

17th NATIONAL CONFERENCE ON BUILDING COMMISSIONING



EFFICIENCY • PERSISTENCE • PERFORMANCE

Development of a Building Commissioning/ Recommissioning Program

Ian Meredith

Natural Resources Canada



Natural Resources
Canada

Ressources naturelles
Canada

Canada

AIA Quality Assurance



Learning Objectives

- 1. Better understanding of government policy and program development**
- 2. Discuss programmatic options for addressing key commissioning industry issues, such as capacity-building**
- 3. Compare US and Canadian (commissioning) program development experiences, and lessons each can learn from the other**
- 4. Promote appreciation that commissioning and recommissioning have wide-spread, international interest and thus benefit from information sharing and other forms of cooperation**

Presentation Outline

- NRCan Interest in Energy and Cx
- Approach to ecoENERGY programming
- DSMWG and Building Cx Subcommittee
- Proposed RCx Program Framework

Government Interest

Federal Speech from the Throne: October 2007

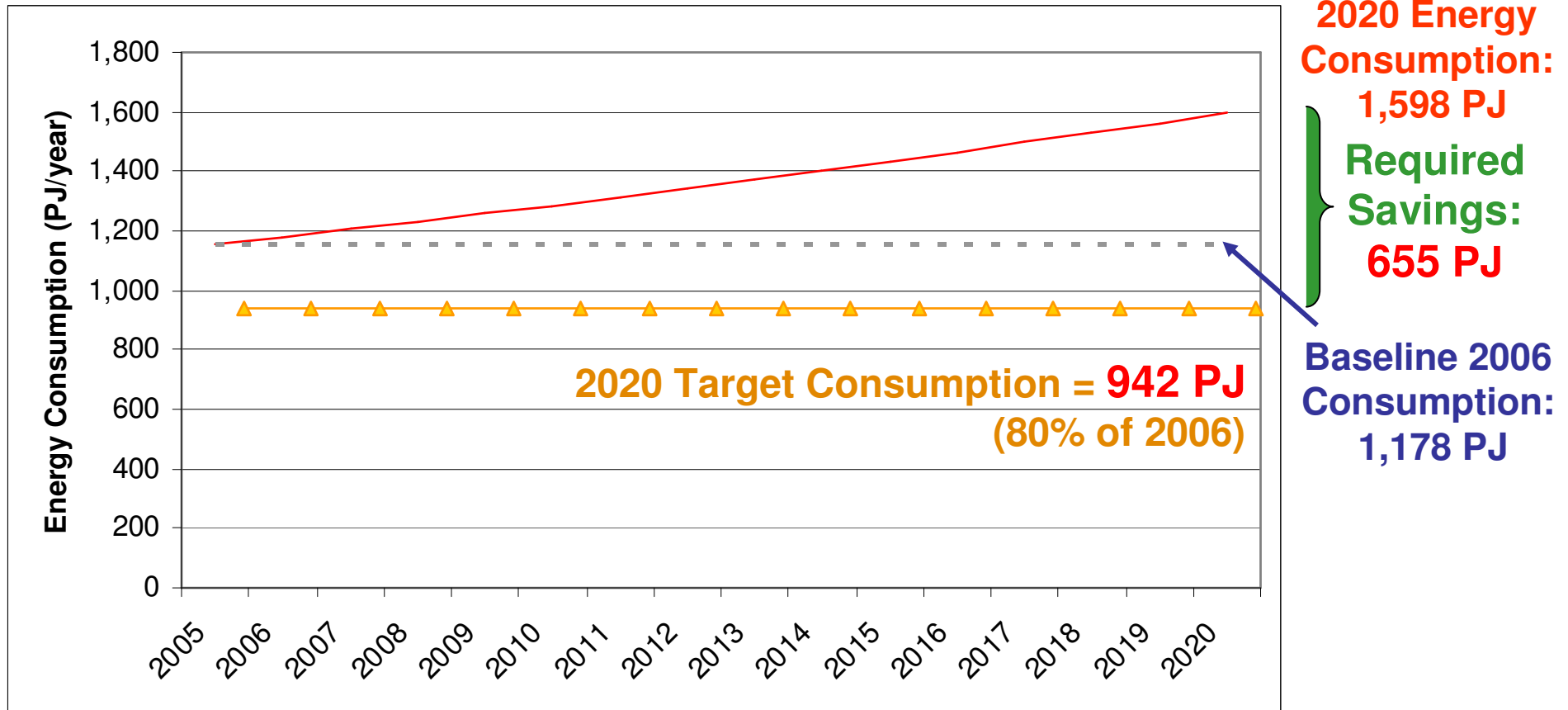
- Climate Change policy to demonstrate reductions in CO₂eq
- Canadian Government commits to implementing a national strategy to reduce Canada's total greenhouse gas emissions 60 to 70 % by 2050...

