Public Sector Climate Leadership in Buildings

Public Sector Climate Action Leadership Symposium
March 1, 2019
Presentation Outline

• Historic emissions
• Policy options for new buildings
• Policy options for existing buildings
• Questions
Public Sector GHG Emissions - Sources

2010

- Buildings: 78%
- Fleet: 19%
- Paper: 3%

2017

- Buildings: 77%
- Fleet: 21%
- Paper: 2%
Public Sector GHG Emissions – Changes since 2010

![Graph showing changes in public sector GHG emissions since 2010. The graph indicates a decrease of 13% from 2010 to 2017, with a 5% increase from 2016 to 2017. The lines represent different categories: Buildings, BC Population, and HDD.]

Ministry of Environment and Climate Change Strategy
Public Sector GHG Emissions – Changes since 2010

[Graph showing changes in Public Sector GHG emissions from 2010 to 2017, with a 13% increase and a 5% decrease indicated.]
High Performance Public Sector Buildings Policy Package

• Path for meeting CleanBC goal of 50% reduction in building-related GHG emissions by 2030
• Ensure investment in cost-effective high-performance new buildings + early adoption of BC Energy Step Code
• Improve performance of existing public building portfolio + support development of existing building energy code
• Clarify government policy on other high-performance building objectives
• Include climate resilience considerations and investments
• Estimate anticipated outcomes + financial and resourcing needs
New Building Construction

• Goals:
  – High energy efficiency performance
  – Low GHG intensity (GHGi)
  – Other high performance buildings attributes (climate resilient, seismic, water efficiency, indoor air quality, etc.)

• Broad Approach:
  – Achieve GHG performance through a combination of:
    • Energy efficiency performance (in advance of, and equal to or better than, energy step code (ESC) requirements)
    • Adoption of low-carbon energy/fuel (for space and water heating)

• Rationale:
  – Allow design teams to determine most cost-effective and context-appropriate way to achieve GHG performance
  – Develop the sector’s capacity to plan, build and inspect to ESC
New Building Construction

Proposed Policy Approach

Energy Efficiency Target

- Early adoption of Energy Step Code:
  - 2020 => Step 3 ~ 50% energy efficiency improvement
  - 2025 => Step 4 - up to 80% energy efficiency improvement

GHGi Target (GHG intensity is measured in emissions per m²)

- Overlay energy efficiency targets with GHGi targets to ensure reductions
- Specific GHGi targets by building archetype = 80% reduction in GHGi
- Adopt less carbon-intensive energy/fuels

Other High Performance Building Objectives

- Current policy: LEED Gold or equivalent
- Proposed policy going forward is under development
- Climate resilience
### Public Sector LEED buildings

#### LEED Ratings

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#### Energy Performance

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Existing Building Strategy

• Goals:
  – Increased energy efficiency performance
  – Reduced GHG intensity (GHGi)

• Broad Approach:
  – Achieve GHG reductions through a combination of:
    • Targeted energy & GHG retrofits for worst performing buildings
    • Leveraging other renovation opportunities
    • Re-commissioning/retro-commissioning

• Rationale:
  – Prioritize greatest GHG reduction opportunities
  – Ensure cost-effectiveness by integrating energy efficiency and GHG measures into other renovations
Existing Buildings Strategy

Possible Policy Approach

Reduce GHG intensity (GHGi): Transition to less carbon intensive energy/fuels
  – Measure GHGi, prioritize buildings for transition (i.e. greatest GHG reduction at lowest cost)

Increase Energy Efficiency: Cost-effective energy efficiency rollout
  – Leverage renovations for other purposes
  – Benchmarking and energy assessments to evaluate energy performance
  – Business case for energy retrofits
  – Energy Code for Existing Building
    • Contribute to development of code
    • Early adoption of code
  – Innovative financing

Re/retro-commissioning
  – Optimize energy efficiency and building operations
  – Achieve incremental GHG reductions with relatively lower costs
Work Underway

- High Performance Public Sector Buildings policy package
- Capital planning guidance materials
  - New buildings: Most cost-effective and context-appropriate approach to achieve GHG performance
  - Existing buildings: Effective use of “window of opportunity” & prioritizing greatest GHG reduction opportunities
- Financing
  - Innovative financing options
- High performance building objectives
  - Review and update to current LEED Gold policy
- CSA for energy studies
Questions?

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