Description of Programs Presented at the Canada Pavilion

United Nations Climate Change Conference - Montreal 2005

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Moving Forward on Climate Change
The Canada Pavilion at the United Nations Climate Change Conference 2005

Information Counter

Environment Canada – Moving Forward on Climate Change: Honouring our Kyoto Agreement

- Canada's Kyoto target is challenging. However, Canada has many advantages that will help us rise to that challenge. The Government of Canada is committed to the transformative, long-term change required to make reductions in GHG emissions while ensuring continued economic growth. In achieving that transformation, we believe we will meet our Kyoto target while maintaining a productive and growing economy.

  As well as transforming our economy, boosting our economic competitiveness and enabling Canada to achieve its short-term and longer term climate change goals, our 2005 Climate Change Plan will contribute significantly to cleaner air for Canada's cities, enhance biodiversity, help to preserve wild spaces and generally improve the quality of life for Canadians
- www.climatechange.gc.ca

1. UNDERSTANDING CLIMATE CHANGE AND HOW IT AFFECTS US

1.1 Our climate is changing

Counter A. Earth Observation and Monitoring

Natural Resources Canada – Canada's Group on Earth Observation (GEO)

- Canada is a major participant in the Group on Earth Observations (GEO), an international initiative that ensures long-term access to Earth Observation data (satellite and in-situ) to realize tangible societal benefits for global priority issues, including climate change.
- http://www.cgeo-gcot.gc.ca/main_e.html

Canadian Space Agency – Earth Observation

- From the unique vantage point of space, satellites monitor the impact of climate change on land, ice, and sea, even in remote areas, analyzing atmospheric gases, weather phenomena, and large-scale changes over time.
- http://www.space.gc.ca/asc/eng/satellites/default.asp?page=observation
- www.space.gc.ca

Counter B. Greenhouse gases and climate change science

Environment Canada's – Climate research and observations

- Environment Canada's climate sciences programs help provide the scientific basis necessary for wise decision-making. Activities include: investigating key climate processes, developing climate system models, assessing the current state of the climate, collecting systematic climate observations, and science assessment.
- http://www.msc-smc.ec.gc.ca/acsd/crb/index_e.html

Environment Canada's – Greenhouse Gas Division

- Environment Canada's Greenhouse Gas Division is continually working to enhance Canada's ability to accurately monitor, verify and report national greenhouse gas emissions.
- http://www.ec.gc.ca/pdb/ghg/ghg_home_e.cfm

1.2 We are already experiencing the impacts

Counter A. Mapping the Impacts on Health

Health Canada - Climate Change and Health Division

- The Climate Change and Health Division works with researchers and decision-makers across Canada to better understand how a changing climate affects the health and well-being of Canadians and how we can adapt to it.
- http://www.hc-sc.gc.ca/ewh-semt/climat/index_e.html

Natural Resources Canada - GeoConnections

- GeoConnections, a national partnership to connect location-based information over the Internet, is promoting and funding user-driven integrated approaches to help assess the impacts of climate change, influence decision-making, and contribute to sustainable development.
- http://www.geoconnections.org/CGDI.cfm

Counter B. Impacts on Oceans and Waterways

Department of Fisheries and Oceans- Determining the Role of the Oceans in Global Climate

- Interaction between the oceans, ice, and atmosphere are a crucial part of the earth's global climate system. As a country that borders on three oceans and has sovereign claim to much of the Arctic, Canada has a vested interest in advancing its understanding of the role of oceans in global climate.
- http://www.dfo-mpo.gc.ca/sds-sdd/1_e.htm

Department of Fisheries and Oceans - Aquatic Ecosystems and Safe and Accessible Waterways

- Canada needs to better understand and predict ocean response to climate change, and assess potential impacts on the marine environment, its ecosystem, fish and mammal populations, and navigation.
- http://www.dfo-mpo.gc.ca/dfo-mpo/vision_e.htm

Counter C. Reducing our Vulnerability

Public Safety and Emergency Preparedness Canada – Public Safety and Emergency Management

- Public Safety and Emergency Preparedness Canada (PSEPC) is Canada's lead department for public safety. Working with our partners, PSEPC helps to reduce or eliminate impacts and risks posed by disasters through an *all-hazards* approach to emergency management
- http://www.psepc.gc.ca/thm/em/index-en.asp

Natural Resources Canada - Reducing Canada's Vulnerability to Climate Change Program

- Reducing Canada's Vulnerability to Climate Change Program conducts and publicizes research aimed at an improved understanding of the vulnerability of Canada's landscape and coastal areas, infrastructure, and communities to climate change.
- http://rcvcc.nrcan.gc.ca/index_e.php

1.3 We must adapt

Counter A. Developing Strategies to Adapt

Natural Resources Canada - Climate Change Impacts and Adaptation Program

- Canada's Climate Change Impacts and Adaptation Program funds research, coordinates a national scale scientific assessment of climate change impacts and adaptation, enhances collaboration between stakeholders and researchers, and facilitates policy development.
- http://www.agr.gc.ca/env/index_e.php?section=h2o&page=h2o

