



**ATOMIC ENERGY OF CANADA LIMITED**

# **First Quarter Financial Report**

**Financial Statements (Unaudited)**

**As at and for the three months ended June 30, 2019**

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# MESSAGE FROM THE PRESIDENT AND CHIEF EXECUTIVE OFFICER



As we start our fourth full year under the Government-owned, Contractor-operated (GoCo) model, we continue our efforts to drive nuclear opportunity for Canada. Canadian Nuclear Laboratories (CNL), which manages and operates our sites, are making real progress in delivering nuclear science and technology that benefit Canadians, all while protecting the environment and bringing value for Canada. The transformation of CNL, both the physical facilities at our Chalk River site and the delivery model, is well underway.

With governments striving towards a clean energy future to address the effects of climate change, one of AECL's and CNL's key initiatives has become part of the discussion: enabling the development of Small Modular Reactor (SMR) technology in Canada. As part of their long-term plan, which has been approved by AECL, CNL has set out an objective to bring an SMR demonstration to one of AECL's sites by 2026. The objective is to leverage the sites, facilities, expertise and private-sector interest to become a platform for reactor developers to demonstrate their technologies. As proponents are currently making their way through regulatory review and CNL's invitation process, the long-term benefits of SMRs predicted for Canada's supply chain and clean energy mix could soon become a reality.

Also, in nuclear science and technology, AECL continued to manage the Federal Nuclear Science and Technology Work Plan, coordinating the needs of thirteen departments and agencies and delivering research activities in support of the Government's priorities in the areas of health, safety and security, energy, and the environment. Through the Work Plan, we have strengthened federal engagement and partnerships while contributing to federal commitments such as Mission Innovation and the Clean Energy Ministerial. This includes advancing innovations in medical applications such as targeted alpha therapy as the next generation of cancer treatment, leveraging other federal programs such as the Canadian Safety and Security Program to address the security risks related to opioids, bringing together key federal stakeholders to a cyber-security roundtable, and driving hydrogen technologies to the forefront as a clean energy solution.

As always, AECL remains committed to addressing the Government of Canada's radioactive waste and environmental responsibilities. Work advanced in this quarter with clean-up activities continuing at the Port Hope Area Initiative (in Ontario) and further decommissioning work at the Whiteshell Laboratories (in Manitoba) and the Chalk River Laboratories (in Ontario). The objective remains to responsibly and safely manage our radioactive waste and clean up contaminated sites in order to protect the environment.

We are cognizant of the fact that some members of public will have questions about our waste management activities, and we are committed to engaging with and listening to stakeholders and Indigenous communities. I believe we all share a common goal of striving to protect the public and environment.

A handwritten signature in black ink that reads "Richard J. Sexton". The signature is fluid and cursive, written in a professional style.

**Richard J. Sexton**

*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 first quarter of 2019-20 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 August 22, 2019.

## 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 and decommissioning responsibilities. AECL receives funding from the Government of Canada and earns commercial revenues 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 on a day-to-day basis 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 radioactive waste management program and build a world-class nuclear laboratory at Chalk River that fulfills Government requirements, while reducing costs and risks to Canada. As an agent of Government, AECL brings value to Canada by overseeing the Government-owned, Contractor-operated arrangement and supporting the Government's development of nuclear policy. AECL plays a challenge function with a view to advancing its priorities in the most effective and efficient manner, whilst maintaining the highest priority on safety, security and protection of the environment.

A key element of AECL's role under the GoCo model is to set priorities for CNL, and to oversee and assess its performance in order to provide value for Canada. In other words, AECL sets out "What" needs to be achieved with CNL deciding "How" it is best executed. This is achieved by AECL having a small organization, staffed by experts, providing oversight of the GoCo agreements.

There are two main areas of focus:

1. Environmental Stewardship (Decommissioning and Waste Management)

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 in order to clean up AECL's sites, protect the environment, and make way for new buildings that will support the ongoing nuclear science and technology mission at the Chalk River site.

