ATOMIC ENERGY OF CANADA LIMITED

Second Quarter Financial Report

Financial Statements (Unaudited)

As at and for the three and six months ended
September 30, 2021

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MESSAGE FROM THE PRESIDENT AND CHIEF EXECUTIVE OFFICER

Despite ongoing challenges related to the COVID-19 pandemic, we continued our efforts to drive nuclear opportunity for Canada. Canadian Nuclear Laboratories (CNL), which manages and operates our sites, is making significant progress in delivering nuclear science and technology for the benefit of Canadians, all while protecting the environment and advancing important remediation projects. We have a lot to be proud of.

Leveraging the Government-owned, Contractor-operated model, we continued to make progress on several fronts. Work to transform the Chalk River Laboratories into a world-class nuclear science and technology campus continues. Of particular note this quarter, we celebrated the commencement of construction of the Science Collaboration Centre, a facility that will serve as the central planning and collaboration space for activities at the Chalk River Laboratories, scheduled to be completed in the spring of 2023. This building is one of several new construction projects being designed and constructed using a new generation of mass timber products. This material represents a sustainable construction approach and showcases AECL and CNL's commitment to green construction and environmental stewardship.

Environmental remediation continued to progress this quarter, with exciting milestones having been met. The near surface facility that contains low-level radioactive waste at the Port Hope Area Initiative (PHAI) Port Granby site was closed and capped, with the overall project on track to be completed by summer 2022. This brings us one step closer to leaving a positive legacy for future generations.

An important milestone was also reached during the quarter with regards to the proposed Near Surface Disposal Facility which is designed to safely contain AECL's low-level radioactive waste. The Canadian Nuclear Safety Commission (CNSC) announced acceptance of CNL's Final Environmental Impact Statement, a key step in the environmental assessment process for the Project. This facility is key to enabling us to remediate large-scale soil contamination at the Chalk River site and safely place low-level radioactive waste that has been accumulated in storage for decades at the site. We recognize that the project is raising questions, and are committed to working with local communities, Indigenous communities, and the public to hear concerns and respond as needed.

Momentum on the science and technology front continued to build. CNL safely completed a project to refuel the Royal Military College of Canada's SLOWPOKE-2 research reactor. As a low-power, self-regulating research reactor, the SLOWPOKE-2 is used to produce neutrons for professional development and academic research and is an important asset in Canada's science infrastructure.

Under AECL's Federal Nuclear Science and Technology Work Plan, work continues to support government priorities to improving the health, safety and security of Canadians, fighting climate change and protecting the environment. This includes ensuring that we have the capabilities to support Canada's regulatory framework, policies and decision making through science-based evidence and

advancing the development of innovative technologies and solutions to reduce environmental impacts, protecting public health, increasing competitiveness, and promoting the use of clean technology.

CNL has recently partnered with General Fusion in a vital project to advance fusion energy technology. Through this collaboration, they will develop tritium extraction techniques for use in commercial fusion power plants. This is a great example of collaboration between research institutions where we are leveraging capabilities to make the most of our science investments.

As we reflect on the challenges and successes of this quarter, I look forward to the progress that will continue in the future. I am proud of the work that has been conducted in science and technology and environmental remediation thus far, and know that we will continue carrying on our important work, in partnership with research organizations, industry stakeholders, local communities and Indigenous communities, for the benefit of Canada and Canadians.

Fred Dermarkar
President and Chief Executive Officer

MANAGEMENT'S NARRATIVE DISCUSSION

Introduction

Management's Narrative Discussion is intended to provide the reader with a greater understanding of AECL's business, its business strategy and performance, its expectations for the future, and its management of risk and capital resources. It is also intended to enhance the understanding of the unaudited financial statements for the second quarter of 2021-22 and accompanying notes. Management's Narrative Discussion should therefore be read in conjunction with this document.

Unless otherwise indicated, all financial information presented in Management's Narrative Discussion, including tabular amounts, is in Canadian dollars and is prepared in accordance with Canadian Public Sector Accounting Standards (PSAS).

Management's Narrative Discussion was authorized for issuance by the Board of Directors on November 18, 2021.

Our Business

AECL is a federal Crown corporation that has a mandate to enable nuclear science and technology and to protect the environment by fulfilling the Government of Canada's radioactive waste management and decommissioning responsibilities. AECL receives funding from the Government of Canada and earns commercial revenues through the activities of CNL at the Chalk River Laboratories to deliver on its mandate. As a federal Crown corporation, AECL reports to Parliament through the Minister of Natural Resources.

AECL delivers its mandate through a long-term, contractual arrangement with CNL for the management and operation of its sites under a Government-owned, Contractor-operated model. Under this model, AECL retains ownership of the sites, facilities, intellectual property, and liabilities. CNL, a private-sector organization, manages AECL's sites and facilities under a contract with AECL.

The Government-owned, Contractor-operated model allows AECL to leverage the expertise and experience of the private sector to accelerate the decommissioning and environmental stewardship program and deliver world-class nuclear science and technology at the Chalk River Laboratories. As an agent of the Government of Canada, AECL's small expert-based organization brings value to Canada by setting priorities for CNL and providing expert-based oversight of the Government-owned, Contractor-operated arrangements with a view to achieving its mandate and priorities. AECL plays a challenge function and assesses CNL's performance to advance its objectives in the most effective and efficient manner, while maintaining the highest priority on safety, security and protection of the environment. Furthermore, AECL supports the Government's development of nuclear policy.

The two main areas of focus for activities are:

1. **Nuclear Laboratories**
   The Chalk River Laboratories are Canada's largest science and technology complex and host to more than 2,800 CNL employees, including a large number of engineers, scientists and technical staff. The work undertaken at the laboratories supports Canada's federal roles, responsibilities and priorities in the areas of health, energy and climate change, the environment, safety and security. Services are also provided to industry and other third parties on a commercial basis. The Chalk River site is currently undergoing an important renewal that is transforming the site into a modern, world-class nuclear science and technology campus, thanks to an investment of $1.2 billion over ten years by the federal government, beginning in 2016.

