Codes



Note: Chart is not to scale

# International Comparison – Net Zero Targets in New Buildings



## BC Hydro providing research, technical advice, funding support

### 1. Home Energy Labeling at time of sale

- With MEMPR and Victoria Real Estate Board in Oak Bay and Salt Spring Island

### 2. Passive Design Tool Kits – homes and buildings

- Vancouver approved kits to educate builders and encourage adoption of passive design; formal guidelines in development

### 3. Expedited Permitting – large buildings

- Vancouver to fast-track building development process for buildings designed to be much higher ee performance than current Building Bylaw req't.

### 4. Local Improvement Charges – financing energy efficiency improvements through property taxes

- Dawson Creek approved pilot; Vancouver investigating

### 5. Sustainability Checklist – for developers

- Victoria developed workplan; Surrey finalizing checklist

### 6. Proposed City of Vancouver Renovation By-law

- 1<sup>st</sup> phase target at one- and two family dwellings
- 2<sup>nd</sup> phase target large commercial buildings

## Policy Initiatives in Development

	Federal	Provincial	Local Government	First Nations
Building Codes and Equipment Standards	X	X	X	
Building Labeling	X	X	X	
PST Exemptions		X		
Policies for Net Zero Homes		X	X	
Sustainable Communities Program (Policy Component)			X	

# New Construction Program

## What is New?

### Comprehensive Offer

- Commercial New Construction Market

### Streamlined Process

- Simpler and Faster Application Process

### Energy Studies/Modeling

- Up to 100% funding

### Tiered Incentives

- Supports Implementation of Costly EE Measures

### Recognition

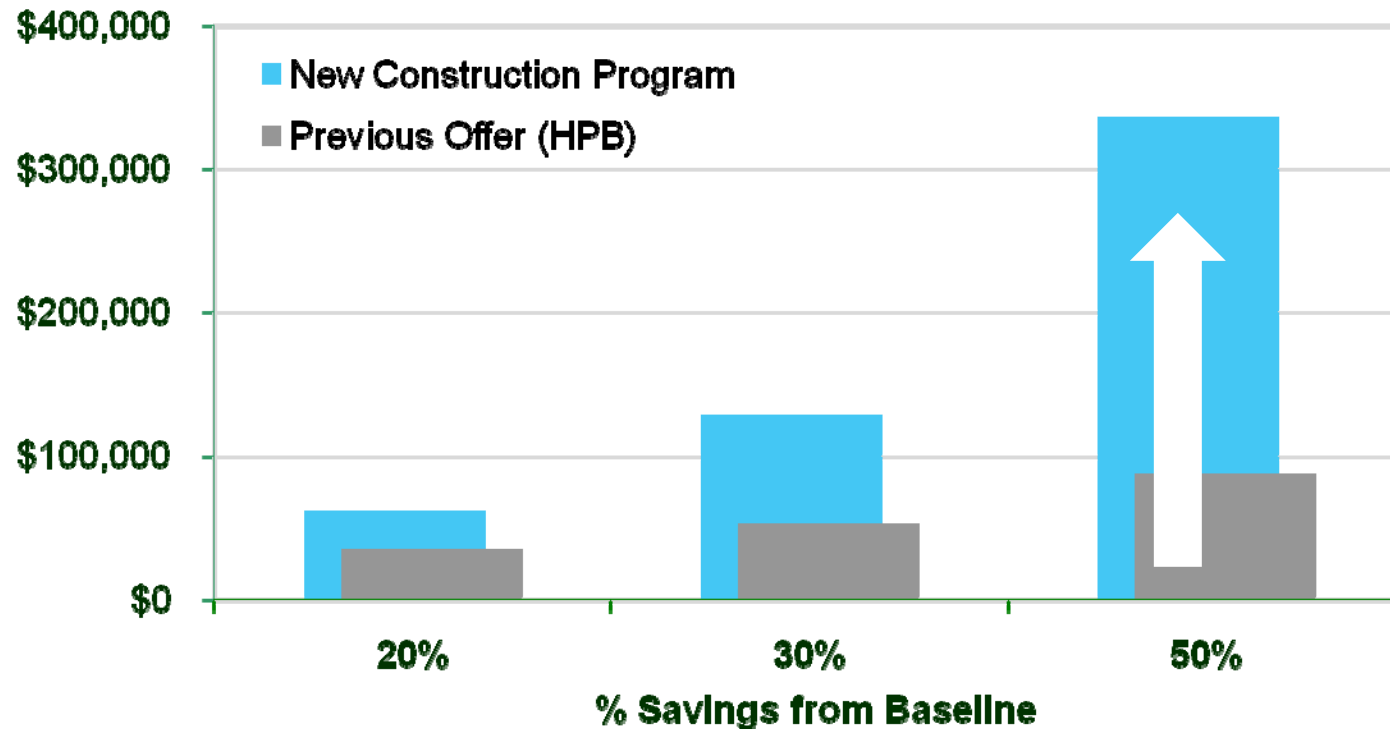
- Developer Recognition Package

### Education

- Industry Workshops, Conferences, and Studies

# Whole Building Design

## Tiered Capital Incentives Example



\* Estimates based on a building with a baseline annual consumption of 1,000,000 kWh

\*\* Estimate based on a 10 year persistency of savings. Savings are subject to BC Hydro's approval.

Program offer may change without prior notice.

### Whole Building Design

- Building as a Complete and Integrated System
- Optimizes Performance and Energy Savings



### System Design

- Focus on Specific Systems Where Detailed Energy Modeling is Not Cost-Effective



### Energy Efficient Lighting Design

- Design Lighting Layout to Maximize Efficiency and to Exceed the Current Standards in Lighting Power Density (LPD)



### In-Suite ENERGY STAR® Package

- Rebates for Energy Star Items in Multi-Unit Residential Suites



More information on the New Construction Program is  
available on:

[bchydro.com/business](http://bchydro.com/business)

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# Questions?

BC Hydro 