2. Nuclear Laboratories

The Chalk River Laboratories are Canada's largest science and technology complex and host to more than 2,800 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 will transform 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.

**Sites under the responsibility of AECL across Canada**



CNL manages and operates several AECL sites across Canada including the Chalk River Laboratories

## First Quarter Highlights for 2019-20

### Environmental Stewardship (Decommissioning and Waste Management)

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. Several sites and/or buildings have also been contaminated as a result

of nuclear science and technology activities and past waste management practices; these now need to be decontaminated and demolished, sites cleaned up and remediated, and the radioactive waste managed properly and safely.

AECL is also responsible for fulfilling Canada's responsibilities with respect to historic low-level 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 pursuant to an agreement between Canada and the municipalities. Two near surface facilities (engineered containment mounds) have been built for this purpose, with waste being emplaced in both of them.

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 GoCo model, AECL was given a mandate to accelerate these activities, in order 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 in order to reduce its environmental liabilities.

This work is well underway, with significant progress having been made at the Chalk River Laboratories where already more than 70 structures and facilities have been demolished. 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 constructed as part of the site's revitalization.

The resulting contaminated materials, demolition debris, and waste from contaminated lands will need to be disposed of in a purpose-built, engineered facility. CNL has proposed to build a Near Surface Disposal Facility at the Chalk River site, to responsibly and safely dispose of AECL's low-level radioactive waste. Near surface disposal is an internationally accepted and proven method of permanently disposing of low-level radioactive waste. The radioactive waste intended for the disposal facility is either currently stored on site, will be created as a result of land remediation and decommissioning activities at the Chalk River site and other smaller AECL sites across Canada, or will be produced as nuclear science and technology activities continue to be performed at the Chalk River site in the coming decades. It is also expected that a small percentage of radioactive waste to be disposed in the facility, will come from hospitals and universities (as a result, for example, of nuclear medicine activities).

Notable accomplishments in the area of environmental stewardship for the first quarter of 2019-20 are presented below.

As per previous quarters, CNL continued its engagement activities with stakeholders, including site tours and information sessions, as well as outreach to, and meetings with, Indigenous groups on the proposed Near Surface Disposal Facility at the **Chalk River site**, in order to provide information and obtain input. CNL has also been reviewing, reflecting on, and responding to the questions that it received on its proposal as part of the Environmental Assessment process. CNL is taking the time to review all questions received from the public, Indigenous groups, the Canadian Nuclear Safety Commission and other regulators, and is preparing responses in order to address them and, as

appropriate, adjust its approach. CNL also continued its technical analysis of the facility, and has been working with Indigenous groups to support traditional knowledge studies.

In the interim, CNL continued to expand temporary storage of low-level radioactive waste in order to allow for the ongoing building decommissioning to proceed at the Chalk River site. Work also continued to expand one of the waste management areas in preparation for waste which will be received from other AECL sites. The objective is to consolidate waste in one location in order to reduce risks, as well as site monitoring, including security, costs.

Another key project currently underway concerns the repatriation of highly-enriched uranium to the United States. The material was used at the Chalk River Laboratories, most notably in the production of the medical isotope Molybdenum-99. This material requires high levels of security, as well as costly and complicated storage. As part of the Global Threat Reduction Initiative (an initiative which aims at reducing proliferation risks by consolidating highly-enriched uranium inventories in fewer locations around the world), AECL is working with the United States Department of Energy and CNL to return (repatriate) this material to the United States for conversion and reuse. This initiative provides for a safe, secure, timely and permanent solution to Canada's long-term management of this material. Shipments of fuel rods containing highly-enriched uranium, as well as shipments of target-residue material, to the Savannah River site in the United States continued to be safely completed during the first quarter of 2019-20 as planned.

