



Climate Change and Emissions Management
(CCEMC) Corporation

2010-2013
Business Plan

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Accountability Statement

The Climate Change and Emissions Management (CCEMC) Corporation budget and business plan for the period June 2010 through May 31, 2013 was prepared in accordance with the requirements of the *Climate Change and Emissions Management Fund Administration Regulation* which was enacted pursuant to the *Climate Change and Emissions Management Act*.

All of CCEMC's policies and accountability obligations and relationships have been considered in preparing this budget and business plan. As well, the Government of Alberta's business plan, public policy statements such as the Climate Change Strategy and Alberta Environment's business plan and priorities were taken into account in the development of the CCEMC's business plan.

The CCEMC is committed to achieving the planned results laid out in this budget and business plan.

Approved by the Board of Directors

Climate Change and Emissions Management (CCEMC) Corporation

Per: Eric Newell, Chair

Executive Summary

The CCEMC is an Alberta-based arm's length, not-for-profit Corporation with a mandate to reduce greenhouse gas emissions and adapt to climate change by supporting the discovery, development and deployment of clean technologies. CCEMC became operational in the summer of 2009. The CCEMC is aligned with public policy and will support and build on the strategic direction established in Alberta's 2008 Climate Change Strategy.

The Climate Change Emissions Management Fund (the Fund) is a key element of Alberta's overall Climate Change Strategy; it will support investment in innovation and clean technologies that will reduce Alberta's greenhouse gas emissions and improve the Province's ability to adapt to climate change. The Fund is the primary source of money for the CCEMC. Money from the Fund is transferred to the CCEMC – through a Ministry of Environment grant – for the funding of projects that will address these important challenges.

The mandate of the CCEMC is to establish or participate in funding for initiatives that reduce emissions of GHGs or improve the ability to adapt to climate change.

The vision of the CCEMC is to become a leader in stimulating clean technology development. Through transformative change, the CCEMC will enhance Alberta's competitiveness, the economic and environmental value of our energy resources, help Alberta meet its greenhouse gas (GHG) reduction targets and facilitate the growth of green jobs and the green economy. New economic opportunities become available through innovation and Alberta leads the creation of highly skilled jobs that pioneer the advancement of transformative technologies. CCEMC innovations have the potential to be applied around the world, competitively positioning Alberta as a leading GHG management jurisdiction and a leader in the development of the green economy.

The mission of the CCEMC is to achieve actual and sustainable reductions in GHG emissions and facilitate climate change adaptation by stimulating transformative change through investments in climate change knowledge, technology development and operational deployment. In doing so, the CCEMC will consider funding projects at all levels of the innovation chain, from bright ideas to commercialization.

CCEMC has identified 4 goals and supporting strategies that will be the basis for delivering on the mandate, vision and mission of the Corporation:

GOAL 1: To fund clean technology projects that achieve actual and sustainable reductions in GHG emissions

GOAL 2: To support the research, development and deployment of transformational technology

GOAL 3: To improve the knowledge and understanding of climate change impacts, mitigation strategies, adaptation and technological advancements

GOAL 4: To demonstrate full accountability to all Albertans

The CCEMC is governed by a Board of Directors and its day to day operations will be delivered through contractual services. A "virtual" organizational model has been employed to provide optimal program performance while minimizing unnecessary overhead. An Operations Management Committee provides the level of rigor required to address the operating needs of the CCEMC and to address any business management risks and needs.

A portfolio management approach will be used in allocating funds and managing projects. Funds made available within the CCEMC's portfolio will be managed by strategic investment area, proportionally allocated and balanced on a 3-5 year basis. Matters such as risk and innovation will be considerations in the portfolio mix. The priority allocations identified for 2010 – 13 are:

Greening Energy Production – (Target 49%)

- Renewable energy
- Cleaner energy production

Conserving and Using Energy Efficiently – (Target 19%)

- Energy efficiency
- Energy conservation

Carbon Capture and Storage – (Target 29%)

- Geologic carbon capture and storage
- Biological management

Adaptation and Knowledge – (Target 3%)

- Adaptation
- Enhancing knowledge

The CCEMC will plan its business on a three-year cycle and will operate its business based on an annual work plan. The business plan anticipates the availability of financial resources in a timely fashion and the possibility of multiple project solicitations each year. Future Expressions of Interest and Full Project Proposals (EOI/FPP) will be targeted to address portfolio needs on an annual basis. The exact timing will depend on circumstances of cash flow and portfolio analysis.

Selection criteria will be established and communicated to the proponents (see EOI/FPP guidelines) in advance of each of the EOI/FPPs. A deliberate and structured project selection process will be used. An EOI will initially be sought, projects will be screened and short listed and then a request for FPPs will be made for those projects that are short listed. Successful projects will enter into contractual agreements with the CCEMC for project delivery.

A structured performance management framework will be used by the CCEMC. This framework will measure both the performance of the Corporation and the success of its projects. Measures of corporate efficiency will focus on the performance of the organization, while requisite measures for individual projects will be defined and mandated in the funded project contribution agreements. Performance measurement of the CCEMC will be supported by effective controls (input, process and review controls) to provide reasonable assurance that the information is properly collected, collated and accurately reported.

Managing performance expectations is an important consideration. There is a lag between the time technology is conceptualized, developed and deployed and the time that reductions in GHGs are realized. This needs to be understood and highlights the compelling need to invest in these technologies today.

The CCEMC will track and report on the following metrics:

1. GHG Reductions: amount of GHG emissions predicted to be reduced from a business as usual scenario
2. Fund Allocations: CCEMC funds allocated to sectors and strategic investment areas as well as leverage achieved
3. Project Success: successful, challenged or incomplete projects (status), and the extent projects span or progress along the innovation spectrum
4. Corporate Efficiency: ability of CCEMC to run operations as efficiently as possible

As technologies come to fruition and achieve broad acceptance, it is expected that the rate of emission reductions will escalate. Consequently, the CCEMC is planning to achieve its GHG reduction objectives over time and will track performance accordingly.

