



**CCEMC**

## **Background on renewable energy projects**

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**Climate Change and  
Emissions Management  
(CCEMC) Corporation**

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### **Climate Change and Emissions Management (CCEMC) Corporation announces \$12.65 million in funding for renewable energy projects**

*Projects in Lacombe and Carseland valued at more than 37.18 million*

The Climate Change and Emissions Management (CCEMC) Corporation announced that it plans to fund two additional renewable energy projects. The following summary of renewable energy projects includes descriptive information from project proponents, as well as media contact information.



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**Organization:** Coastal Hydropower Corporation  
**Project:** Carseland Very Low Head (VLH) Small Hydro Project  
**Location:** Carseland, Alberta  
**CCEMC funding:** \$2.65 million  
**Total project value:** \$5.38 million  
**Estimated GHG emissions reduction over 10 years:** 42,510 tonnes CO<sub>2</sub>e

Coastal Hydropower Corporation (CHC) is an Alberta company founded to develop small-scale hydro facilities using a new, highly efficient, fish friendly Very Low Head (VLH) water turbine technology developed in France. CHC has undertaken a program to adapt the VLH technology for commercial deployment in North America starting with a demo project at Alberta Environment's Carseland Weir on the Bow River.

The high cost of civil infrastructure associated with building conventional run-of river hydro facilities has in the past outweighed economic benefits when applied to very low head facilities of less than five meters. Significant undeveloped low head hydropower potential exists since no viable technology was available to economically develop these sites.

The VLH turbine has been designed specifically for installation into low head existing civil structures; minimizing infrastructure costs; time required to obtain regulatory approvals; time to construct projects, and impacts on the environment.

Appropriate existing sites are often encountered along irrigation canals, navigation canals, water control weirs, and dams usually built near small communities. There are currently no other turbine designs available that have the ability to operate economically in these structures.

In France, 19 VLH turbines are now operating on a commercial basis. Significant modifications are required, however, for cold weather operation in northern climates. An intensive evaluation has been undertaken to identify adaptations required for the VLH design to meet these operating requirements. Modification to the VLH technology to be demonstrated in this project include: cold climate adaptation, fish mitigation, meeting North American power grid requirements and methods to install, operate and extract the turbines at operating sites.

This project will take two years to modify the VLH turbine design for cold climate operation; retrofit two 390 kW VLH units in the weir sluiceway; and demonstrate successful winter operation.

**Media inquiries:**

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**Organization:** BioRefinex Canada Inc.  
**Project:** Lacombe Biorefinery  
**Location:** Lacombe, Alberta  
**CCEMC funding:** \$10 million  
**Total project value:** \$31.8 million  
**Estimated GHG emissions reduction over 10 years:** 364,149 tonnes CO<sub>2</sub>e

BioRefinex Canada Inc. is an Alberta company with a vision to be a world leader in processing animal by-products and other organic residue and waste materials to help address critical health and environmental challenges. Utilizing the patented thermal hydrolysis process developed by Biosphere Technologies Inc., its parent company, BioRefinex will promote sustainable use of land and soils by replenishing nutrients using purely organic materials, generate renewable electricity, divert organic waste now being sent to landfills and incinerators, and reduce greenhouse gas emissions.

The Lacombe Biorefinery is an energy-from-biomass and organic fertilizer manufacturing project located in central Alberta, within the Wolf Creek Industrial Park in Lacombe, Alberta. The project will showcase the thermal hydrolysis technology to process organic waste and animal by-products that typically would be sent to landfills, delivering significant economic, health, and environmental benefits. The process, certified internationally for the destruction of all disease agents, is now one of the safest, validated processes in the world for transforming organic wastes into valuable energy and nutrient products.

Biosphere Technologies will continue to provide research and development support to the Lacombe Biorefinery project, creating even more valuable products from waste organic materials. It will co-ordinate R&D initiatives with the company's research partners that include the AAFC Lacombe Research Centre, Alberta Crop Diversification Centre South, Alberta Innovates, and Olds College.

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