2. **Environmental Stewardship**
   The objective is to safely and responsibly address the environmental responsibilities and liabilities which have resulted from legacy activities at AECL sites. This requires the decontamination and decommissioning of redundant structures and buildings, the remediation of contaminated lands and the management and disposal of radioactive waste at AECL sites, primarily at the Chalk River Laboratories and the Whiteshell Laboratories in Manitoba. AECL is also responsible for the remediation and long-term management of sites contaminated with historic, low-level radioactive waste where the Government of Canada has accepted responsibility, most notably as part of the Port Hope Area Initiative. Responsible decommissioning and radioactive waste management is necessary to remediate AECL's sites to modern standards, protect the environment, and make way for new buildings that will support the ongoing nuclear science and technology mission at the Chalk River site.

Second Quarter Highlights for 2021-22

Nuclear Laboratories

AECL has been leading innovation in nuclear science and technology for over six decades. Over the years, AECL has played an important role in supporting public policy and in delivering programs for the Government of Canada. This includes the design of the CANDU reactor, production of medical isotopes

and the provision of nuclear science and technology in the areas of energy, non-proliferation, emergency preparedness, counterterrorism, health, and security.

Through the Government-owned, Contractor-operated model, AECL's objective is to leverage the vast experience and expertise at the Chalk River Laboratories to contribute to the government's science, innovation, and clean energy objectives. Nuclear science and technology activities at the Chalk River Laboratories support the Federal Nuclear Science and Technology Work Plan, which helps the Government of Canada deliver on its responsibilities in the areas of health, nuclear safety and security, energy, and the environment.

To further grow the science expertise and capabilities at Chalk River, CNL also uses AECL facilities to provide technical services and research and development products on a commercial basis.

CNL has developed a long-term plan outlining its strategic approach to delivering an integrated, effective, project-based and customer-focused science and technology mission that serves the needs of the federal government as well as those of external customers. Based on an assessment of existing capabilities, the external environment and market opportunities, CNL has identified eight strategic initiatives that it will focus on over the next few years, which support the needs of the federal government and third-party customers to tap into new and expanded markets:

- **Long-term reliability of existing reactors**: Support for Canada's fleet of existing reactors through work on life extension and long-term reliability of the existing fleet of CANDU reactors domestically and internationally, and expansion to include support for other reactor designs, advanced nuclear materials, fuels research and nuclear chemistry applications.
- **Advanced fuel fabrication**: Development of advanced nuclear fuel concepts in order to support the long-term reliability of existing reactors and the development of advanced reactors. These advanced fuels offer higher performance, improved failure tolerance, increased safety, proliferation resistance and accident tolerance, and are recycled or recyclable.
- **Small modular reactors**: CNL's goal is to demonstrate the commercial viability of small modular reactors by 2026, with a view to positioning Canada to take a leadership role in this emerging nuclear technology. The objective is for Canada and CNL to best leverage their expertise and facilities to position small modular reactors to provide low-carbon, reliable, load-following, scalable and cost-effective energy options to remote communities, mining and oil sand applications, and to fill other energy gaps and needs that often have unique Canadian interest.
- **Decarbonizing the transportation sector**: CNL aims to build on existing capabilities, and leverage recent capital investments by AECL in modern hydrogen laboratories, to support hydrogen safety and heavy water and tritium management in CANDU reactors. As hydrogen technologies have matured, costs have dropped to the point that hydrogen solutions are financially competitive with similar energy conversion technologies. Hydrogen technology offers low-carbon options for the energy and transportation sectors, which supports Canada's international commitments for carbon reduction.
- **Targeted alpha therapy research for cancer treatment**: Targeted alpha therapy is a new area of research in the battle against cancer and other diseases. The benefit of this therapy is that the radiation is targeted at the cancer cell, unlike existing treatments that often involve irradiation of all cells in the vicinity of a tumor, healthy and cancerous.

- **Nuclear cyber security**: Cyber security of industrial control systems is a growing concern in all industries, and particularly in the nuclear industry where it represents a multibillion-dollar worldwide market. While a large commercial industry caters to the cyber security of information technology systems, most solution providers are focused on conventional hacking and data theft. CNL has already commissioned a nuclear cyber security test facility located in New Brunswick, and is now working to develop, commercialize and deploy a nuclear industrial control cyber intrusion detection and mitigation system.
- **Nuclear forensics, detection and response**: The need for science and technology activities in nuclear security continues to grow in Canada, as evidenced by the government's renewed commitments to nuclear threat reduction, both domestically and abroad. There is a growing demand from government departments and agencies for nuclear science and technology expertise to inform their response to emergent national and international issues concerning nuclear safeguards, safety and security. CNL is working to establish a facility for government agencies and commercial partners to develop, test, calibrate and validate nuclear forensics technologies and materials. Furthermore, CNL is supporting work to safeguard and secure nuclear material and improve Canada's border security.
- **Science and technology for advanced environmental sustainability**: CNL is working to expand the understanding of the behaviour of contaminant radionuclides, and further develop safe and economical nuclear waste management technologies. The environmental technology capability will also continue to support the government in monitoring for the presence and spread of low levels of contamination. CNL is also growing its commercial work in this area.

As part of its long-term vision for the Chalk River Laboratories, CNL's plans, approved by AECL, entail the revitalization of the site through the demolition of old and outdated buildings and the construction of new facilities that will transform the site into a world-class, state-of-the-art nuclear science and technology campus and enable a vibrant science and technology mission going forward.

During the second quarter, AECL and CNL pursued activities in this respect, including:

- Working under AECL's Federal Nuclear Science and Technology Work Plan, CNL is set to begin testing of a prototype detector for special nuclear materials. With partners from SNOLAB, CNL will further develop passive detection techniques that could be deployed in Canadian radiation portal monitors at the ports of entry and international borders to identify and prevent the undocumented movement of special nuclear material.
- Also under the Federal Nuclear Science and Technology Work Plan, CNL is exploring the viability of powering low voltage batteries using beta radiation from tritium. The research is conducted at the unique tritium research facility that was originally built to support research related to the safe operation of Canada's nuclear fleet and the Canadian fusion program. Tritium batteries could generate uninterrupted low-power for more than 20 years and could have applications to power wireless sensors in remote applications that aren't easily accessible such as remote SMR applications, space, or deep oceans.
- CNL and General Fusion have partnered in a project to advance fusion energy technology to develop tritium extraction techniques for use in commercial fusion power plants – specifically, the process of extracting tritium from liquid metal to provide a limitless supply of tritium fuel.

