



Canadian Nuclear
Laboratories

Laboratoires Nucléaires
Canadiens

Catalyzing a Better Tomorrow, Today

2024 Sustainability Report



Land Acknowledgment

CNL operates on sites located on the traditional lands, waterways and ceded and unceded territories of Indigenous peoples. CNL recognizes and affirms all First Nations, Métis, and Inuit in this land we now know as Canada.

We acknowledge, respect and seek to better understand Indigenous history, rights and title on the lands where we work.

We honour and respect the importance of the relationship between Indigenous peoples and their lands, waters and territories.



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Introduction

About This Report

Scope

The scope of this Sustainability Report (“Report”) applies to CNL’s operations throughout Canada and summarizes the progress we have made in addressing our strategic Environmental, Social and Governance (ESG) priorities for the year ending March 31, 2024. CNL issues a Sustainability Report on an annual basis; links to our previous reports can be found [here](#).

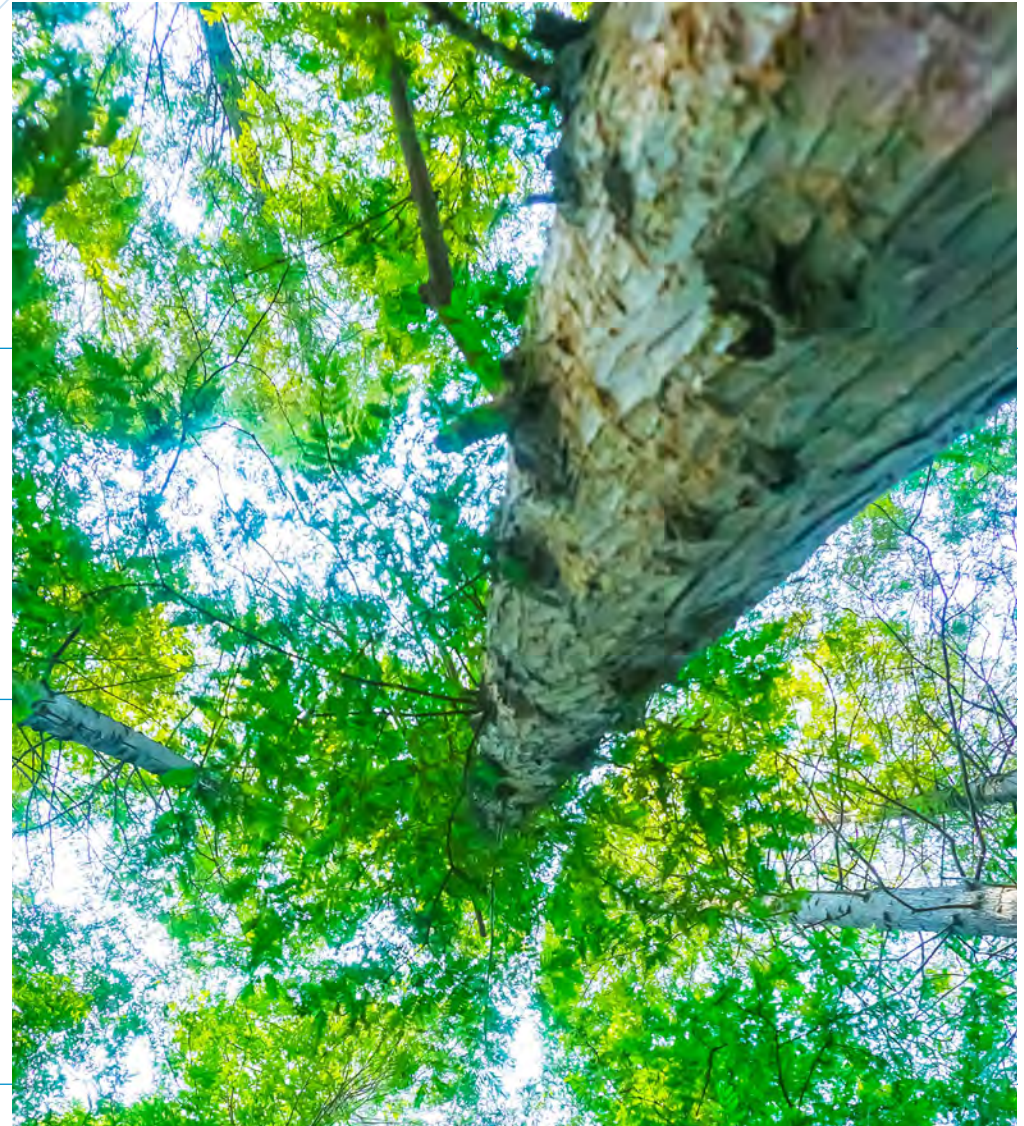
Definition of Sustainability

This report focuses on the corporate sustainability of CNL’s operations and covers the treatment of environmental, social and governance (ESG) topics of material importance to CNL, its shareholder, client, Indigenous Nations, communities and organizations, and stakeholders. Throughout this report, reference is made to ESG when referring to those topics that are most material to achieving CNL’s overall corporate sustainability goals.

Reporting standards

Our Report is prepared with reference to global reporting frameworks including the [Global Reporting Initiative \(GRI\)](#), [Sustainability Accounting Standards Board \(SASB\)](#), and the [Task Force on Climate-related Financial Disclosures \(TCFD\)](#). We acknowledge that the global ESG disclosure and reporting landscape is evolving quickly and both SASB and TCFD are now fully incorporated into the [International Financial Reporting Standards \(IFRS\) Sustainability Disclosure Standards](#) IFRS S1 and S2.

We are monitoring the release of the final [Canadian Sustainability Standards Board \(CSSB\)](#) Sustainability Disclosure guidelines for



alignment in our future reports. We are also exploring the [Task Force on Nature-related Financial Disclosures \(TNFD\)](#) to assess our readiness for future reporting.

Please see Appendix A for our ESG data supplement with relevant metrics and GRI Content Index.



Statement on forward-looking information

