

2023-26

# BUSINESS PLAN



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# LAND ACKNOWLEDGEMENT

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In the spirit of reconciliation, we have the privilege of living, working, and investing on traditional territories, which include Treaty 6, Treaty 7, and Treaty 8 Nations; Metis Nations (Region 3 and 4); Inuit; and all others who live and care for these lands. We are dedicated to promoting a culture of collaboration and meaningful engagement.



# MESSAGE FROM THE BOARD CHAIR

In this message a year ago, in reference to energy markets and climate in 2021 I noted “these developments reinforce the reality that the transformation of global energy systems on the path to Net Zero will be highly uncertain, challenging, and disruptive”. 2022 proved to be a year of significant disruption in global energy markets, characterized by price volatility, structural shifts and government intervention, all of which have had significant collateral economic effects and impacts on greenhouse gas emissions. At the same time, emissions reduction targets and commitments are in many cases becoming more ambitious.

It is against this backdrop that the Government of Alberta and ERA must chart a competitive path forward on energy and climate, accelerating investment in technology and innovation opportunities. Over the next 20 to 30 years, the province needs unprecedented transformation of its energy and industrial infrastructure and processes. Significant investment by the Government of Alberta will enable the development and commercialization of promising solutions to lower costs, improve competitiveness, and accelerate our province’s transformation to a low carbon emissions economy. Recent changes in global energy markets have affirmed the importance of ERA’s investment portfolio encompassing both incumbent industries and the development and growth of new, low carbon emissions industries. Carbon Capture Utilization and Storage and Hydrogen are just two areas that potentially represent significant economic and environmental opportunities for Alberta.

Alberta has often demonstrated leadership in developing the clean technology required by our key industrial sectors, but the competitive landscape is changing and necessitates an ongoing response by Canadian governments. The province has a robust carbon pricing system in the Technology Innovation and Emissions Reduction (TIER) Regulation, which creates greater certainty

for industry in the longer-term. In 2022, the Government of Alberta increased its commitment to using the carbon price paid by regulated facilities to identify and scale-up emissions reducing innovation. By updating TIER, Alberta’s government is increasing the funding available for technology and innovation, and helping Alberta industries remain competitive. As Alberta and federal government climate and energy policies continue to evolve, ERA is well-positioned to responsibly invest and leverage government funding to reduce greenhouse gas emissions and enable economic growth.

ERA is a trusted delivery partner for the Government of Alberta’s TIER Fund and a key contributor toward achieving the province’s goals for economic development and emissions reduction. The funds entrusted to us recognize ERA’s credibility and track record for accelerating technology development. Investing in technology and innovation will continue to position Alberta as a forward-thinking jurisdiction in the areas of environmental performance and energy systems.

ERA’s vision is to enable Alberta and Canada to achieve a low-emissions future, while contributing to a competitive economy that attracts investment and creates jobs. As outlined in this 2023-26 Business Plan, the ERA team will rely on its agile, adaptive and efficient business model, convening power and strategic partnerships, and entrepreneurial spirit to deliver even greater impact to support the innovation system.

Sincerely,

**Dave Collyer**

*Board Chair, Emissions Reduction Alberta*



# MESSAGE FROM THE CEO

At ERA, we search for and scale-up emissions reducing technologies that ensure Alberta remains globally competitive.

For over 13 years, we have been helping the Government of Alberta achieve its environment and economic goals by stewarding late-stage technology investments along the innovation continuum. We have committed \$855 million to 245 projects worth \$7 billion. These projects are estimated to deliver cumulative GHG reductions of 41 million tonnes by 2030 and 105 million tonnes by 2050. Our investments are also putting people to work. These projects will lead to more than 33,000 person-year jobs by 2025 and contribute over \$4.9 billion to Alberta's GDP.

Taking action on climate change, supporting job growth, and investing in innovation will help build a better future for everyone. This is why I am proud to share ERA's 2023-26 Business Plan, which has been informed by stakeholders from government, industry, academia, and the broader innovation system. Their advice and diverse perspectives means our Business Plan is aligned around the right priorities and will lead to real climate action.

In 2023-26, ERA will continue to support the acceleration of innovative, GHG-reducing technologies that address industry needs and opportunities in Alberta through targeted, competitive funding challenges. We will also enhance our technology scouting capacity and evolve our Continuous Intake Programming to increasingly support promising solutions outside our traditional call process.

Our strategic partnerships will expand to include high-impact ecosystem support organizations who can help us better understand barriers to commercialization and how we collectively identify and address key gaps.

The real demonstration of ERA's and the Government's success won't be widely known

until ERA-funded projects are commercialized and deployed in the market. As an example, our 2022 Carbon Capture Kickstart resulted in \$40 million in funding to 11 CCUS-based engineering studies that could lead to over \$20 billion in capital expenditures. Many of these projects represent the first stage of large overall project plans. In 2023-26, we will focus on moving these projects to final investment decisions, so they stay on track for deployment by 2030.

This Business Plan also highlights Alberta's priority for developing clean hydrogen, offering a solution to lower emissions in many hard-to-decarbonize sectors such as chemical manufacturing and heavy-duty transport. ERA will support this key provincial area of focus while managing and investing in a balanced portfolio.

We will continue to work closely with the Provincial and Federal Governments to monitor policy changes, priorities, and funding that could necessitate adjustment to ERA's portfolio mix. We will also work with stakeholders across the innovation ecosystem to provide advice that helps ensure new policy and regulation enables innovation and technology deployment.

We have long recognized that ERA cannot operate in isolation, and that our partnerships and strategic alliances will stimulate today's economy and create the net-zero economy of the future. Leveraging investment and innovation capacity on provincial, national, and international levels will be integral to scaling-up capital-intensive technologies and accelerating the pace of innovation.

We understand the complexity of the transition to a clean energy future. ERA has the vision and the Business Plan to take Alberta to the next stage of its journey.

Sincerely,

**Justin Riemer**

*CEO, Emissions Reduction Alberta*



# 1.0 EXECUTIVE SUMMARY

This 2023-26 Business Plan identifies the actions ERA will take to accelerate technology development and strengthen the partnerships to help Alberta thrive in a low emissions economy. This plan is scalable, and ERA's business model is nimble, allowing us to respond to industry's short-term needs while delivering on longer-term strategic outcomes.

Guided by ERA's Technology Road Map (TRM), ERA will invest in a balanced portfolio across timescales, technology readiness levels, industries, and technology pathways in its funding calls, through Continuous Intake Programming, and the Energy Savings for Business (ESB) suite of funding.

Over the next three years, ERA will invest \$175 million through its competitive operating cost structure. In this Business Plan, ERA shares an overview of its anticipated competitive funding opportunities, which help advance the cross-cutting technology areas critical for greenhouse gas (GHG) reduction and economic growth. They include:

- + **RESHAPING ENERGY SYSTEMS**  
*(SPRING 2023)*
- + **FUELS OF THE FUTURE**  
*(FALL 2023)*
- + **HYDROGEN DEPLOYMENT**
- + **BUILDINGS OF THE FUTURE**
- + **ADVANCED MATERIALS**
- + **NEXT GENERATION  
CARBON CAPTURE**

These specific focus areas are informed by government, industry, and innovator priorities identified through engagement activities held in 2022-23. ERA will also continue accepting applications for its ESB suite of funding into the fall of 2023.

ERA's traditional funding challenges will be complemented by its Continuous Intake Programming—a flexible mechanism to fund innovative projects on an ongoing basis such as those brought forward by Trusted Partners. In 2023-26, ERA will leverage its existing partnerships and seek out new, value-add partners that can help advance critical technologies. ERA will also continue to explore additional funding or financing mechanisms to augment its traditional grant funding approach in support of highly capital-intensive projects.

For its broader portfolio, ERA will undertake several initiatives to help organizations overcome barriers to scaling technology adoption. A priority is to complete a study to determine the gaps in commercialization and scale-up support.

In 2023-26, ERA will continue to convene the resources required to accelerate adoption of clean technology solutions. This includes enhanced communications, engagement, and strategic initiatives that support the Government of Alberta and industry in catalyzing funding in priority areas. This work is fundamental to achieving ERA's vision and supporting past and future investments.

ERA plans to continue working closely with the provincial and federal governments to create larger pools of capital to drive innovation and technology toward commercialization, scale up and adoption. ERA will strengthen its network of international partnerships to facilitate exporting Alberta technologies across the globe and demonstrating global technologies to enhance local industry performance. This will also provide opportunities for knowledge sharing and collaboration to accelerate innovation to tackle shared global challenges.

In 2023-26, ERA will increase awareness and share knowledge, successes, and stories from funded projects through a variety of events and communication channels to demonstrate that Alberta is delivering on the environmental and economic outcomes the world needs.

Ensuring responsible and effective stewardship of public funds requires ERA to track and report its performance metrics. ERA will further demonstrate to its stakeholders a clear line of sight between its funding, technology commercialization activities, GHG emissions reductions, and economic impact.

In all of this work, ERA remains committed to continuous improvement and ongoing operational improvements.



# BUSINESS PLAN AT-A-GLANCE

## STRATEGIC PRIORITY: ACCELERATE TECHNOLOGY

### OBJECTIVES

- + Identify high-potential opportunities and gaps where technology investment can provide maximum value in Alberta.
- + Attract projects through ERA's competitive Calls for Proposals and Continuous Intake Programming that support technologies and solutions to help Alberta achieve its climate outcomes.
- + Support efforts by Alberta's businesses to accelerate innovative clean technologies toward commercialization and deployment in Alberta.

### ACTIONS

- + Implement an investment strategy that is aligned with ERA's TRM, Government of Alberta priorities, and innovation needs.
- + Manage and invest in a balanced portfolio.
- + Identify solutions that reduce emissions for Alberta industries, build on our strengths, and help create new business opportunities.
- + Support innovative technology projects using competitive funding calls and Continuous Intake Programming.
- + Select and fund the highest potential opportunities using a rigorous and transparent process.

