

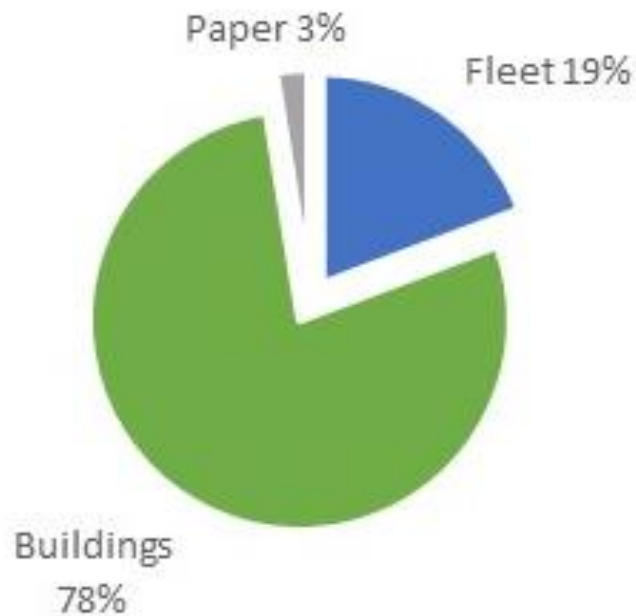
Public Sector Climate Leadership in Buildings

Public Sector Climate Action
Leadership Symposium
March 1, 2019

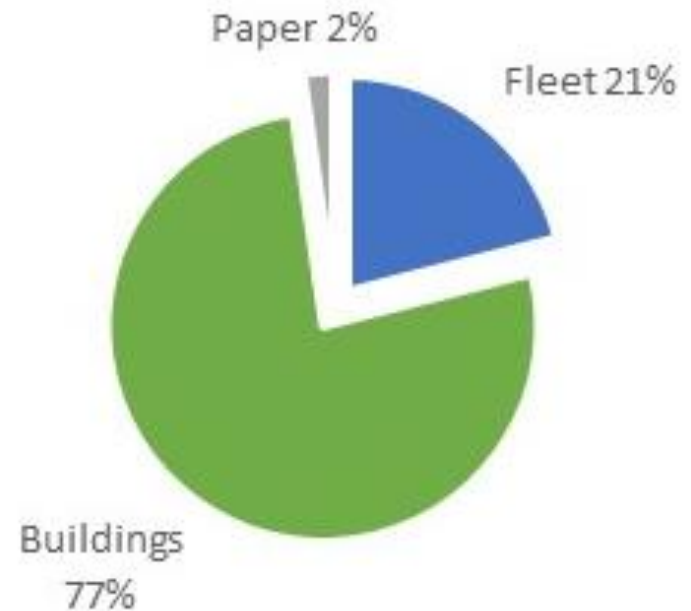
Presentation Outline

- Historic emissions
- Policy options for new buildings
- Policy options for existing buildings
- Questions