Natural Resources Canada - Canadian Forest Service

- Canadian Forest Service has undertaken considerable research aimed at better understanding and coping with the projected increased frequency and severity of natural disturbances such as fire and insect outbreak
- http://www.nrcan-rncan.gc.ca/cfs-scf/science/resrch/forestfire_e.html
- http://fire.cfs.nrcan.gc.ca/research/environment/cffdrs/cffdrs_e.htm
- **http://mpb.cfs.nrcan.gc.ca/index_e.html**

Counter B. Connecting researchers and decision-makers

Natural Resources Canada – Canadian Climate Impacts and Adaptation Research Network (C-CIARN)

- Canadian Climate Impacts and Adaptation Research Network (C-CIARN), A national network that promotes and encourages new climate change impacts and adaptation knowledge by bringing Canadian researchers and key decision-makers together.
- http://www.c-ciarn.ca/index_e.asp

2. SOLUTIONS AND BEST PRACTICES FOR REDUCING GREENHOUSE GAS EMISSIONS

2.1 Government is leading by example

Counter A. Government Operations

Public Works and Government Services Canada - Office of Greening Government Operations program

- The Office of Greening Government Operations provides government-wide environmental leadership and expertise for issues like green procurement, green construction and property management, waste management, and remediation of contaminated sites.

Department of Environment Canada and Natural Resources Canada – Federal House in Order

- The goal of Federal House in Order (FHIO) is to reduce GHG emissions from federal operations by 31% between 1990 and 2010 through the promotion of energy efficiency, renewable energy technologies, alternative fuels and employee awareness.
- http://www.fhio.gc.ca

Counter B. Sustainable Federal Buildings

Natural Resources Canada's Office of Energy Efficiency Program – Federal Buildings Initiative

- Facilitates comprehensive energy efficiency upgrades and building retrofits for federal organizations. To March 2005, 80 projects have led to energy cost savings of $35 million annually and GHG emission reductions of 250 kilotonnes.
- oee.nrcan.gc.ca/fbi

Natural Resources Canada's Office of Energy Efficiency Program – Federal Vehicle Initiative

- The Federal Vehicles Initiative allows the government to "lead by example" by promoting the adoption of new and advanced technologies, fuels, and information tools that increase operational efficiencies and reduce greenhouse gas emissions.
- http://www.fhio.gc.ca

Natural Resources Canada and Public Works and Government Services Canada-National Master Specification for Canada

- To facilitate the use of GHG emission reducing supplementary cementing materials for concrete in Federal buildings, guidelines were prepared that will be incorporated into the National Master Specification for Canada.

Natural Resources Canada - Government Purchase of Electricity from Renewable Resources

- The Government of Canada will displace its carbon-intensive electricity usage by purchasing 20% of its electricity requirements from emerging renewable energy sources having low environmental impact by 2010.
- http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=464

Canadian Museum of Civilization Corporation – Building of the Canadian War Museum

- The CWM is Canada's national museum of military history. The building, through its architectural concept "regeneration", features one of Canada's largest grass roofs, along with energy-efficient construction and use of recycled materials.
- www.warmuseum.ca www.museedelaguerre.ca

2.2 We are working with public and private sector partners at home and abroad

Counter A. Forestry/Agriculture

Agriculture and Agri-Food Canada - National Program on Energy Co-generation from Agricultural and Municipal Wastes

- The National Program on Energy Co-generation from Agricultural and Municipal Wastes (EcoAMu) is designed to mitigate net greenhouse gas emissions from agriculture through energy co-generation while improving production efficiency and resource conservation eg. anaerobic digestion for processing manure into biologically stable, odourless and pathogen-free fertilizer/soil, electricity and water.
- http://www.agr.gc.ca/policy/environment/prog_08_e.phtml and http://www.gov.mb.ca/agriculture/livestock/livestockliv/posters/Barclay-Monreal.pdf

Agriculture and Agri-Food Canada - Environmental Technology Assessment for Agriculture

- The Environmental Technology Assessment for Agriculture Program (ETAA) identifies innovative and sustainable technologies for adoption by farmers to reduce the risk of soil, water and air contamination and to reduce adverse impacts on biodiversity.
- http://www.agr.gc.ca/policy/environment/prog_08_e.phtml and http://www.gov.mb.ca/agriculture/livestock/livestockliv/posters/Barclay-Monreal.pdf

Agriculture and Agri-Food Canada - The Virtual Farm: Estimating Net Emissions from Whole Farms

- The “Virtual Farm” is an internet-based dynamic farm-scale ecosystem model for predicting agriculture-related greenhouse gas emissions under alternative mitigation strategies. It will allow farmers to evaluate the benefit of farming practices proposed for reducing emissions and sequestering soil carbon on their actual farm.

- http://www.agr.gc.ca/policy/environment/prog_09_e.phtml and http://www.biocap.ca/images/pdfs/conferencePosters/Gibb_D_P1.