In Manitoba, work continued to decommission the **Whiteshell site**, which was previously an active nuclear research laboratory. 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. The proposal to decommission the research reactor in situ has been used internationally and provides a safe, environmentally sound, and more cost effective approach to address AECL's liability, when compared with the removal and disposal of contaminated reactor components. The proposal, led by CNL, is currently undergoing an Environmental Assessment. During the first quarter of 2019-20, CNL continued to address the comments and questions it received from the public, Indigenous groups, the Canadian Nuclear Safety Commission and other regulators as part of the Environmental Assessment process. It also continued to engage with stakeholders, the public and Indigenous groups on its proposal through site tours and meetings. Other work required to decommission the Whiteshell site includes removal of the fuel from the site and addressing waste that is currently stored in trenches and bunkers which are located at or below ground level. CNL is currently developing solutions for the decommissioning and remediation, where appropriate, of these areas. In some cases, the retrieval process is presenting some challenges, as waste and facilities may have degraded over time. The objective is to find solutions that will protect workers as they work to remediate areas, and further protect the environment by moving waste to modern facilities.

Similarly, CNL continued to advance its proposal for the in situ decommissioning of the **Nuclear Power Demonstration reactor**. During the first quarter of 2019-20, CNL continued to engage with stakeholders, the public and Indigenous groups on its proposal through site tours and meetings.

As part of the **Port Hope Area Initiative**, where historic low-level radioactive waste in the municipalities of Port Hope and Clarington is being remediated, CNL continued with residential property remediation and waste emplacement as part of the Port Hope Project. Based on site

characterization results, the number of small scale sites (residential properties) needing remediation is increasing compared to the original plans. Work is underway to review schedules and work packages to manage this change.

During the first quarter of 2019-20, CNL continued work to remediate residential properties in Port Hope, and over 650,000 cubic meters of waste was emplaced in the near surface facility purpose-built for this in the Municipality of Port Hope. Waste also continued to be emplaced in the near surface facility located in the Municipality of Clarington, as part of the Port Granby project. It is expected that waste remediation will be completed during this fiscal year, with the facility being capped and the site closed and ready for long-term monitoring in the coming years.

The Port Hope Area Initiative is delivering on Canada's long-term commitment to clean up low-level radioactive waste in the community, remediate historically contaminated lands and safely manage radioactive waste.

## **Nuclear Laboratories**

AECL has been leading innovations 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, counter-terrorism, health, and security. AECL's unique facilities have made it an attractive research destination for scientists across Canada and the world, leading to home-grown innovation and the development and retention of highly-qualified nuclear workers and scientists.

Through the GoCo 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 uses AECL facilities to provide technical services and research and development products for third parties on a commercial basis.

CNL has developed a 10-year 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, external environment and market opportunities, CNL has identified eight strategic initiatives that it will focus on during the planning period, 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 (SMRs):** CNL's goal is to demonstrate the commercial viability of SMRs 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 SMRs 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 research:** 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 (IT) 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.
- **Environmental remediation management science and technology:** CNL is working to expand the understanding of the behaviour of contaminant radionuclides, and further develop safe, 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.

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 first quarter of 2019-20, CNL pursued activities in this respect, including:

- Global First Power, a SMR technology vendor which is currently progressing through CNL's SMR invitation process, submitted an application for a licence to prepare site for an SMR at the Chalk River Laboratories. This is being done in parallel to business discussions with CNL and AECL, and is not an indication of project approval. As part of its long-term vision, CNL has set out an objective to become a hub for SMR research and technology, including to have a demonstration unit built at an AECL site by 2026. This is aligned with AECL's role as a federal Crown corporation to enable nuclear science and technology and to drive nuclear innovation for Canada.
- CNL hosted its sixth SMR Roundtable in Vancouver, an event that sought to involve international developers in discussions focused on the synergy between new nuclear and other clean energy sources. This supports CNL's efforts to attract partners in order to facilitate the development and deployment of SMRs and is aligned with the Canadian SMR Roadmap, which was released in the last quarter.
- Delivery of the Federal Nuclear Science and Technology Work Plan continued to progress well. As part of this work plan, thirteen federal departments and agencies, together with AECL, have identified priorities in nuclear science and technology in order to support federal mandates in the areas of health, energy, safety and security, and the environment. Projects from the Federal Nuclear Science and Technology Work Plan continue to support a number of government priorities and commitments including: Mission Innovation, the Pan-Canadian Framework and the Clean Energy Ministerial as well as strengthening bilateral partnerships on nuclear science and technology with countries such as the United States, United Kingdom, and India, and multilateral partnerships with the Nuclear Energy Agency, and the Generation IV International Forum. Projects under the Federal Nuclear Science and Technology Work Plan continue to successfully leverage research with other funding programs such as the Canadian Safety and Security Program.
- In April, CNL co-hosted the 11<sup>th</sup> International Symposium on Targeted Alpha Therapy (TAT 11) in partnership with TRIUMF, Canada's particle accelerator centre. Targeted alpha therapy, often regarded as the next generation of cancer treatment, works to deliver radiation selectively to cancer cells while minimizing toxic effects that could result in additional treatment needs. CNL has made targeted alpha therapy one of its scientific priorities going forward.
- AECL co-hosted the Generation IV International Forum in Vancouver to discuss the development and deployment opportunities for Generation IV nuclear technologies. This international collaboration works to identify and select nuclear energy systems for further development, and aligns with government priorities in the Federal Nuclear Science and Technology Work Plan.
- *Of Great Service: The Story of the National Research Universal Reactor*, a documentary produced by CNL, was officially premiered to the general public after a series of local screenings over the previous months. *Of Great Service* tells the story of the NRU reactor and its historical role as one of Canada's most important scientific and research facilities.

- Design work for an important new science facility to be built at the Chalk River Laboratories, the Advanced Nuclear Materials Research Centre, continued during the quarter. The facility will consolidate key capabilities from a number of aging facilities that are scheduled for decommissioning, and will enable world-class research in nuclear energy, public health, environmental stewardship and global security.

## 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 months ended June 30, 2019, 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.

## Financial Review

(\$ millions)	Three Months Ended	
	June 30,	
	2019	2018
<b>Revenues</b>		
Parliamentary appropriations	\$ 145	\$ 126
Commercial revenue	30	32
Interest income	1	1
	<b>176</b>	<b>159</b>
<b>Expenses</b>		
Cost of sales	21	20
Operating expenses	18	16
Contractual expenses	57	65
Decommissioning, waste management and contaminated sites expenses	69	68
	<b>165</b>	<b>169</b>
<b>Surplus (deficit) for the period</b>	<b>\$ 11</b>	<b>\$ (10)</b>

### Parliamentary Appropriations

The Government of Canada provides funding quarterly for AECL to advance its priorities and deliver on its mandate. AECL recognized \$145 million of Parliamentary appropriations in the first quarter of 2019-20, compared to \$126 million for the same period in 2018-19. The first quarter variance is primarily related to an anticipated decrease in customer receipts in the first quarter of 2019-20 compared to the prior period.

## **Commercial Revenue**

In the first quarter of 2019-20, \$30 million in revenue was recognized, compared to \$32 million for the same period in 2018-19. Revenue included isotope sales, commercial technology sales, and research and development activities performed by CNL for commercial customers. The reported decrease in the quarter can be attributed to decreased sales of the cobalt isotope, partly offset by an increase in heavy water sales.

## **Interest Income**

Interest income is earned on cash, short-term investments from appropriations and investments held in trust. Income earned in the quarter is comparable to the prior period.

## **Cost of Sales**

Cost of sales is consistent with the Commercial revenue noted above, but with a decrease in margin in the quarter as a result of decreased higher margin isotope sales.

## **Operating Expenses**

Operating expenses are largely comprised of AECL's oversight expenses and amortization of tangible capital assets. The \$18 million in the current period is consistent with the previous year's quarter.

## **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 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 first quarter total \$57 million, compared to \$65 million in the first quarter of 2018-19. The variance in the quarter is largely a result of decreased spending on the continuing shutdown of the NRU reactor.