...with an intermediate target of **20% by 2020**

- For Buildings, this means reducing from a projected (“status quo”) 2020 energy consumption of 1,598 PJ to 942 PJ, a reduction of **655 PJ (182 TWh)**
- Translates to **59 MT** of CO₂eq
- Reiterated in 2008 Throne Speech

Government Interest

20/20 Building Consumption Target

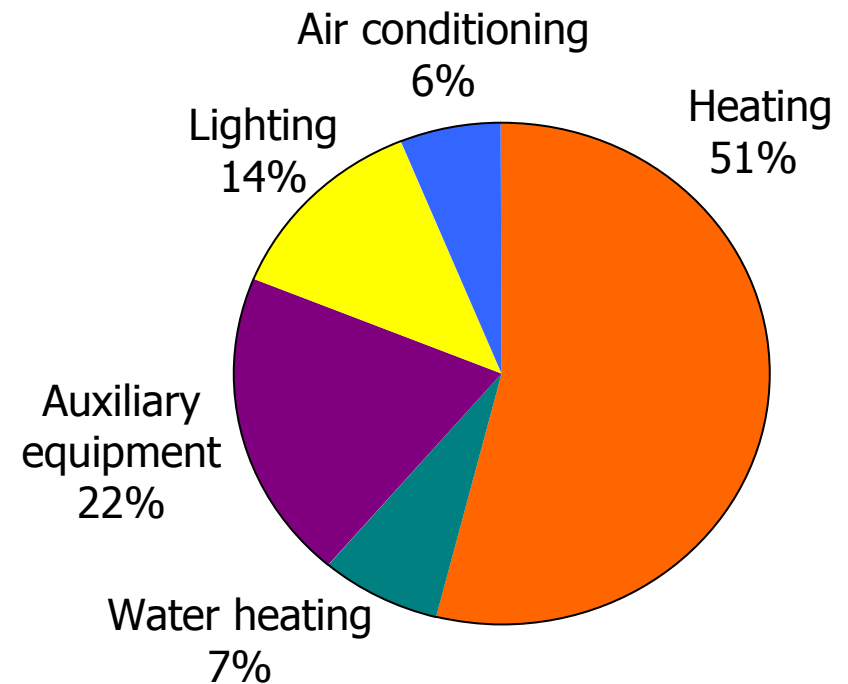


Source: Office of Energy Efficiency, 2008

Government Interest

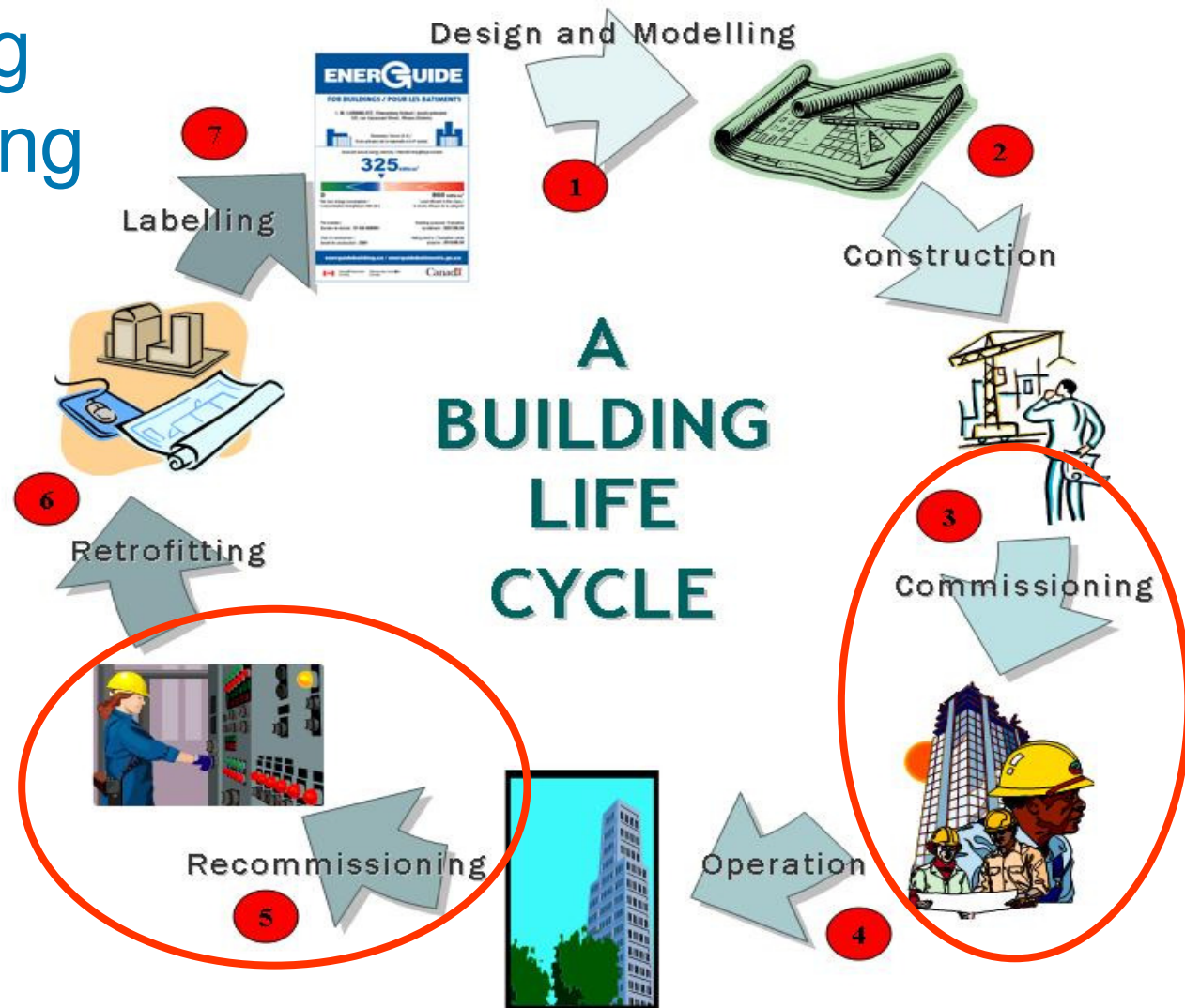
Energy use in Canadian Buildings

- 327 TWh (2006)
- **15%** of GHG emissions
- 591 million m²
- Canadian C/I sector investment ~ \$1 Trillion
- 5000 new buildings, or additional 8.5 million m² per year