Natural Resources Canada, Canadian Forest Service - Operational Scale Carbon Budget Model of the Canadian Forest Sector (CBM CFS3)

- This model allows forest managers to evaluate the effects of their activities on forest carbon stocks and to develop strategies for reducing greenhouse gas emissions or increasing forest carbon sinks.
- http://carbon.cfs.nrcan.gc.ca

Natural Resources Canada, Canadian Forest Service - Forest 2020 Plantation Demonstration and Assessment Initiative (PDA)

- This initiative analyses the investment potential and assesses options to attract private investment in future plantations, and demonstrates the potential of fast-growing tree plantations to remove greenhouse gas emissions and help Canada address climate change.
- http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/afforestation/index_e.html

Natural Resources Canada, Canadian Forest Service - Canada's Model Forest Program

- Works with communities to raise awareness, determine vulnerability, develop tools to help mitigate the effects of climate change and help communities reduce potential property losses to forest fires. Assesses forest management impacts on carbon stocks.
- www.modelforest.net

Counter B: Industrial Process Efficiency and Large Final Emitters

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Advanced Combustion Technologies Program

- Promotes the research and development of efficient combustion processes and pollution abatement technologies to support industrial development, including technologies for coal, oil, natural gas, biomass, waste fuels and coal gasification.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/research_programs_act_e.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Clean Coal

- Envisions Canada as a leader in adapting and integrating technology and knowledge for the utilization of coal in the production of electricity, hydrogen, and heat with zero or minimal environmental impacts.
- http://www.nrcan.gc.ca/es/etb/cetc/combustion/cctrm/htmldocs/overview_e.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Energy Technologies for High Temperature Processes Program

- Conducts research and development, standard tests and analysis of pulverized coal injection and coke making processes on a fee-for-service basis for coal mining, iron-making and related industries in Canada and abroad.

- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/research_programs_ehtp_e.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Direct Reduced Iron (DRI)

- Iron production directly using coal as reductant and energy source, with significant energy, environmental and GHG benefits. Lab development, process design, simulation and economic feasibility study led to patents and commercialization in India.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/services_01_e.html#ac

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Emerging Technologies Program

- Identifies and funds projects to overcome technical barriers to increasing energy efficiency technologies that contribute to improved energy efficiency and the highest rate of return on R&D investment for Canada's industrial sector.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/funding_programs_etp_e.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Energy Research and Development

- Promotes the development of products, processes or systems that will increase the efficiency of energy use throughout industry, and at encouraging use of the technology developed under the program.
- www.ierd.nrcan.gc.ca

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Processing and Environmental Catalysis Program

- Focused on the research and development of economically viable technologies for alternative transportation fuels, fuel additives and petrochemicals from natural gas, recycling of waste oils and sustainable use of industrial low-grade heat.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/research_programs_pec_e.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - ROBYS ™ Waste Oil processing

- Economically purifies and stabilizes reclaimed and refined gas oils. Acids, odour, precipitates, sulphur, chlorine and nitrogen compounds are much reduced. Commercial 30000 Tonnes/year installation near Kuantan, Malaysia.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/factsheet_fuel_oil_purification_and_stabilization_e.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Flare Test Facility

- Through international collaboration and a shared R&D flare testing facility, finds the most cost-effective, safe and environmentally responsible technology to dispose of waste gases.

- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/factsheet_flare_test_facility_e.html
- http://www.nrcan.gc.ca/es/etb/cetc/ifc/

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - EnerGuide for Industry

- 0ffers interactive tools, tips, return-on-investment analysis and business cases to help industries make energy-efficient choices when buying equipment including electric motors, dry-type distribution transformers, lighting products, and large air-conditioning units.
- egi.gc.ca

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Canadian Industry Program for Energy Conservation (CIPEC)

- The Canadian Industry Program for Energy Conservation (CIPEC) is an industry-government partnership that helps Canada's industries improve their energy efficiency and reduce greenhouse gas emissions that contribute to climate change.
- oee.nrcan.gc.ca/cipec

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Industrial Energy Innovators Initiative

- As part of CIPEC, a joint industry-government program sponsored by NRCan, provides access to financial incentives, access to information, and recognition for corporate social responsibility for energy-saving improvements.
- oee.nrcan.gc.ca/industrial/opportunities/innovator/

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Canada's Energy Efficiency Awards

- Created in 1999 to recognize Canadian innovation and achievement in energy efficiency. In response, Canadian industry indicates a more sophisticated, broad-based and strategic approach to the climate change challenge.
- energyawards.nrcan.gc.ca

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Accelerated Capital Cost Allowance (ACCA) 43.1 and Canadian Renewable and Conservation Expenses (CRCE)

- Class 43.1 provides accelerated depreciation for investments in cogeneration, energy efficiency or renewable. Qualified Canadian Renewable and Conservation Expenses are fully tax deductible and can be carried forward indefinitely or transferred using flow-through shares.
- http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=469&oid=111

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Modeling Underground Mine Ventilation

A modeling system to assess the ventilation requirements of a mine to efficiently

dilute contamination and support production while reducing energy consumption and GHG emissions, on an on-demand basis.

