



Action on Climate Change in BC Communities

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Presented to:

Conversations on Climate Change

March 28, 2007

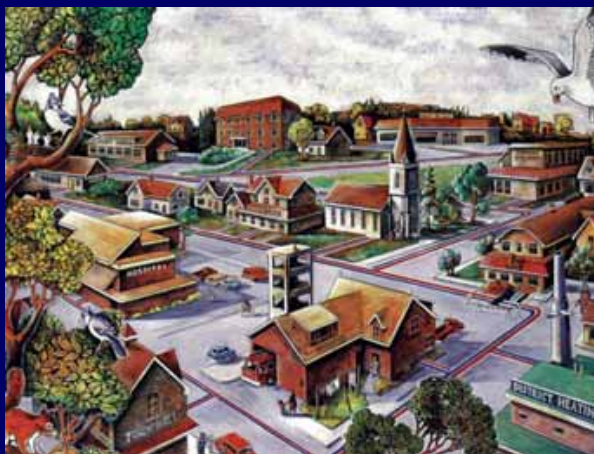
Municipalities and Energy

- Canadians are the 4th highest per capita energy users in the world
- ~ \$4,300/person/year on energy
- Municipalities directly account for 7% of GHG emissions, indirectly > 50%



Obsolescence Cycle of a City

- City structure and layout 75 – 200 years +
- Buildings 50 – 100 years
- Infrastructure 20 – 100 years
- Systems & equipment 5 – 30 years



GHG and Energy Planning

- Evaluate current energy consumption and GHG/energy forecasts
- Encourage community engagement
- Clarify goals & priorities
- Coordinate potential opportunities
- Achieve GHG reduction goals
- Benefits include:
 - Air quality
 - Energy security
 - Economic development



GHG Planning - History 101

- 1990 Vancouver: Clouds of Change
- 1992 Capital Regional District Healthy Atmosphere 2000
 - Targets:
 - 20% reduction from 1990 levels by 2000
 - 60% reduction by 2020
 - Actions: Land Use, Transpo, Buildings, Waste & Landfill
 - Lack of regional and municipal support
 - Some items implemented: Landfill gas capture, building retrofits
 - Most recommendations still relevant
 - 15 years later; less time to do the same work
 - More public will now??

Capital Regional District Community Energy Plan 2007

- Draft released – for Board review
- Energy use scenarios 1995 - 2012:
 - BAU: increase 13%
 - “Comprehensive” action: increase 4%
- GHG emissions 1995 – 2012:
 - BAU: - 7.2% (due to landfill gas capture)
 - “Comprehensive” action scenario: - 15.6%
- No long-term targets/scenarios
- April 4, 2007 Public Meeting (7 pm Spectrum)
- Relies on each municipality for local implementation



Other BC GHG or Energy Plans

- Complete
 - Kamloops – 1997
 - Revelstoke – 1997
 - Bowen Island – 2003
 - Quesnel – 2003
 - Whistler - 2004
 - City of North Vancouver – 2005
 - Vancouver – 2005
 - Prince George – 2006
- Provincial target to have 50 CEPs by 2010



Actions

- Land Use: Smart growth planning
- Transportation:
 - Transportation demand management
 - Green fleets
 - Fuels
- Buildings
- Infrastructure
- Renewable energy supply
- Municipal operations
- Education campaigns



Land Use, Transportation, and Buildings Policies

GHG/Energy goals can be incorporated into OCP, bylaws, policies, etc.

- GHG/energy targets
- Densification, focused development supporting transit
- Smart growth guidelines
- District heating service areas
- Density bonusing
- Rezoning applications



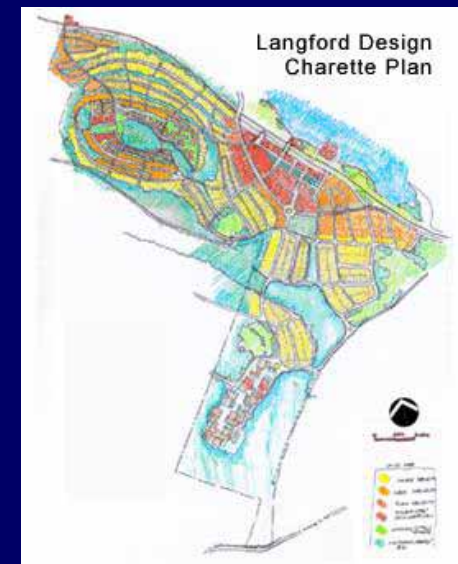
Dockside Green, Victoria

- Complete sustainable community
- GHG neutral
- Key energy features include:
 - High density, mixed use development
 - Transportation demand strategy
 - LEED platinum for buildings
 - Biomass co-generation, district heating
 - Demonstrations of other renewables (eg. solar hot water, photovoltaics)