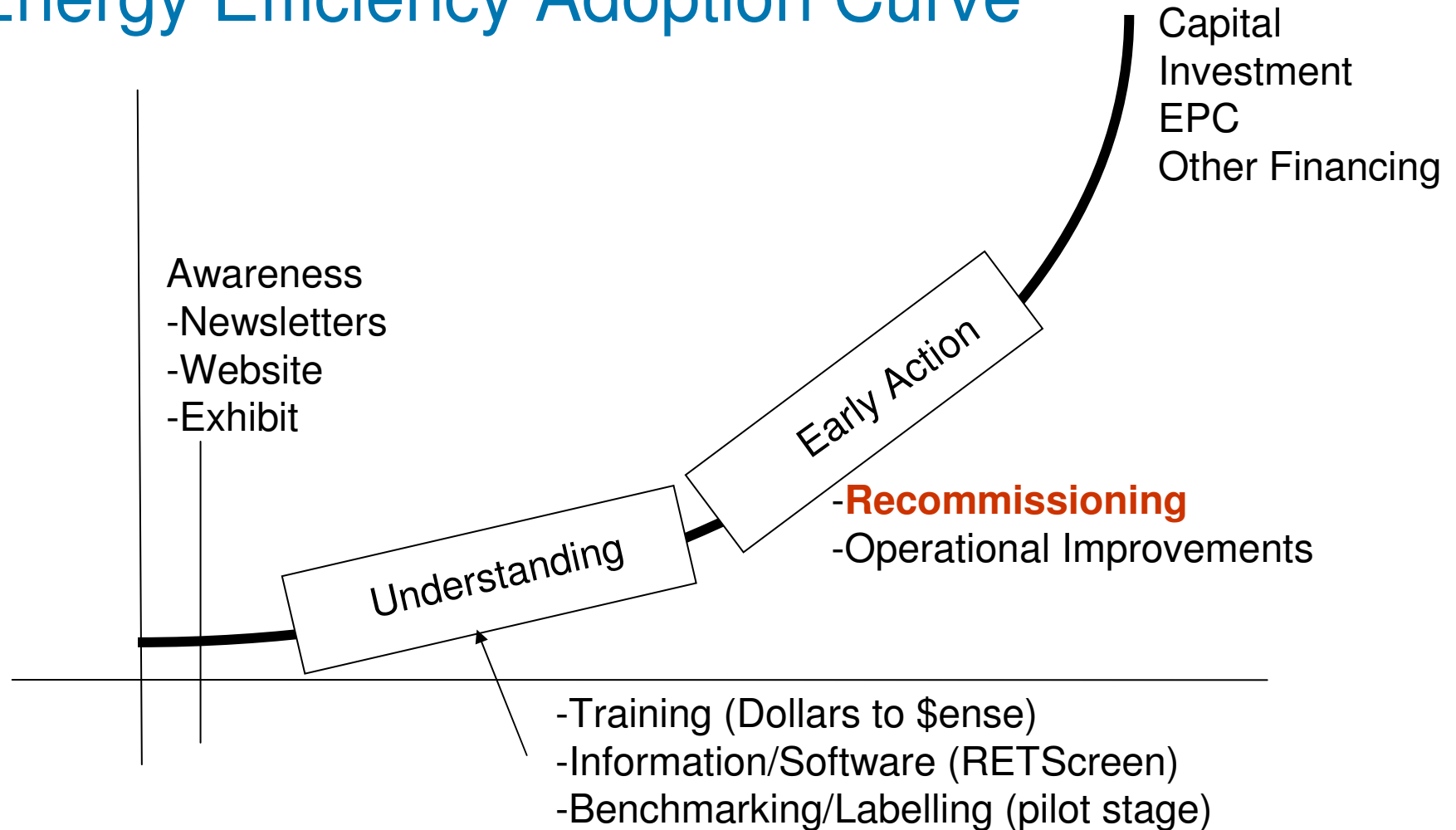
Government Approach

Programming for the Building Life Cycle



Government Approach

Energy Efficiency Adoption Curve



Government Approach

ecoENERGY for Buildings and Houses

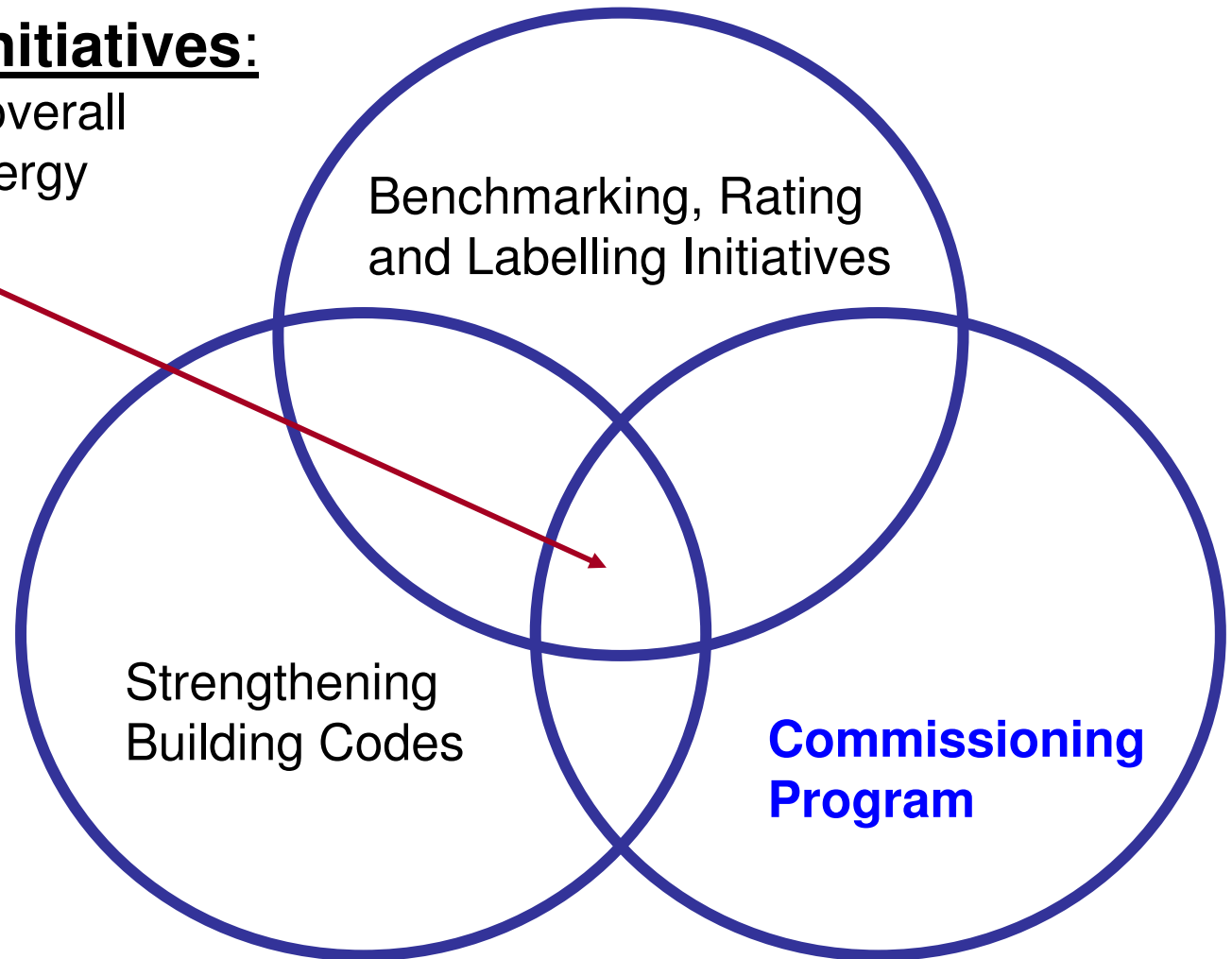


- Building codes
 - National Research Council develops Model National Energy Code for Buildings (MNECB)
 - Individual Provinces may adopt into own Building Codes
- Validation of new building designs
 - Confirms designed performance at least 25% above MNECB
- Retrofit Incentives
 - \$/GJ saved for buildings < 200,000 ft²
- Benchmarking, rating and labelling
 - Considering adopting and adapting the US EPA Energy Star approach for Canadian buildings

Government Approach

Complementary Initiatives:

Combine for maximal overall increase in building energy efficiency



Government Approach

Government Interest in Commissioning

- RCx estimated to save 10-15% energy
...translates to significant GHG reductions
- Relation to:
 - “Green Building” programs
 - Energy Retrofits in Commercial & Institutional buildings
 - Energy Benchmarking/Labelling
- Cx is an under-utilized practice
- Government role: leadership + facilitation

Commissioning Issues

Why is commissioning currently under-utilized?

- Acceptance (by potential customers) that RCx provides tangible benefits
- Lack of consistency on definitions and attributes, or one accepted approach
- Concern over whether Cx/RCx benefits can persist over time
- Need for capacity building – to provide services
- Further capacity building – better educated/qualified building operations staff