- http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/mines/air/air-e.htm

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Diesel Contamination Control in Underground Mines

- A prototype diesel-electric hybrid load-haul dumo (H-LHD) vehicle can reduce emissions by 40% and is being designed to evaluate performance and impact on air quality.
- http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/mines/air/diesel/diesel-e.htm

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - CH4MIN

- NRCan developed an eco-technology called CH_4MIN (*chamine) to mitigate dilute low concentration methane in coal mine ventilation air while producing energy by catalytic oxidation in a flow reversal reactor.
- http://cetc-varennes.nrcan.gc.ca/en/indus/mc_cm.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Industrial Process Integration

- An overall industrial facility analysis that integrates unit operations into an efficient global process rather than considering individual operations only. It systematically identifies and corrects inefficiencies in industrial processes.
- http://cetc-varennes.nrcan.gc.ca/en/indus/pp/ip_pi.html
- http://cetc-varennes.nrcan.gc.ca/en/indus/rafp_oref/ip_pi.html
- http://cetc-varennes.nrcan.gc.ca/en/indus/petroch/ip_pi.html
- http://cetc-varennes.nrcan.gc.ca/en/indus/chim_chem/ip_pi.html
- http://cetc-varennes.nrcan.gc.ca/en/indus/fa_is/ip_pi.html
- http://cetc-varennes.nrcan.gc.ca/en/indus/agroa_fd/ip_pi.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Grid Integration of Decentralized Energy

- To effectively address technical, institutional and regulatory barriers to enable the reliably interconnection of dispersed and intermittent renewable energy sources to the electricity distribution grid.
- http://cetc-varennes.nrcan.gc.ca/en/er_re/inter_red.html

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Nuclear Energy Program

- Canada supports safe use of nuclear power as part of its energy mix, which significantly contributes to GHG emissions reductions. It supports the development of nuclear technology including the Advanced CANDU Reactor and GEN IV systems.
- http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=446

Natural Resources Canada's-Office of Energy Efficiency, CANMET Energy Technology Centre and Minerals and Metals Sector - Carbon Capture and Storage Technology Network

- In partnership with domestic and international industry, academia and other federal departments and provinces, coordinates the research, development, implementation and supporting policy activities for CO_2 capture and storage initiatives.
- http://www.nrcan.gc.ca/es/etb/cetc/combustion/co2network/htmldocs/aboutus_e.html

Counter C: Transport and Buildings

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Community Energy Systems Program

- Improves energy efficiency by applying technologies that interconnect heat sources and sinks and stimulates interest in community-based energy systems and the use of local sources of renewable energy, particularly biomass.
- http://www.sbc.nrcan.gc.ca/communities/communities_e.asp

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Super-E® Buildings/Housing Program

- Supports export of energy efficient and healthy housing pursuant to the Super-E® standard. Canadian companies and their export partners receive support services that increase volume, profitability and durability.
- http://www.super-e.com/

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Sustainable Buildings and Communities Group

- Experts in buildings energy innovations with a leadership role in the research, development, and deployment of leading-edge energy efficient and renewable energy technologies for housing, buildings and communities.
- http://www.sbc.nrcan.gc.ca/
- http://www.sbc.nrcan.gc.ca/renewable_energy/hydro_e.asp
- http://www.sbc.nrcan.gc.ca/renewable_energy/solar_e.asp
- http://www.sbc.nrcan.gc.ca/renewable_energy/wind_e.asp
- http://www.sbc.nrcan.gc.ca/renewable_energy/integration_and_assessment_e.asp

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - The Energy Technology Applications Group (ETAG)

- Provides technical and project management services to assist in the development of clean, energy efficient heating and cooling technologies to governments and the private sector on a cost recovery basis.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/research_programs_fibp_e.html
- http://www.nrcan.gc.ca/es/etb/cetc/pdfs/etag_brochure_e.pdf

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Transportation Energy Technologies Program

- Supports efforts to develop and deploy technologies and alternative transportation fuels that provide a cleaner, more sustainable energy mix for our roadways, in partnership with Canadian industry.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/funding_programs_tetp_e.html

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - SuperCetane

- Innovative process to convert oils, greases and other high lipid waste products into a high cetane diesel fuel blending stock. Raising cetane content reduces engine pollutant emissions and improves fuel economy.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/factsheet_supercetane_e.html

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - EnerGuide for Existing Building (EEB)

- Helps commercial businesses and public institutions improve energy efficiency in existing buildings by providing financial incentives (up to $250,000 for members), publications and other tools designed to achieve market transformation.
- www.oee.nrcan.gc.ca/buildings

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Fleet Vehicle Initiative

- The Fleet Vehicle Initiative helps fleet managers determine how energy-efficient vehicles and business practices can reduce a fleet's operating costs, improve its productivity and increase competitiveness.
- fleetsmart.gc.ca

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Commercial Building Incentive Program

- The Commercial Building Incentive Program provides financial incentives up to $60,000 to commercial and institutional building owners who incorporate energy efficiency features in the design of their new buildings.
- www.oee.nrcan.gc.ca/newbuildings

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Industrial Building Incentive Program

- The IBIP encourages the design and construction of new, energy-efficient industrial buildings and building/process integration. Funding up to $80,000 is available for eligible organizations based on process and building savings.
- http://oee.nrcan.gc.ca/industrial/financial-assistance/new-buildings/index.cfm?attr=24

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - The Canadian Lightweight Materials Research Initiative (CLiMRI)

CLiMRI develops lightweight transportation materials to reduce GHG emissions. Weight reduction benefits apply to all types of vehicles, whether they are powered by fossil fuels, fuel cells, electricity, or biofuels.