Introduction

Investments in clean technology and transformational change are required to maintain and enhance our competitiveness, green our economy, provide green jobs and address our climate change targets. The Climate Change Emissions Management Fund (the Fund) is a key element of Alberta's overall Climate Change Strategy; it will support investment in innovation and clean technologies that will reduce Alberta's greenhouse gas (GHG) emissions, improve the Province's ability to adapt to climate change and enhance our competitiveness.

The Fund is the primary source of money for the CCEMC. The CCEMC is an arm's length, not-for-profit Corporation dedicated to reducing greenhouse gas emissions and assisting Alberta in adapting to climate change.

This three-year business plan describes the CCEMC's business for the operating years 2010-2013. The plan recognizes and is consistent with: the Climate Change Emissions Management Act (the Act), the Specified Gas Emitters Regulation, the Alberta Climate Change Strategy, Alberta Environment's mandate and Business Plan,, the Memorandum of Understanding and grant agreement between the Minister of Environment and the CCEMC, and a variety of public policy statements such as Alberta's Energy Strategy and Alberta's Framework to Improve Alberta's Natural Gas and Conventional Oil Competitiveness. The plan will be adjusted annually to reflect emerging policy direction.

The Challenge and Opportunity

Canadians are concerned about the environment, climate change and GHG emissions. They are equally concerned about the strength of Canada's economy, the need to provide high quality employment opportunities and the need to generate revenues to provide the goods and services Canadian's expect. Economic growth must be balanced with environmental responsibility.

Based on Environment Canada's 2007 greenhouse gas inventory, total GHG emissions were 747 million tonnes (MT) – an increase of 4% from 2006 levels and part of a general trend upwards. Historical increases have generally resulted from large increases in oil and gas production, coal fired electricity generation and a large increase in consumption as reflected by the number of motor vehicles. Long-term, GHG emissions are expected to continue to rise and must be addressed.

Alberta's emissions are projected to grow to 400 MT by 2050 under a business as usual scenario. Alberta's target is to reduce emissions by 200 MT or 50% below business as usual by 2050.

Alberta is in a unique position as a global energy supplier. As the economy grows, emissions are expected to rise over the short-term, then fall as emission reduction strategies and clean technologies come on stream. Growth in green jobs and an economic transition to green energy production is a desired outcome.

Public Policy Context

The United Nations Conference of the Parties for the Framework Convention on Climate Change was held in Copenhagen, Denmark in December 2009, resulting in the Copenhagen Accord. The Accord is a high level, non-binding political agreement that includes the major global economies and emitters (United States, Europe, China, Brazil, India and South Africa) and one that establishes important strategic direction. The Agreement recognizes the need for global collective action, that these actions will be differentiated and location based and that the role of technology development and technology transfer will become increasingly important. The framework is highly comprehensive, as the major emitting jurisdictions are now part of the process (over 80 per cent of global emissions) supporting a shift to enable greater bilateral efforts and cooperation.

In addition to the framework provided by the Accord, the CCEMC's direction has been developed in consideration of the Government of Canada's evolving climate change strategy. Canada has indicated its support for the Accord and has agreed to an emissions reduction target of 17% by 2020 from a baseline of 2005. Canada has stated its interest in becoming a "clean energy super power".

The intent and direction of the Government of the United States is also a very important consideration. Current emphasis on a cap and trade model has important implications for Canadian jurisdictions, as does United States interest in clean technologies and transforming its economy to be less reliant on conventional energy resources. Harmonizing Canada's policy with the emerging United States policy is critical to maintaining an integrated North American economy.

The CCEMC is strongly aligned with the Accord and Canada's target. The focus on jurisdictional applications, adaptation and clean technology are all recognized within CCEMC programming. Continued support for clean technology development is critical to meaningful progress, and will help address the emissions challenges at the source. It will also generate greater economic and environmental value from our energy resources.

In addition to matters related to climate, Alberta is taking steps to enhance its competitiveness. Alberta has grown to become a major international producer of energy and is among the top jurisdictions that have the resource base, the expertise and the creative and entrepreneurial spirit to serve the world's increasing energy needs. In 2008, approximately 30 percent of Alberta's total GDP was from energy development, contributing \$87 billion to the provincial economy. Approximately 14% of Albertans – almost one in seven – are directly or indirectly employed in the energy industry. In addition, The Canadian Energy Research Institute has forecasted that over the next 25 years, Alberta's oil and gas industry is poised to contribute \$2.5 trillion to Alberta's GDP alone with over 18.5 million person years of employment created nation-wide.

However, Alberta has lost competitive ground and Alberta's share of investment has declined. The province faces growing and increasingly stiff competition and recognizes the need to adapt. Enhancing competitiveness by managing a growing economy, generating more value from our energy resources and maintaining a commitment to emission reductions is a strategically important initiative.

Alberta's Climate Change Policy

Alberta has both a responsibility and an opportunity to take decisive action to reduce GHG emissions. The CCEMC will support and build on the strategic direction established in Alberta's 2008 Climate Change Strategy. It will also recognize the direction set by Alberta's Carbon Capture and Storage Development Council and seek to complement decisions made on large carbon capture and storage (CCS) projects.

Priority areas for funding consideration are aligned with Alberta's Climate Change Strategy and include:

CONSERVING AND USING ENERGY EFFICIENTLY

This strategy is focused on reducing GHG emissions by transforming how we use energy, and encouraging ways to conserve and become more efficient. All Albertans and all sectors need to be engaged. Through these efforts, the Alberta Government intends to reduce emissions in this area by 24 MT by 2050.

IMPLEMENTING CARBON CAPTURE AND STORAGE

This strategy focuses on storing quantities of CO₂ in Alberta's geological formations rather than releasing it into the atmosphere. Emissions can be captured where produced, transported and stored – offering a valuable tool in enhanced oil recovery. CCS provides the greatest potential to substantially reduce greenhouse gas emissions in the medium and long term. Through these efforts, the Alberta Government intends to reduce emissions in this area by 139 MT by 2050.

