



Agriculture and  
Agri-Food Canada

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# Canada's New and Renewable Energy Programs and Policies

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Canada 

# Federal Policy

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In 2007, the Government of Canada introduced the \$2 billion ecoENERGY Initiatives to boost clean energy supplies, promote energy efficiency, and reduce air pollutants and emissions.

- ecoENERGY Renewable Initiative
- ecoENERGY Technology Initiative
- ecoENERGY Efficiency Initiative
- ecoENERGY Biofuels Initiative

Office of Energy Efficiency programs  
under these two initiatives

# ecoENERGY Programs (2007 – 2011)

1. ecoENERGY Retrofit – Homes	\$520M /4yrs	} ecoENERGY Efficiency Initiative
2. ecoENERGY for Buildings & Houses	\$61M /4yrs	
3. ecoENERGY for Personal Vehicles	\$21M /4yrs	
4. ecoENERGY for Fleets	\$22M /4yrs	
5. ecoENERGY for Industry	\$18M /4yrs	
6. ecoENERGY for Equipment	\$32M /4yrs	
7. ecoENERGY for Biofuels	\$1480M /9yrs	

# ecoENERGY Innovation Initiative

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*Funding: \$97 M Canadian over the next 4 years*

1. Priority Area 1: Energy Efficiency in Buildings and Communities, Industry and Transportation
2. Priority Area 2: Clean Electricity and Renewable Energy
3. Priority Area 3: Bioenergy
4. Priority Area 4: Electrification of Transportation
5. Priority Area 5: Unconventional Oil and Gas

Web Site

<http://www.nrcan.gc.ca/eneene/science/ecii-eng.php>



# Partnerships / Cooperation

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1. Federal-provincial-territorial cooperation
  - coordinated delivery of programs
  - energy efficiency initiatives that may be adopted by multiple jurisdictions currently under development for the Council of Energy Ministers
2. Municipal governments
3. Industry, professional, academic and voluntary organizations
4. International organizations

# Priority Area 1: Energy Efficiency

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## 1. Targeted Area A: Buildings and Communities

- Innovative Technologies and their Integration
- Modeling and Simulation
- Integrated Systems for Communities
- Codes and Standards

## 2. Targeted Area B: Industry

- Improved process energy design and integration;
- Tools and models for optimizing the use and distribution of energy;
- Novel combined heat and power systems for the steel industry.

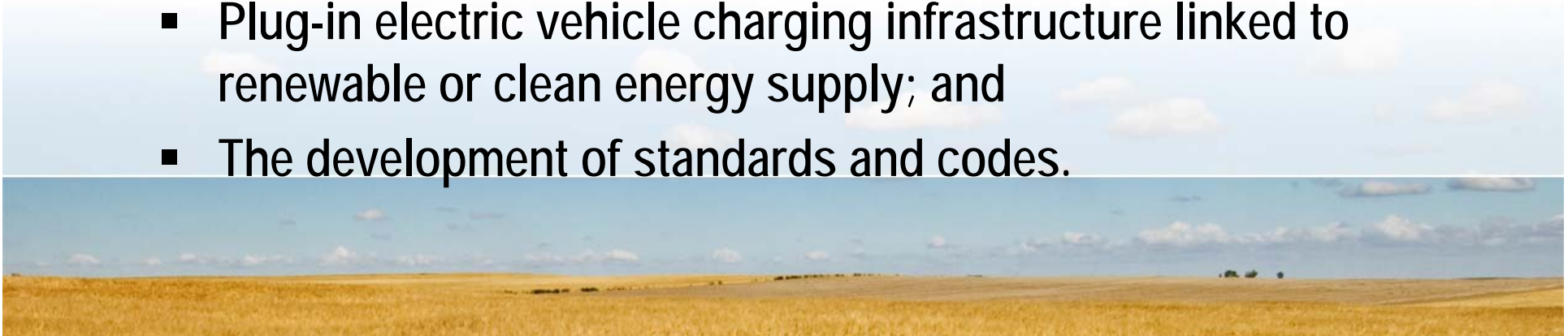


# Priority Area 2: Clean Electricity and Renewables

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## 1. Targeted Area A: Integration of Renewable Energy with Smart Grid technologies,

- Demand response/management;
- Deployment and integration of distributed resources, particularly intermittent renewable energy;
- Dynamic optimization of grid operations and resources;
- Energy storage;
- Remote microgrid control and optimization for renewable energy integration;
- Plug-in electric vehicle charging infrastructure linked to renewable or clean energy supply; and
- The development of standards and codes.



