



Canada's Activities to Reduce Energy in Buildings

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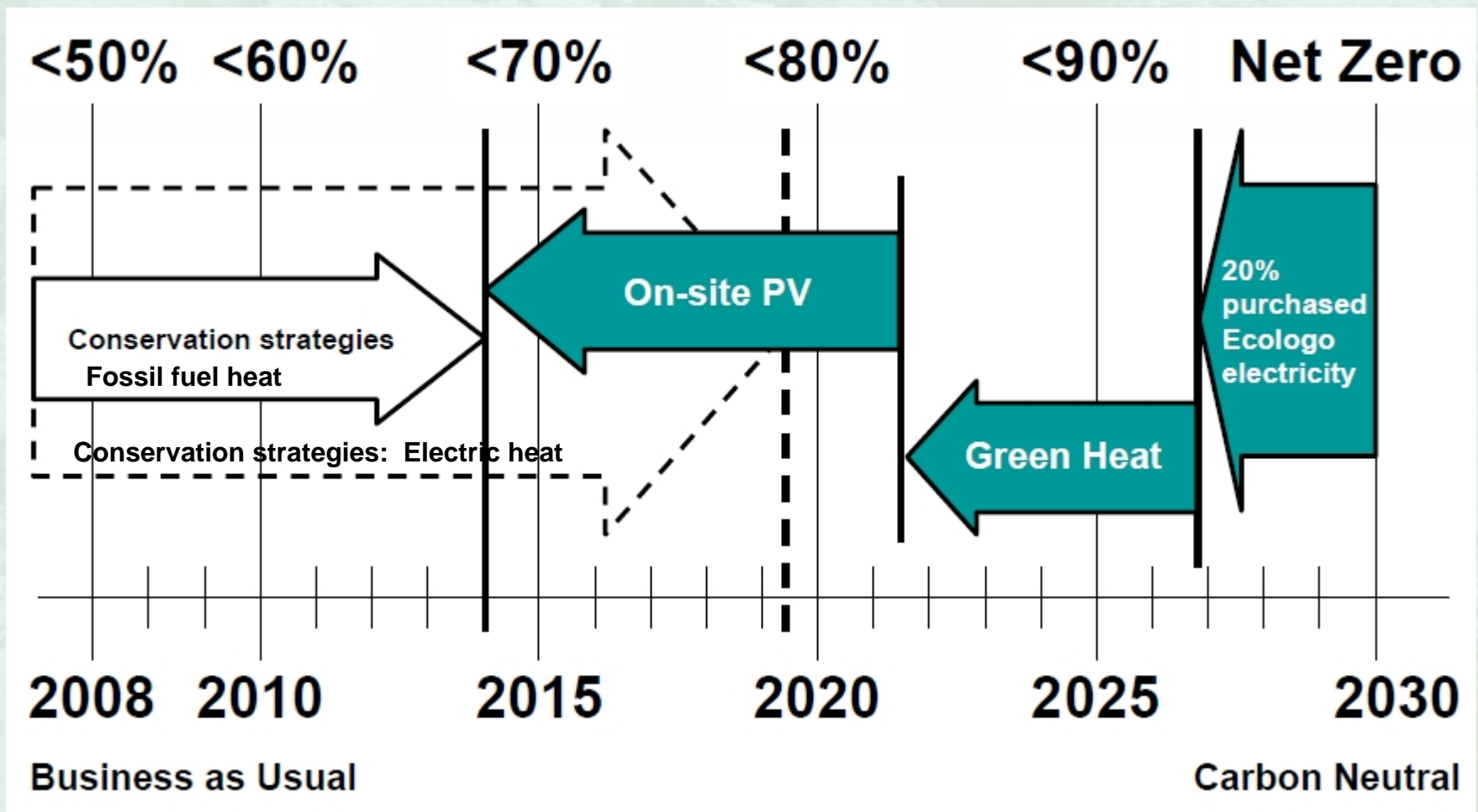
Policy Environment for Energy Efficiency

- Canada has abundant energy resources, and the energy sector is a major driver of the Canadian economy. Canada depends heavily on fossil fuels for its energy needs.
- Using energy more efficiently ensures that energy supplies go further, leading to financial savings, pollution reduction and increased profits and productivity.
- Energy efficiency programs and initiatives are and will continue to be a key element of Canada's greenhouse gas emissions reduction strategy.