## STRATEGIC PRIORITY: DRIVE COMMERCIALIZATION

### OBJECTIVES

- + Increase commercialization and market adoption of emissions-reducing technologies.
- + Share technological learnings and project knowledge to accelerate commercial deployment of technologies.
- + Leverage investments to create larger pools of capital for innovation and technology.
- + Foster economic benefits (direct and indirect) in Alberta from projects funded by ERA, including measurable jobs, GDP creation in new and existing sectors, and economic diversification.

### ACTIONS

- + Convene ecosystem supports to uncover and address barriers to commercialization.
- + Act as a trusted advisor to provide strategic advice to stimulate adoption of cleantech solutions.
- + Deliver programming to support the market adoption of commercialized emissions-reducing technologies.

## STRATEGIC PRIORITY: MAXIMIZE IMPACT

### OBJECTIVES

- + Demonstrate ERA's contribution to provincial policy priorities, including emissions reduction and economic growth.
- + Promote widespread dissemination of knowledge and lessons learned from ERA-funded projects.
- + Increase awareness of ERA's role within the innovation system.
- + Support the Government of Alberta's objectives related to climate change.
- + Facilitate broader awareness of lessons learned and knowledge gained to support greater adoption and scale up of GHG reducing technologies.
- + Ensure efficient and effective use of public funds.

### ACTIONS

- + Increase stakeholder awareness and share knowledge, successes, and stories from funded projects.
- + Ensure ERA's success and lessons learned are a critical component of Alberta's environmental and economic impact reporting.
- + Strengthen ERA's performance management framework.



# 2.0 ABOUT ERA



## MANDATE

Reduce GHG emissions and grow Alberta's economy by accelerating the development and adoption of innovative technology solutions.

## VISION

Alberta has a diversified, net-zero economy with competitive industries that deliver sustainable environmental outcomes and attract investment.

## VALUE PROPOSITION

ERA invests proceeds from carbon pricing paid by TIER regulated facilities to reduce GHG emissions and strengthen the competitiveness of new and incumbent industries in Alberta. Our investments help innovators develop and demonstrate GHG-reducing technologies. These technologies will lower costs, improve competitiveness, and accelerate Alberta's transformation to a low emissions economy. ERA delivers results through a competitive, transparent, efficient, and outcomes-focused delivery model.

## TIER FUND

Since 2007, Alberta has had an industrial carbon pricing and emissions trading system. On January 1, 2023, the Government of Alberta introduced changes to its 2020 Technology Innovation and Emissions Reduction (TIER) regulation, increasing the stringency of targets and aligning

to the federal price on carbon. The updated TIER Regulation:

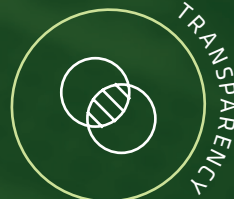
Reduced the opt-in threshold for emissions-intensive, trade-exposed industries from 10,000 tonnes to 2,000 tonnes of CO<sub>2</sub>e per year.

- + Imposed a two per cent tightening rate to facility-specific and high-performance benchmarks.
- + Reduced the current emissions performance credits and Offset expiry from 9- and 8-year periods to 5 years for those issued in 2023 or later.
- + Imposed credit use limits beginning at 60 per cent in 2023 and increasing by 10 per cent per year.

Under this emissions trading system, large emitters or facilities that have opted-in to the regulation in Alberta are required to meet GHG emission performance benchmarks. Regulated facilities can comply with these benchmarks by making on-site reductions, using emission performance credits from other facilities that have outperformed their benchmarks, using offset credits from prescribed emissions reduction activities outside of regulated facilities, or by paying into the TIER compliance fund.

Alberta is committed to maintaining jurisdiction over industrial carbon pricing, which includes increasing the fund price to align with the federal carbon price. The price of TIER fund credits have increased from \$30 per tonne in 2020, to \$65 per tonne in 2023, and are scheduled to reach \$170 per tonne by 2030. Over the past three years, more than \$1 billion from the TIER fund has been used to support innovative technologies that diversify Alberta's economy and cut emissions, with another \$700 million being invested over the next three years. ERA remains a key delivery agent responsible for reinvesting these funds into Alberta businesses.

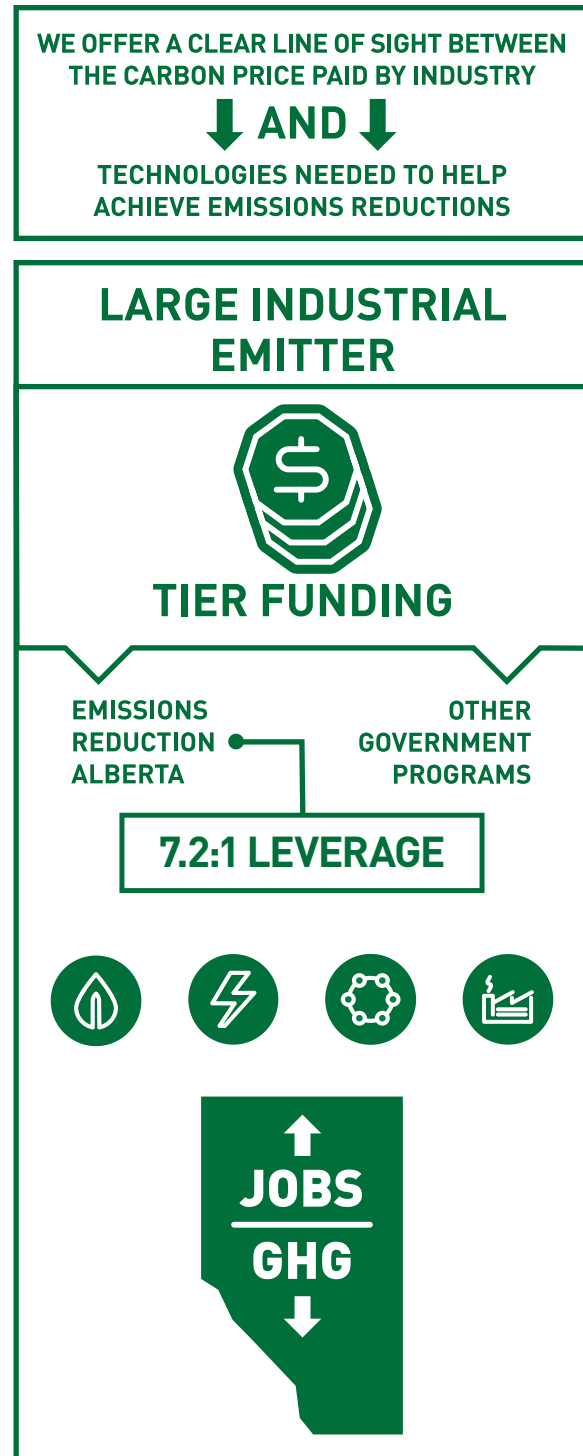
## CORE VALUES



# BUSINESS MODEL

While many jurisdictions have a mechanism to invest in clean technology, ERA's model is unique:

- + It offers a clear line of sight from the carbon price paid by industry, under the TIER regulation, to investment in the solutions needed to achieve GHG reductions.
- + Funding is directed at accelerating innovation toward commercial deployment and adoption by de-risking technology in the crucial pilot, demonstration, and first-of-kind deployment stages of development.
- + Non-dilutive\* grant funding allows ERA to reduce innovation risk with industry and private funders to accelerate the development of clean technologies.
- + Its Delegated Administrative Organization (DAO) structure means ERA has no annual investment caps, can fund multi-year projects, carry funding over from year-to-year, and reinvest funds when projects do not progress.
- + ERA requires 1:1 matching of its investments with private dollars. For projects funded to date, every dollar invested by ERA, \$7.20 has leveraged from public and private funders.



\*Non-dilutive funding is defined as funding that does not require companies to give up ownership or shares of the company or product.



# OUR IMPACT

## TECHNOLOGY INNOVATION

**\$855  
MILLION**  
TOTAL INVESTMENT



**245  
PROJECTS**

**\$7 BILLION**  
TOTAL PROJECT VALUE

**41**  
MILLION TONNES  
OF CUMULATIVE  
EMISSIONS  
REDUCTION  
BY 2030

**105**  
MILLION TONNES  
OF CUMULATIVE  
EMISSIONS  
REDUCTION  
BY 2050

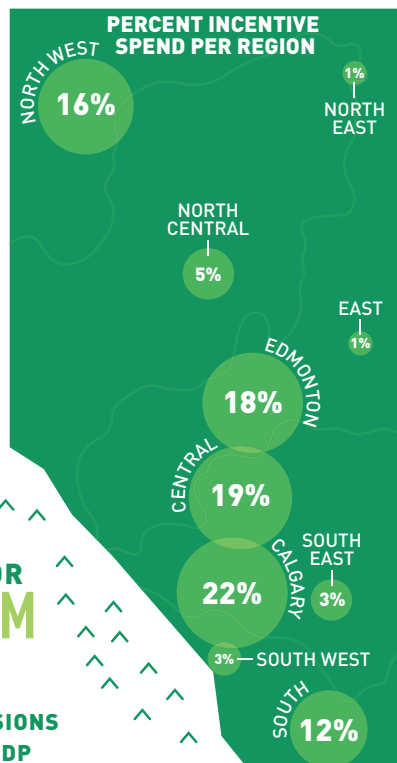
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**LEVERAGED  
FUNDING  
FROM PUBLIC  
AND PRIVATE  
INVESTORS**

## COMMERCIAL ADOPTION

**1812**  
AS OF  
FEBRUARY  
28, 2023

PROJECTS  
SUPPORTED  
THROUGH THE  
ENERGY SAVINGS  
FOR BUSINESS  
PORTFOLIO



## ENERGY SAVINGS FOR BUSINESS PROGRAM

INVESTED \$40.5 MILLION

CREATED 1,123 JOBS

REDUCED 3Mt OF LIFETIME EMISSIONS

CONTRIBUTED \$138 MILLION TO GDP

## ALL PROJECTS

**33,400**



PERSON-YEAR  
JOBS IN ALBERTA  
BY 2025

**\$4.9 BILLION**  
GDP IMPACT  
TO ALBERTA  
BY 2025

**OVER \$900M**  
NET ECONOMIC  
BENEFIT OF AVOIDED  
CLIMATE DAMAGES

# BOARD AND GOVERNANCE

ERA is a not-for-profit organization that reports to an independent Board of Directors. ERA remains accountable to the Government of Alberta through the TIER Fund Administration Regulation, a Memorandum of Understanding, and a Grant Agreement.