Together, they will identify the most promising approaches for managing tritium in fusion energy systems.

- CNL safely completed a project to refuel the Royal Military College of Canada's SLOWPOKE-2 research reactor. As a low-power, self-regulating research reactor, the SLOWPOKE-2 is used by the Royal Military College to produce neutrons for professional development and academic research, including nuclear and radiological forensic expertise, and rapid response capabilities for environmental and nuclear emergencies, primarily by the Department of National Defence and the Canadian Armed Forces.
- CNL announced that they are set to create the world's first 'finned' CANDU fuel. The Fuel Development team has been exploring through modelling a concept which would see the embedding of metallic fins into a conventional fuel pellet to allow for more efficient heat transfer, which in turn makes the reactor fuel more efficient.
- In support of the Chalk River site revitalization, construction activities on new buildings continued during the second quarter. Of particular note, several buildings are being constructed out of mass timber, demonstrating AECL's and CNL's commitment to sustainability.
    - Activities on a new office building, the Science Collaboration Centre, are progressing with most of the mass timber frame having been installed. Scheduled for completion in the spring of 2023, the new Science Collaboration Centre will serve as the central planning and collaboration space for CNL's science and technology programs.
    - Planning and design work also continued on the Advanced Nuclear Materials Research Centre, which will provide modern shielded facilities needed to advance several of AECL's strategic priorities, including small modular reactors, environmental remediation, support for Canada's CANDU fleet and radioisotope work.

Environmental Stewardship

AECL has been conducting nuclear science and technology activities for decades. While these activities have had important benefits for Canada and Canadians – for example the production of medical isotopes used in the detection and treatment of cancer – they also produced radioactive waste. AECL has various types of radioactive waste at its sites, including high-level waste (used fuel), intermediate-level waste and low-level waste (for more information on the various types of radioactive waste, visit nuclearsafety.gc.ca/eng/waste). Several sites and/or buildings have also been contaminated as a result of nuclear science and technology activities and past waste management practices that do not meet modern standards; these now need to be decontaminated and demolished, sites cleaned up and remediated, and the radioactive waste managed based on modern standards.

AECL's objective is to protect the environment by advancing key decommissioning, remediation and waste management projects in order to address risks and hazards. With the implementation of the Government-owned, Contractor-operated model, AECL was given a mandate to accelerate these activities to reduce risks and costs for Canada, in a safe manner, consistent with international leading practices. Specifically, AECL has asked CNL to propose projects to dispose of radioactive wastes and to advance other decommissioning activities to reduce its environmental liabilities and protect the environment.

Work has steadily progressed at the Chalk River Laboratories, with just under 100 buildings having been fully decommissioned since 2015. Notably, the demolition of the 100th building at the Chalk River site is underway. This not only reduces AECL's environmental liabilities and overall site maintenance costs, but it also provides the required space for new facilities to be built as part of the site's revitalization.

The resulting contaminated materials, demolition debris, and waste from contaminated lands need to be disposed of in a manner that further protects the environment. As such, CNL has proposed to build a near surface disposal facility at the Chalk River site. This purpose-built, engineered facility will enable the responsible and safe disposal of AECL's low-level radioactive waste. This includes contaminated items like gloves, protective shoe covers, clothing, rags, mops, equipment and tools, as well as contaminated building material, debris and soil. A near surface disposal facility is an appropriate, internationally accepted and proven method of disposing of low-level radioactive waste. The radioactive waste intended for the disposal facility includes waste currently stored on site and waste which will be created as a result of remediation and decommissioning activities at AECL sites (i.e. contaminated soil and building debris). It also includes waste which will continue to be produced as a result of ongoing nuclear science and technology activities at the Chalk River site.

Progress in the area of environmental stewardship for the second quarter of 2021-22 is presented below.

In Manitoba, work continued to decommission the **Whiteshell site**, which was previously an active nuclear research laboratory, despite a reduction of staff on site due to COVID-19. The scope of work includes the decontamination and demolition of structures and planning for the in situ decommissioning (i.e. immobilizing and leaving in place) of the WR-1 research reactor. Work on the Environmental Impact Statement for the WR-1 research reactor continued with CNL engaging with Indigenous communities to discuss the project and preparing documentation for eventual submission to the regulator.

CNL also advanced work to decommission most of the buildings on the main campus, which is anticipated to be completed by late fall 2022. The decommissioning of the former liquid treatment centre is near completion, with another series of buildings having been safely de-energized, with demolition expected this fall. Furthermore, activities continued on the design and fabrication of a specialized remote handling system to retrieve waste that is stored in standpipes and bunkers (concrete boxes and structures which are just below ground level).

At the **Chalk River site** in Ontario, despite onsite staff restrictions due to the pandemic, CNL continued the decommissioning of Building 250 and the Building 200 series, which represent four of the highest risk buildings and most complex to be decommissioned. Projects are remaining on schedule, while proper COVID-19 safety protocols are being maintained.

CNL also continued to advance planning work on the proposed Near Surface Disposal Facility, including engaging with local stakeholders and Indigenous communities, and responding to questions. In July, the Canadian Nuclear Safety Commission announced acceptance of CNL's Final Environmental Impact

Statement, a key step in the environmental assessment process for the project. This paves the way for the project to proceed to public regulatory hearings, expected to take place in February 2022.

Work also continued to progress on the planning for the in situ decommissioning of the **Nuclear Power Demonstration** reactor. The project is currently undergoing an Environmental Assessment, and work during the second quarter continued to focus on responding to questions from, and engaging with, Indigenous communities on the proposal. CNL is planning to submit an updated draft of the Environmental Impact Statement to the Canadian Nuclear Safety Commission in late 2021.

AECL is also responsible for fulfilling Canada's responsibilities with respect to historic low-level radioactive waste at sites where the original owner no longer exists or another party cannot be held liable and for which the Government has accepted responsibility. This includes the cleanup and safe long-term management of historic, low-level radioactive waste in the municipalities of Port Hope and Clarington, in Ontario as part of the **Port Hope Area Initiative**, pursuant to an agreement between Canada and the municipalities. Two near surface facilities (engineered containment mounds) have been built for this purpose. In the case of the Port Granby project, all waste has now been remediated and the mound has been capped and closed. In total, 1.3 million tonnes of historic low-level radioactive waste have been relocated from the shorelines of Lake Ontario in Clarington, to a new, near surface facility.