GREENING ENERGY PRODUCTION

This strategy focuses on transforming the way we produce energy and introducing cleaner more sustainable approaches to energy production. This focuses on better use of energy from traditional sources, reducing our waste and transitioning to alternative sources of energy. Through these efforts, the Alberta Government intends to reduce emissions in this area by 37 MT by 2050.

The CCEMC is one important means of implementing Alberta's Climate Change Strategy. Successful implementation of other independent but related strategies will also be required to achieve the goals identified.

The Climate Change and Emissions Management (CCEMC) Corporation

The CCEMC is an Alberta-based not-for-profit, independent Corporation with a mandate to reduce greenhouse gas emissions and adapt to climate change by supporting the discovery, development and deployment of clean technologies. The organization became operational in the summer of 2009.

Expenditures by the CCEMC are bound by the purposes described in the Act, as well as the terms of the Memorandum of Understanding and the grant agreement between the Minister of Environment and the CCEMC.

The Value Proposition

Alberta's specified gas emitters (>100,000 tonnes CO₂e annually) have a regulatory requirement to achieve specified reductions of GHGs. Performance targets have been established for facilities and performance compliance must be assured. Paying into the Climate Change and Emissions Management Fund (the Fund) is one compliance option (\$15/tonne CO₂e). Money from the Fund is dedicated and provided to the CCEMC through a grant agreement with the Government of Alberta. Funds are then re-invested by the CCEMC into innovative clean technology projects that will have an actual and sustainable impact on reducing GHG emissions.

The value proposition of this business model is:

- Regulatory requirement – GHG reductions are mandatory. Paying into the technology fund is one compliance option.
- Dedicated and sustainable funds – the funding is collected annually by government, deposited into a segregated account and dedicated to reducing GHG emissions or adapting to climate change.
- Performance accountability – those that emit are accountable for finding solutions. The opportunity is dealt with at the source.
- Jurisdictionally adaptable- the model is adaptable and will fit the circumstances of individual jurisdictions.
- Technology mobility – technological innovation is portable and when developed, can be applied anywhere it makes sense.
- Certainty – compliance and cost are certain.
- Objectivity – projects are reviewed by technically competent third parties.
- Collaboration – there is a collaborative approach to technology development and technology transfer.

Mandate

The mandate of the CCEMC is to establish or participate in funding initiatives that reduce GHG emissions or improve our ability to adapt to climate change through:

- Energy conservation and energy efficiency;
- New technologies that affect reductions in GHG emissions in the discovery, recovery, processing, transportation and use of energy resources;
- New technologies in the alternative energy and renewable energy fields;
- GHG capture, use and storage technology;
- Removing GHG from the atmosphere through sequestration by sinks;
- Determining the natural removal and storage of carbon; and
- Climate change adaptation programs and measures.

Vision

The CCEMC is a leader in stimulating clean technology development. Through transformative change, the CCEMC has enhanced Alberta's competitiveness, the economic and environmental value of our energy resources, helped Alberta meet its GHG reduction targets and facilitated the growth of green jobs and the green economy. New economic opportunities become available through innovation and Alberta leads the creation of highly skilled jobs that pioneer the advancement of transformative technologies. Consumers have a broader range of choices to meet their energy needs in a competitive environment of service provision. CCEMC innovations have the potential to be applied around the world, competitively positioning Alberta as a leading GHG management jurisdiction and a leader in the development of the green economy.

Mission

The mission of the CCEMC is to achieve actual and sustainable reductions in greenhouse gas emissions and facilitate climate change adaptation by stimulating transformative change through investments in climate change knowledge, clean technology development and operational deployment.

The CCEMC intends to manage its resources as a portfolio of projects with a wide spectrum of investments. In doing so, the CCEMC will consider funding projects at all levels of the innovation chain, from early stages to commercialization (see Figure 1). Attracting the entrepreneur (pull strategy) and advancing technology and deployment (push strategy) will be equally important.

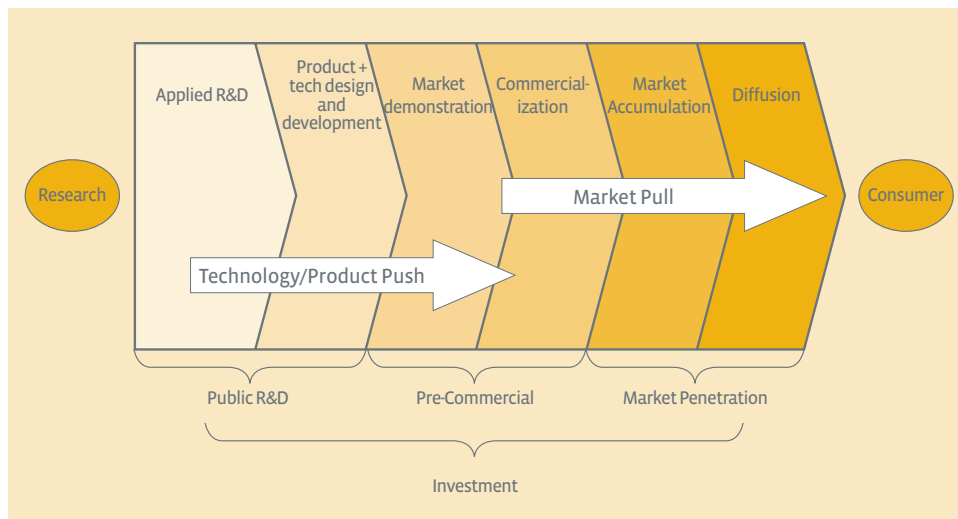


Figure 1: Main Steps in the Innovation Chain (based on Grubb, 2004)

Managing performance expectations is also an important consideration. There is a lag between the time technology is conceptualized, developed and deployed and the time that reductions in GHGs are realized (see Figure 2). This needs to be acknowledged. As technologies come to fruition and achieve broad acceptance, it is expected that the rate of emission reductions will escalate. This highlights the compelling need to invest in these technologies today. With time, the CCEMC expects to have a wide variety of projects in play at various stages of development, each contributing to achieving targeted reductions while advancing Alberta's green economy.