ERA's Grant Agreement with the Government of Alberta is in place until 2024. Through this accountability framework, ERA has two primary reporting requirements to the Department of Alberta Environment and Protected Areas:

- + Delivery of an annual rolling three-year business plan to highlight priorities and planned activities.
- + Completion of an annual report to highlight achievements and outcomes from each fiscal year.

The governance role of ERA's Board of Directors involves strategic planning, organizational oversight, risk management, standards of business conduct, and reporting to the Government of Alberta. The Board is responsible for seeking out highly qualified directors with diverse backgrounds to ensure fresh ideas and perspectives are shared and considered. The Board is also responsible for selecting and evaluating the performance of ERA's CEO in alignment with organizational goals.

ERA's Board of Directors makes the final investment decision on funded projects and provides advice to inform Alberta's overall efforts to achieve environmental and economic objectives. With highly accomplished backgrounds that include industry, government, academia, and the not-for-profit sector, ERA's Board provides tremendous expertise and leadership to the organization. The Board includes:

- + **CÉLINE BAK**
- + **VITTORIA BELLISSIMO**
- + **DAVE COLLYER** (*BOARD CHAIR*)
- + **JAMIE CURRAN**
- + **JOSEPH DOUCET** (*VICE-CHAIR*)
- + **JOHANNES DYRING**
- + **SARA HASTINGS-SIMON**
- + **CLIVE MATHER**
- + **DAVID MOSS**

In 2023, Joseph Doucet, Vice-Chair, will retire from his board role. Over the next year, ERA will recruit new directors.





Capital Power, Genesee Carbon Conversion Centre

## 3.0 DELIVERING ON STRATEGIC PRIORITIES

ERA has three strategic priorities to deliver on its mandate and vision for Alberta. These priorities serve as the framework for deliberate actions that ERA will operationalize over the next three years to deliver the technologies the province and the world needs.

1. **ACCELERATE TECHNOLOGY:** Invest in innovative technologies that help industries in Alberta achieve net-zero GHG emissions.
2. **DRIVE COMMERCIALIZATION:** Convene the right resources to accelerate adoption of technology solutions that lead to economic growth and GHG reductions in Alberta.
3. **MAXIMIZE IMPACT:** Maximize ERA's impact by sharing knowledge and lessons learned, and striving for operational excellence.

Delivery of these priorities is made possible through a Grant Agreement with the Government of Alberta. ERA has also received a funding commitment from the Federal Government



through the Low Carbon Economy Leadership Fund (LCELFF). This funding is supporting technology demonstration projects and ERA's Energy Savings for Business (ESB) suite of funding.

ERA has designed this Business Plan based on a commitment of future funding from the Government of Alberta. ERA is also strengthening its relationship with the Federal Government to leverage resources to maximize the impact of Alberta's investments. Both levels of government have provided input into ERA's Technology Roadmap (TRM), a supplement to the Business Plan that guides ERA's investment in the development of both short- and long-term technologies and solutions.

ERA's efficient and responsive business model allows for scalability and acceleration of the activities outlined in this plan. All actions can be expanded and enhanced to yield broader and deeper benefits should additional dollars become available. In 2023-26, ERA will explore additional funding or financing mechanisms to augment its traditional grant funding approach. Such mechanisms could enable ERA to catalyze highly capital-intensive projects while balancing the risks associated with larger investment dollars.

## 89% of key stakeholders support ERA's mandate.

ENMAX, E-Fleet Pilot





# 3.1 ACCELERATE TECHNOLOGY

Invest in innovative technologies that help industries in Alberta achieve net-zero GHG emissions.

## OBJECTIVES

- + Identify high-potential opportunities and gaps where technology investment can provide maximum value in Alberta.
- + Attract projects through ERA's competitive Calls for Proposals and Continuous Intake Programming that support technologies and solutions to help Alberta achieve its climate outcomes.
- + Support efforts by Alberta's businesses to accelerate innovative clean technologies toward commercialization and deployment in Alberta.

## IMPACTS

- + Accelerated advancement of bold clean technology solutions that can drive toward net-zero GHG emissions in Alberta.
- + Made-in-Alberta innovation that can be exported across Canada and globally.
- + Strong suite of technology options for Alberta's industries to achieve net-zero commitments.
- + Increased employment and investment attraction in Alberta's clean technology sectors.
- + Improved ESG outcomes.

## KEY INDICATORS

- + Total project investment and total dollars invested in Alberta.
- + Technology Readiness Level (TRL) progression.
- + Direct, market, and enabled GHG reductions.
- + Jobs created in Alberta.
- + Measurable non-GHG environmental, social, and other benefits in Alberta.

## ACTION 1

### Implement an investment strategy that is aligned with ERA's TRM, Government of Alberta priorities, and innovation needs

ERA's investments are guided by its TRM—a living document that ensures the organization remains responsive to the evolving needs of Alberta's industries and innovators within a changing global context. In June 2022, ERA published the fourth edition of its TRM to focus on technologies that can be adapted and deployed across numerous industrial operations. The TRM was informed and

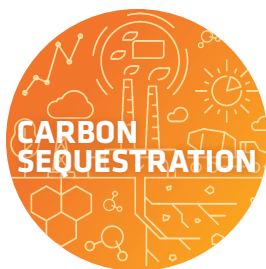
validated by several engagement sessions with relevant thought leaders across Canada. ERA's TRM identifies the critical innovation pathways, timescales to technology deployment, challenges to adoption, and tactical opportunities to deliver on this outcome while supporting Alberta's job creation and diversification imperatives.

ERA's TRM identifies five technology investment areas that have been chosen based on planning considerations, engagement, and research into technology needs of the future. These focus areas consider GHG reduction potential, economic benefit for the province, and timescales to ensure ERA is investing in the optimal short-, medium-, and long-term technologies that realize environmental and economic objectives. These focus areas are designed to be complementary, supporting existing and emerging sectors across Alberta.

GHGSat, Satellite-Aircraft Hybrid Detection and Quantification of Methane Emissions







Technologies and solutions that provide the means to capture, sequester, and permanently store carbon dioxide, including capture from industrial or diffuse sources and sequestration through biological processes and natural systems.



Technologies that minimize emissions at the point of energy end-use through production of renewable electricity, clean heat, low-GHG fuels, and energy carriers. This includes hydrogen and novel next-generation biofuels to increase the supply of clean energies coupled with fuel switching and electrification solutions to create and expand markets for low-carbon energy.



Scaling and deploying near-commercial technologies to optimize processes, enhance energy management, and improve building energy performance for a wide range of residential, commercial, institutional, agricultural, and industrial energy consumers.



Emerging solutions to accelerate Alberta's transformation to a low-carbon economy by implementing new products and processes within existing industries, mitigating fugitive emissions, and developing new high-value opportunities such as bitumen beyond combustion, advanced materials, and energy minerals.



Technology solutions to improve the value of products in Alberta and keep resources circulating for longer, helping Alberta to become a leader in new low-carbon materials, critical energy minerals, and waste-to-value-added products.

ERA will continue to take a balanced approach to investing in innovation. This includes continued support for technologies and solutions for existing industries in their pursuit of net-zero GHG emissions. It also includes seeking technology opportunities for new low-emissions economic

activities that remain critical to continued economic prosperity and achieving long-term climate commitments.



Canadian Pacific, Hydrogen Locomotive Program

## ACTION 2

### Manage and invest in a balanced portfolio

Local and global analyses have demonstrated the need for both implementation of near-term deployable solutions and the development of long-term transformative solutions. Furthermore, to ensure a resilient transformation to a low or net-zero emissions future, all of Alberta's emissions-intensive industries will need to take action. Additionally, a multitude of technology solutions will need to be explored within and across industries due to the breadth of GHG challenges and the inherent risk involved in technology innovation. Guided by ERA's TRM, ERA will deliberately invest in a balanced portfolio across timescales, technology readiness levels, industries, and technology pathways when designing funding calls, seeking solutions through the Continuous Intake Programming, and continuing to deliver the ESB suite of funding. ERA will track the total project investments and total dollars invested in Alberta. In 2023-2026, ERA will

continue to work closely with the Provincial and Federal Governments to monitor policy changes, priorities, and funding that could necessitate adjustment to ERA's investment focus and portfolio mix.

In 2022, ERA engaged a diverse set of partners including financial institutions, public innovation funders, post-secondary institutions, and investors to assess significant challenges and gaps in the funding system. This has informed ERA's strategy and we collaborate with our partner organizations to further optimize financial tools that ensure projects are successfully completed.





Stephanie Voysey, Head of Sustainability and Environment for Western Canada, Lafarge

## ACTION 3

### **Identify solutions that reduce emissions for Alberta industries, build on our strengths, and help create new business opportunities**

ERA is committed to seeking out and investing in emerging technologies that can be developed in Alberta and deployed globally. In 2023-2026, ERA will continue to enhance its technology scouting capacity by leveraging its Trusted Partner network, engaging with innovators to learn more about how they are applying their local expertise to solving climate challenges here in Alberta and around the world.

ERA embraces the philosophy that good ideas can come from anywhere. ERA will engage with innovators and thought leaders from around the globe, bringing the best ideas to Alberta for environmental and economic benefits. ERA's broad network of provincial, national, and international partners provides the opportunity to identify shared challenges, become aware of leveraging opportunities, and tap into global innovation activity.

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**ERA-funded projects are estimated to deliver cumulative GHG reductions of 41 million tonnes by 2030 and 105 million tonnes by 2050.**





Calgary Aggregate Recycling, Soil Reuse Facility Expansion

## ACTION 4

### Support innovative technology projects using competitive funding calls and continuous intake programming

ERA's funding is delivered through targeted, competitive funding challenges and Continuous Intake Programming. Accelerating and de-risking later-stage GHG-reducing technologies requires significant capital investment. ERA's processes and systems are well-regarded and designed to fill a significant need for de-risking technologies that have been proven in concept and prototype and need to be scaled-up for field piloting, demonstration, and first-of-kind commercial deployment.