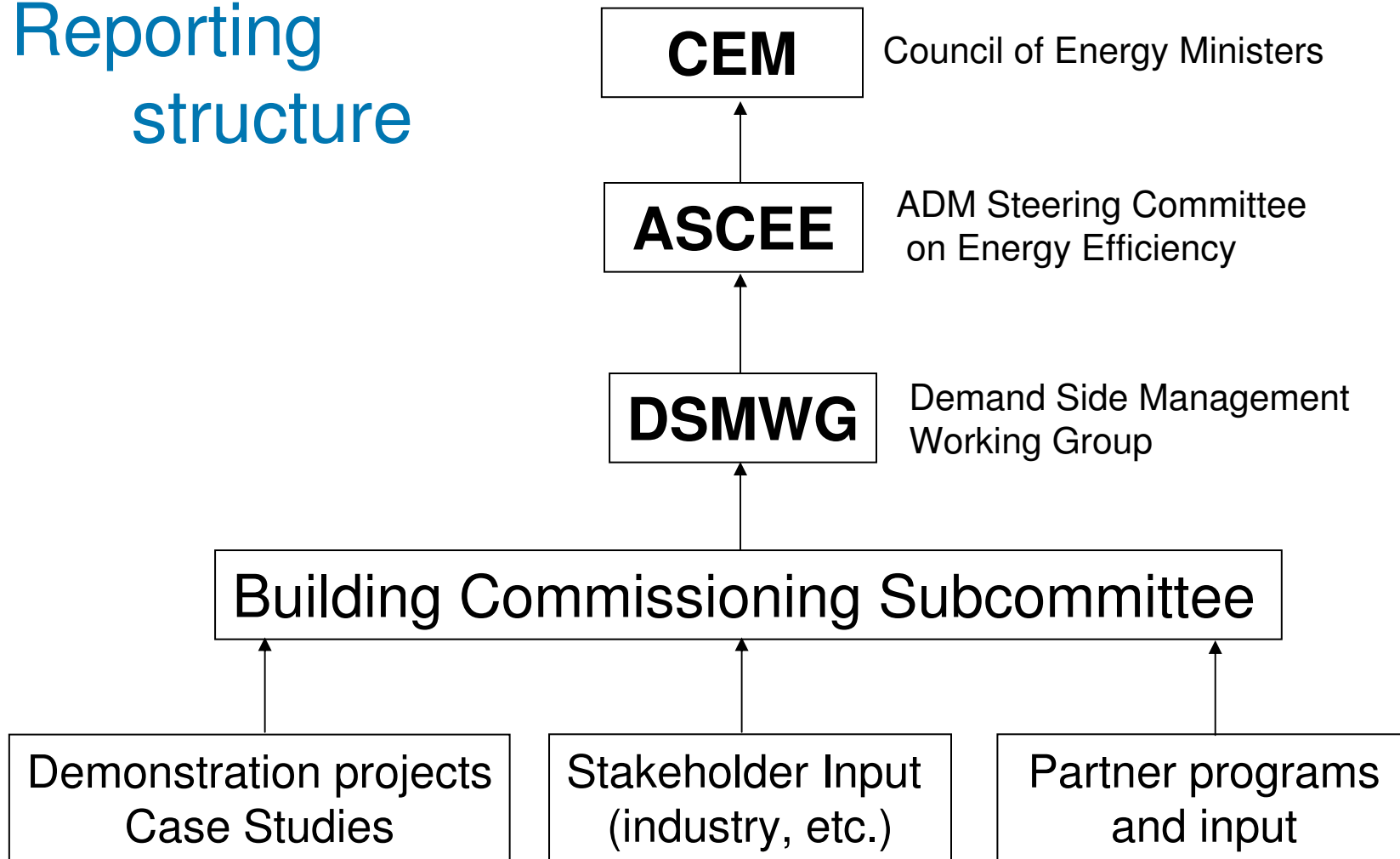
Market Research

Market Scan Results

- Initially identified 128 companies across Canada
- About 31% are dedicated Cx providers; others offer some form of Cx/RCx as one service
- Qualifications and methodologies are variable
- Research included interviews with stakeholders:
 - Utilities, industry assoc., etc.
 - Comments support our Subcommittee's general direction on standards, training, demonstration of Cx value proposition and capacity-building