- http://climri.nrcan.gc.ca/

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Supplementary Cementing Materials (SCMs)

- Portland cement production accounts for 5-7 percent of global GHG emissions. Our technology significantly reduces the concrete CO2 emission intensity, while retaining the durability and mechanical properties of conventionally produced concrete.
- http://www.nrcan.gc.ca/mms/canmet-mtb/mtl/research/concrete_e.htm

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - The Refrigeration Action Program for Buildings (RAPB)

- Provides analysis of innovative refrigeration systems for supermarkets, ice and curling rinks that provide 20 to 50% reductions in GHG emissions and energy consumption.
- http://cetc-varennes.nrcan.gc.ca/en/b_b/parb_rapb.html

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Diagnostic agent for building operations (DABO)

- Intelligent building software tool that, when installed in parallel with a central control system, permits automated operation of a commercial building's mechanical systems to reduce energy consumption.
- http://cetc-varennes.nrcan.gc.ca/en/b_b/bi_ib.html

Natural Resources Canada's CANMET Energy Technology Centre, Office of Energy Efficiency and Sustainable Buildings Portal - Sustainable Buildings Portal

- Sustainable construction and green building activities are fundamental ways in which the department is successfully pursuing its mandate for sustainable development.
- www.sustainablebuildings.gc.ca or www.batimentsdurable.gc.ca

Transport Canada – Freight Incentives

- Canada is committed to helping companies in Canada's freight industry improve their competitiveness through efficiency-enhancing technologies, while reducing their greenhouse gas emissions. The Freight Incentives Program (FIP) provides incentives for the purchase of technologies by Canadian freight sector companies.
- www.tc.gc.ca/FIP www.tc.gc.ca/PTM

Counter D: Renewables, International Trade and Carbon Finance Market

Natural Resources Canada's CANMET Energy Technology Centre and REED Bioenergy Development Program

- Assists Canadian industry in the research and development and commercialization of bioenergy technologies that can serve as reliable, cost-effective and environmentally responsible alternatives to conventional energy production.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/factsheet_bioenergy_dev_e.html

Natural Resources Canada's CANMET Energy Technology Centre and REED Canadian Initiative for International Technology Transfer

- Provides financial assistance for viability studies, proposal development and brokering, knowledge sharing and relationship management for the identification and development of climate-change technology transfer projects in international markets.
- www.exporttech.gc.ca

Natural Resources Canada's CANMET Energy Technology Centre and REED - Climate Change Technology Promotion Officer Program

- Promotes Canadian clean energy technologies abroad with locally engaged officers who facilitate sales and exports by providing support and assistance to Canadian companies seeking to develop new international markets.
- http://www.nrcan.gc.ca/media/archives/speeches/2002/2002136a_e.htm
- http://www.dfait-maeci.gc.ca/canadaeuropa/poland/embassy2-en.asp
- http://www.dfait-maeci.gc.ca/mexico-city/trade/our_team-en.asp
- http://www.infoexport.gc.ca/ie-en/OurTeamInfo.jsp?oid=90

Natural Resources Canada's CANMET Energy Technology Centre and REED - Clean Energy Portal and links to TT:CLEAR

- A web portal to connect project developers with Canadian providers of cleaner energy product and service solutions. First national technology information centre integrated with the UNFCCC TT:CLEAR technology transfer clearinghouse.
- www.cleanenergy.gc.ca

Natural Resources Canada's CANMET Energy Technology Centre and REED - Renewable Energy Technologies Program

- Supports commercializing renewable energy technologies such as active solar, wind power, bioenergy and small hydro for domestic and international markets by providing cost-effective, environmentally responsible alternatives to conventional energy generation.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/funding_programs_retp_e.html

Natural Resources Canada's CANMET Energy Technology Centre and REED - RETScreen International

- The RETScreen International Clean Energy Decision Support Centre seeks to build the capacity of decision-makers and industry to implement renewable

energy and energy efficiency projects, thereby reducing the cost of pre-feasibility studies
- http://www.retscreen.net/ang/t.php

Natural Resources Canada's CANMET Energy Technology Centre and REED - Photovoltaic & Hybrid Systems
- Promotes photovoltaic energy technologies in order to accelerate deployment and exploit national and international potential through research projects in grid-connected applications, remote regions, development and demonstration projects, and formulation of standards.
- http://cetc-varennes.nrcan.gc.ca/en/er_re/pvb.html

Natural Resources Canada's CANMET Energy Technology Centre and REED - Renewable Energy Deployment Initiative (REDI)
- REDI offers financial incentives to Canada's commercial, industrial and institutional sectors to encourage the adoption of solar thermal and biomass combustion technologies to reduce greenhouse gas emissions and dependence on fossil fuels.
- www.nrcan.gc.ca/redi

Natural Resources Canada's CANMET Energy Technology Centre and REED - Renewable Power Production Incentive (RPPI)
- Will provide 1500 MW of capacity from renewables including small hydro, biomass and tidal power. Projects commissioned between March 2006 and April 2011 will receive ___0.01 $/kwh of production for the first ten years.
- www.nrcan.gc.ca/rppi

Natural Resources Canada's CANMET Energy Technology Centre and REED -Wind Power Production Incentive
- WPPI provides a production incentive to Canadian wind energy developers. Proponents of qualifying wind farms are eligible for an incentive averaging___ 0.01$/kwh Payments are made over a 10-year period.
- www.canren.gc.ca/wppi

Foreign Affairs Canada
Clean Development Mechanism and Joint Implementation Office (CDM/JI)
- The Office promotes and supports Canadian participation in the Kyoto flexibility mechanisms through capacity building in host countries, funding project development, advocating contacts between Canadian and foreigners. The Office is active in Africa, the Americas, Asia, and Europe.
  www.cdm-ji.ca