On November 14, 2022, ERA launched the \$50 million Industrial Transformation Challenge with projects to be selected in 2023. This funding focuses on technology solutions for achieving net-zero emissions that are not currently in widespread commercial use. The Challenge aims to unlock the potential for step-change emissions

benefits across Alberta's industrial sector to secure the competitiveness of existing and new industries. ERA will measure the success of this challenge, and new challenges launched in the next three years, by several metrics including the number of jobs created, non-GHG environmental, social, and other benefits in Alberta.

In 2023-26, ERA will continue to support the acceleration of innovative, GHG-reducing technologies that address industry needs and have them progress along the Technology Readiness Level (TRL) scale. ERA has identified specific focus areas that align with the TRL and that are informed by government, industry, and innovator priorities through engagement activities held in 2022-23.

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**82% of ERA-funded projects have made greater than or equal to 1 TRL progression.**

## FUNDING COMPETITION FOCUS AREAS

**ERA understands that technology investment across multiple focus areas and industries is needed to chart a trajectory toward net-zero GHG emissions in Alberta. The following potential funding areas have been identified as near-term opportunities to align with this trajectory.**

### RESHAPING ENERGY SYSTEMS

Achieving long-term net-zero GHG emissions will require technology and innovation to change the way energy is managed and used in Alberta. Pathways to net-zero will require efficient and reliable systems to deliver and manage increasing volumes of clean energy. Currently, Alberta's transmission and distribution systems represent significant legacy assets with high upfront capital construction costs and significant regulatory oversight. These barriers can limit the ability to pilot or adopt new technologies that could enable a more modern grid, capable of meeting shifting consumer demands.

Commercial and industrial buildings, which form part of Alberta's energy systems, will also need novel approaches and tangible demonstrations for achieving net-zero GHG emissions. Integrating digital technologies such as data-based optimization will play an important role in fostering collaboration across utilities, transmission and distribution operators, and end users for more efficient energy end-use and demand response.

Technologies and solutions arising from this funding opportunity will help Alberta's energy systems transition towards a net-zero-ready configuration, support further adoption of cleaner forms of generation, smarter and more efficient energy use, and increase consumer access to net-zero energy carriers to fuel their daily activities.

### FUELS OF THE FUTURE

In 2022, the International Energy Agency's (IEA) annual World Energy Outlook forecasted the need for countries to secure fuel supplies, including liquid hydrocarbons for transport, petrochemical feedstock, energy for electricity generation, and other uses. These products have an unrivalled energy density and are easy to transport, making them an ideal means to carry and store energy. However, these fuels represent a significant portion of global and local GHG emissions. While alternatives are being developed for current uses such as electrification in passenger cars, liquid hydrocarbons remain difficult to replace in heavy-duty and marine transport, aviation, and as a feedstock for the petrochemical industry.

Alberta can be a leader in the production of low- to zero-emissions fuels by capitalizing on its current industries, infrastructure, and resource base. However, challenges such as adequate feedstock and high capital cost of plant construction remain. Development of new, transformative technology for low-GHG fuels and energy carriers will improve the diversity and resilience of Alberta's economy and provide flexibility for fuel switching. This includes fuels that will play a critical role in achieving a net-zero GHG future such as biofuels, renewable natural gas, renewable electricity, nuclear, and hydrogen.

While significant commercial success has been achieved locally and globally, opportunities exist for transformative innovation, step-change improvements, and critical technology enablers to reduce costs and meet future demands for these fuels. ERA will work with the Government of Canada to understand the implications and opportunities presented by the Clean Fuel Regulations when designing a funding competition related to Fuels of the Future. ERA will focus on bold new innovations in low- to zero-emitting fuels to ensure a suite of economically competitive fuels are available to meet growing demand.



## HYDROGEN DEPLOYMENT

ERA has invested more than \$60 million in hydrogen projects because it is recognized locally and globally as a promising fuel for achieving net zero. Efforts are increasing around the world, and in Alberta specifically, to advance and demonstrate low-carbon hydrogen production from both renewable and non-renewable resources. Alberta remains one of the lowest-cost producers of hydrogen, which is why innovation partners are advancing infrastructure and end-use efforts in parallel. However, to avoid stalled and siloed assets, and falling behind in the global race for widespread hydrogen deployment, ERA must build on the momentum already created from previous investments.

Significant technology opportunities and challenges exist across the hydrogen value chain, from production to storage to transport, to understanding equipment upgrade requirements and pilot support, to effective use of low-GHG hydrogen. While ERA remains a technology de-risker in the higher TRL stages, a more concerted, aligned effort is required from all stakeholders. ERA is exploring co-funding opportunities with Alberta Innovates across a broad range of TRL stages (3-9). Earlier-stage opportunities will be funded through Alberta Innovates and the Hydrogen Centre of Excellence (HCOE), and higher TRL opportunities through ERA.

ERA will work with its partners to ensure a healthy pipeline of low-GHG hydrogen technologies across the value chain and will support high-potential innovation at the stages of technology scale-up and large-scale demonstration.

## BUILDINGS OF THE FUTURE

According to the Canadian Climate Institute, 70 per cent of all buildings standing today will still be in use in 2050. With buildings being the fourth-largest sector of emissions in the province, making up 23Mt, or 8 per cent of Alberta's GHG emissions profile, there is a significant opportunity for ERA support.

While many technologies exist today, there are significant systems integration, technical, and business case challenges preventing early adoption of deep energy and emissions reductions technology in the building sector. ERA will aim to de-risk and reduce these barriers by seeking out technologies and integrated solutions necessary to build or retrofit large commercial and light industrial buildings. Leveraging existing federal initiatives, such as the Net Zero Accelerator Fund and the Net-Zero Challenge, will further incentivize property owners to participate. Throughout 2023-2026, ERA will continue working to design a program that supports zero emission technology demonstrations in commercial and light industrial buildings.

## ADVANCED MATERIALS

While much attention and effort has been directed at developing future energy systems, advanced new materials will also be required to facilitate a net-zero economy. For example, lighter, stronger, and less GHG-intensive construction materials will be necessary for infrastructure. Alberta has a tremendous opportunity to lead the development of novel materials that will pave the way to a sustainable future. However, these industries are nascent in the province and are at a critical stage where funding support can significantly accelerate development and commercialization prospects.

For example, Alberta's existing materials manufacturing industries are poised to demonstrate and implement transformative processes that continue to provide high-quality materials with lower embodied GHG emissions. Significant efforts are also underway to utilize existing infrastructure and expertise to develop new materials such as non-combustion products from Alberta's bitumen resources, high-value metals (such as zirconium, titanium and lithium) found in trace amounts within Alberta's natural resources, and carbon-based materials from carbon dioxide utilization. These materials can facilitate technology such as advanced battery and fuel cell development, as well as lighter and more durable products used in everyday life. Waste materials and process streams represent an opportunity for production of valuable materials. ERA will seek out innovative technology solutions to accelerate the demonstration and commercialization of advanced materials, and their use within industrial infrastructure with significant potential for facilitating a net-zero economy.

## NEXT GENERATION CARBON CAPTURE

ERA has provided more than \$160 million toward CCUS projects. ERA was an early investor in innovative CO<sub>2</sub> utilization through its Grand Challenge: Innovative Carbon Uses and has remained committed to accelerating development of this technology through its most recent investment in the Carbon Capture Kickstart: Design and Engineering funding call.

The most significant challenge to long-term viability of CCUS is financial feasibility. A key question remains: how will the carbon captured get stored or used and what will ensure revenue stability? To address this, ERA will explore technology options beyond traditional, commercially-available amine processes. ERA will focus on next generation carbon capture technology that improves the performance and reduces the cost of capturing CO<sub>2</sub>, particularly from lower-concentration sources, like natural-gas combined cycle electricity generation plants.

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**“Funding from the Government of Alberta offered through ERA is fundamental to achieving ambitious sustainability goals the world demands, while also providing Alberta industries an advantage to remain competitive in a global economy.”**

**Brad Kohl**

President and CEO, Lafarge Western Canada



## CONTINUOUS INTAKE PROGRAMMING

While most of ERA's funding is distributed through its competitive Call for Proposals process, ERA also considers projects through its Continuous Intake Programming. These funding initiatives allow ERA to remain nimble in addressing gaps to ensure high-potential and strategically important projects can be evaluated outside of the Call for Proposals cycle.

### PARTNERSHIP INTAKE PROGRAM

The Partnership Intake Program accelerates innovation and maximizes impact by leveraging funds, coordinating investment priorities, and reducing administrative burden for project proponents. It also allows ERA to work with other funders to accelerate technology development.

The program has been an effective tool for capturing opportunities that might otherwise be missed. In 2023, ERA will streamline the application process, expand eligibility, and work to proactively identify high-impact projects beyond those identified in the near-term funding competitions outlined in this Business Plan.

The Partnership Intake Program has been based on co-funding with organizations that meet ERA's definition of Trusted Partner. Trusted Partners are like-minded funding organizations with rigorous, fair, and transparent due diligence processes.

In 2023-26, ERA will leverage its existing partnerships and seek out new, value-add partners that can help advance critical technologies for Alberta. ERA has active Trusted Partner relationships with the following organizations:



Natural Resources  
Canada

Ressources naturelles  
Canada



UNIVERSITY  
OF ALBERTA

(through the Canada First Research Excellence Fund)



UNIVERSITY OF  
CALGARY

(through the Canada First Research Excellence Fund)



SUSTAINABLE DEVELOPMENT  
TECHNOLOGY CANADA  
TECHNOLOGIES DU DÉVELOPPEMENT  
DURABLE CANADA



PrairiesCan



EDC



NGIF

NATURAL GAS INNOVATION FUND  
GAZ NATUREL FINANCEMENT INNOVATION



evok  
INNOVATIONS



PRIZE®



AVATAR  
INNOVATIONS



PLUGANDPLAY

## ACTION 5

### Select and fund the highest potential opportunities using a rigorous and transparent process

All of ERA's technology acceleration investments are assessed against a set of transparent criteria and undergo a rigorous due diligence process to select projects that best deliver on ERA's mandate, TRM, and Business Plan. In general, ERA relies on a two-stage evaluation process in its Calls for Proposals, followed by a detailed project execution process to ensure funds are invested prudently. This evaluation process involves oversight by an independent Fairness Monitor who ensures all applicants are treated in

a fair and impartial manner. The Fairness Monitor reports directly to ERA's Board of Directors and shares findings before any funding decisions are made. Project proposals are evaluated on criteria such as the GHG reductions, other environmental and economic benefits, market potential, technology innovation, project readiness, work plan, budget, and project team expertise.