Forward-Looking Statements

This Management's Narrative Discussion has been reviewed by AECL's Audit Committee and approved by AECL's Board of Directors. It provides comments on the performance of AECL for the three and six months ended September 30, 2021, and should be read in conjunction with the unaudited financial statements and accompanying notes.

The Management's Narrative Discussion contains forward-looking statements with respect to AECL based on assumptions that Management considers reasonable at the time of preparation. These forward-looking statements, by their nature, necessarily involve risks and uncertainties that could cause future results to differ materially from current expectations. We caution the reader that the assumptions regarding future events, many of which are difficult to predict, may ultimately require revision.

Management of Risks and Uncertainties

AECL carefully plans for and manages risks as part of sound risk management practices. Due to its oversight role, AECL's risk management approach goes beyond the internal organizational risk, and includes oversight of CNL risks as they relate to the management and operation of AECL sites and facilities. Through ongoing communication between AECL and CNL, plans and activities are monitored to mitigate risks as necessary. This section highlights some of the risks to AECL, which could ultimately impact financial results.

COVID-19 Pandemic: The ongoing pandemic presents risks to the safety and security of personnel and the sites, as well as risk of financial impacts. To mitigate the safety and security risks, AECL and CNL are following comprehensive plans for recovery that reflect government and health authority guidance, provide for COVID-19 countermeasures including changes to workspaces and work procedures to maintain physical distancing, provide personal protective equipment and training, and implement appropriate restrictions on travel, amongst other things. CNL and AECL continue to closely monitor the financial impacts of COVID-19, including near-term impacts to revenue and cash flow in 2021-22, as well as longer-term impacts to project costs and schedules.

Human Resources: AECL is a small organization that relies on a small complement of highly trained and experienced personnel, several of whom bring experience in the management of similar Government-owned, Contractor-operated arrangements, both from a government and contractor perspective. AECL's goal is to maintain the necessary expertise and capabilities to oversee the Government-owned, Contractor-operated contract and play an appropriate oversight and challenge function to achieve value for money for Canada. Given AECL's small size, an ongoing challenge is to adapt to fluctuating resourcing requirements across different areas of the organization and backfill those on short-term leave where appropriate. To manage this, AECL strives to be adaptable and flexible, deploying a handful of third-party service contracts to bolster resourcing when and where required and cross-training employees when the opportunities arise. A succession plan is in place and is reviewed regularly. Furthermore, AECL regularly reviews its total compensation package to remain competitive amongst similar employers nationally and internationally.

Contractor Performance: As AECL relies on a private-sector contractor to execute scope related to its mandate, an inherent risk is failure of the contractor to execute and perform. To mitigate this risk and drive the appropriate behaviour, the contract with CNL is carefully structured to include several mechanisms for AECL to incentivize and oversee CNL's performance. On an annual basis, AECL sets priorities supported by achievable stretch targets to drive value for Canada. Ongoing evaluation of the contractor throughout the year provides AECL the opportunity to highlight strengths and weaknesses and the contractor the opportunity to correct where needed.

Costs to Operate Chalk River Laboratories: The shutdown of the National Research Universal reactor in March 2018 has resulted in lost revenue from the activities of the reactor (including isotope sales) and diminishing funding for the National Research Universal reactor, which has created funding pressures in terms of corporate support and site operating costs that must be borne by the remaining programs. More recently, this has been further compounded by the cost pressures created by the COVID-19 pandemic. While CNL continues to make progress by lowering indirect costs to address the cost pressures, it continues to look at all options with a view to enabling a sustainable organization in the long-term, while remaining protective of the environment and health and safety.

Major Waste Disposal Projects: Part of AECL's core mandate is environmental stewardship and remediation of sites for the benefit of future generations. Currently, three important projects which are aimed at reducing environmental risks and protecting the environment are at various stages of environmental assessment:

- Construction of a Near Surface Disposal Facility at the Chalk River Laboratories;
- In situ decommissioning of the WR-1 research reactor at the Whiteshell site; and,
- In situ decommissioning of the Nuclear Power Demonstration facility in Rolphton, Ontario.

The regulatory environment, as well as engagement of the public and Indigenous communities, are key to the success of these projects. Timelines have been revised to ensure that all comments and concerns from the public and Indigenous communities have been considered for all three projects, as well as requests from the Canadian Nuclear Safety Commission to provide additional technical studies. As a result, additional time has been needed to build the safety case for each project. Overall, while these schedule changes have impacted CNL's ability to commence large-scale cleanup and remediation activities at AECL sites, they are allowing for more public and Indigenous engagement, and the development of additional studies in support of the projects' safety cases.

Indigenous Engagement and Consultation: Indigenous reconciliation continues to be a priority for AECL. There are increasing needs for support for capacity to engage, Traditional Knowledge studies, and participation in formal regulatory processes, as well as environmental monitoring operations. CNL also continues its outreach activities across all sites. AECL is engaged with Indigenous communities in building meaningful and mutually beneficial relationships, recognizing that these take time. AECL and CNL are working closely together and are looking for more ways to increase participation, collaboration and mutual benefit with Indigenous communities.

Public Relations: In order to be successful in delivering its mandate, AECL depends on the support of key stakeholders, including government and the public. AECL is continually looking for relationship building opportunities, as well as innovative and effective means to reach its audiences. Working with CNL, AECL endeavours, when communicating with the public, to use clear messaging and a variety of communications tools to more effectively reach key audiences.

Cybersecurity: Cybersecurity is top of mind at AECL. AECL's approach to cybersecurity is two-fold: cybersecurity within its own organization and CNL's cybersecurity efforts to protect AECL's information assets as part of the Government-owned, Contractor-operated contract. AECL and CNL work to continuously improve cybersecurity capabilities, with a focus on training and adaptation.