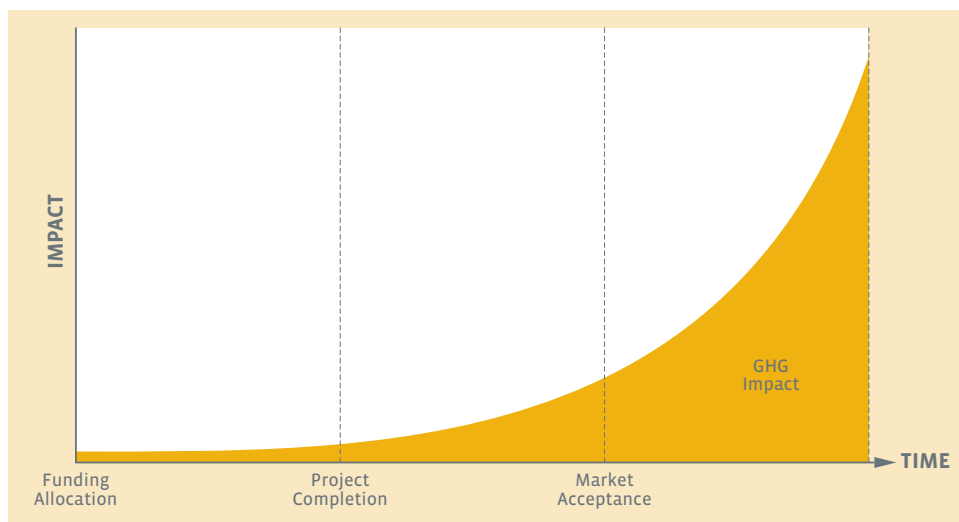


Figure 2: Investment/Benefit Relationship of Technology Applications

Management Philosophy and Values

The CCEMC believes that transformative change is necessary and the development and deployment of new clean technologies is the principal way to achieve it. Applying existing technologies is insufficient if we want to reach the ambitious targets established by the province; significant reductions in GHG emissions will only be achieved by enabling breakthrough technologies. CCEMC will initially fund solutions that focus on energy efficiency and energy conservation, greening energy production and carbon capture and storage. These clean technologies are at the leading edge of the green economy, maintain or enhance our competitiveness and support and promote the transformative change necessary to reduce GHG emissions, enhance the economic and environmental value of energy resources, create green jobs and offer greater consumer choice.

In delivering its mission and respecting its management philosophy, the CCEMC will operate with eight key values:

LEADERSHIP

The CCEMC is a catalyst in the development and deployment of clean technology.

TECHNOLOGICAL INNOVATION

The CCEMC believes the development of clean technologies will drive transformative change. The CCEMC will pursue leading edge opportunities and is prepared to invest in bold new ideas.

LEVERAGE

The CCEMC intends to leverage finances, human resources and technology to deliver optimal value.

ACHIEVING RESULTS

The CCEMC is focused on identifying, measuring and achieving actual and sustainable GHG reductions, generating greater environmental and economic value from energy resources, maintaining or enhancing our competitiveness, and supporting growth in Alberta's green economy.

INTEGRITY

The CCEMC will be fair and professional in all its administrative and operational processes. It upholds the highest standards of governance and operational management excellence.

TRANSPARENCY

The CCEMC will strive to be transparent in its operations wherever practical and will encourage knowledge and technology transfer at the earliest stages possible.

OBJECTIVITY

The CCEMC is an arm's length organization that objectively considers the merit of all ideas, proposals and technology.

SERVING THE PUBLIC INTEREST

The CCEMC is committed to delivering results that serve the public interest.

Goals and Strategies

The discovery, development and deployment of clean technologies require an investment of intellectual capacity, money and time. Consequently, sustainable reduction in GHG's will be realized as technologies mature, applications broaden and sufficient time is made available for commercialization and deployment to occur.

The following goals and strategies provide important direction for the CCEMC over the life of the business plan. The goals and strategies are enabling in nature and are expected to evolve as the organization matures and the intersection of opportunity and technology is better understood.

The CCEMC's goals and strategies are:

GOAL 1: TO FUND CLEAN TECHNOLOGY PROJECTS THAT ACHIEVE ACTUAL AND SUSTAINABLE REDUCTIONS IN GHG EMISSIONS.

The CCEMC is committed to funding exceptional clean technology projects and initiatives to stimulate transformative change, support the green economy, reduce GHG emissions and offer greater consumer choice. CCEMC contributes to this goal by investing in projects that deliver actual and sustainable reductions of greenhouse gases and by measuring and tracking those reductions. It is important to note that significant reductions in GHG emissions are not expected to be achieved for some time.

Strategies:

- Make strategic investments in projects that stimulate the development, application and commercialization of clean technology, processes or systems.
- Advance knowledge and understanding of technology, processes and systems by targeting all GHG sources.
- Invest in the following areas:
 - Conserving and Using Energy Efficiently – This includes process improvements, avoidance of energy consumption and demand side energy management.
 - Implementing Carbon Capture and Storage – This includes projects that reduce GHG emissions by capturing, treating, transporting and storing CO₂, through natural processes of sequestering carbon and by capturing emissions generated from biodegradable materials.
 - Greening Energy Production – This includes fuel switching, renewable energy production, alternative energy development, cleaner energy production and addressing electricity grid challenges.
- Broaden the range of green energy sources and enhance consumer choice.
- Ensure projects deliver a broad range of benefits including the potential for jobs, investment attraction and other environmental benefits.
- Manage project investments from a portfolio perspective.
- Leverage financial resources and support technologies that offer the broadest possible potential.
- Consider risk, including whether necessary regulatory and approval frameworks exist to enable implementation.