Note: ERA's ESB Program follows a different process using eligibility criteria. The ESB Program and its funding streams utilize processes designed to achieve the outcomes of the program. More details about the specific processes used within the ESB program can be found on ERA's website at [eralberta.ca](http://eralberta.ca).



## 3.2 DRIVE COMMERCIALIZATION

Convene the right resources to accelerate adoption of technology solutions that lead to economic growth and GHG reductions in Alberta.

### OBJECTIVES

- + Increase commercialization and market adoption of emissions-reducing technologies.
- + Share technological learnings and project knowledge to accelerate commercial deployment of technologies.
- + Leverage investments to create larger pools of capital for innovation and technology.
- + Foster economic benefits (direct and indirect) in Alberta from projects funded by ERA, including measurable jobs, GDP creation in new and existing sectors, and economic diversification.

### IMPACTS

- + Accelerated commercialization and adoption of Alberta-based clean technologies within Alberta, across Canada, and around the world.
- + Increased economic competitiveness, growth, and diversification through existing and new industries.
- + Successful and profitable Alberta-based companies.
- + Measurable transformation toward a net-zero GHG economy.

### KEY INDICATORS

- + Technology investment.
- + GDP impact.
- + Job creation.
- + Completed projects continuing toward commercialization.
- + Support for small and medium-sized enterprises.
- + Collaborative partnerships.



Circular Rubber Technologies, Rubber Reclaim

## ACTION 1

### Convene ecosystem supports to uncover and address barriers to commercialization

Beyond funding, innovators face challenges that hinder technology advancement and adoption by industry. Public funding is critical for accelerating new technologies, yet it is not enough to carry innovation through to commercialization. Addressing gaps requires an all-hands-on-deck approach, with government and industry sitting at the same table.

In 2023-26, ERA will continue to work with government, innovators, ecosystem partners, and Alberta's industries to help address gaps and bring new technologies and solutions to market. ERA will also increase the frequency of engagement with accelerators, industry, innovation networks, industry alliances, and post-secondary institutions.

### STRATEGIC INNOVATION FUND – NET-ZERO ACCELERATOR

ERA will continue to strengthen partnerships with federal departments and organizations to maximize the impact and benefits to Alberta from federal investments. For example, the federal department of Innovation, Science and Economic Development (ISED) manages the Strategic Innovation Fund Net-Zero Accelerator (SIF-NZA), an \$8 billion fund focused on decarbonizing high-emitting sectors. Since 2021, ERA has been part of a federal-provincial working group that has supported the SIF-NZA.

In 2023-26, ERA will continue working with ISED and other federal ministries to better leverage our funding to support large-scale, innovative, and GHG-reducing projects that can also receive federal climate funding. This will include streamlining processes to identify new investments.



## NATIONAL AND PROVINCIAL ECOSYSTEM PARTNERSHIPS

ERA actively pursues opportunities to support innovators on their path to commercialization. In 2023-26, ERA will build a broader suite of partnerships along the innovation continuum. This will enhance ERA's role as a convener in connecting innovators to the right resources based on their technology's maturity. It will also allow ERA to gain broader knowledge of high-potential technologies as they progress toward the scale-up and demonstration stages.

ERA will continue to work with business support service providers such as Plug & Play, Avatar Innovations, Platform Calgary, Edmonton Unlimited, and Alberta Innovates to help ensure entrepreneurs and innovators have the business capacity and skills to advance their innovation toward commercialization.

## INTERNATIONAL PARTNERSHIPS

Reaching net-zero will require international collaboration as emissions reduction targets and nationally determined contributions become more aggressive. ERA is focused on strengthening its network of international partnerships to facilitate exporting local technologies across the globe and importing global technologies to enhance local industries.

ERA will continue working with provincial and federal government partners such as Invest Alberta and Invest in Canada to develop international networks that increase awareness and impact of ERA's portfolio of projects. Through its international partnership with Accelerating CCS Technologies (ACT), ERA will pursue innovative CCS projects. Most recently, through the \$19 million ACT4 Call, ERA sought CCUS technologies with strong potential for commercialization in Alberta. Applications closed in September 2022 and new projects will be announced in 2023.

ERA will also work with the Clean Energy Transition Partnerships (CETP), a transnational initiative for joint research, technological development, and innovation (RTDI) programing to boost and accelerate the energy transition. CETP collaborates with funding partners within and beyond Europe to broaden knowledge and introduce European solutions and stakeholders to global value chains. In January 2022, ERA joined CETP and participated in its first co-funded opportunity: Joint Call 2022. The initiative enables 50 national and regional funding partners from 30 countries to align on priorities, pool budgets for two joint calls in 2022 and 2023, and implement annual calls until 2027. For Joint Call 2022, ERA focused on advancing technology solutions for renewable fuels and hydrogen, as well as CCUS, with strong potential for commercialization in Alberta. Although the first competition did not result in projects for ERA to fund, ERA will continue to collaborate with CETP to seek out opportunities in the CETP focus areas.

In addition to partnering on funding programs, participating in international events such as United Nations' Conference of the Parties (COP) and Climate Week NYC, along with hosting international experts at virtual events, ERA will continue to uncover new opportunities, establish new partnerships to leverage funding, share knowledge and help support important industrial projects like CCUS to final investment decision (FID).

## INNOVATOR SUPPORT PROGRAM

In 2020, ERA launched the Innovator Support Pilot program to help reduce barriers to funding technology by helping small- and medium-sized enterprises strengthen their business strategies. The success of this pilot program led ERA to explore adding this program as a regular offering alongside its traditional Call for Proposals funding process.

In 2023-26, ERA will work with innovation system service providers to help strengthen elements critical to business success such as organizational strategy and governance, technology and commercial readiness strategy, financial planning, marketing, and customer attraction. By providing a subset of recipients and unsuccessful ERA call applicants with additional support to create more fundable companies, these promising technologies have a higher chance of commercial success.

## BARRIERS TO COMMERCIALIZATION

There are several innovation ecosystem supports for clean technology in Alberta, yet technology leaders still face barriers to commercialization. In 2023-26, ERA will undertake several initiatives to help organizations overcome barriers to scaling technology adoption.

A priority is to complete a study to help inform the common gaps in commercialization and scale-up support. This will provide insight into any notable trends in barriers and success criteria relevant to Alberta's current and future industries. This project will also help ERA identify the relevant partner organizations that are best suited to develop new innovator support programs.

LanzaTech, Carbon Sequestration via Next-Generation Bioreactor Technology





# HYDROGEN ECOSYSTEM SUPPORTS

In September 2021, the Government of Alberta published its Hydrogen Roadmap which outlines seven policy pillars to reach clean hydrogen integration in Alberta's domestic energy system and become a reliable exporter of hydrogen by 2030. It also completed engagement to update the Gas Utilities Act and the Gas Distribution Act to facilitate adoption of hydrogen blending. In 2021, ERA invested in the Edmonton Region Hydrogen Hub (the Hub), which was established to kickstart the region's hydrogen economy and ensure long-term economic competitiveness. The investment in the Hub developed data resources for industry and investment attraction that is valued by industry associations, academia, production,

and transportation. ERA has also invested in several hydrogen projects, including \$15 million in Air Product's new Net-zero Hydrogen Energy Complex, \$7 million in the Alberta Zero Emissions Truck Electrification program, and almost \$5 million in the two-hydrogen fuel cell electric buses currently in road trials in Edmonton and Strathcona County.

The Hydrogen Centre of Excellence (HCOE), supported by the Government of Alberta and led by Alberta Innovates, was launched in 2022 to accelerate Alberta's hydrogen economy. ERA is a co-chair on the Steering Committee for HCOE. ERA will continue to support the drive to commercialization and the development of highly connected hydrogen hubs.

To round out the portfolio, ERA's investment into Canadian Pacific Railway's Hydrogen Locomotive Program in 2020 has led to hydrogen-powered locomotives demonstrated in real-world commercial uses.

# CCUS SUPPORTS

Since inception, ERA has dedicated nearly \$80 million to carbon sequestration projects alone, and another \$70 million toward advancing CCUS, including \$30 million through its Grand Challenge and \$40 million through its Carbon Capture Kickstart. For 10 years, ERA has believed in CCUS technologies for reaching environmental and economic outcomes and ERA remains committed to helping scale high-potential opportunities. To amplify ERA's investments and promote CCUS project advancement, ERA formed a partnership in 2023 with the International CCS Knowledge Centre. A community of practice was formed with leading executives across the province, the country and the globe to bring these projects closer to a final investment decision. Moving forward, ERA will continue supporting this initiative and others to rapidly advance and scale the technologies invested in today, to support global needs in 2050 and beyond.





eCAMILION, Demonstration of Battery-Based Bus Charging Routes

## ACTION 2

### Act as a trusted advisor to provide strategic advice to stimulate adoption of cleantech solutions

For a technology to reach commercialization, the right market, policy, and regulatory conditions must exist. Mechanisms such as Alberta's TIER regulation can spur the advancement and uptake of technologies that achieve desired environmental outcomes while growing the economy. Policy and regulatory predictability are often a key consideration for companies developing or investing in clean technology and remains a barrier to the development of some technologies that will be required on the pathway to net-zero.

ERA plays an important role in understanding the regulatory and policy barriers faced by innovators in Alberta and brings this insight to government through its work as a trusted advisor and through policy collaboratives. ERA also works with stakeholders across the innovation ecosystem to provide advice that helps ensure new policy and regulation enables innovation and technology deployment.

Alignment with provincial and federal policy outcomes is essential to ERA's success. Funding initiatives are designed in collaboration with regulators and policy makers to complement and enhance the effect of policy and regulatory drivers. In 2023-26, ERA will identify synergies with provincial and federal priorities and continue working with the Governments of Alberta and Canada to leverage TIER funds alongside federal initiatives to advance green technologies.