## **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. Decommissioning, waste management and contaminated sites expenses in the first quarter of 2019-20 of \$69 million are comparable to that of the same period in 2018-19.

## **Surplus (Deficit) for the Period**

Consistent with AECL's financial reporting framework, appropriations are recognized as revenue when received in a given period 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 2019-20 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 three months of 2019-20.

## Cash Flow and Working Capital

<i>(\$ millions)</i>	<b>Three Months Ended</b>	
	<b>June 30,</b>	
	<b>2019</b>	<b>2018</b>
Cash provided by operating transactions	\$ 233	\$ 269
Cash applied to capital transactions	<b>(17)</b>	(19)
Increase in cash	<b>216</b>	250
Balance at beginning of the year	<b>62</b>	38
<b>Balance at end of the year</b>	<b>\$ 278</b>	<b>\$ 288</b>

### Operating Transactions

Operating transactions generated a net cash inflow of \$233 million in the first quarter of 2019-20, compared to \$269 million during the same period in 2018-19. The variance is the result of a lower draw of Parliamentary appropriations due to lower anticipated cash requirements for the second quarter of 2019-20 compared to the same quarter in the prior year, largely due to decreased spending for activities related to the NRU reactor as it is being prepared for decommissioning.

### Capital Transactions

Capital transactions used cash of \$17 million in the first quarter of 2019-20 compared to \$19 million in the same period in 2018-19.

## Highlights of the Statement of Financial Position

<i>(\$ millions)</i>	<b>June 30, 2019</b>	March 31, 2019	Variance In \$	Variance By %
Financial Assets	\$ <b>576</b>	\$ 435	\$ 141	32%
Liabilities	<b>7,955</b>	7,822	133	2%
Non-Financial Assets	<b>670</b>	665	5	1%
Accumulated Deficit	<b>(6,709)</b>	(6,721)	12	0%

AECL closed the first quarter of 2019-20 with Financial Assets of \$576 million, which represents a \$141 million increase from March 31, 2019. This variance is mainly the result of increased cash received from Parliamentary appropriations as the appropriations for the second quarter of 2019-20 were received just prior to the end of the current quarter and treated as Deferred funding, partially offset by amounts receivable from the prior year.

The increase in Liabilities of \$133 million can be attributed primarily to the increase in Deferred funding as described above, partly offset by a decrease in the Decommissioning and waste management provision and Contaminated sites liability as a result of spending on decommissioning activities.

## Management of Risks and Uncertainties

Risks and uncertainties are described in AECL's 2018-19 Annual Report under the section "Management's Discussion and Analysis." Risks and uncertainties and risk management practices as noted in the 2018-19 Annual Report have not materially changed in the first three months of 2019-20.

## 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 "Standard on Quarterly Financial Reports for Crown Corporations," 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.



**Richard J. Sexton**

*President and Chief Executive Officer*

August 22, 2019

Chalk River, Canada



**David J. Smith**

*Chief Financial Officer*

August 22, 2019

Chalk River, Canada

# UNAUDITED FINANCIAL STATEMENTS

## Statement of Financial Position

As at

<i>(thousands of Canadian dollars)</i>	Notes	June 30, 2019	March 31, 2019
<b>Financial Assets</b>			
Cash		\$ 277,572	\$ 61,833
Long-term disposal of waste fund		32,744	31,000
Investments held in trust		54,472	53,573
Trade and other receivables	3	42,741	42,851
Appropriations receivable	9	-	69,276
Inventories held for resale		168,491	176,511
		<b>576,020</b>	<b>435,044</b>
<b>Liabilities</b>			
Accounts payable and accrued liabilities	4	27,583	32,684
Employee future benefits	5	19,549	19,779
Due to Canadian Nuclear Laboratories		93,781	100,400
Deferred funding	9	195,650	-
Decommissioning and waste management provision	6	6,598,697	6,613,955
Contaminated sites liability	7	1,019,971	1,054,978
		<b>7,955,231</b>	<b>7,821,796</b>
<b>Net Debt</b>		<b>(7,379,211)</b>	<b>(7,386,752)</b>
<b>Non-Financial Assets</b>			
Tangible capital assets	8	669,133	665,003
Prepaid expenses		844	464
		<b>669,977</b>	<b>665,467</b>
<b>Accumulated Deficit</b>		<b>(6,709,234)</b>	<b>(6,721,285)</b>
Accumulated deficit is comprised of:			
Accumulated operating deficit		(6,710,659)	(6,722,172)
Accumulated remeasurement gains		1,425	887
		<b>\$ (6,709,234)</b>	<b>\$ (6,721,285)</b>

