



Climate Change Central

Energy Efficiency: Opportunity in Alberta

Inter-America Development Bank
May 12, 2008

John Rilett
Director, Energy Efficiency and Conservation

Suite 100, 999 - 8th St. SW Calgary, Alberta, Canada
403-517-2700 | info@climatechangecentral.com
www.climatechangecentral.com



Climate Change Central

- A not-for-profit private-public partnership
- Core staff of 20 in Calgary and Edmonton
- Multi-stakeholder board



C3's Role

- Work on climate change solutions
- Deliver effective programs
- Take action
- Partner
- Provide innovation
- Align initiatives to Alberta's and the federal government's plans
- Leverage

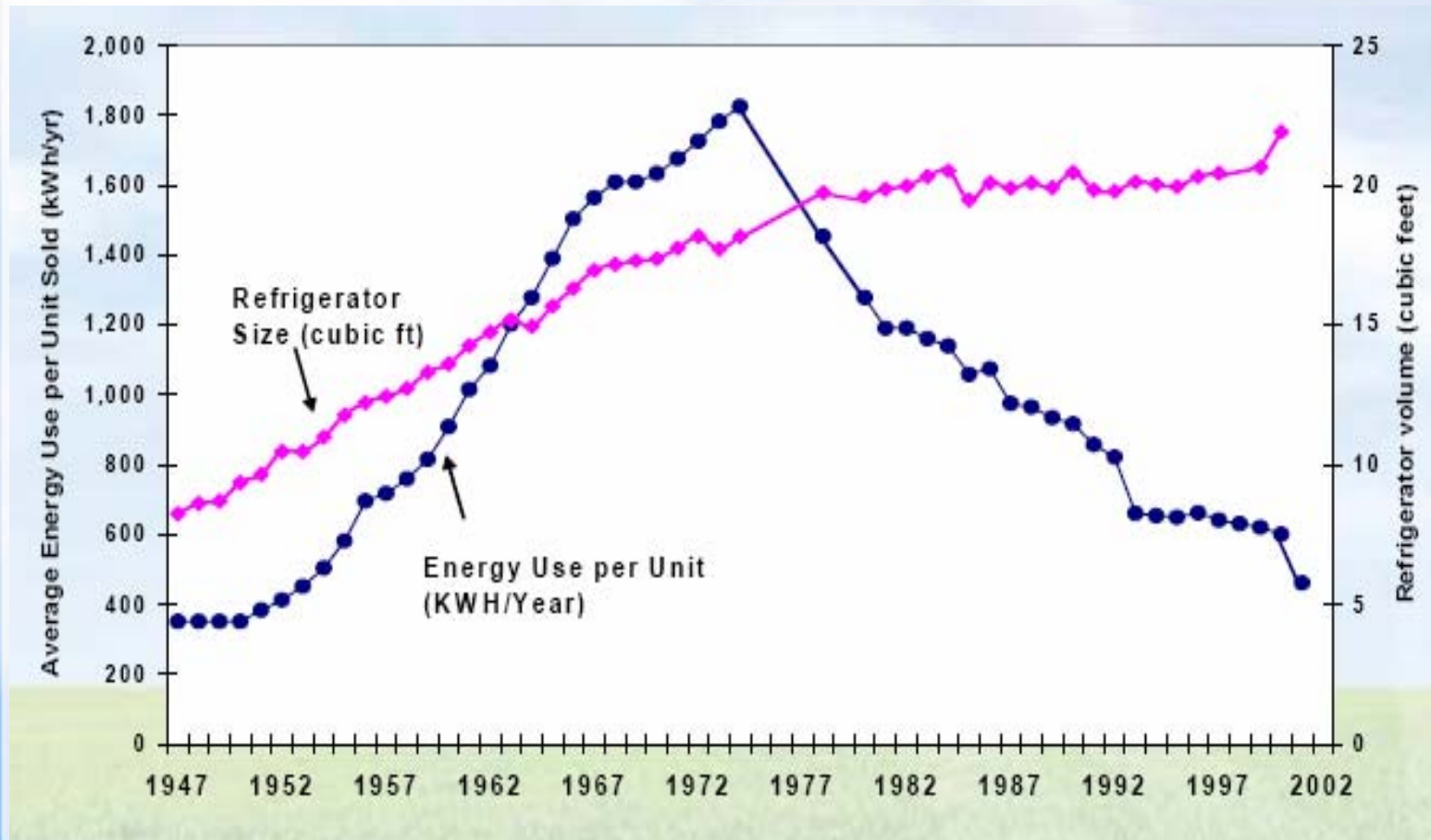


Energy Efficiency Benefits

- Cheap
 - Energy conserved is often the cheapest energy available
- Revenue Enhancement
 - More product to market, lower operating costs
- Helps stretch non-renewable resources
 - Natural Gas, Oil, Coal
- Help integrate renewable energy
 - Wind, solar, biomass
- Tangible role for everyone
 - We all get to play (Industry and Individual)