## ACTION 3

### Deliver programming to support the market adoption of commercialized emissions-reducing technologies

ERA will continue accepting applications for its ESB suite of funding into the fall of 2023.

This \$55 million funding opportunity supports cost-saving and emissions-reducing projects at small- and medium-scale industrial and commercial facilities. This program is helping Alberta businesses grow their operations and become more competitive, while creating skilled jobs and boosting economic recovery. The program is forecasting full subscription through its three streams and is anticipated to achieve or exceed its impact targets: GHG reductions of 2.6 million tonnes of CO<sub>2</sub>e; creation of approximately 1,400 jobs (direct and indirect); and driving an estimated \$300 million in economic activity.

In 2022, ERA expanded the scope of the ESB Program to enable support for a wider range of participants and project types through three streams:

- + Expanded Technologies Pilot (ETP) is a pathway for participants to apply with effective, commercially available technologies not currently supported through ESB. Through the pilot, ERA can fund the project and better understand the technology's performance, market potential, and how it could be best supported in future initiatives.

- + Comprehensive Energy Savings (CES) aims to support comprehensive retrofits and upgrades that reduce GHG emissions and energy usage; reduce facility operating costs, maintenance requirements and environmental footprint; and increase the value and efficiency of buildings while creating a comfortable space for occupants.
- + Small Producer Energy Efficiency Deployment (SPEED) focused on accelerating implementation of commercially available technology upgrades in small- and medium-sized oil and gas facilities. The SPEED application window is now closed, and all all project funding decisions have been made.

All projects funded under the ESB Program are expected to be completed by 2024.

### STRATEGIC ENERGY MANAGEMENT

In 2023-26, ERA will continue to explore opportunities to engage Alberta's leading companies in a hands-on educational program that drives corporate culture toward identifying and implementing cost-effective energy savings practices through the Strategic Energy Management (SEM) program. SEM will build lasting institutional competencies that enable companies to plan and implement continuous operational efficiency improvements, large capital projects, and develop long-term emissions reduction strategies necessary to meet future goals. By focusing on corporate leadership, these benefits can expand across the corporate structure and contribute to capacity-building opportunities and developing industry best practices.

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**More than 60 unique commercial technologies are supported by the ESB portfolio.**



## 3.3 MAXIMIZE IMPACT

Maximize ERA's impact beyond technology support by sharing knowledge, promoting lessons learned and striving for operational excellence.

### OBJECTIVES

- + Demonstrate ERA's contribution to provincial policy priorities, including emissions reduction and economic growth.
- + Promote widespread dissemination of knowledge and lessons learned from ERA-funded projects.
- + Increase awareness of ERA's role within the innovation system.
- + Support the Government of Alberta's objectives related to climate change.
- + Facilitate broader awareness of lessons learned and knowledge gained to support greater adoption and scale up of GHG reducing technologies.
- + Ensure efficient and effective use of public funds.

### IMPACTS

- + Widespread knowledge of ERA-supported technologies among innovation ecosystem stakeholders.
- + Incorporation of project learnings into future implementation and projects across the province.
- + Increased recognition of Alberta as an innovation and clean technology leader, strong environmental steward, and globally competitive clean investment destination.
- + Trusted Partners and stakeholders understand and champion ERA's processes, role, and impact.

### KEY INDICATORS

- + Stakeholder awareness and collaborative partnerships.
- + Follow-on business from engagement with proponents.
- + Operating costs as a percentage of approved project commitments.
- + Length of ERA intake, decision-making, and contracting cycle.
- + Leveraged investment.
- + Return on investment.
- + Projects supporting global sustainable development goals.





Amanda Hehr, President, Sunterra Farms Greenhouse

## ACTION 1

### **Increase stakeholder awareness and share knowledge, successes, and stories from funded projects**

ERA is in a unique position to show the world that Alberta is taking real action to deliver the environmental and economic outcomes the world needs. Through a variety of events and communication channels, ERA raises awareness of the organization's vision, mandate and value proposition to maximize the impact of its investments. These communication efforts will increase in 2023-26 to help raise the profile of Alberta's emissions reduction successes and showcase Alberta as a place for clean technology investment. ERA will deploy a variety of tactics to amplify project outcomes to provincial, national and international audiences to drive future investment in technologies that benefit Alberta and beyond.

### **HOST AND PARTICIPATE IN STRATEGIC EVENTS, WORKSHOPS, AND CONFERENCES**

ERA will help prepare, plan, program, and promote the 17th International Greenhouse Gas Control Technologies (GHGT-17) conference to be held in Calgary in October 2024. The GHGT conference series was initiated in 1997 by the International Energy Agency's Greenhouse Gas R&D Programme (IEAGHG). The biennial event has established itself as the principal and largest international conference on CCUS technologies, historically attracting over 1,000 participants from more than 40 countries. It will include visits across the province to industrial sites and bring CCUS thought leaders from around the world to Alberta. ERA was named as co-host of this event in the fall of 2022.

**ERA will also:**

- + Actively participate and host side events at Climate Week NYC, World Petroleum Congress and COP28 in the United Arab Emirates.
- + Host two Lessons Learned Workshops each year to accelerate technology adoption by sharing insights from project proponents and industry leaders.
- + Continue its SPARK Speaker Series and Carbon Copy podcasts featuring thought leaders from a variety of industries to share their insights, ideas, and experiences to spark innovation.
- + Provide thought leaders who can speak at externally hosted innovation and sustainability events focused on raising awareness of emissions-reducing technology trends and projects.
- + Attend and participate in events and webinars to raise awareness of ERA's outcomes, mandate and funding opportunities.

Participating in events that bring cleantech researchers and innovators together with representatives from the business community, government, and the innovation system will help inspire and accelerate Alberta's transformation to a low emissions economy. Leveraging connections with industry and government influencers in this way builds upon ERA's credibility as a convener across the innovation system, and as an accelerator of commercialization and adoption for GHG-reducing technologies.

**IMPACT STORIES**

Impact stories inspire innovation and reinforce that Alberta is a leader in technology development. In 2023-26, ERA will continue to deliver a story-based content strategy across communication platforms (website, social media, newsletter, YouTube, Spotify, Apple, Google, etc.). These impact stories will also be used in speeches, presentations, stakeholder updates, internal communications, and more. They will focus on projects in ERA's funding portfolio of new and completed projects, technology areas outlined in the Technology Roadmap, and feature industry and innovator thought leaders.

**To grow its audience and increase awareness of ERA's impact in 2023 and beyond, ERA will:**

- + Increase the frequency of Carbon Copy and collaborate with other podcast hosts to share ERA stories.
- + Proactively distribute all content produced by the organization to its Trusted Partner network.
- + Leverage sponsored content or boosted posts to share stories with a wider audience.
- + Drive an increase in users to the ERA website and social media accounts where users will be directed to apply for funding, attend events, and subscribe to ERA's newsletter.



## SECURING MEDIA COVERAGE

ERA will continue to pursue earned media coverage by top tier news organizations at both the provincial, national, and international level. The organization will capitalize on its relationships with industry magazines and non-traditional media partners to encourage the reproduction of ERA content.

**In 2023-26, this will involve:**

- + More emphasis on generating media coverage to share the Alberta clean technology story. This approach reinforces the action Alberta has taken to address climate change.
- + Development of new communications tools and resources to help funded projects share and promote their project through news releases, media interviews, announcements, presentations, and publications.
- + Offering project proponents a media-training and storytelling workshop to enable organizations to tell their own stories and speak to the value of ERA's support.
- + Working more closely with projects proponents and partners on their media relations activities so that ERA investments are amplified.

## ACTION 2

### Ensure ERA's success and lessons learned are a critical component of Alberta's environmental and economic impact reporting

In 2023-26, ERA will continue to offer the Government of Alberta opportunities to leverage ERA's investments and successes. ERA communication assets will be shared with government departments and relevant agencies.

#### GOVERNMENT OF ALBERTA PARTICIPATION IN FUNDING ANNOUNCEMENTS

As an enabler of the province's strategic communications outcomes, objectives, and activities, ERA will continue to ensure its funding launches and project announcements are made in partnership with the Government of Alberta. This includes in-person or digital media events with participation from the appropriate Minister(s) and, where possible, the Premier of Alberta. It also includes a corresponding news release from the Government of Alberta. ERA will work with the Government of Alberta to ensure industry and innovator stakeholders participate in these announcements and provide validator quotes for news releases.

ERA shares regular briefings on project progress with the communications team at Alberta Environment and Protected Areas and other ministries when appropriate. Government of Alberta and Government of Canada senior officials, departments, and agencies are also provided with relevant and timely information about ERA's unique value proposition, impact stories, and investment impacts related to GHG reductions and economic growth.

**Beyond regular briefings on projects, ERA will continue to produce and share its:**

- + TRM as a guide to achieving net-zero.
- + Business Plan to outline its strategy and focus areas for future investment.
- + Quarterly Stewardship Report to demonstrate ongoing transparency for TIER investments.
- + Annual Report to showcase the impact of investments each year.

## ACTION 3

### Strengthen ERA's performance management framework

Performance management is critical to demonstrating that ERA is delivering on its mandate, while staying true to its core values.

ERA is a well-established delivery agent of Alberta's climate change and economic policy and its efforts are aligned with defined provincial, national, and international metrics. ERA is continually updating the metrics it uses, along with fine-tuning the collection methodology behind them to align with best practices. ERA will continue evolving its performance management approach to measure performance against key indicators and to deliver maximum value to its stakeholders.

### STRATEGIC DASHBOARD

To demonstrate and communicate how ERA is delivering results, the organization develops and reports on portfolio-based performance outcomes and measures. ERA's internal strategic dashboard gives a bird's-eye view of how the portfolio of projects is performing against original projections. Current projections are updated each quarter as projects are onboarded through ERA's funding competitions, the Continuous Intake Programming, and ESB suite of funding. ERA will continue to track project attrition and the reasons for early project cancellation. In 2023-26, ERA will further analyze these attrition metrics and identify barriers that can be addressed by the broader innovation ecosystem.

