



Natural Resources
Canada

Ressources naturelles
Canada



C E T C CANMET ENERGY TECHNOLOGY CENTRE

CETC – Ottawa PROGRAMS AND SERVICES



CLEAN ENERGY TECHNOLOGIES

www.cetc.nrcan.gc.ca

Canada 

The CANMET Energy Technology Centre (CETC) is Canada's leading federal government S&T organization with a mandate to develop and demonstrate energy efficient, alternative and renewable energy technologies and processes. CETC has facilities in Devon, Alberta; Varennes, Québec; and Ottawa, Ontario.

CETC – Ottawa's clean energy expertise includes:

- Alternative transportation fuels and technologies
- Bioenergy, solar, small hydro, and wind
- Catalytic and membrane process technologies
- Clean fossil fuel technology and clean power generation
- CO₂ capture
- Energy efficiency for buildings, communities and industry
- High temperature processes for the steel industry
- Hydrogen and fuel cells

CETC – Ottawa has been involved in every stage of the technology development cycle, from idea to demonstration. Feasibility, economic and market analysis are integral to our scientific research. We have a proven record of innovation and successful collaboration with a variety of domestic and international clients, including the private sector, utilities, government, universities and other research bodies.

Cover:

CETC – Ottawa's partnerships with industry and other government organizations are putting innovative transportation technologies on the road, such as those found in these Ford fuel cell vehicles.

Our programs and services are structured according to the following areas of expertise and services:

SUSTAINABLE BUILDINGS AND COMMUNITIES (SBC)

SBC is a leader in the research, development and deployment of energy efficient and renewable energy technologies for houses, buildings and communities. Our goal is to reduce energy consumption and greenhouse gas emissions while addressing future energy supply issues. Active across the commercialization cycle, we focus on energy analysis and simulation tools, technology design criteria, testing, rating and monitoring, standards development, field trials and demonstrations, technology transfer and support in technology feasibility and economics. We work with domestic and international energy technology researchers, innovators and early adopters to increase industrial capacity and market uptake. For more info visit www.sbc.nrcan.gc.ca.



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Winnipeg's Red River College made dramatic improvements in energy efficiency and environmental performance with CETC – Ottawa's involvement.

INDUSTRIAL INNOVATION (IIG)

IIG performs and financially supports R&D and demonstration projects, including: innovative steel making; biofuels for stationary and transportation applications; biomass for heat, power, gaseous fuels and bio-products; waste oil and coke recovery; and ceramic membranes for H₂ and CO₂ separation. We have supported numerous Canadian industrial projects through our Industry Energy Research and Development Program (www.ierd.nrcan.gc.ca) and Emerging Technologies Program (ETP). The IERD program is aimed at supporting the development of products, processes or systems that will increase the efficiency of energy use throughout the use of technologies developed under the program. The ETP program identifies and develops emerging energy efficiency technologies that have significant potential for energy use reduction, improved manufacturing competitiveness and reduced environmental impact in Canada.

CLEAN ELECTRIC POWER GENERATION (CEPG)

In Canada, combustion of hydrocarbons provides approximately 80% of the energy used in stationary power generation equipment. Because fossil fuels will continue to play a vital role in our world's economy for

years to come, **CEPG** is actively developing and deploying processes and tools that: increase our knowledge of combustion; substantially reduce the release of greenhouse gases; and improve the efficiency of combustion-based power generation. Our researchers undertake both lab-scale and pilot scale research within our well equipped facilities. Field demonstrations to promote the implementation of new technologies are often undertaken in cooperation with private sector companies, universities and special interest groups. Research areas include pressurized gasification, fluidized bed combustion, O_2/CO_2 combustion, computational fluid dynamics, advanced measurement techniques, simulation, mercury capture, fine particulates research, advanced control systems, flaring, fuels and byproduct characterization, biomass combustion and isokinetic sampling. Our Energy Technology



CETC – Ottawa is equipped with a variety of facilities and technologies to meet both industrial and commercial needs, such as this high-pressure gasifier, which produces a synthetic gas that can be used for producing hydrogen and clean coal power generation.

Applications Group (ETAG) can assess, design and help you implement the ideal energy solution for your organization. ETAG's mandate is to develop energy efficiency projects, and apply, when appropriate, the leading edge technologies that are being developed within the Clean Electric Power Generation group and CETC – Ottawa. It can assist with technologies ranging from current boiler and combustion technologies to renewable energy systems and fuel cells.

HYDROGEN, FUEL CELLS AND TRANSPORTATION ENERGY (HYFATE)

HyFATE partners with industry and other government organizations to develop, improve and deploy a wide range of transportation technologies, for example: emissions controls, hybrid and electric vehicles, and alternative fuels (natural gas, ethanol and biodiesel). As well, HyFATE supports the development of fuel cell and hydrogen technologies, encompassing hydrogen production, storage and utilization, for transportation, stationary and portable applications. At home and abroad, we support R&D, studies, workshops and demonstration projects, often through cost-sharing arrangements. We manage the Canadian Transportation Fuel Cell Alliance (CTFCA) program (www.ctfca.nrcan.gc.ca), which is demonstrating and evaluating fueling options for fuel cell vehicles

in Canada. We also play a key role in the creation of codes, standards, and training and certification programs.

CHARACTERIZATION LABORATORY (CL)

Serving external and internal clients, **CL** sports state-of-the-art technological capabilities for the characterization of fuels and petroleum related compounds. With over a century of combined analytical experience in fuel testing, CL continues to develop novel analytical methods and continually makes contributions to national and international test methods and standards.

TECHNOLOGY PLANNING AND INTEGRATION (TP&I)

The **TP&I** group supports the use of integrated planning and program development concepts across the technology development spectrum. The group serves to improve synergies across technology areas and facilitates coordination among S&T, policy and programs.

CONTACT US

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CETC – Varennes (QC)

www.ctec-varennes.nrcan.gc.ca

CETC – Devon (AB)

www.nrcan.gc.ca/es/etb/cwrc

ENERGY EFFICIENCY PROGRAMS

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CETC – Ottawa

Programs and Services

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