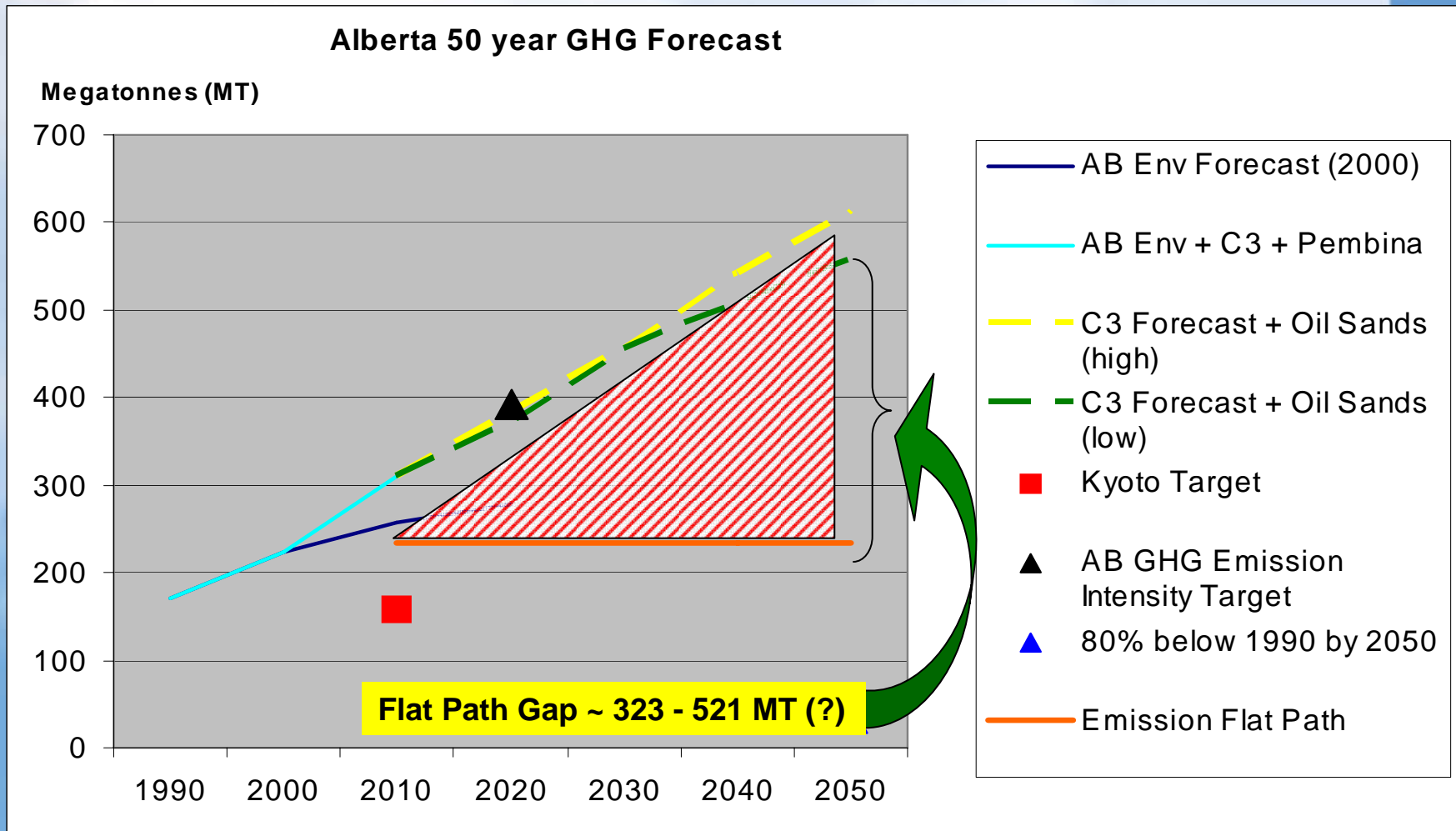
Efficiency vs. Performance



Source: California Energy Commission