Financial Review

($ millions)	Three Months Ended September 30 2021	2020	Six Months Ended September 30 2021	2020
Revenues				
Parliamentary appropriations	**$ 212**	$ 207	**$ 394**	$ 372
Commercial revenue	**38**	24	**65**	44
Interest income	**1**	1	**2**	2
Other proceeds	**-**	-	**7**	-
	251	232	**468**	418
Expenses				
Cost of sales	**25**	18	**43**	33
Operating expenses	**16**	16	**34**	33
Contractual expenses	**84**	68	**141**	121
Decommissioning, waste management and contaminated sites expenses	**96**	94	**170**	166
	$ 221	$ 196	**388**	353
Surplus for the period	**$ 30**	$ 36	**$ 80**	$ 65

Parliamentary Appropriations

The Government of Canada provides funding quarterly for AECL to advance its priorities and deliver on its mandate. AECL recognized $212 million of Parliamentary appropriations in the second quarter of 2021-22, slightly higher than the same period in 2020-21. On a year-to-date basis, AECL recognized $394 million of Parliamentary appropriations, compared to $372 million for the same period in 2020-21. The year-to-date variance is primarily related to an increase in funding required to execute decommissioning, remediation, and waste management activities, as planned.

Commercial Revenue

In the second quarter of 2021-22, $38 million in revenue was recognized, compared to $24 million for the same period in 2020-21. On a year-to-date basis, revenues were $65 million, compared to $44 million in 2020-21. Revenue included technology sales and research and development activities performed by CNL for commercial customers, as well as heavy water sales. The quarterly and year-to-date increase in commercial revenue is a result of the COVID-19 pandemic and the related reduced level of activity in the prior period, as well as increased heavy water sales.

Interest Income

Interest income is earned on cash, short-term investments from appropriations and investments held in trust. Interest income earned is comparable to the same periods in 2020-21.

Other Proceeds

Other proceeds relate largely to a commercial settlement recorded during the first quarter.

Cost of Sales

Cost of sales is higher than the same periods in the prior year as a result of increased revenues as discussed above. Cost of sales decreased as a percentage of revenue compared to the same period of the prior year as a result of additional costs for COVID-19 related replanning and rescheduling in the prior period as well as an increase in higher margin heavy water sales in the current year.

Operating Expenses

Operating expenses are largely comprised of AECL's oversight expenses and amortization of tangible capital assets. Operating expenses in the second quarter of $16 million and year-to-date of $34 million are comparable to that of the same periods in 2020-21.

Contractual Expenses

AECL delivers its mandate through a long-term contract with CNL for the management and operation of its sites. CNL expenditures (excluding costs charged to the Decommissioning and waste management provision and Contaminated sites liability, Construction in progress and Cost of sales) are reported by AECL as Contractual expenses. Expenses in this category for the second quarter total $84 million, compared to $68 million in the second quarter of 2020-21. Year-to-date expenses in this category total $141 million compared to $121 million in the previous period in 2020-21. The variances are largely a result of increased spending on science and technology activities.

Decommissioning, Waste Management and Contaminated Sites Expenses

Decommissioning, waste management and contaminated sites expenses consist of financial expenses and the revaluation (gain) loss, if any, on these reported liabilities. Financial expenses reflect the increase in the net present value (accretion of discount) of these reported liabilities. Revaluation gains and losses represent changes to the estimates for the reported obligations. Decommissioning, waste management and contaminated sites expenses in the second quarter of 2021-22 of $96 million and year-to-date of $170 million are comparable to that of the same periods in 2020-21 and consist largely of financial expenses.

Surplus for the Period

Consistent with AECL's financial reporting framework, appropriations are recognized as revenue when received in a given period, or as deferred funding to the extent they relate to the months following the period end, and may be greater or less than the reported expenditures for the same period. For instance, amounts received to fund decommissioning, waste management and contaminated sites expenditures are recorded as Parliamentary appropriations revenue in the current period while the related expenditures are drawn down from the associated liabilities previously recorded on the Statement of Financial Position. With respect to tangible capital assets, Parliamentary appropriations revenue includes amounts received in the period to fund the purchase and construction of these assets while the related expenditures are capitalized; therefore, the reported operating expenses include only the amortization of existing tangible capital assets.

Outlook

AECL's planned activities are set out in its Corporate Plan. The 2021-22 year-to-date results are generally comparable to the planned results. As such, AECL is on track to meet its commitments within budget. Priorities and deliverables have not materially changed in the first six months of 2021-22.

Cash Flow and Working Capital

	Six Months Ended September 30	
($ millions)	**2021**	2020
Cash provided by operating transactions	**$ 315**	$ 132
Cash applied to capital transactions	**(43)**	(58)
Increase in cash	**272**	74
Balance at beginning of the period	**159**	80
Balance at end of the period	**$ 431**	$ 154

Operating Transactions

Operating transactions generated a net cash inflow of $315 million in the second quarter of 2021-22, compared to an inflow of $132 million during the same period of the previous year. The variance is a result of $214 million of Parliamentary appropriations received in the second quarter of 2021-22 for third quarter activities. In the prior year, the third quarter funding was not received before the end of the second quarter. Refer to Note 9 of the unaudited financial statements for a reporting on how appropriations were received and recognized.

Capital Transactions

Capital transactions used cash in the second quarter of 2021-22 of $43 million compared to $58 million in the same period in the previous year. The variance is a result of increased spending in the prior year toward newly built Chalk River site infrastructure.

Highlights of the Statement of Financial Position

($ millions)	**September 30 2021**	March 31 2021	Variance In $	Variance By %
Financial Assets	**$ 700**	$ 561	$ 139	25%
Liabilities	**8,462**	8,381	81	1%
Non-Financial Assets	**809**	787	22	3%
Accumulated Deficit	**(6,953)**	(7,033)	80	-1%

AECL closed the second quarter of 2021-22 with Financial Assets of $700 million, which represents a $139 million increase from March 31, 2021. This variance is mainly the result of an increase in cash related to $214 million of funding for the third quarter of the current year received before the end of the second quarter, partly offset by a $123 million decrease in the Appropriations receivable that was accrued at the end of the previous fiscal year and largely consumed in the first quarter.

The increase in Liabilities of $81 million can be attributed primarily to the $214 million increase in deferred funding for the third quarter, partly offset by a decrease in the Decommissioning and waste management provision and Contaminated sites liability as a result of spending on decommissioning activities.