Environment Canada-PERRL
- A 5-year emissions trading learning initiative delivered by Environment Canada that provides a financial incentive to Canadian organizations to take early action to achieve GHG emission reductions/removals in key strategic areas.
- http://www.ec.gc.ca/PERRL/

2.3 Engaging our citizens

Counter A. One-Tonne Challenge

Environment Canada, Natural Resources Canada and Transport Canada – One-Tonne Challenge

- The One-Tonne Challenge asks Canadians to reduce their annual greenhouse gas emission by 20% or about one tonne.
- http://www.climatechange.gc.ca/onetonne/english/
- http://tcinfo/programs/environment/menu.htm
- http://tcinfo/programs/environment/utsp/menu.htm
- http://tcinfo/programs/environment/atvpgm/menu.htm
- http://tcinfo/programs/environment/fuelpgm/menu.htm

Natural Resources Canada's Office of Energy Efficiency Program – R-2000* Standard

- The **R-2000*** **Standard** encourages the construction of energy-efficient houses. It includes comprehensive training and certification for homebuilders, as well as quality assurance inspection, testing and certification of new houses.
- *R-2000 is an official mark of Natural Resources Canada.
- r2000.gc.ca

Natural Resources Canada's Office of Energy Efficiency Program – EnerGuide for Houses

- EnerGuide for Houses offers professional advice on how to improve the energy performance of homes. Property owners can qualify for a grant for implementing the energy improvements recommended in their report.
- energuide.gc.ca

Natural Resources Canada's Office of Energy Efficiency Program – EnerGuide for Equipment

- EnerGuide for Equipment promotes the purchase of energy-efficient household appliances and heating, ventilating and air-conditioning equipment. The EnerGuide label shows how much energy equipment uses in order to easily compare models.
- energuide.gc.ca

Natural Resources Canada's Office of Energy Efficiency Program – ENERGY STAR®

- This symbol identifies the most energy-efficient products in their class. Most labeled products are 10 to 50 percent more efficient than the minimum regulated standard in Canada.
- www.energystar.gc.ca

Natural Resources Canada's Office of Energy Efficiency Program – EnerGuide for New Houses

- EnerGuide for New Houses provides independent expert advice on energy efficient home construction to homebuilders and new homebuyers. An energy advisor evaluates building plans to develop energy upgrade packages.

- newhomes.gc.ca

Counter B. Clean Air

Natural Resources Canada's Office of Energy Efficiency Program – EnerGuide for Vehicles Personal Vehicles Initiative

- The EnerGuide for Vehicles and Personal Vehicles Initiative provides Canadian motorists with helpful tips and tools on buying, driving and maintaining their vehicles to reduce fuel consumption and greenhouse gas emissions.
- www.vehicles.gc.ca

Natural Resources Canada's Office of Energy Efficiency Program – Energy Ambassadors

- The annual competition recognizes Canadian post-secondary undergraduate students who have develop energy efficiency proposals. Many of the winning projects have been implemented by local communities and industries.
- www.energyambassadors.nrcan.gc.ca

Natural Resources Canada's Office of Energy Efficiency Program – Vehicle Fuels

- Develops policies and program to encourage the production and market up-take of renewables and alternative fuels such as: biodiesel, ethanol, natural gas, propane and hydrogen.
- http://oee.nrcan.gc.ca/transportation/personal/vehicle_fuels.cfm?attr=8
- http://oee.nrcan.gc.ca/transports/personnel/carburants.cfm?attr=8

Environment Canada - Clean Air Outreach Initiatives

- Clean Air Outreach Initiatives give Canadians better access to information related to air pollution and engage them to reduce their own emissions in order to protect their health.
- http://www.ec.gc.ca/cleanair-airpur/Home-WS8C3F7D55-1_En.htm

Environment Canada - Eco Action

- EcoAction is an Environment Canada program that provides funding to help non-profit organizations carry out projects that will have measurable, positive impacts on the environment.
  - www.ec.gc.ca/ecoaction <http://www.ec.gc.ca/ecoaction>

3. FUTURE ECONOMIC, SOCIAL AND ENVIRONMENTAL OPPORTUNITIES OF TAKING ACTION ON CLIMATE CHANGE

3.1 Emerging Canadian technology is key to sustainable economic growth

Counter A. Business Development

Développement Économique du Canada pour les régions du Québec

- The Economic Development Agency of Canada for the Regions of Quebec emphasizes the development and commercialization of products and the optimization of productivity within small and medium-sized businesses through eco-efficiency and pollution prevention.
- http://www.dec.ced.gc.ca/

Industry Canada –Trade Team Canada Environment (TTCE)

- TTCE brings government and industry together to promote Canada's dynamic environmental industry in world markets and provide leading-edge solutions that prevent, reduce, mitigate or sequester greenhouse gas (GHG) emissions now and into the future.
- http://ttc-environment.ic.gc.ca

Industry Canada –SourceCAN

- Free government service disseminating domestic and international business opportunities. Create a profile, post online, browse and/or search for opportunities to meet your business needs for today and the future.
- www.sourcecan.gc.ca

Industry Canada –Sustainable technologies

- Canadian Environmental Solutions (CES) is a directory of Canadian companies providing technologies and services to address the environmental challenges faced by every sector of the economy, including climate change.
- www.strategis.ic.gc.ca/ces

International Trade Canada - The Canadian Trade Commissioner Service

- Working in 12 regional offices across Canada and in over 140 cities abroad, Trade Commissioners help Canadian companies succeed abroad by providing practical advice, valuable business intelligence and in-market assistance.
- www.infoexport.gc.ca

Counter B. Emerging Technologies

Natural Resources Canada, Environment Canada, Industry Canada – TEAM Operations Office

- Provides funding assistance to companies at the early commercialization stage to demonstrate, in Canada and abroad, innovative green technologies that reduce GHG emissions.