Public Sector GHG Emissions - Sources

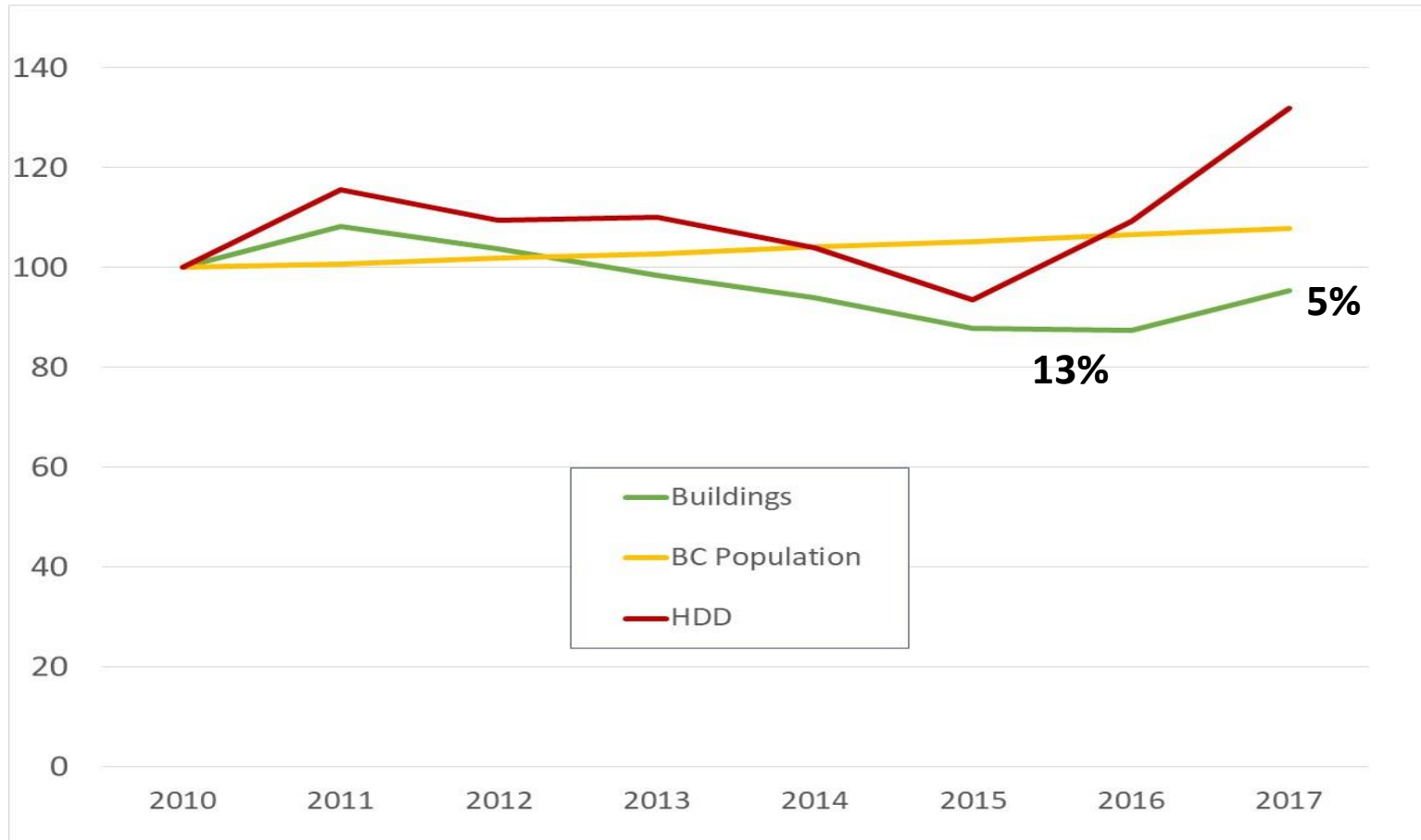


2010

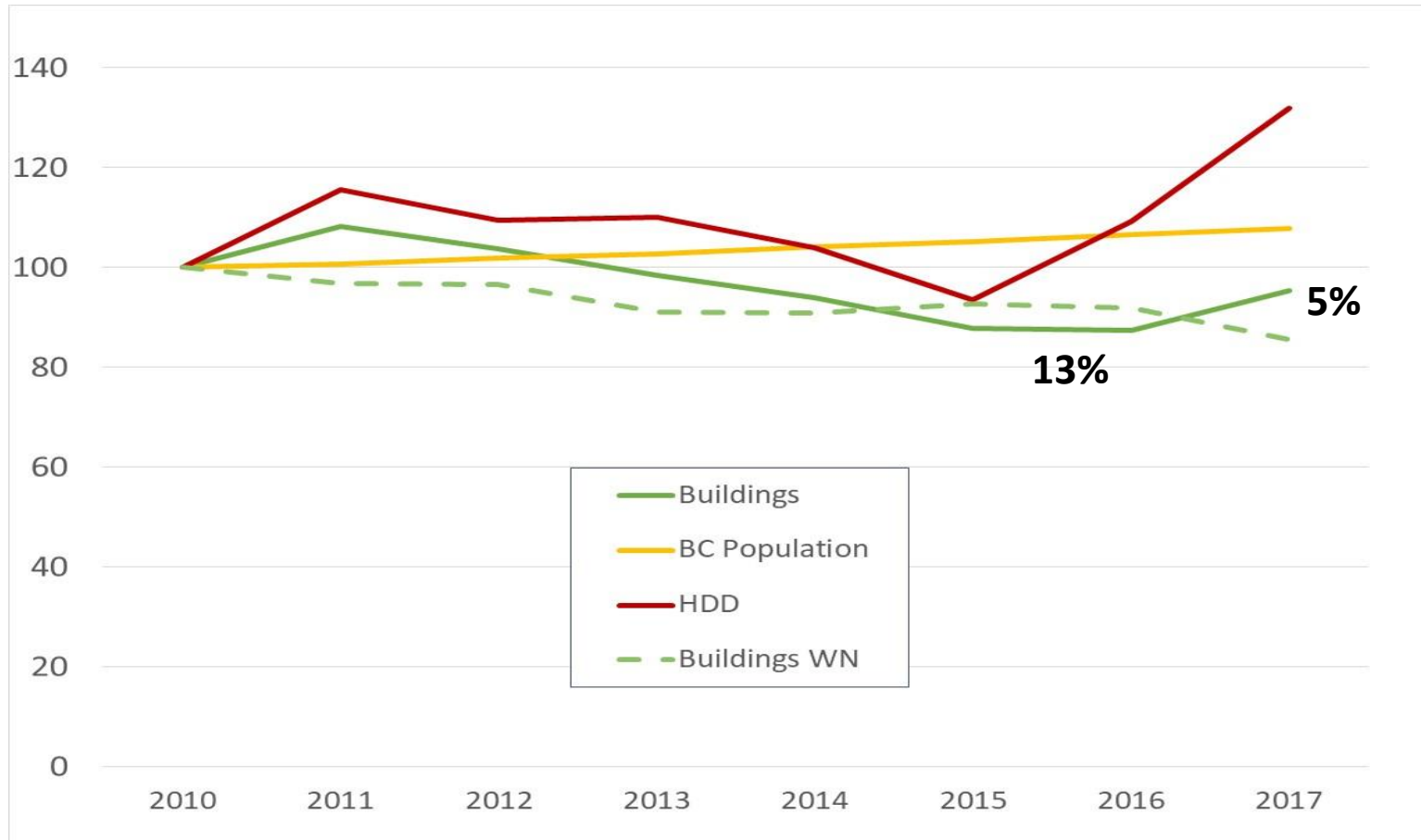


2017

Public Sector GHG Emissions – Changes since 2010



Public Sector GHG Emissions – Changes since 2010



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					
	Certified	Silver	Gold	Platinum	Total
Crown	1		8	1	10
Health	3	2	23		28
K-12	1	3	26	1	31
Post Secondary	2	1	45	6	54
Provincial Govt			3		3
Total	7	6	105	8	126

Energy Performance					
	LEED v1.0			LEED 2009	
	EAc1 pts	% Better than ASHRAE 90.1 -1999 Baseline	% Better than MNECB	EAc1 pts	% Better than ASHRAE 90.1 -2007 Baseline
min	1	15%	24%	7	24%
max	10	60%	64%	19	48%
mode	6	40%	47%	16	42%
average	6	40%	47%	13.5	37%

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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