Westhills Green Community, Langford

- Comprehensive Development Zoning
- 472 acre sustainable neighbourhood plan
- LEED Neighbourhood Development Standard; all buildings to be LEED certified
- Compact development; all amenities within walking distance
- Local commuter buses, extensive trail network



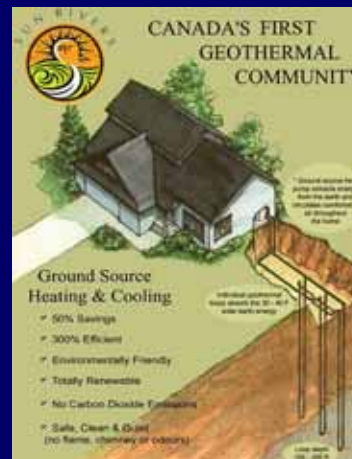
Bowen Island

- Energy performance standards via rezoning
 - Developing a rezoning policy
 - Rezoning applicants expected to achieve Built Green™ “Gold”, and EnerGuide for New Houses 80 for new residential development
 - Extensive developer consultation and committee referrals



Sun Rivers Community: Ground-Source Heating

- 2000 home development in Kamloops
- Each home has a closed ground loop
- Ground loops installed and paid for by Corix Utilities, leased back to homeowner
- Homeowner responsible for systems within the house

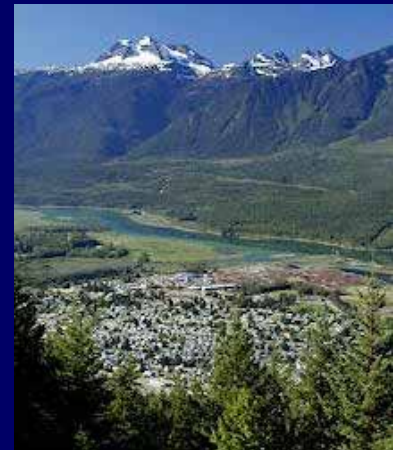


Infrastructure

- District heating systems
 - biomass, geo-exchange, cogen, landfill gas, waste heat
- Waste heat recovery
 - from sewage treatment plants, ice rinks, industrial
- Green power from municipal water supplies
- Landfill gas capture and utilization
 - e.g. for electricity, vehicle fuels or heating

Revelstoke District Heating

- First renewable-energy district heating system in BC, burning wood waste from local mill
- Hot water heating to downtown buildings, steam for kilns
 - Reduced use of silo burner
 - Lower energy costs for customers
 - City is a partner in Revelstoke Energy Corp.



Wastewater Heat Reclaim, Kelowna

- Wastewater treatment plant discharge used as low temperature heat source
- Heat recovered using heat pumps
- Used as first stage of heating for Okanagan College



West Vancouver Micro-Hydro

- Hydro-electric generation from municipal water supply
- Partnership with Pacific Cascade Hydro
- 1.2 GWh annual generation
 - \$328,000 capital investment by municipality, 5-year payback



Hartland Landfill Gas Utilization

- 1.6 MW green power generation
- Privately built by Maxim Power
- 12,274 MWh electricity generated
- \$250,000/year royalty to Capital Regional District



Municipal Operations

- Procurement
- Municipal Buildings
- Fleets

City of Richmond

- Sustainable High Performance Building Policy
 - Projects will be evaluated based on life cycle costing
 - LEED Gold standard for buildings >2000 m²
 - LEED Silver for buildings < 2000 m²



Saanich Municipal Energy Retrofit

- 10 municipal buildings
- Lighting, mechanical and water
- Energy performance contract – guaranteed savings
- \$90,000 in annual savings



Biodiesel Demonstration Program: BC Biofleet - Fleet Challenge BC



- Based on success of pilot project
 - 6 municipalities in Lower Mainland and Whistler
 - Will purchase 80 million litres of biodiesel over 5 years
 - Biodiesel cost can be same or less than regular diesel



Solar Energy in Dawson Creek

- Solar water heating in three municipal buildings
- Partnership with BCSEA for promotion and education about solar water heating
 - Solar water heating curriculum introduced at Northern Lights College
 - Developing a model bylaw to require “solar ready” new homes



Community Energy Association

Helping Communities Benefit From Energy Opportunities

- First-stop shop for BC local governments:
 - Presentations to council or staff
 - Website – local government energy information
 - Energy planning toolkit
 - Funding guide
 - Information and assistance

Community Energy Association

Helping Communities Benefit From Energy Opportunities

Partners





Thank you

Community Energy Association

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