Roadmap for Net Zero or Carbon Neutral Buildings





ecoENERGY Programs



- ecoENERGY Retrofit – Homes \$520M /4yrs
- ecoENERGY for Buildings & Houses \$61M /4yrs
- ecoENERGY for Personal Vehicles \$21M /4yrs
- ecoENERGY for Fleets \$22M /4yrs
- ecoENERGY for Industry \$18M /4yrs
- ecoENERGY for Equipment \$32M /4yrs
- ecoENERGY for Biofuels \$1480M /9yrs

ecoENERGY Efficiency Initiative





ecoENERGY Retrofit Incentives

Financial incentives : NRCan

- **ecoENERGY Renewable Heat**
 - Commercial incentives for solar air or water up to \$400,000 per installation; \$2,000,000 per entity
 - www.ecoACTION.gc.ca/heat
- **ecoENERGY Retrofit – Small and Medium Organizations**
 - For Buildings
 - For Industry

Federation of Canadian Municipalities

- **Grants for Plans, Studies and Pilots**
- **Loans and grants for Capital Projects**



ecoENERGY Retrofit Incentives



Eligible organizations:

- Commercial, institutional and certain multi-unit residential buildings $\leq 20,000 \text{ m}^2$
- Industrial facilities with fewer than 500 employees not subject to clean air regulation

Incentive calculation:

- \$10 per gigajoule estimated annual savings
- up to 25% of eligible project costs
- up to \$50,000 per project
- payback \geq one year

Funding schedule:

- Limited funds to March 31, 2010
- Final year for application is fiscal 2010/2011
- Program closes March 31, 2012



Multi-Level Participation

Each Province and Territory has additional programs. Examples include:

- New energy efficient home purchase;
- Appliance replacement or retrofit;
- Renewable energy addition;
- Insulation upgrades;
- Energy monitoring.





ecoENERGY Buildings and Houses Capacity Building

Training and Workshops

- Dollars to \$ense,
 - Spot the Opportunities, Energy Management Plans, Financing, EMT;
 - Customized Workshops – sectoral, regional etc
 - Charrettes
- Building Energy Use Simulation
 - EE4
- Recommissioning

Software and tools

- EE4, RETScreen, Screening Tool
- Benchmarking Initiative




















Awareness


- Case Studies, Technical Studies and Factsheets
- Heads Up Energy Efficiency



Free Energy Software Tools

http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/software_tools.html

Access Energy Simulation and Software Tools (free-of-charge)			
Renewable Energy	Whole Housing (or part)	Whole Buildings (or part)	Component-Specific
			
			
			
			
			
			
Access Renewable Energy Web Tools (free-of-charge)			
Wind Atlas	Hydro Atlas	IREE	PV & Solar Maps



Building Regulatory and Rating Systems Tools

NRCan responsibility:

- **The Model National Energy Code for Buildings 1997 (MNECB)**
 - Requires 9.5 l/min showerheads and 8.3 l/min facets
 - Minimum energy requirements for all new buildings
- **The National Energy Code for Building (NECB), an update of the MNECB is scheduled for public consultation in fall 2010, for adoption in 2011**

National Research Council responsibility:


- **National Building Code scheduled to adopt energy efficiency and water efficiency as additional objectives for 2015 edition**



Canadian Mortgage & Housing Activity

EQilibrium™ Housing Demonstration Projects

- Innovative homebuilding teams have been selected by CMHC to build demonstration homes throughout Canada. View pictures of the homes by clicking on the 'Image Gallery' link under the project name. Learn about each EQilibrium™ project by clicking on the 'Details' link under the project name.
- http://www.cmhc-schl.gc.ca/en/inpr/su/eqho/eqho_015.cfm



Net Zero Energy Home Coalition

- 1. Demonstrate energy efficiency with onsite renewable energy integration.**
- 2. Expand builder and related sector support.**
- 3. Expand consumer awareness of and public engagement in NZEH value and technologies.**
- 4. Financing NZEH Technologies and options.**
- 5. Identify a performance based standard and position NZEH along the continuum of energy efficient housing in Canada.**



Net Zero Technologies

- 1. R-2000 Construction**
- 2. Passive Solar**
- 3. Solar Domestic Hot Water**
- 4. Solar Electricity**
- 5. GeoExchange Technology**



Benefits

- 1. Enhanced collaboration across sector.**
- 2. Diversified power sources and conservation will improve Canadian competitiveness.**
- 3. Cleaner air and climate protection.**
- 4. Regional and economic development.**
- 5. Global leadership.**

Riverdale NetZero Home

- Predicted surplus annual energy production
- Low pollutant-emitting building materials and finishes
- Building materials are regional, renewable and/or abundant
- 54% reduction in potable water use: exterior drought-tolerant plants that rely solely on rainwater
- A predicted 40 per cent of the house heating will be provided by passive solar gain, 28 per cent by internal sources, 21 per cent by active solar, and 11 per cent by solar photo-voltaics





Thank You !