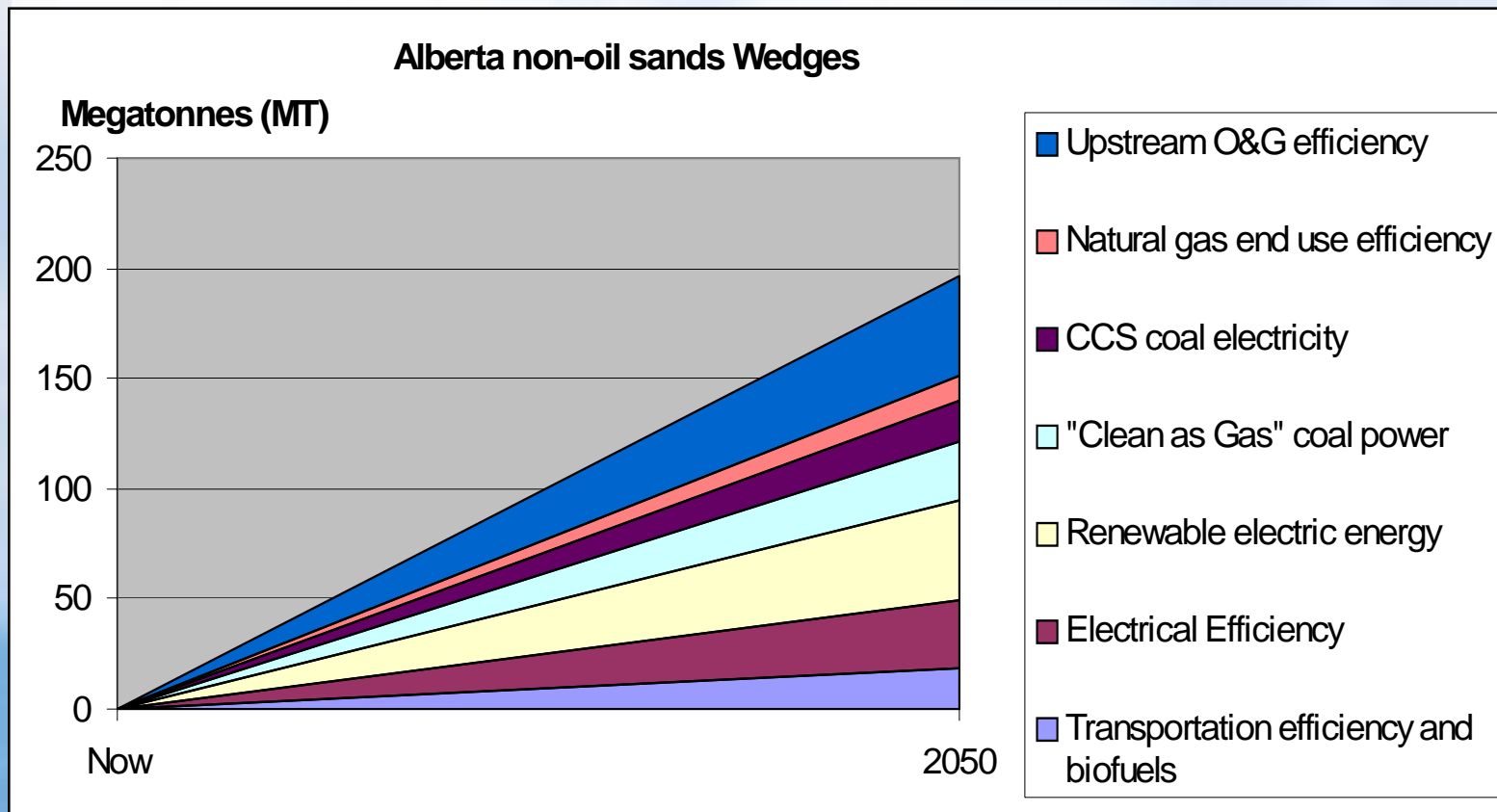


ALBERTA 50 YEAR GHG FORECAST





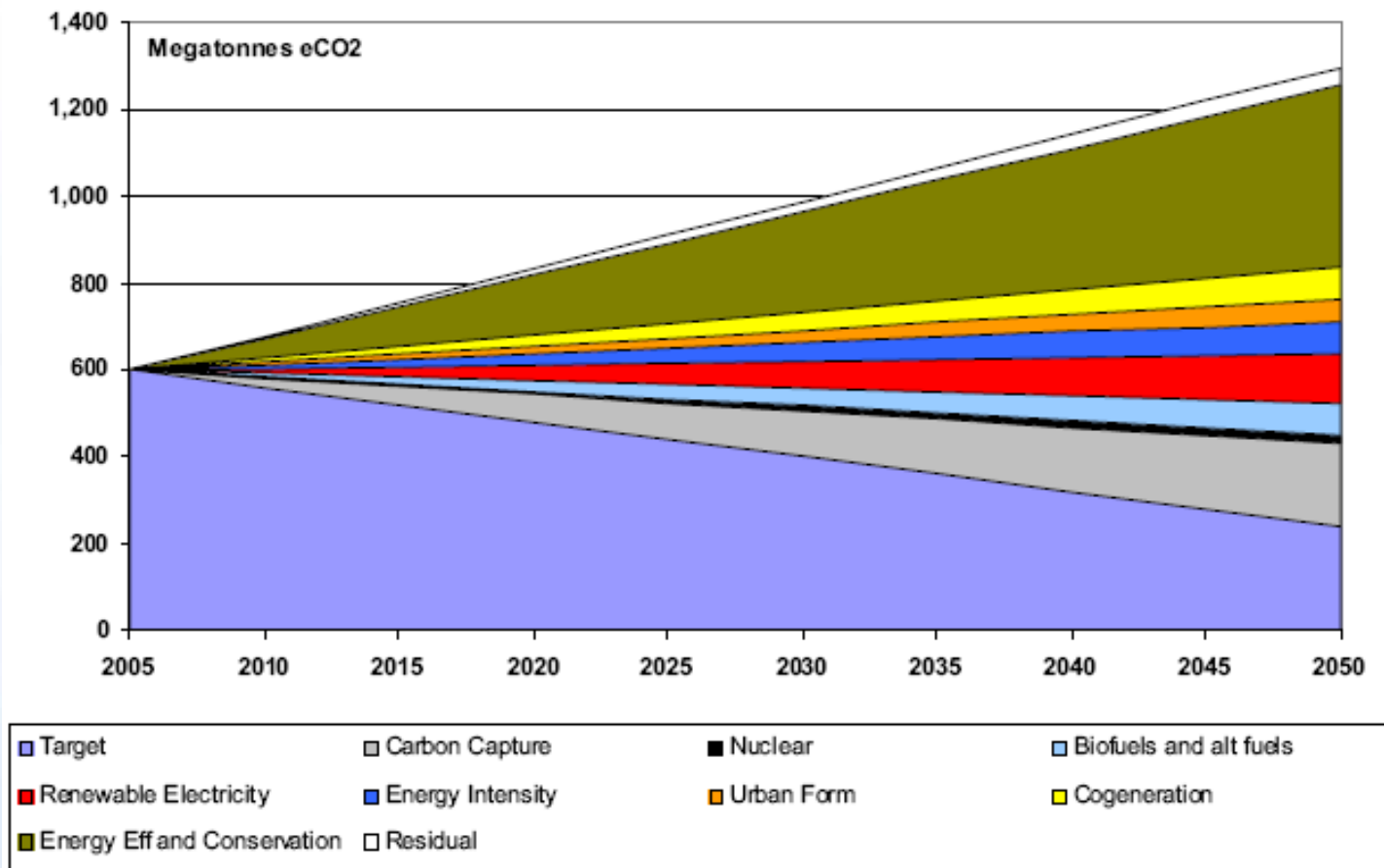
Alberta Stabilization Wedges



Disclaimer: All numbers are preliminary and have not been reviewed or finalized.