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

## Statement of Operations and Accumulated Deficit

For the three months ended

<i>(thousands of Canadian dollars)</i>	Notes	2020 Budget	June 30, 2019	June 30, 2018
<b>Revenues</b>				
Parliamentary appropriations	9	\$ 1,197,282	\$ 144,540	\$ 126,514
Commercial revenue		75,700	30,344	31,645
Interest income		3,000	1,474	1,100
		1,275,982	176,358	159,259
<b>Expenses</b>				
Cost of sales		52,990	21,324	20,026
Operating expenses		66,016	17,609	16,372
Contractual expenses	10	251,200	56,691	64,483
Decommissioning, waste management and contaminated sites expenses		262,754	69,221	68,127
		632,960	164,845	169,008
<b>Surplus (deficit) for the period</b>		643,022	11,513	(9,749)
<b>Accumulated operating deficit, beginning of period</b>		(6,722,172)	(6,722,172)	(6,868,978)
Transfer to deferred decommissioning and waste management funding		-	-	(5,930)
Transfer to repayable contributions		-	-	(523)
<b>Accumulated operating deficit, end of period</b>		\$ (6,079,150)	\$ (6,710,659)	\$ (6,885,180)

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

## Statement of Remeasurement Gains and Losses

For the three months ended

<i>(thousands of Canadian dollars)</i>	<b>June 30, 2019</b>	June 30, 2018
<b>Accumulated remeasurement gains (losses), beginning of period</b>	<b>\$ 887</b>	<b>\$ (120)</b>
<b>Remeasurement gains (losses) arising during the period</b>		
Unrealized gains (losses) on Investments held in trust	533	(244)
<b>Reclassifications to the Statement of Operations and Accumulated Deficit</b>		
Realized losses on Investments held in trust	5	-
<b>Net remeasurement gains (losses) for the period</b>	<b>538</b>	<b>(244)</b>
<b>Accumulated remeasurement gains (losses), end of period</b>	<b>\$ 1,425</b>	<b>\$ (364)</b>

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

## Statement of Change in Net Debt

For the three months ended

<i>(thousands of Canadian dollars)</i>	Notes	2020 Budget	June 30, 2019	June 30, 2018
<b>Surplus (deficit) for the period</b>		\$ 643,022	\$ 11,513	\$ (9,749)
<b>Tangible capital assets</b>				
Acquisition of tangible capital assets	8	(200,000)	<b>(16,266)</b>	(12,384)
Amortization of tangible capital assets	8	45,826	<b>12,155</b>	10,478
Other changes	8	-	<b>(19)</b>	859
		(154,174)	<b>(4,130)</b>	(1,047)
<b>Non-financial assets</b>				
Changes in prepaid expenses		-	<b>(380)</b>	128
Net remeasurement gains (losses) for the period		-	<b>538</b>	(244)
<b>Decrease (increase) in net debt</b>		488,848	<b>7,541</b>	(10,912)
<b>Net debt at beginning of period</b>		(7,386,752)	<b>(7,386,752)</b>	(7,515,436)
Transfer to deferred decommissioning and waste management funding		-	-	(5,930)
Transfer to repayable contributions		-	-	(523)
<b>Net debt at end of period</b>		\$ (6,897,904)	<b>\$ (7,379,211)</b>	\$ (7,532,801)