### QUANTIFYING AND REPORTING GHG REDUCTIONS

ERA funding applicants are evaluated on the GHG reduction potential of their proposed projects. This is central to ERA's mandate and is the most heavily weighted criteria during ERA's project selection process. ERA has robust quantification methodology that aligns with industry standards and is applied by a team of experts. ERA quantifies the estimated emission reductions that will be delivered through its portfolio of projects on a quarterly basis. ERA-funded projects can have GHG benefits in a number of ways.

In 2023-26, ERA will continue to quantify estimated GHG reduction potential for its investments in three broad categories:

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**“A more sustainable, diversified provincial economy requires using our resources more wisely, we need to think about waste as a resource rather than a cost. This investment is going to make a real difference.”**

**Justin Riemer**

CEO, ERA

*Excerpt from Calgary Herald article*

**1. Direct:** represents total GHG emissions reductions anticipated from each project directly. This value is provided by project proponents and reviewed by ERA to ensure the basis and methodology for the estimate is sound. ERA requires all projects that result in material direct GHG reductions to undertake third party verification once the projects are complete to substantiate direct reduction calculations.

**2. Market:** represents the market adoption of technologies advanced through ERA funding. This is an estimate of GHG reductions that would be realized if the technologies are commercialized at conservative adoption rates. Additionally, pre-construction design and engineering will fill key knowledge gaps, drive partnerships and innovation, and accelerate project funding and deployment in Alberta. Several considerations and assumptions underpin this calculation, including GHG emissions intensity, estimated market size, various economic indicators, and lifespan of the technology. Since market assumptions can fluctuate with new regulations, market dynamics, and technology evolution, ERA regularly re-evaluates these estimates to ensure they reflect the most current market conditions and anticipated commercialization plans. This estimate is dynamic and follows the changing trajectory of the technologies, industries and markets they represent.

**3. Enabled:** represents the significant benefits that can result in terms of GHG reductions that are enabled

by ERA-funded projects. This could include, for example, methane detection technology that can enable industry to more efficiently and cost-effectively meet new regulations such as Alberta's Directive 60, energy storage that can enable greater integration of variable and intermittent renewable electricity, and others. These technologies enable GHG reductions that may be directly associated with other technologies, with regulatory obligations, or with behavioural changes. In many cases, enabled GHG reductions are difficult to quantify, measure, or verify, or are not additional to reductions from regulatory requirements. Nevertheless, enabled GHG benefits are critical to achieving net-zero commitments. In 2023-26, ERA will enhance efforts to understand the enabling impact of its investment portfolio.

In 2023-26 ERA will develop a publicly accessible GHG measurement data dashboard that will increase transparency and understanding of ERA GHG reduction progress.

## QUANTIFYING AND REPORTING ECONOMIC IMPACT

Each year, ERA updates its analysis to quantify the net economic impact resulting from ERA's emissions reduction investments. This quantification includes an estimation of avoided climate damage associated with GHG reductions, as well as direct benefits from economic activities advanced through ERA-funded projects.

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**ERA's investment of \$855 million is estimated to result in net benefits of \$913 million by 2030 and over \$3.5 billion by 2050, amounting to a return of \$2.40 by 2030 for every ERA dollar invested\*.**

*\*ERA calculates the return on investment using Environment and Climate Change Canada's Social Cost of Carbon valuation model. Note that both benefits and investment (i.e., cost) were estimated at present-value terms by applying a 3% discount rate.*



## ERA's funded projects are forecast to create 33,400 person-year jobs in Alberta by 2025, which is nearly 40 jobs per every \$1 million of ERA funding.

In addition to avoided climate damages, ERA uses Statistics Canada's Input-Output (I-O) model (2018) to determine the projected GDP impact to Alberta by 2025. ERA's funded projects were expected to contribute \$4.9 billion to Alberta's GDP and \$6.6 billion to the national GDP by 2025. This indicates that every \$1 of ERA funding supports an increase of \$5.60 to the provincial GDP or \$7.50 to the national GDP.

### In 2023-26, ERA will continue:

- + To communicate and signal to investors the potential economic benefit these technologies offer in both Alberta and Canada.
- + The valuation of its emissions reductions, determining and explaining trends.
- + Working with the innovation ecosystem to advance technologies to ready them for adoption into market.

### PERFORMANCE MANAGEMENT REFINEMENT

Ensuring responsible and effective stewardship of public funds requires ERA to track and report metrics on past performance. As data analysis and reporting becomes more advanced, additional initiatives are being evaluated.

In 2023-26, ERA will further demonstrate to its stakeholders a clear line of sight between its funding, technology commercialization activities, and GHG emissions reductions, including:

- + Identifying and investing in promising technologies that have a high potential in Alberta's short- and long-term future.
- + Helping support Alberta energy producers' net-zero emissions commitments.
- + Contributing to local, national, and international targets.
- + Develop additional communication tools for diverse audiences.

**“This support of Circular Rubber Technologies’ project is pivotal in advancing Canada’s circular economy. Government of Alberta funding through ERA accelerates bringing our product—the world’s cleanest, highest quality rubber reclaim—to a \$45 billion global market.”**

**Maartje Van Der Sande**

CEO, Circular Rubber Technologies

## OPERATIONS AND GOVERNANCE

Delivering operational effectiveness and efficiency continues to be a guiding principle for ERA. The organization's approach to resourcing and capacity building is centered on being able to scale in response to the needs of ERA, government, and the innovation ecosystem. To enable this, ERA relies upon a hybrid of internal staff and external service providers.

In 2023-26, ERA will continue holding staff and service providers to a strong value proposition and encouraging them to identify efficiencies and assist ERA in maintaining low operating costs and high value for dollar. Given the significant increase in the ERA portfolio of funded projects, the internal capacity of the team to manage and steward this portfolio has expanded to accommodate the volume of work with offices in both Edmonton and Calgary.

## EQUITY, DIVERSITY, AND INCLUSION

While GHG reductions are at the core of ERA's mandate and Alberta's climate and innovation policies, this is not the only measure of success. ERA recognizes the importance of developing an inclusive culture. This is critical for developing programs and achieving outcomes relevant and accessible to Alberta's diverse populations. In 2022, ERA brought forward Equity, Diversity, and Inclusion (EDI)\* initiatives and has implemented a public commitment statement signalling the importance to ERA. Over the next three years, ERA will advance its EDI strategy by continuing to offer training initiatives for staff, Board members, and service providers, and ensuring its engagement practices reach a broad spectrum of innovators, including underrepresented groups. ERA will continue collecting data from its proposal intake processes to understand the demographics of applicants, which will allow ERA to find potential gaps in its engagement process, so we can create equitable awareness of funding.

### EDI Statement

**The path towards achieving Alberta's environmental, economic and social sustainability goals is complex, requiring a broad set of expertise and range of perspectives, including those from underrepresented groups. As a result, ERA is committed to fostering a culture of equity, diversity and inclusion within our organization and ensuring these vital pillars are integrated in ERA's activities.**

*\*EDI refers to a system of practices and strategies addressing the need to remove systemic barriers and biases to ensure all individuals have equal opportunity to access and benefit from programs, recognizing differences in race, colour, place of origin, religion, sexual orientation, etc., and ensuring all individuals are valued and respected for their contributions equally.*

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG)

ESG frameworks are becoming increasingly important for organizations and are being demanded by investors across the globe. As Alberta develops and shares its ESG framework for responsible investment, ERA will align its operations and investment activities to support these outcomes.

## ONGOING OPERATIONAL IMPROVEMENTS

The development of the 2023-26 Business Plan involved engagement with over 35 organizations, which reinforced that our audience appreciates our transparent funding process and the opportunity to engage with project advisors through the funding call process. The technical team was praised for their willingness to support each proposal with quick response times and investment in seeing projects succeed. However, project proponents would appreciate longer timelines from call announcements to EOI due dates. ERA will evaluate this feedback and apply where appropriate.

Alberta-Pacific Forest Industries Inc., Kraft Pulp Mill Flue Gas Energy Recovery Project





# BUDGET

As a trusted delivery agent for the Government of Alberta and other public funders, ERA actively seeks opportunities to increase cost effectiveness and efficiency. The operating budget that follows delivers on ERA's commitment to financial responsibility. A key metric for ERA, is the overall administrative costs compared to the total funds under administration, which is forecast to be under 3 per cent for the current fiscal year and is budgeted to be 3 per cent for the upcoming fiscal year.

ERA is committed to telling Alberta's emissions reduction story in a meaningful way and stakeholders expect the organization to be present and active. While the operating budget is consistent with the current fiscal year expenditures, it demonstrates a commitment to invest in communications, engagement, and strategic initiatives through enhanced participation in events and increasing the team's capacity with strategic resources.

## REVENUE

The Government of Alberta has confirmed \$75 million in 2022/23 and \$50 million annually in 2023/24 and 2024/25. This has been reflected in ERA's three-year operating budget. ERA was also previously approved for Federal Low Carbon Economy Leadership Fund (LCELF) and committed this investment to projects funded under the Industrial Efficiency Challenge, Shovel Ready Challenge, Partnership Intake Program, and the Energy Savings for Business Program. To date, ERA has received a reimbursement of \$38.8 million of the total \$91.8 million committed. Funding competitions, continuous intake programming, and operating commitments can be scaled to accommodate any funding envelope provided by the Government of Alberta, or other funding partners, should additional funds be received. In addition, ERA has the flexibility to reallocate funds to future funding opportunities from approved projects that may not proceed.

## EXPENDITURES

ERA continues to demonstrate a highly efficient operating model. Current year expenditures are forecast to be \$7.3 million, when the ESB program is removed, compared to budgets of \$8 million, \$8.1 million, and \$8.1 million respectively over the next three fiscal years. The increase of 10 per cent reflects inflationary pressures on service provider rates, in addition to the investment in communications, engagement, and strategy noted above. ERA has bolstered the team with senior strategy and engagement staff that will enhance the stewardship of the larger project portfolio and enable ERA to increase support to both the Government of Alberta and industry in catalyzing investments in priority funding areas. Future budgeted years are expecting operating expenses to be consistent with 2023/24, with modest adjustments for inflation, offset by reduced activity for the ESB program and the GHGT-17 conference.