- www.team.gc.ca

Sustainable Development Technology Canada

- Sustainable Development Technology Canada is a foundation created by the Government of Canada that operates a $550 million fund to support the development and demonstration of clean technologies that address issues of climate change, air quality, and clean water and soil
- www.sdtc.ca

National Research Council Canada- Biotechnology Research Institute

- Promotes, assists and performs R&D in linked to the needs of the environment sector. It has research programs in two areas: environmental protection and eco-efficient industrial production (clean manufacturing).
- http://www.irb-bri.cnrc-nrc.gc.ca/

National Research Council Canada- Canadian Hydraulics Centre

- Canada's largest hydraulics andcoastal engineering laboratory. Using sophisticated numerical and physical models, CHC examines the nature of environmental hydraulics problems and develops potential solutions.
- http://chc.nrc-cnrc.gc.ca/

National Research Council Canada- Industrial Materials Institute

- Does R&D related to materials processingTechnologies, working in metal, polymer, aerospace and automotive sectors. Emphasis is placed on virtual manufacturing and on the development of environmentally-friendly technologies.
- http://www.imi.cnrc-nrc.gc.ca/

National Research Council Canada- Institute for Chemical Process and Environmental Technology' s

- Chemical science and engineering capabilities contribute to research, development and technology commercialization in three areas of application: Fuel Cells, Oil Sands, and Bioproducts.
- http://icpet-itpce.nrc-cnrc.gc.ca

National Research Council Canada- Institute for National Measurement Standards

- Anchors the national measurement system and provides calibration infrastructure that supports Canadian industry. It is committed to preparing NRC's capabilities for future measurement requirements of a deregulated electricity industry.
- http://inms-ienm.nrc-cnrc.gc.ca

National Research Council Canada- Institute for Research in Construction

- Develops the knowledge basecritical to the Canadian construction sector, supports the development,commercialization and implementation of leading-edge technologies, and fosters the provision of sustainable built environments through codes and standards.
- http://irc.nrc-cnrc.gc.ca/

National Research Council Canada- Plant Biotechnology Institute

- The major research centre for plantbiotechnology in Canada. With the aim of improving agronomic traits for Canadian growers, NRC-PBI is also investigating the mechanisms of drought tolerance.

- http://pbi-ibp.nrc-cnrc.gc.ca/

National Research Council Canada- Steacie Institute for Molecular Sciences

- Investigates topics in molecular sciences that could generate and transform future technologies. We develop innovative materials, processes and technologies in the areas of molecular diagnostics and imaging as well as clean energy alternatives.
- http://steacie.nrc-cnrc.gc.ca/

National Research Council Canada- Institute for Ocean Technology

- A leader in ocean engineering research and advances ocean technology, including model scale experimental results for ocean energy extraction technologies.
- http://iot-ito.nrc-cnrc.gc.ca/

National Research Council Canada- Institute for Aerospace Research

- Performs combustion and fluids engineering research to develop more efficient and clean industrial combustion processes for the next generation of fuels, engines and combustion devices. It coordinates and performs airborne climate change research experiments in collaboration with other agencies.
- http://iar-ira.nrc-cnrc.gc.ca

Transport Canada – Advanced Technology Vehicles Program (ATVP)

- Canada is committed to reducing greenhouse gas emissions from transportation sources and achieving a sustainable transportation system. The Advanced Technology Vehicles Program (ATVP) assesses vehicles with advanced power trains, materials, chassis designs, emission controls, fuels, and other technologies to measure their impact on safety, energy efficiency and the environment.

Counter C. Hydrogen Economy

Natural Resources Canada - Fuel cell vehicles: New nanophase materials for advanced solid-state hydrogen storage

- A collaboration with the University of Waterloo to develop a solid-state compound that will store and release at least 6.5% weights % hydrogen, enabling a 500 km range for hydrogen-powered automobiles.
- http://www.nrcan.gc.ca/es/etb/cetc/cetc01/htmldocs/funding_programs_tetp_e.html

Natural Resources Canada - Hydrogen Fuel Cell Applications in Underground Mining

- Hydrogen fuel cell technologies are being developed as an alternative to diesel engines in underground mining equipment, thus permitting reduced ventilation volumes, costs and associated direct and indirect GHG emissions.
- http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/mines/mech/mech-e.htm

Natural Resources Canada - Canadian Transportation Fuel Cell Alliance

- Demonstrates and evaluates fuelling options for fuel cell vehicles in Canada and develops standards and training and testing procedures as related to fuel cell and hydrogen technologies.
- http://www.nrcan.gc.ca/es/etb/ctfca/index.html

National Research Council- Institute for Fuel Cell Innovation (NRC-IFCI)