GOAL 2: TO FACILITATE INNOVATIVE SOLUTIONS AND THE DEVELOPMENT AND DEPLOYMENT OF TRANSFORMATIVE TECHNOLOGY.

CCEMC understands that enabling breakthrough technologies requires investing in innovation. Capital is required to stimulate the investigation of new clean technologies and it is understood that not all of these investments will prove to be successful. Due diligence and a structured risk assessment will be applied to determine which projects warrant investment.

Strategies:

- Identify needs and opportunities.
- Make investments at strategic stages of the innovation chain.
- Leverage CCEMC investments with other private and public funding sources.
- Share investment risk with qualified project proponents.
- Encourage the broad deployment of transformational technologies through licensing and other mechanisms.

GOAL 3 – TO IMPROVE THE KNOWLEDGE AND UNDERSTANDING OF CLIMATE CHANGE IMPACTS, MITIGATION STRATEGIES, ADAPTATION AND TECHNOLOGICAL ADVANCEMENTS.

CCEMC is supportive of efforts designed to enhance our knowledge of climate change impacts, and the mitigation and adaptation strategies required to address them. The level of knowledge and certainty can vary significantly within the scope of CCEMC programming; therefore a deeper and more informed understanding is required to ensure that CCEMC project funds are allocated to the most promising solutions. Initiatives that are designed to enhance knowledge and understanding are of interest to the CCEMC. The CCEMC also understands that climate change impacts will result in changes to ecological capacity, productivity and other natural attributes of Alberta's landscape and that economic and social adaptation is required. Alberta will need to anticipate and plan ahead to reduce vulnerability to the impact of climate change. Strategies to adapt should go hand in hand with direct mitigation measures to reduce GHG emissions.

Strategies:

- Inventory climate change knowledge networks and maintain currency.
- Identify CCEMC gaps in knowledge and program direction.
- Address gaps in strategic areas such as biological opportunities and policy and research to support adaptation.
- Participate in relevant networks that inform the CCEMC.
- Stimulate and support the establishment of network(s) where they are considered to address a fundamental knowledge gap important to CCEMC.
- Host and participate in relevant conferences or other knowledge forums.
- Identify appropriate adaptation risk management strategies and invest in risk management projects.

GOAL 4: TO DEMONSTRATE FULL ACCOUNTABILITY TO ALL ALBERTANS.

The CCEMC is accountable to its stakeholders, the Minister of Environment and through the ministry, all Albertans. The CCEMC strives to support Ministry initiatives and meet or exceed reporting requirements to ensure integration of goals and policies that support climate change management.

Strategies:

- Identify needs and opportunities to demonstrate accountability.
- Work collaboratively with Alberta Environment to develop clear expectations and standards for program reporting.
- Establish program/project management/monitoring and accountability systems.
- Report annually on CCEMC expenditures and results achieved as indicated by the chosen performance metrics.
- Where possible, report on a range of ancillary non-GHG benefits such as investment, employment, brand enhancement and other pertinent factors.
- Ensure transparency of CCEMC operations and decisions.

Strategic Investment Areas (SIAs) and Portfolio Management

The CCEMC is committed to responsible portfolio management. This means that the structure of the portfolio must be understood and that each of the strategic investment areas is properly resourced. This ensures that competitive processes for financial resources are focused within each strategic investment area and the best projects are selected from that targeted investment. Portfolio considerations will include funding priorities: greening energy production, carbon capture and storage, and conserving and using energy efficiently; adaptation and knowledge requirements, and stages of the innovation chain; impact on reducing GHGs, size and scope of project; nature and extent of risk; and any other matters that the Board may determine to be meaningful.

CCEMC's portfolio is aligned with the Act and regulations and is aligned with Alberta's Climate Change Strategy. Each area of the portfolio is identified as a strategic investment area and is segregated to ensure resources are targeted to appropriate needs and that competitive processes occur within the portfolio rather than across them.

Consequently, the CCEMC has targeted resources to each of the SIAs on a proportional basis. These proportions are intended to function as guidelines, are expressed as a proportion of annual funds available and will be balanced on a three to five year business planning cycle. Adjustments amongst the SIAs will be made annually in the context of a portfolio assessment and the allocation of program funds.

A description of each of the SIAs follows:

Greening Energy Production (Target = 49%)

RENEWABLE ENERGY

This includes energy derived from feedstock that is renewable and from natural or waste materials. Renewable energy development is demanding an increasing share of the world's energy investment and is beginning to represent a greater share of the world's energy mix. Shifting the mix of energy development in Alberta to provide a wider array of renewable energy sources and services is strategically important. Examples of renewable energy opportunities include biomass and waste to energy, bio-fuels, geothermal, mini-hydro, solar and wind.

CLEANER ENERGY PRODUCTION

This includes transforming the way we currently produce energy from more traditional energy sources like coal, oil, gas and oilsands and includes such things as recovery of conventional and unconventional gas, upgrading and refining, chemical processing, transportation, coal processing and underground coal gasification.

Conservation and Efficiency (Target = 19%)

ENERGY EFFICIENCY

This opportunity is focused on industrial energy efficiency and improvements that can be made to existing manufacturing processes. This SIA includes on-site generation, district heating, waste heat utilization, retrofits and waste heat for power generation as well as the transmission and distribution of generated power.

ENERGY CONSERVATION

This area is focused on reducing the amount of energy currently being consumed. Good examples of conservation initiatives include new or retrofitted buildings and community design, alternative low energy demand lighting, power storage (on site and battery) and less demanding transportation systems. The intention is to focus on industrial applications, not domestic or consumer level initiatives.

Carbon Capture and Storage (Target = 29%)

GEOLOGICAL CARBON CAPTURE AND STORAGE

This opportunity focuses on capturing CO₂ where it is produced, then transporting and storing it into deep geological formations. The technology requires significant capital investment and time to put into place. CCS technologies offer the greatest potential to substantially reduce greenhouse gases and include applications such as separation, compression, transportation, geologic storage, measurement monitoring and verification, enhanced oil/gas recovery and enhanced coal bed methane. It is anticipated that CCEMC investments will focus on smaller scale projects that will serve as a springboard for large scale development.