GHG Reduction Diagram for Canada – Aggregate Wedges



Source: NRTEE



Alberta – Past Activity

- Primarily focused on consumers
- Focused on voluntary action
- Many programs have been demonstration or “pilot” programs



Past Programs - Consumer

- Home Heating (pilot)
 - 5,900 furnace replacements
 - 225,000 GJ annual savings
 - 11,000 tonnes GHG savings annually
- Energy Star Clothes Washers (pilot)
 - 14,000 replacements
 - 1,800 tonnes GHG savings annually
 - 30 million litres of water annually



Past Programs - Consumer

- Vehicle Scrappage
 - Early retirement of older, high-polluting vehicles
 - 6000+ vehicles retired
 - 8,200 tonnes of GHGs reduced
 - 3,500 tonnes of smog forming pollutants



Past Programs - Commercial

- ME First (Municipal Energy)
 - No interest loan program for municipalities
 - 39,000 mWh saved annually
 - 28,000 GJ saved annually
 - 38,000 tonnes GHGs saved annually
- Alberta Plus (pilot)
 - Commercial building incentive program
 - 11 commercial building projects
 - 2,500 tonnes GHG's saved annually



Past Programs - Commercial

- LED Exit Signs (pilot)
 - 7,300 replacements
 - 2,100 mWhs
 - 50,000 tonnes over 25 years
- OnFarm Energy Efficiency
 - Energy assessment program for agriculture
 - Focused on intensive livestock (poultry, swine, dairy)



Alberta's Path

- Throne Speech
 - Commitment to make Alberta more Energy Efficient
- 2008 Climate Change Strategy
 - 24 MT reduction from energy efficiency and conservation
- 2008 Budget
 - \$40 million allocated to energy efficiency programming (Environment and Energy)
 - Details of timeframes and focus areas still to be determined



Alberta's Opportunity

- Residential buildings and appliances
 - Lighting and heating
- Commercial buildings and processes
 - Lighting, heating and equipment
- Industrial
 - Upstream oil and gas



Consumers - Residential



- Currently use 135 GJ and 7000 kWhs
- Target
 - Detached homes 30% more efficient
 - Multiple dwelling 60% more efficient
- Residential lighting energy use reduced by 60% - 75%
- Appliances 20% - 25% more efficient



Alberta Actions - Consumers

- Incentives for consumers
 - Residential heating
 - Appliances
- Energy efficiency building code
 - Target for 2009
- Energy Efficiency Act
 - Standards for appliances and electronics



Residential Heating



- What if all home heating in Alberta was Energy Star?
 - 24 million GJs in savings
 - 1.2 MT of GHG emissions avoided annually
 - \$144 million in annual savings to consumers



Commercial

- New building target - 60% reduction in energy use
- Retrofit – 25-50% reduction in energy use
- Lighting efficiency improved by 50% (T8 lights, electronic ballasts, sensors)
- Auxiliary motors 20% more efficient
- Cooling reduced by 30%

Source: NRTEE





Alberta Actions - Commercial

- Actions still to be determined
 - Incentive based vs. regulatory
- Likely areas of focus
 - Space heating
 - Lighting
 - Electric motors and pumps



Industrial Facilities

- Sector dominated by oil and gas
- Huge potential for energy efficiency improvements
- Details are not well understood at present



Alberta Actions - Industrial

- Large Final Emitters program indirectly supports energy efficiency as a compliance mechanism
- Alberta Energy has commissioned a scoping study to evaluate opportunities



Summary

- Energy efficiency programming is gaining strength
- Opportunity (for business and investment) will grow for buildings, both residential and commercial
- Efficiency gains in the oil and gas industry will become increasingly important



Climate Change Central

Contact Information

John Rilett

Director, Energy Efficiency and Conservation

Suite 100, 999 Eighth St SW

Calgary, AB

T2R 1J5

jrilett@climatechangecentral.com

403-517-2700

Suite 100, 999 - 8th St. SW Calgary, Alberta, Canada
403-517-2700 | info@climatechangecentral.com
www.climatechangecentral.com