Use of Parliamentary Appropriations

AECL receives its funding primarily through Parliamentary appropriations. The appropriations are drawn down based on quarterly cash flow projections and may not necessarily match the timing of expenses reported in the Statement of Operations and Accumulated Deficit. AECL records Parliamentary appropriations received in the period as revenue in the Statement of Operations and Accumulated Deficit or as Deferred funding in the Statement of Financial Position to the extent they relate to the months following the period end. Refer to Note 9 of the unaudited financial statements for a reporting on how appropriations received were used during the period.

MANAGEMENT'S RESPONSIBILITY

Management is responsible for the preparation and fair presentation of these quarterly financial statements in accordance with the Treasury Board of Canada's Directive on Accounting Standards: GC 5200 Crown Corporations Quarterly Financial Reports, and for such internal controls as Management determines are necessary to enable the preparation of quarterly financial statements that are free from material misstatement. Management is also responsible for ensuring all other information in this quarterly financial report is consistent, where appropriate, with the quarterly financial statements.

Based on our knowledge, these unaudited quarterly financial statements present fairly, in all material respects, the financial position, results of operations and cash flows of the Corporation, as at the date of and for the periods presented in the quarterly financial statements.

Fred Dermarkar
President and Chief Executive Officer
November 18, 2021
Chalk River, Canada

Thomas Assimes
Chief Financial Officer
November 18, 2021
Chalk River, Canada

UNAUDITED FINANCIAL STATEMENTS

Statement of Financial Position

As at

(thousands of Canadian dollars)	Notes	**September 30 2021**	March 31 2021
Financial Assets			
Cash		**$ 431,259**	$ 159,157
Long-term disposal of waste fund		**46,592**	48,030
Investments held in trust		**59,163**	58,315
Trade and other receivables	3	**49,906**	43,342
Appropriations receivable	9	**-**	122,601
Inventories held for resale		**113,273**	129,239
		700,193	560,684
Liabilities			
Accounts payable and accrued liabilities	4	**47,256**	37,029
Employee future benefits	5	**15,611**	16,211
Due to Canadian Nuclear Laboratories		**177,514**	175,620
Deferred funding	9	**213,800**	-
Decommissioning and waste management provision	6	**7,305,680**	7,362,192
Contaminated sites liability	7	**702,167**	790,190
		8,462,028	8,381,242
Net Debt		**(7,761,835)**	(7,820,558)
Non-Financial Assets			
Tangible capital assets	8	**808,500**	786,819
Prepaid expenses		**590**	444
		809,090	787,263
Accumulated Deficit		**(6,952,745)**	(7,033,295)
Accumulated deficit is comprised of:			
Accumulated operating deficit		**(6,954,431)**	(7,034,916)
Accumulated remeasurement gains		**1,686**	1,621
		$ (6,952,745)	$ (7,033,295)

The accompanying notes are an integral part of these financial statements.

Statement of Operations and Accumulated Deficit

(thousands of Canadian dollars)	Notes	2022 Budget	Three Months Ended September 30 **2021**	2020	Six Months Ended September 30 **2021**	2020
Revenues						
Parliamentary appropriations	9	$ 1,188,800	**$ 211,900**	$ 206,700	**$ 393,949**	$ 371,800
Commercial revenue		91,000	**38,174**	24,677	**65,357**	44,231
Interest income		4,000	**685**	793	**1,631**	1,853
Other proceeds		-	**300**	-	**7,050**	-
		1,283,800	**250,759**	232,170	**467,987**	417,884
Expenses						
Cost of sales		63,700	**24,440**	17,888	**43,357**	33,156
Operating expenses		63,643	**16,317**	16,316	**33,750**	33,316
Contractual expenses	10	248,785	**84,011**	68,307	**140,604**	120,529
Decommissioning, waste management and contaminated sites expenses		277,708	**96,177**	94,030	**169,791**	166,251
		653,836	**220,945**	196,541	**387,502**	353,252
Surplus for the period		629,964	**29,814**	35,629	**80,485**	64,632
Accumulated operating deficit, beginning of period		(7,034,916)	**(6,984,545)**	(7,012,467)	**(7,034,916)**	(7,041,470)
Accumulated operating deficit, end of period		$ (6,404,952)	**$ (6,954,731)**	$ (6,976,838)	**$ (6,954,431)**	$ (6,976,838)

The accompanying notes are an integral part of these financial statements.

Statement of Remeasurement Gains and Losses

(thousands of Canadian dollars)	Six Months Ended September 30 2021	2020
Accumulated remeasurement gains, beginning of period	**$ 1,621**	$ 1,801
Remeasurement gains arising during the period		
Unrealized gains on Investments held in trust	**254**	3,278
Reclassifications to the Statement of Operations and Accumulated Deficit		
Realized gains on Investments held in trust	**(189)**	(250)
Net remeasurement gains for the period	**65**	3,028
Accumulated remeasurement gains, end of period	**$ 1,686**	$ 4,829

The accompanying notes are an integral part of these financial statements.

Statement of Change in Net Debt

(thousands of Canadian dollars)	Notes	2022 Budget	**Six Months Ended September 30 2021**	2020
Surplus for the period		$ 629,964	**$ 80,485**	$ 64,632
Tangible capital assets				
Acquisition of tangible capital assets	8	(151,846)	**(46,172)**	(47,387)
Amortization of tangible capital assets	8	45,233	**24,289**	23,518
Other changes	8	-	**202**	3
		(106,613)	**(21,681)**	(23,866)
Non-financial assets				
Changes in prepaid expenses		-	**(146)**	(337)
Net remeasurement gains for the period		-	**65**	3,028
Decrease in net debt		523,351	**58,723**	43,457
Net debt, beginning of period		(7,820,558)	**(7,820,558)**	(7,756,153)
Net debt, end of period		$ (7,297,207)	**$ (7,761,835)**	$ (7,712,696)

The accompanying notes are an integral part of these financial statements.