BIOLOGICAL MANAGEMENT

This addresses the use of biological systems or resources for the sequestration of greenhouse gases or for the production of energy from natural or waste materials. Measurement of natural removal of carbon, charcoal sequestration, biochar, fermentation, digestion, photosynthesis, forest management practices, agricultural management and changes to land use and land use practices are examples of the kinds of opportunities that should be explored.

Adaptation and Knowledge (Target = 3%)

ADAPTATION

There is a compelling need to build climate change adaptive capacity in the public and private sectors. Building understanding and capacity is a significant undertaking. This area will focus on identifying the key economic, social and environment challenges requiring adaptation. Adaptation will require fundamental changes in the way business and policy decisions are made to address the effects of a changing climate through effective public policy, risk management and planning. Water and water management, ecological impacts and effects on ecological goods and services and the possibilities of disease and insect outbreaks are probable areas to investigate.

ENHANCING KNOWLEDGE

This area is dedicated to support initiatives that are designed to improve our knowledge about any of the SIAs or specific technological opportunities that could exist within them. Several of the strategic investment areas are not well understood and resources will need to be allocated to mobilize the intellectual capital necessary to better understand them and identify where the true opportunities lie.

In order to maintain a balanced portfolio, the Board may allocate resources through a suite of funding initiatives including open EOI/FPPs, targeted EOI/FPPs and direct allocation investments. Funds from the CCEMC may be made available for individual strategic investment areas or may be aggregated. The choice of processes employed will be based on the circumstances and will be influenced by the scope of the initiative, supporting knowledge, timing, size of market and other determining factors. Generally speaking, the following options will be considered:

- EOI/FPP Open – This is a two-staged process that requires an initial EOI to solicit all available proposals, screens and selects the most promising projects and requests detailed project submissions. Successful applicants are selected based on the best fit with the established criteria.
- EOI/FPP Targeted – The same process as above but limited in scope to a defined project or SIA
- Solicited or Direct Allocation – From time to time, resources may be solicited or directed to certain initiatives that support CCEMC business (e.g., network establishment) where the choice of service provider is non-competitive or where there are limited service providers.

Enhancing Knowledge and Engagement

Enhancing our knowledge about the diversity and technological possibilities to address climate change challenges is an important undertaking. To facilitate greater knowledge and independent advice, the CCEMC will support the development of knowledge networks where the current level of knowledge is underdeveloped within an SIA.

An inventory of knowledge networks will be undertaken. Networks that support each of the SIAs will be identified and the scope of their undertaking documented. Gaps in knowledge will be identified and actions taken to address the gaps. The CCEMC will support the establishment of knowledge networks where those networks are deemed critical to addressing the desired management opportunity.

Each knowledge network supported by the CCEMC will be purpose driven and have a mandate to enhance our knowledge base, maintain currency in science and business applications and track the evolution and development of key technologies. The network will be comprised of a broad cross section of knowledgeable, well informed individuals from key disciplines. An annual work plan will be developed and executed. Resources will be made available to assist in fulfilling the mandate.

Network(s) will advise the Board of Directors on knowledge gaps and key project considerations to assist in advancing the interests of the CCEMC.

Strategic Initiatives

There are a number of strategic initiatives that will be undertaken during this business planning cycle. These initiatives are intended to support the CCEMC business by enhancing knowledge, engaging key constituencies and informing the decision making process.

Investment Strategy

A strategy will be developed to optimize the investment value of financial resources held by the CCEMC. This strategy will be consistent with risk tolerance provisions established in current and future grant agreements.

International Conference

A significant conference in the late spring/early summer of 2011 will be hosted by the CCEMC. It is expected that a conference will be held every other year.

Speaker Series

The CCEMC will consider supporting existing “speaker series” initiatives hosted by other organizations that have a similar or shared interest and where the speaker(s) can provide knowledge and insight that will be valuable to CCEMC business.

Climate Change Management System

The CCEMC will support and participate in the consideration, clarification and integration of Alberta’s climate change delivery system. All delivery agents will be engaged and services rationalized in the context of existing climate change policy.

Knowledge Network Inventory

An inventory and gap analysis will be conducted.

Communications/Awareness

The CCEMC will continue to develop and implement communications initiatives designed to enhance awareness of CCEMC, to promote engagement in CCEMC processes and to report on progress being made.

Operations Management

The CCEMC is governed by a Board of Directors and its day-to-day operations will be delivered through contractual services. A “virtual organization” model has been employed to deliver optimal program performance while minimizing unnecessary overhead.

The Board is responsible for strategic leadership, policy development and the allocation of corporate resources to achieve strategic results. The Board will be dedicated to serving the purpose of the CCEMC, will act in a strategic leadership capacity and will ensure that the CCEMC is respectful of the strategic direction of Government.

An Operations Management Committee, lead by a Chair, provides the support required to address the operating needs of the CCEMC and to address any business management risks and needs.

Operational Products and Services

In the context of its operations, the CCEMC will be delivering four core products and services:

CLIMATE STRATEGY

The CCEMC will work with climate change policy makers, practitioners, regulators, industry and other interested parties. In its advisory role, the CCEMC has a responsibility to assess policy, research and technical opportunities that could advance clean technologies and address climate change challenges. It will be critical that timely information on policy, practices, clean technologies and other matters be made available to the CCEMC. On an annual basis, the CCEMC will conduct planning sessions to shape its strategic direction; new identified opportunities will be shared with the Minister of Environment, the Department and other relevant organizations. Sharing the knowledge built within the CCEMC will help to inform broader policy decisions and industry best practices.

CLEAN TECHNOLOGY PROJECT INVESTMENT

The CCEMC will receive, manage and allocate monies provided from the Fund to credible projects that meet the standards set for approval. Rigorous, objective and credible reviews (scientific, engineering, business etc.) will determine what clean technology projects should be financed to best deliver on Alberta’s climate change goals. Resources will be allocated based on schedules and milestones – recipients will be held accountable for all expenditures and for results achieved.