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

## Statement of Cash Flows

For the three months ended

<i>(thousands of Canadian dollars)</i>	<b>June 30, 2019</b>	June 30, 2018
<b>Operating transactions</b>		
Cash receipts from Parliamentary appropriations	\$ 409,466	\$ 457,739
Cash receipts from customers	29,580	31,948
Cash paid to suppliers	(82,349)	(94,668)
Cash paid to employees	(3,673)	(4,398)
Cash paid for decommissioning, waste management and contaminated sites activities	(119,486)	(120,502)
Cash invested for waste management and disposal activities	(1,559)	(1,576)
Interest received	887	690
<b>Cash provided by operating transactions</b>	<b>232,866</b>	<b>269,233</b>
<b>Capital transactions</b>		
Acquisition of tangible capital assets	(17,127)	(18,771)
<b>Cash applied to capital transactions</b>	<b>(17,127)</b>	<b>(18,771)</b>
<b>Increase in cash</b>	<b>215,739</b>	<b>250,462</b>
<b>Cash at beginning of period</b>	<b>61,833</b>	<b>37,580</b>
<b>Cash at end of period</b>	<b>\$ 277,572</b>	<b>\$ 288,042</b>

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

# NOTES TO THE FINANCIAL STATEMENTS

## For the three months ended June 30, 2019

(Expressed in thousands of Canadian dollars)

(Unaudited)

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### 1. The Corporation

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 2019-20 to 2023-2024 Corporate Plan received Treasury Board approval in the first quarter of the 2019-20 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, 2019.

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 annually 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.

#### *Budget Figures*

The 2019-20 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 2019-20 projections and estimates contained within the 2019-20 to 2023-24 Corporate Plan.

### **3. Trade and Other Receivables**

<i>(thousands of Canadian dollars)</i>	<b>June 30, 2019</b>	March 31, 2019
Trade receivables	\$ 22,371	\$ 17,848
Unbilled revenue	<b>10,372</b>	10,514
Consumption taxes receivable	<b>9,998</b>	14,489
	<b>\$ 42,741</b>	<b>\$ 42,851</b>

## 4. Accounts Payable and Accrued Liabilities

<i>(thousands of Canadian dollars)</i>	<b>June 30, 2019</b>	March 31, 2019
Trade payables	\$ 6,917	\$ 8,423
Other payables and accrued expenses	<b>12,325</b>	14,493
Accrued payroll liabilities	<b>1,146</b>	1,812
Amounts due to related parties	<b>305</b>	172
Provisions	<b>5,620</b>	5,640
Customer advances and obligations	<b>1,270</b>	2,144
	<b>\$ 27,583</b>	<b>\$ 32,684</b>

The Amounts due to related parties represent royalty revenues earned that are payable to the Government. Provision amounts are short-term in nature, are not discounted and include estimated costs related to lawsuits, 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:

<i>(thousands of Canadian dollars)</i>	<b>Three Months Ended June 30,</b>	
	<b>2019</b>	2018
Payments by employees	\$ 234	\$ 248
Payments by employer	<b>558</b>	522

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 (VTC) and other post-employment benefits as described in Note 2(g) of the annual audited financial statements dated March 31, 2019. 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 VTC included in the reported Employee future benefits liability is \$7.1 million (March 31, 2019: \$7.2 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 in order 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.

	<b>Three Months Ended</b>	Year Ended
	<b>June 30,</b>	March 31,
	<b>2019</b>	2019
<i>(thousands of Canadian dollars)</i>		
<b>Carrying amount - Beginning of period</b>	<b>\$ 6,613,955</b>	<b>\$ 6,473,301</b>
Liabilities settled	<b>(80,358)</b>	(353,292)
Unwinding of discount	<b>63,541</b>	251,132
Revision in estimate and timing of expenditures	<b>1,559</b>	242,814
<b>Carrying amount - End of period</b>	<b>\$ 6,598,697</b>	<b>\$ 6,613,955</b>

The undiscounted future expenditures, adjusted for inflation, for the planned activities comprising the liability are \$15,820.7 million (March 31, 2019: \$15,901.1 million).