Statement of Cash Flows

(thousands of Canadian dollars)	Six Months Ended September 30 **2021**	2020
Operating transactions		
Cash receipts from Parliamentary appropriations	**$ 730,350**	$ 471,850
Cash receipts from customers and other sources	**69,059**	98,188
Cash paid to suppliers	**(162,491)**	(157,011)
Cash paid to employees	**(6,926)**	(6,411)
Cash paid for decommissioning, waste management and contaminated sites activities	**(314,326)**	(270,925)
Cash invested for future waste management and disposal activities	**(990)**	(4,216)
Interest received	**772**	984
Cash provided by operating transactions	**315,448**	132,459
Capital transactions		
Acquisition of tangible capital assets	**(43,346)**	(58,111)
Cash applied to capital transactions	**(43,346)**	(58,111)
Increase in cash	**272,102**	74,348
Cash, beginning of period	**159,157**	79,851
Cash, end of period	**$ 431,259**	$ 154,199

The accompanying notes are an integral part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS
For the three and six months ended September 30, 2021

(Expressed in thousands of Canadian dollars)

(Unaudited)

1. General Information

Atomic Energy of Canada Limited (AECL) is a federal Crown corporation whose mandate is to enable nuclear science and technology and protect the environment by managing the Government of Canada's radioactive waste and decommissioning activities. Since 2015, AECL has been delivering its mandate through a Government-owned, Contractor-operated model, whereby Canadian Nuclear Laboratories (CNL), a private-sector organization, operates and manages AECL's sites on its behalf pursuant to a contractual arrangement.

AECL was incorporated in 1952 under the provisions of the *Canada Corporations Act* (and continued in 1977 under the provisions of the *Canada Business Corporations Act*), pursuant to the authority and powers of the Minister of Natural Resources under the *Nuclear Energy Act*.

AECL is a Schedule III Part I Crown corporation under the *Financial Administration Act* and an agent of Her Majesty in Right of Canada. As a result, AECL's liabilities are ultimately liabilities of Her Majesty in Right of Canada. AECL receives funding from the Government of Canada and is exempt from income taxes in Canada.

AECL's 2021-22 to 2025-26 Corporate Plan received Treasury Board approval in the first quarter of the 2021-22 fiscal year. The Corporate Plan is aligned with the direction provided by AECL's sole shareholder, the Government of Canada, and reflects AECL's priorities under the Government-owned, Contractor-operated model.

2. Significant Accounting Policies

Basis of Accounting

These quarterly financial statements have been prepared in accordance with Canadian Public Sector Accounting Standards (PSAS) established by the Public Sector Accounting Board (PSAB), and should be read in conjunction with the annual audited financial statements dated March 31, 2021. The accounting policies used in these statements are consistent with those disclosed in the most recent annual audited financial statements dated March 31, 2021.

Both financial and non-financial assets are reported on the Statement of Financial Position. Non-financial assets are normally employed to provide future services, and are charged to

expense through amortization or upon utilization. Non-financial assets are not taken into consideration when determining the net debt (or net financial assets), but rather are added to the net debt (or net financial assets) to determine the accumulated surplus (deficit).

Measurement Uncertainty

The preparation of the quarterly financial statements in accordance with PSAS requires management to make estimates and assumptions that affect the reported amounts of financial assets, liabilities and non-financial assets at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting period. Items requiring the use of significant estimates and assumptions include those related to the fair value of financial instruments, useful life and write-down of tangible capital assets, employee future benefits, contingent liabilities and provisions including the decommissioning and waste management provision and contaminated sites liability. Estimates and assumptions are based on the best information available at the time of preparation of the quarterly financial statements and are reviewed regularly to reflect new information as it becomes available. Where actual results differ from these estimates and assumptions, the impact will be recorded in future periods when the difference becomes known.

AECL has considered the impact of the COVID-19 pandemic on the valuation of its assets and has determined that no impairments are required. AECL has also considered the impact of the pandemic on the valuation of its Decommissioning and waste management provision and Contaminated sites liability, and where impacts were known, changes to the provision have been made.

Budget Figures

The 2021-22 budget is reflected in the Statement of Operations and Accumulated Deficit and the Statement of Change in Net Debt. Budget data presented in these financial statements is based upon the 2021-22 projections and estimates contained within the 2021-22 to 2025-26 Corporate Plan. The expected impact of the COVID-19 pandemic on AECL's results has been reflected in the 2021-22 budget figures.

3. Trade and Other Receivables

(thousands of Canadian dollars)	**September 30 2021**	March 31 2021
Trade receivables	**$ 22,235**	$ 11,480
Unbilled revenue	**17,455**	18,026
Consumption taxes receivable	**10,216**	13,836
	$ 49,906	$ 43,342

4. Accounts Payable and Accrued Liabilities

(thousands of Canadian dollars)	**September 30 2021**	March 31 2021
Trade payables	**$ 1,495**	$ 4,642
Other payables and accrued expenses	**36,576**	21,830
Accrued payroll liabilities	**1,113**	2,002
Amounts due to related parties	**150**	234
Provisions	**4,704**	5,704
Customer advances and obligations	**3,218**	2,617
	$ 47,256	$ 37,029

Provisions are short-term in nature and are not discounted and include estimated costs related to lawsuits and legal claims and disputes with suppliers.

5. Employee Future Benefits

a) Pension Plan

Employees of AECL participate in the Public Service Pension Plan (PSPP). The PSPP is a contributory defined benefit plan established through legislation and sponsored by the Government of Canada. Contributions are required by both the employees and the employer to cover current service cost. The President of the Treasury Board of Canada sets the required employer contributions based on a multiple of the employees' required contribution.

Total contributions made on account of current service are as follows:

	Three Months Ended September 30		**Six Months Ended September 30**	
(thousands of Canadian dollars)	**2021**	2020	**2021**	2020
Payments by employees	**$ 203**	$ 189	**$ 464**	$ 416
Payments by employer	**277**	284	**846**	808

The Government of Canada holds a statutory obligation for the payment of benefits relating to the PSPP. Pension benefits generally accrue up to a maximum period of 35 years at an annual rate of two per cent of pensionable service, multiplied by the average of the best five consecutive years of earnings. The benefits are coordinated with Canada/Québec Pension Plan benefits and are indexed to inflation.

b) Other Employee Future Benefits

AECL provides certain voluntary termination compensation and other post-employment benefits as described in Note 2(g) of the annual audited financial statements dated March 31, 2021. The defined benefit obligation is not funded, as funding is provided when benefits are paid. Accordingly, there are no plan assets and the defined plan deficit is equal to the defined benefit obligation.