PERFORMANCE TRACKING AND ACCOUNTABILITY

The CCEMC will develop performance metrics that are credible, transparent and useful in tracking the performance of the projects. Timely and accurate reporting will be critical to inform Albertans about the quality of investments made and the results achieved. Communications will be equally important in managing expectations and sharing results. Project reports will be made as well as annual program reporting. All of these reports will be publicly accessible.

ADVISING THE MINISTER OF ENVIRONMENT

The CCEMC will periodically advise the Minister of Environment on emerging funding priorities and the areas in which funds will have the greatest impact.

Operating Cycle of Innovation

The Fund may only be used for the purposes outlined in the Act and the Grant Agreement; projects that are within the CCEMC's scope will be eligible for consideration. Strategic investment areas, eligibility criteria and other guidance to inform direction of the CCEMC will be updated from time to time to reflect changes in public policy, Fund management direction, grant agreement provisions and CCEMC operating policy.

Funds will generally be managed by strategic investment area with established funding targets balanced on a three- to five-year cycle. Reassessing these priorities in a timely manner ensures a broad range of initiatives are being funded and there is enough flexibility to respond to interest, opportunities and market conditions.

The CCEMC will plan its business on a three-year cycle and will operate its business based on an annual work plan. The business plan anticipates the availability of financial resources in a timely fashion and the possibility of multiple project solicitations each year. The following schedule outlines the typical sequence of activities over the course of an operating year. This sequence may be adjusted based on emerging program needs or other factors deemed important by the Board.

Business plan development	April
Annual Grant renewal	May
EOI/FPP – Draw #1	April to November
EOI/FPP – Draw #2	October to April
Annual General Meeting	September
Major conference	May

Annually, up to two EOI/FPPs may be conducted. The intention is to establish a flow to the business that maintains CCEMC presence in the market and provides frequent opportunity to access financial resources to accelerate the application of emerging technologies. Future EOI/FPPs will be targeted to address portfolio needs on an annual basis. The exact timing will depend on circumstances of cash flow and portfolio analysis. Selection criteria will be established and communicated to the proponents (see EOI/FPP guidelines) in advance of each of the EOI/FPPs. A defined project selection process will be used and the following tools employed in formulating recommendations to the Board:

- Proponent self-evaluation
- Evaluation Committee assessment – project reviews, interviews
- Independent expert reviews – technical and financial assessment and risk analysis
- Consensus of support – reached by the Evaluation Committee

The project development process is described in Figure 3. An EOI will initially be sought, projects screened and short listed and then followed by requests for FPPs administered by the CCEMC. The EOI/FPP process will be issued at least annually and supported by clear documentation that outlines the purpose, available funds, eligibility criteria, selection criteria and other relevant matters. Successful projects will enter into contractual agreements with the CCEMC for project delivery.

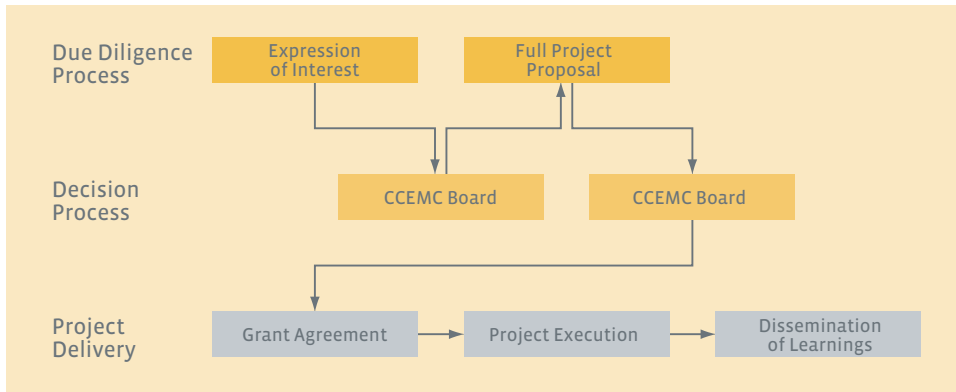


Figure 3: Project Development Process

Examples of selection criteria that will drive the decision making process include but are not limited to: anticipated reductions in GHG emissions, the strength of the partnership, the amount that CCEMC-contributed funds will be leveraged, potential technology deployment, the strength of the management team and other matters deemed important. Criteria and application guidelines are available on the website at www.ccemc.ca.

The CCEMC reserves the right to use other processes to allocate resources.

Performance Management System

A structured performance measurement and reporting framework is being developed by the CCEMC. While several strategic planning processes exist, the outcomes-based approach employed by the CCEMC provides a number of benefits including:

- Recognition that the CCEMC will be influenced by the needs of various stakeholders including government, industry and others;
- Consensus and understanding across key stakeholder groups on the common drivers, purpose, vision, mission, goals and strategies for the CCEMC; and
- Clear linkages of accountability and responsibility for measurement and reporting between the CCEMC and those being funded.

Figure 4 illustrates the performance management framework used by the CCEMC. This framework ensures alignment of organizational direction with public policy drivers and identifies performance measures for reporting and accountability purposes.