As a percentage of total funds under management, ERA's costs are estimated to be under 3 per cent for the current year and 2023/24. ERA continues to operate with robust financial controls for projects and pays at the completion of milestones with associated deliverables. ERA also withholds a standard per cent of each payment until the project is completed and a final outcomes report is shared publicly. Due to continued economic conditions and supply chain disruptions, existing projects in ERA's portfolio are experiencing longer than expected project timelines, resulting in a higher balance in funds under management. ERA anticipates payments to accelerate as projects return to expected execution timelines. As a result, the operating cost metric is expected to increase over the three-year period as project expenses are paid out at a faster rate than new commitments are made. Future operating costs will be influenced by the size of the project portfolio, and will be updated as project commitments unfold. ERA will work with all funding recipients to expedite projects where possible and enforce contractual terms where necessary to ensure funds are distributed in a timely and well controlled manner.



## Emissions Reduction Alberta (ERA)

	2022/23 Budget (Approved Mar 2022) \$	2022/23 Annual Forecast (Prepared March 2023) \$	2023/24 Budget (Approved by Board March 2023) \$	2024/25 \$	2025/26 \$
<b>Revenue</b>					
Grant revenue	178,738,188	91,310,029	59,438,890	50,000,000	50,000,000 (a)
Interest income	6,343,289	19,602,705	18,506,564	10,116,075	5,419,990 (b)
<b>Total Revenue</b>	<b>185,081,477</b>	<b>110,912,734</b>	<b>77,945,453</b>	<b>60,116,075</b>	<b>55,419,990</b>
<b>Project Expenditures</b>	<b>249,252,261</b>	<b>170,701,618</b>	<b>183,481,992</b>	<b>182,695,000</b>	<b>105,972,159 (c)</b>
<b>Revenue less Project Expenditures</b>	<b>(64,170,784)</b>	<b>(59,788,884)</b>	<b>(105,536,538)</b>	<b>(122,578,925)</b>	<b>(50,552,169)</b>
<b>Operating Expenses</b>					
<b>General &amp; Administrative Expenses</b>					
Corporate costs	419,259	485,777	509,550	560,186	576,142
Insurance	33,000	27,251	30,000	30,900	31,827
GST expense	173,427	170,952	149,363	114,946	110,166
<b>Total General &amp; Admin Expenses</b>	<b>625,686</b>	<b>683,980</b>	<b>688,913</b>	<b>706,032</b>	<b>718,135 (d)</b>
<b>Management Expenses</b>					
Project Adjudication and Portfolio Management	2,511,163	2,324,686	2,228,619	2,234,605	2,261,417
Contracts	293,233	334,622	280,304	303,932	326,589
Communications and Engagement	1,099,348	1,372,190	1,671,176	1,762,187	1,662,808 (e)
Strategic	502,730	454,791	763,303	780,643	803,563
Corporate Administration	951,547	1,063,607	1,102,562	1,025,249	1,055,736
Governance	207,844	236,624	229,323	236,172	243,227
ESB	2,030,077	2,409,041	1,383,147	130,655	-
<b>Total Management Expenses</b>	<b>7,595,941</b>	<b>8,195,561</b>	<b>7,658,433</b>	<b>6,473,442</b>	<b>6,353,339 (f)</b>
<b>Other Contracted Services and Special Initiatives</b>					
Consulting contracted services	767,640	544,500	825,150	827,192	837,192 (g)
GHGT Conference	20,000	20,000	-	-	- (h)
<b>Total Other Contracted Services and Special Initiatives</b>	<b>787,640</b>	<b>564,500</b>	<b>825,150</b>	<b>827,192</b>	<b>837,192</b>
<b>Board and Oversight</b>					
Board remuneration and expense	127,500	127,500	128,000	131,840	135,795 (i)
Professional fees	85,000	90,000	80,000	82,400	84,872
<b>Total Board and Oversight</b>	<b>212,500</b>	<b>217,500</b>	<b>208,000</b>	<b>214,240</b>	<b>220,667</b>
<b>Total Operating Expense</b>	<b>9,221,767</b>	<b>9,661,541</b>	<b>9,380,496</b>	<b>8,220,907</b>	<b>8,129,334</b>
<b>Surplus / (Deficiency) of Funds for the year</b>	<b>(73,392,551)</b>	<b>(69,450,425)</b>	<b>(114,917,034)</b>	<b>(130,799,831)</b>	<b>(58,681,503)</b>
<b>Total Funds Under Management - beginning of year</b>	<b>459,077,634</b>	<b>506,566,590</b>	<b>447,074,855</b>	<b>349,491,752</b>	<b>218,691,920 (j)</b>
<b>Total Funds Under Management - end of year</b>	<b>385,685,083</b>	<b>447,074,855</b>	<b>349,491,752</b>	<b>218,691,920</b>	<b>160,010,417</b>
<b>Committed Funds for Approved Projects</b>	<b>971,224,327</b>	<b>993,169,353</b>	<b>1,118,169,353</b>	<b>1,168,169,353</b>	<b>1,218,169,353 (k)</b>
<b>Total Project Funds paid to date</b>	<b>(619,356,700)</b>	<b>(586,329,782)</b>	<b>(769,811,774)</b>	<b>(952,506,773)</b>	<b>(1,058,478,933)</b>
<b>Remaining Funds required to fulfill approved project co</b>	<b>351,867,627</b>	<b>406,839,572</b>	<b>348,357,580</b>	<b>215,662,580</b>	<b>159,690,421</b>
<b>Uncommitted Funds</b>	<b>33,817,456</b>	<b>40,235,283</b>	<b>1,134,172</b>	<b>3,029,340</b>	<b>319,996</b>



## Emissions Reduction Alberta (ERA)

Operating costs as a % of Funds Required to Fulfill Approved Project Commitments (With ESB)	3.0%	2.4%	2.7%	3.8%	5.1% (l)
Operating costs as a % of Funds Required to Fulfill Approved Project Commitments (Without ESB)	2.0%	1.9%	2.3%	3.8%	5.1%

### Notes and assumptions

- (a) The GOA has confirmed \$50M per year for three years for grant funding and an additional \$25M for FY23 to fund Hydrogen development and the Hydrogen value chain. Project commitments and operating commitments can be scaled to accommodate any funding envelope provided by the GoA should additional monies be received. ERA was approved for \$99.8 million of funding under the federal Low Carbon Economy Leadership Fund (LCELf) including the \$8 million approved for Industrial Efficiency Challenge in FY19. In FY22, ERA has received \$38.75M out of the approved LCELf funding. Cash Flows of remaining LCELf funding have been reflected in the current and future years based on estimates of contributions to ultimate project recipients. Current projections indicate that approximately \$8 million of PIP LCELf funds will remain unspent, therefore no revenue has been projected for this amount.
- (b) Interest income has been based on cash flow projections for the Corporation and current interest rate assumptions forecasted by ERA. ERA's investment accounts include ATB Financial (ATB) and Canadian Western Bank (CWB) alongside the legacy CIBC Business Investment Account and include a combination of high interest savings accounts and GIC instruments. Current rates and respective balances are as follows: CIBC - \$173.6M at 4.74%, ATB - \$102.6M at 4.85%, CWB - \$51.3M at 4.89%. Rate increases have been forecast based on the most current CIBC interest rate forecasts received in February 2023 and current GIC holdings.
- (c) Program expenditures have been budgeted based on signed contribution agreements or on a set of assumptions regarding approved and anticipated funding for projects. Future funding initiatives are based on anticipated calls laid out in the Business Plan and funding received from the GOA.
- (d) General and Administrative Expenses budget for FY24 reflect an increase due to the growth of the organization.
- (e) Communications and Engagement is expected to increase from the current FY23 forecast. This is largely attributable to the increased focus on engagement and outreach that ERA has started in fiscal 2023. The ERA team has added an additional internal resource dedicated to communications and outreach and is adding another senior resource focused on partnership and external engagement this quarter.
- (f) Total Management expense costs, excluding ESB, have been forecasted to increase from the current year forecast. This is due to the general forecasted increase in total project portfolio of projects under management and increased activities of ERA in stakeholder engagement and knowledge sharing.
- (g) Other Consultant costs were budgeted to be in line with prior year budgets and account for inflation. The current year forecast is trending lower than original budget, but it is expected that there will be a number of initiatives undertaken in the upcoming year.
- (h) ERA will be hosting the GHGT-17 conference in October 2024. The conference is expected to be cost neutral for ERA given the significant conference sponsorship and partnerships already secured, however there will be considerable effort and resources dedicated to this conference delivery over the coming two fiscal years (FY24 and FY25).
- (i) Board remuneration and expense budgets for FY24 and beyond are expected to remain consistent with FY23 activity. This reflects Board meetings for 2 days per quarter and the associated Governance, Accountability and Human Resource and Audit, Finance and Investment Committee meetings.
- (j) Based on Cash flow projections for the period ended December 31, 2022 and representing the actual funds under management. The change each year may differ from the Surplus/deficiency noted above due to timing of revenue accrual and receipt of grant amounts.
- (k) Based on actual funding approved for remaining active projects in all completed calls and assumptions for Partnership Intake. Future approved rounds are based on estimates. Funds are shown as committed once the EOI cycle has started for a particular Call.

	\$
<b>Committed Funds for approved projects - Forecast FY23</b>	<b>909,817,821</b>

Forecast Future Rounds	\$
2022/23 Partnership Intake, ACT 4	33,351,532
Call 10 - Industrial Transformation	50,000,000
Call 11, 12, 2023/24 Partnership Intake	125,000,000
Call 13, 14, 2024/25 Partnership Intake	50,000,000
Call 15, 16, 2025/26 Partnership Intake	50,000,000

- (l) This metric represents total ERA Operating costs for the year as a percentage of the funds required to fulfill all remaining project commitments approved by the ERA Board of Directors. The relative percentage increases over the three year budget. The funds required to fulfill remaining commitments will be reduced as project payments continue to be made in accordance with the project plans, at a greater pace than new commitments are made. Given we have placeholders for future years grant allocations, the actual percentage will differ from the estimate above. When ESB is removed, the operating metric improves given the ESB program experiences a higher administrative cost burden than ERA's typical portfolio of projects.