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## R & D to assist in Smart Grid development:

- Accelerated commercialization of renewable energy technologies and field demonstrations;
- Reduction of life-cycle costs of renewable energy;
- Tool development such as remote sensing and monitoring;
- Adaptation for rural and remote communities; and
- Impact assessment of the environmental performance of the complete system.

2. Targeted Area B: Clean Coal and Carbon Capture and Storage

3. Targeted Area C: Generation IV Nuclear





# Priority Area 3: Bioenergy

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## 1. Targeted Area A: Feedstocks

- Determine realistic biomass inventories
- Define sustainable biomass removal rates
- Increase the efficiency of harvesting, transportation, storage and pre-processing
- Develop improved and new biomass supplies
- Develop improved and new waste management procedures relevant to biomass supply



# Priority Area 3: Bioenergy (cont)

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## 2. Targeted Area B: Advanced Biomass Combustion

- Support the development of advanced biomass conversion processes including pyrolysis, gasification, fermentation, anaerobic digestion, and catalytic technologies.
- Increase conversion efficiencies, maximize value extracted from biomass, and minimize material and energy requirements in order to realize cost-effective technological solutions of advanced biomass conversion processes.



# Priority Area 3: Bioenergy (cont)

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## 3. Targeted Area C: Bio-Systems Integration and Enabling Tools

- Support the development of new and enhanced approaches to bio-systems integration, thereby reducing operating and capital costs of emerging advanced bioenergy production systems and technologies.
- Develop sustainability criteria, life cycle analyses and performance measurement tools and generate knowledge to support the development of enabling policies, standards and regulations.



# Priority Area 4: Electrification of Transportation

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1. Target Area A: Electric Vehicle Systems
2. Target Area B: Advanced Energy Storage Systems
3. Target Area C: Electric Drive Components



# AAFC Activity

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1. Agricultural Bioproducts Innovation Program (ABIP)
  - Just completed work on 9 Network Programs funded by \$61M ABIP Program.
  - Some Programs have significant renewable energy implications, and final reports should be issued by March 31, 2012.
2. Under negotiations with the Provinces and Territories for Growing Forward II which should have significant activity in the area of biorefining.
  - Web site is: <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1294780620963&lang=eng>
3. Initiating a project on evaluating the business case for aviation biofuels for Western Canada.



# Nine Funded ABIP Networks

<b>Subject</b>	<b>Network</b>	<b>Funding</b>
<b>Industrial Oilseed</b>	<b>Industrial Oil Seed Network (IOSN)</b>	<b>\$2,976,982</b>
<b>Cellulosic Biofuels</b>	<b>The Cellulosic Biofuels Network (CBioN)</b>	<b>\$19,980,000</b>
<b>Animal Feed</b>	<b>Feed Opportunities from the Biofuels Industries (FOBI)</b>	<b>\$6,000,000</b>
<b>Potato</b>	<b>The BioPotato Network: a Canadian network for potato-based bioproducts (BioPotato)</b>	<b>\$5,300,000</b>
<b>Triticale</b>	<b>Canadian Triticale Biorefinery Initiative (CTBI)</b>	<b>\$15,480,000</b>
<b>Flax fibre</b>	<b>The Natural Fibres for the Green Economy Network (NAFGEN)</b>	<b>\$9,620,000</b>
<b>Pulse</b>	<b>Pulse Research Network (PURENET)</b>	<b>\$5,300,000</b>
<b>Canola / biodiesel</b>	<b>Sustainable Cropping System Platforms for Biodiesel Feedstock Quantity and Quality (SBQQ)</b>	<b>\$1,000,000</b>
<b>Biorefinery: energy, fuels and chemicals</b>	<b>Agricultural Biorefinery Innovation Network for Green Energy, Fuels &amp; Chemicals (ABIN)</b>	<b>\$8,755,382</b>

# Anticipated Changes in Canadian Policy

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1. Deficit and debt restructuring will be circumstances that control policy initiatives.
2. Current programs like the Panel on Energy R&D funding of the Bioenergy Strategic Technologies (BEST) program may be affected.
3. Canada is moving further towards targeted and partnered science and engineering development programs.
4. Travel limits may restrict Canadian representation or conference access.
5. Expect continued effort with our US and NAFTA partners to develop our understanding of environmental performance and sustainability.





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*Thank You!*

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