The voluntary termination compensation included in the reported Employee future benefits liability is $6.1 million (March 31, 2021: $6.1 million) and is payable in instances of future voluntary resignations and retirements.

6. Decommissioning and Waste Management Provision

AECL has an obligation to decommission its nuclear facilities and other assets to address its liabilities, reduce risk, and protect the environment. A portion of the liabilities relate to obligations stemming from activities undertaken prior to the creation of AECL in 1952.

(thousands of Canadian dollars)	**Six Months Ended September 30 2021**	Year Ended March 31 2021
Carrying amount - Beginning of period	**$ 7,362,192**	$ 7,184,910
Liabilities settled	**(219,766)**	(432,194)
Unwinding of discount	**139,699**	271,357
Revision in estimate and timing of expenditures	**22,564**	335,037
Estimates affecting Property, plant and equipment and future disposal costs for waste from ongoing operations	**991**	3,082
Carrying amount - End of period	**$ 7,305,680**	$ 7,362,192

The undiscounted future expenditures, adjusted for inflation, for the planned activities comprising the liability are $15,891.4 million (March 31, 2021: $16,073.0 million).

The provision was discounted using a rate of 3.80% as at September 30, 2021 and March 31, 2021.

7. Contaminated Sites Liability

AECL has the responsibility for the implementation of the Government of Canada's commitments with respect to the Port Hope Area Initiative and Low-level Radioactive Waste Management Office.

(thousands of Canadian dollars)	**Six Months Ended September 30 2021**	Year Ended March 31 2021
Carrying amount - Beginning of period	**$ 790,190**	$ 877,196
Liabilities settled	**(95,551)**	(158,557)
Unwinding of discount	**7,528**	17,528
Revision in estimate and timing of expenditures	**-**	54,023
Carrying amount - End of period	**$ 702,167**	$ 790,190

The nature of the Port Hope Area Initiative is the clean-up and local, long-term, safe management of historic low-level radioactive waste in the municipalities of Port Hope and Clarington, in Ontario. This waste consists mainly of past process residues containing uranium and radium, and associated contaminated soils, the result of activities of a former federal Crown corporation and its private-sector predecessors. The implementation phase is forecasted to be complete in 2023-24, with long-term monitoring and maintenance expected to continue for 100 years after implementation.

AECL also has responsibility for the Low-level Radioactive Waste Management Office which includes all activities to address and manage historic low-level waste at sites in Canada for which the Government has assumed responsibility (excluding the Port Hope Area Initiative). Historic low-level radioactive waste is material contaminated with low levels of radioactivity resulting from the processing and shipment of uranium and radium.

The liability is discounted using net present value techniques at a rate of 1.91%. The estimated total undiscounted expenditures are $765.3 million (March 31, 2021: $860.9 million).

8. Tangible Capital Assets

(thousands of Canadian dollars)

	Construction in progress	Land and land improvements	Buildings	Reactors, Machinery and Equipment	Total
Cost at March 31, 2021	**$ 182,064**	**$ 145,586**	**$ 545,437**	**$ 502,368**	**$ 1,375,455**
Additions and transfers	46,172	1,476	42,583	7,535	97,766
Disposals and transfers	(51,594)	-	(490)	(2,925)	(55,009)
Cost at September 30, 2021	**176,642**	**147,062**	**587,530**	**506,978**	**1,418,212**
Accumulated amortization at March 31, 2021	-	**52,558**	**235,210**	**300,868**	**588,636**
Increase in amortization	-	2,720	7,478	14,091	24,289
Disposals and transfers	-	-	(314)	(2,899)	(3,213)
Accumulated amortization at September 30, 2021	**-**	**55,278**	**242,374**	**312,060**	**609,712**
Net carrying amount at March 31, 2021	**182,064**	**93,028**	**310,227**	**201,500**	**786,819**
Net carrying amount at September 30, 2021	**$ 176,642**	**$ 91,784**	**$ 345,156**	**$ 194,918**	**$ 808,500**

9. Parliamentary Appropriations

	Three Months Ended September 30		Six Months Ended September 30	
(thousands of Canadian dollars)	**2021**	2020	**2021**	2020
Parliamentary appropriations for operating, capital and statutory expenditures				
Amount received during the period for operating, capital and statutory expenditures	**$ 425,700**	$ 206,700	**$ 730,350**	$ 471,850
Amount receivable from a previous period	**-**	-	**(122,601)**	(100,050)
Amount received related to the next period (Deferred funding)	**(213,800)**	-	**(213,800)**	-
Total Parliamentary appropriations recognized	**$ 211,900**	$ 206,700	**$ 393,949**	$ 371,800

The difference between Parliamentary appropriations received and recognized relates to amounts received but related to either a previous or subsequent quarter. The appropriations approved for operating and capital expenditures for the year ending March 31, 2022 total $1,189 million.

10. Contractual Arrangement

Since 2015, AECL has been delivering its mandate through a Government-owned, Contractor-operated model whereby the assets, sites and facilities continue to be owned by AECL, but are being contractually managed and operated by a private-sector company. As such, AECL makes payments to CNL and its parent company, Canadian National Energy Alliance (CNEA), as per the terms of the contractual arrangement.

The following contractual expenses were incurred:

	Three Months Ended September 30		Six Months Ended September 30	
(thousands of Canadian dollars)	**2021**	2020	**2021**	2020
Contractual amounts paid or payable	**$ 286,959**	$ 257,987	**$ 527,579**	$ 464,592
Less: Costs charged to Decommissioning and waste management provision and Contaminated sites liability	**(159,905)**	(147,661)	**(313,972)**	(273,825)
Less: Costs charged to Construction in progress	**(29,357)**	(29,227)	**(46,172)**	(47,387)
Less: Costs classified as Cost of sales	**(13,686)**	(12,792)	**(26,831)**	(22,851)
Contractual expenses	**$ 84,011**	$ 68,307	**$ 140,604**	$ 120,529

Contractual amounts paid or payable include fees paid to CNEA, in accordance with the contractual arrangement between AECL and CNEA and CNL.

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