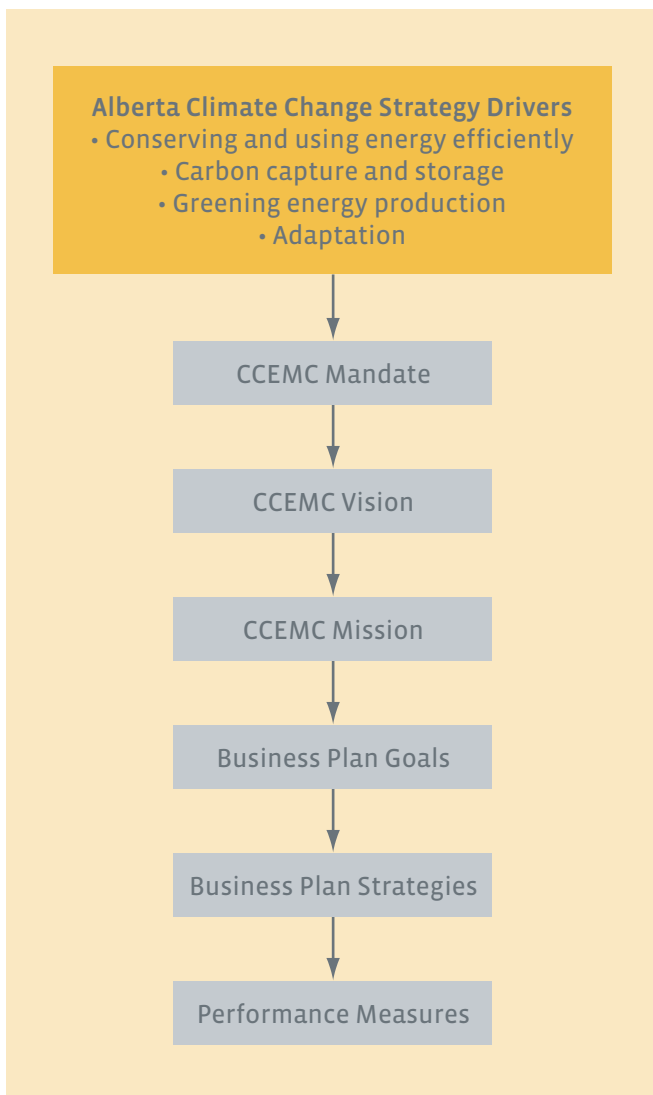


Figure 4: Performance Management Framework

Performance Measurement

Performance management for the CCEMC is critical to demonstrate that the corporation is delivering results that are consistent with its mission, strategic directions, established goals and core values. Relevance, quality and performance will all be important dimensions of the organization's performance.

Performance will be managed at the corporate and project level. Measures of corporate efficiency will focus on the performance of the organization, while requisite measures for individual projects will be defined and mandated in the funded project contribution agreements. Performance measurement of the CCEMC will be supported by effective controls (input, process and review controls) to provide reasonable assurance that the information is properly collected, collated and accurately reported.

In addition to developing performance measures during the initial strategic and business planning processes, the CCEMC will, over time, develop new measures and could change definitions for performance measures during plan revision processes. Establishing both an explanation of the measure and methodology for its calculation is an important aspect of the overall performance management system for the CCEMC.

The CCEMC will track and report on the following metrics:

- GHG Reductions – amount of GHG emissions predicted to be reduced from a business as usual scenario.
- Fund Allocations – CCEMC funds allocated to sectors and strategic investment areas as well as leverage achieved.
- Project Success – successful, challenged or incomplete projects (status), and the extent projects span or progress along the innovation spectrum.
- Corporate Efficiency – ability of CCEMC to run operations as efficiently as possible.

A more complete description of the metrics can be found at www.ccemc.ca

Operating Budget and Forecast for 2010-2013

The Department of Environment has provided a revenue forecast for planning purposes that is influenced by emerging policy and market conditions. A three-year revenue and budget forecast has been developed to support business plan goals. It is possible that several policy adjustments could be made within the life of this plan and could include lowering the threshold of large emitters, elevating the performance target for each facility, increasing the price on carbon and accepting compliance requirements associated with fuel mixing. Other variables affecting revenue will also include the direction of bilateral agreements between Canada and the United States. This budget assumes that no policy changes will occur and that there is a constant annual revenue forecast of \$61.25 M. In the event that policy changes occur, revenue adjustments will be made.

The operating budget and forecast is built on a projection of forecasted revenues into the Fund and the expenses associated with funding projects and operating the CCEMC. The CCEMC Board of Directors will determine the costs of administration on an annual basis with due regard to maximizing available funds for projects.

An operating reserve may be established for the CCEMC by carrying forward some funds to ensure continuity of operations from one year to the next. The budget for operations in 2010/11 is estimated to be \$4,475,588M, an increase of \$210,588 over the previous year's budget. This budget reflects a completion of many of the start-up requirements for the corporation and a shift to maintenance of general systems. These reductions in development expenses are offset by the emergence of project management requirements resulting from one or more EOI/FPP processes and the associated project monitoring systems. These costs are expected to increase over time as more projects come into play.

The CCEMC will also be required to carry funds over multiple years to support approved multi-year project commitments. These funds will be segregated as committed funds under management.

The following outlines the statement of projected operations for the fiscal year 2010/11 and a forecast of operations for 2011-13.

**Climate Change and Emissions Management Corporation
Budget Forecast 2010-2013**

	2009/10 Budget (\$)	2010/11 Budget (\$)	2011/12 Budget (\$)	2012/13 Budget (\$)
REVENUE				
Fund contributions	120,000,000	61,250,000	61,250,000	61,250,000
Investment income	1,024,534	1,088,227	1,015,102	
Total Revenue	120,000,000	62,274,534	62,338,227	62,265,102
OPERATING EXPENSES				
Board meetings				
Board meeting general expenses	5,000	5,000	5,000	5,000
Directors' honoraria and expenses	150,000	150,000	150,000	150,000
Program management	2,830,000	2,963,888	3,498,918	3,869,755
Consulting contracted services	900,000	900,000	900,000	900,000
Corporate expenses (i.e. phone, printing, etc)	50,000	136,600	150,430	161,827
Insurance	20,000	12,600	13,230	13,892
Outreach	100,000	200,000	200,000	200,000
Third party financial advisors	110,000	107,500	117,750	125,588
Contingency	100,000	100,000	100,000	100,000
Total Operating Expenses	4,265,000	4,575,588	5,135,328	5,526,061
Total Funds Available for Projects	115,735,000	57,698,947	57,202,899	56,739,041
Total Funds Under Management		117,000,000	149,600,000	159,300,000
Administration Costs as % of Funds Under Management		3.9%	3.4%	3.5%