The provision was discounted using a rate of 3.84% as at June 30, 2019 and March 31, 2019.

## 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.

	<b>Three Months Ended</b>	Year Ended
	<b>June 30,</b>	March 31,
<i>(thousands of Canadian dollars)</i>	<b>2019</b>	2019
<b>Carrying amount - Beginning of period</b>	<b>\$ 1,054,978</b>	\$ 988,243
Liabilities settled	<b>(40,688)</b>	(156,905)
Unwinding of discount	<b>5,681</b>	21,377
Revision in estimate and timing of expenditures	-	202,263
<b>Carrying amount - End of period</b>	<b>\$ 1,019,971</b>	\$ 1,054,978

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 30 years after implementation. The liability is discounted using net present value techniques at a rate of 2.15%. The estimated total undiscounted expenditures are \$1,121.0 million (March 31, 2019: \$1,161.7 million).

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.

## 8. Tangible Capital Assets

(thousands of Canadian dollars)

	Construction in progress	Land and land improvements	Buildings	Reactors, Machinery and Equipment	Total
<b>Cost at March 31, 2019</b>	\$ 104,153	\$ 100,536	\$ 506,852	\$ 475,662	\$ 1,187,203
Additions and transfers	16,266	-	2,527	4,082	22,875
Disposals and transfers	(6,609)	-	54	(204)	(6,759)
<b>Cost at June 30, 2019</b>	<b>113,810</b>	<b>100,536</b>	<b>509,433</b>	<b>479,540</b>	<b>1,203,319</b>
<b>Accumulated amortization at March 31, 2019</b>	-	42,316	210,189	269,695	522,200
Increase in amortization	-	1,080	3,270	7,805	12,155
Disposals	-	-	686	(855)	(169)
<b>Accumulated amortization at June 30, 2019</b>	-	<b>43,396</b>	<b>214,145</b>	<b>276,645</b>	<b>534,186</b>
<b>Net carrying amount at March 31, 2019</b>	<b>104,153</b>	<b>58,220</b>	<b>296,663</b>	<b>205,967</b>	<b>665,003</b>
<b>Net carrying amount at June 30, 2019</b>	<b>\$ 113,810</b>	<b>\$ 57,140</b>	<b>\$ 295,288</b>	<b>\$ 202,895</b>	<b>\$ 669,133</b>

## 9. Parliamentary Appropriations

	Three Months Ended	
	June 30,	
(thousands of Canadian dollars)	2019	2018
<b>Parliamentary appropriations for operating and capital expenditures</b>		
Amount received during the period for operating and capital expenditures	\$ 409,466	\$ 457,739
Amount receivable from a previous period	(69,276)	(103,825)
Amount received related to the next period (Deferred funding)	(195,650)	(227,400)
<b>Total Parliamentary appropriations recognized</b>	<b>\$ 144,540</b>	<b>\$ 126,514</b>

The difference between received and recognized Parliamentary appropriations 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, 2020 total \$1,197 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:

<i>(thousands of Canadian dollars)</i>	Three Months Ended	
	2019	June 30, 2018
<b>Contractual amounts paid or payable</b>	<b>\$ 206,365</b>	<b>\$ 213,892</b>
Less: Costs charged to Decommissioning and waste management provision and Contaminated sites liability	<b>(120,407)</b>	(121,583)
Less: Costs charged to Construction in progress	<b>(16,266)</b>	(12,384)
Less: Costs classified as Cost of sales	<b>(13,001)</b>	(15,442)
<b>Contractual expenses</b>	<b>\$ 56,691</b>	<b>\$ 64,483</b>

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

## 11. Comparative Figures

Certain of the June 30, 2018 comparative figures have been reclassified to conform to the financial statement presentation adopted in the 2019-20 fiscal year.



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