DSMWG Building Commissioning Subcommittee

Reporting structure



DSMWG Building Commissioning Subcommittee

- **Mandate**

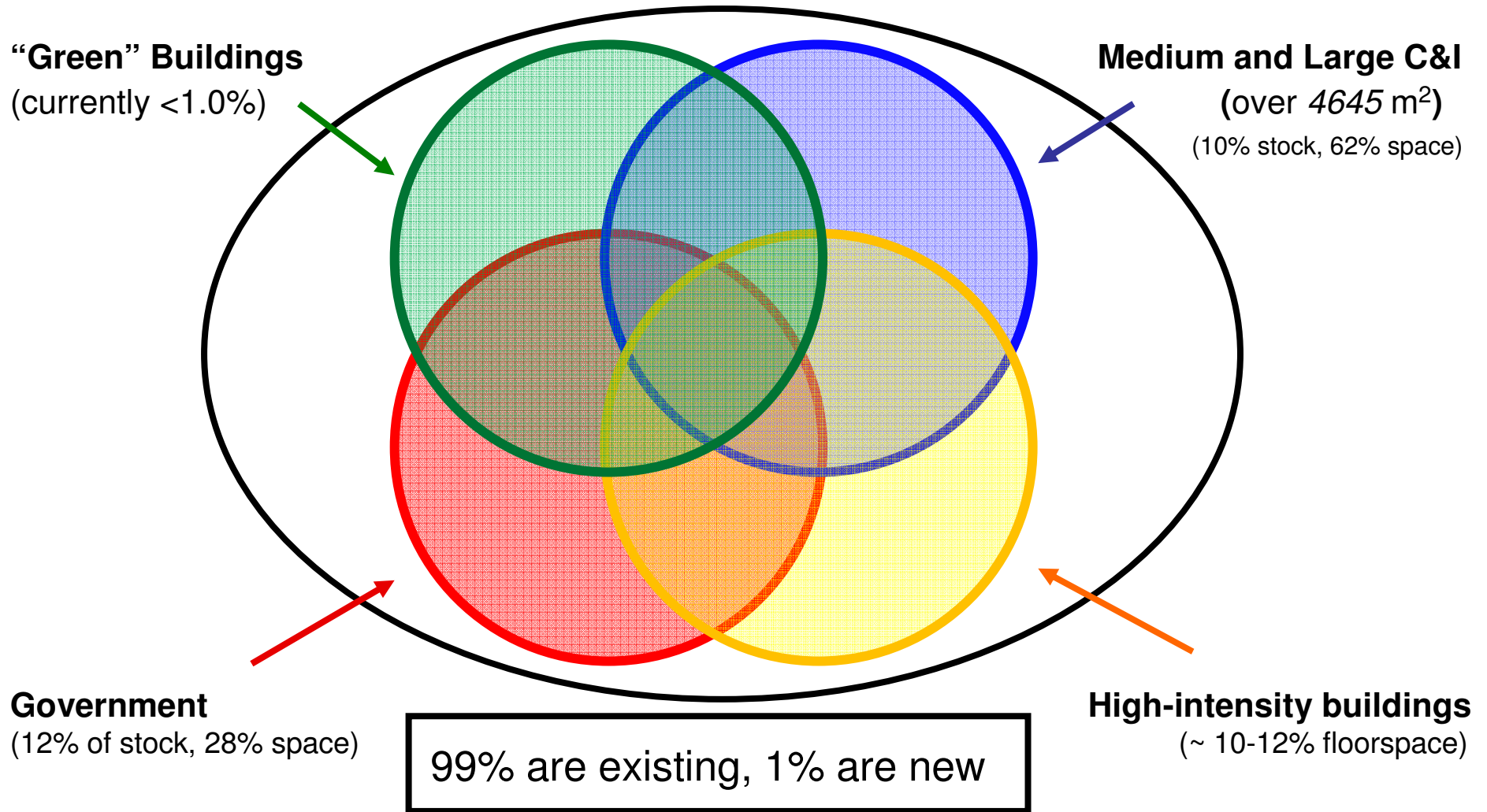
- Research and discuss issues and opportunities
- Facilitate building Cx/RCx efforts through development and implementation of collaborative Strategic Action Plan
- Address several *Moving Forward* priorities, including:
 - Research Development & Deployment
 - Developing capacity
 - Government Leadership

- **Project Team**

- NRCan plus several provinces and/or provincial utilities
- Industry and NGOs: BOMA, CSA, CaGBC, Building Commissioning Association (BCA), Mechanical Contractors Association of Canada (MCAC)

Recommissioning Program Framework

Focus on Recommissioning



Recommissioning Program Framework

RCx program proposed by the DSMWG Subcommittee will adhere to four key program “Pillars”:

- Based on recommissioning methodology developed by Portland Energy Conservation Inc. (PECI)
 - Will eventually be influenced by introduction of *CSA Standard Z320 (2010)*
- A key strategic element will be to work through established “distribution channels” to promote and implement RCx projects and programs
- A similar program framework will eventually be proposed for commissioning (Cx) of new buildings

Recommissioning Program Framework

Proposed Program Pillars:

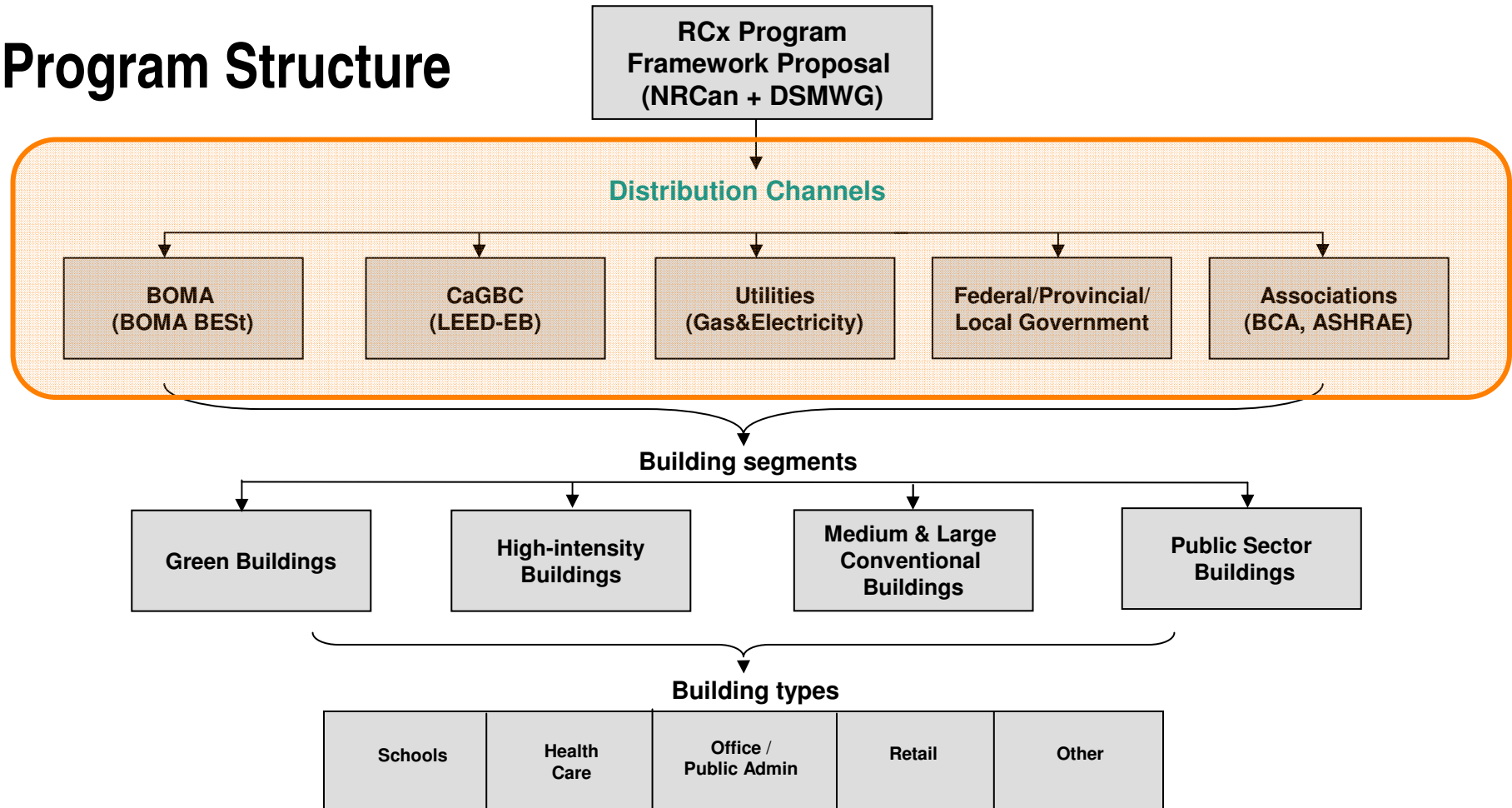
- Standardization: RCx methodology and Best Practices
- Education: Awareness and Training
- Promotion: Demonstration of RCx value
- Facilitation: Deployment Tools and Initiatives

Individual actions are being formulated for each pillar

- Together, serve the most important overall consideration, which is capacity building

Recommissioning Program Framework

Program Structure



AIA Quality Assurance



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For more information:

Ian Meredith, Commissioning Project Coordinator
OEE Buildings Division

ian.meredith@nrcan-rncan.gc.ca


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