- NRC-IFCI is Canada's premier applied research organization dedicated to supporting the innovation needs of Canada's fuel cell and hydrogen industry.
- www.ifci-iipac.nrc-cnrc.gc.ca

Industry Canada - Hydrogen Economy

- The Government of Canada continues to play an important role in the development of Canada's hydrogen and fuel cell industry, building world-leading capacity in R&D, demonstration, deployment, codes and standards, and public education.
- www.hydrogeneconomy.gc.ca

3.2 Our efforts will improve the quality of life at home and abroad

Counter A. At Home

Health Canada – Safe Environments

- The Safe Environments Program (SEP) promotes healthy living, working and recreational environments by identifying and assessing health risks to Canadians posed by environmental factors.
- http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/hecs-dgsesc/sep-psm/index_e.html English

Indian and Northern Affairs Canada – Impacts and Adaptation Program

- INAC works with Aboriginal and northern communities to develop capacity to adapt to climate change impacts, supporting efforts to raise awareness of impacts and adaptation needs, develop information sources and tools for communities to address risks of climate change impacts
- http://www.ainc-inac.gc.ca/clc/index_e.html

Indian and Northern Affairs Canada – Aboriginal and Northern Community Action

- The Aboriginal and Northern Community Action Program (ANCAP), is focused on engaging Aboriginal and northern communities in all provinces and territories to become active partners in climate change action.
- Anglais: http://www.ainc-inac.gc.ca/clc/index_e.html

Counter B. Abroad

Canadian International Development Agency (CIDA) – The Canada Climate Change Development Fund

- A main source of CIDA's climate change assistance has been directed through the Canada Climate Change Development Fund (CCCDF), since its establishment in 2000. The Fund has made a valuable contribution to meeting Canada's international climate change commitments and development goals, with activities in over 50 countries.
- Web: www.acdi-cida.gc.ca

3.3 By taking action now, our environment will benefit

Counter A. Urban

Environment Canada – Advancing Climate-Friendly Technologies

- Environment Canada works with the public and private sectors to encourage accelerated development and deployment of innovative climate-friendly technologies for realizing greenhouse gas reductions and other environmental co-benefits in both Canada and partner countries.
- www.ec.gc.ca/etad

Environment Canada – Clean air benefits of Climate Change actions

- Clean air benefits of Climate Change actions - Actions to reduce greenhouse gas emissions often benefit clean air, especially when consumption of fossil fuels is reduced. This booth will highlight this good news story with information on new technologies and behavioural change actions.
- http://www.ec.gc.ca/cleanair-airpur/Clean_Air,_Climate_Change_and_Stratospheric_Ozone_Depletion-WSC6DCEC3F-1_En.htm

Counter B. Sustainable Partnership

Industry Canada - Sustainable Cities Initiative

- Canada's SCI is an innovative partnership between government, non-government organizations (NGOs), the private sector and 16 cities worldwide. SCI responds to urban issues with Canadian solutions that have a positive impact on climate change and quality of life.
- Web: www.sci.ic.gc.ca

Canada Mortgage and Housing Corporation – RRAP

- CMHC's Residential Rehabilitation Assistance Program (RRAP), a program aimed at helping low-income households repair their dwellings to minimum health and safety levels, allows repair work to include energy-saving renovations and retrofits to improve the energy performance of housing units assisted through the program.
- www.cmhc.ca

Canada Mortgage and Housing Corporation – Mortgage Loan Insurance Enhancements

- CMHC refunds 10% of its mortgage loan insurance premium to borrowers who purchase or make their property energy-efficient. This program encourages improvements in building standards in support of Canada's Kyoto targets.
- www.cmhc.ca

Canada Mortgage and Housing Corporation – Sustainable Community Research

- The goal of CMHC's sustainable community research is to encourage neighbourhood design and land use planning approaches that reduce costs and environmental impacts, while maintaining or improving community livability. This includes examples of best practices in design and development, tools for community planners and designers and practical information for Canadian homeowners.
- www.cmhc.ca

Canada Mortgage and Housing Corporation – Net Zero

- Canada's net zero energy healthy housing initiative is a government/industry partnership to strengthen the commitment to a clean energy future, and building safe, healthy and sustainable communities.
- www.cmhc.ca

Canada Mortgage and Housing Corporation – Water reuse

- Water reuse is a component of CMHC's integrated water management research program. CMHC is providing leadership in this area by bringing national and international stakeholders together to advance the residential reuse agenda.
- www.cmhc.ca

World Urban Forum –

- The World Urban Forum (WUF3), an international UN-HABITAT event, will host over 6,000 delegates in Vancouver, BC, June 19-23, 2006 with the theme Our Future: Sustainable Cities - Turning Ideas into Action.

Counter C. Sustainable Agriculture

Agriculture and Agri-Food Canada – Greenhouse Gas Mitigation Program- Best Management Practices (GHGMP - BMPs)

- The Greenhouse Gas Mitigation Program (GHGMP) involves: identifying beneficial (or “best”) management practices (BMPs) that reduce greenhouse gas emissions in the agriculture sector; raising awareness; and involving agricultural producers in adopting the practices for soil, nutrient and livestock management. The impacts of specific BMPs on greenhouse gas emissions are measured to identify areas for improvement.
- http://www.agr.gc.ca/progser/ghg/ghgm_e.phtml