This Report includes forward-looking information and forward looking statements about our environmental, social and governance performance. These forward-looking perspectives are based on assumptions, information, beliefs, plans and aspirations as of the

date this Report was published. This may be subject to change going forward based on, among other things, economic and market conditions, budgets, and the regulatory and policy landscape.

Leadership Messages

MESSAGE FROM THE PRESIDENT & CHIEF EXECUTIVE OFFICER (CEO)

Nuclear is Leading the Way in Sustainability

The publication of CNL’s annual Sustainability Report has served as an important tool that both tracks and guides our journey towards more responsible operations, and which illustrates the many activities that are underway to pursue a more sustainable future at Canada’s national nuclear laboratories. We are excited to be on our sustainability journey at the same time as we are seeing a pivotal shift in the ever-important role of nuclear energy and technology as a central tool in confronting the biggest challenges facing our country and indeed, the globe.

In the past two years, the Government of Ontario has announced plans to expand nuclear energy capacity in the province over the coming decades, including the construction of new large-scale and small nuclear reactors, as well as the refurbishment of existing reactors. This is in addition to several exciting funding commitments and mechanisms announced in the Government of Canada’s 2024 Budget, which are designed to facilitate the healthy operation and growth of our domestic nuclear industry, a sector that is critical to Canada’s economic, environmental, and public health priorities.

The future we are collectively working towards – a country with a clean environment, a vibrant and dynamic economy, and a healthy and secure population – requires the pursuit of technological innovation and scientific progress. And it has become increasingly clear that we simply cannot realize this future without the contributions of nuclear science and technology, which are well placed to support the achievement of several United Nations Sustainable Development Goals (UN SDGs), including Affordable and Clean Energy (Goal 7), Industry, innovation, and infrastructure (Goal 9), and Climate Action (Goal 13). With this in mind, we must build on the extraordinary foundation that we have already established as a proud leading nuclear nation, and which has already improved our lives in so many profound and important ways.

It is also clear that this isn’t a journey we can take alone – we must work together with our colleagues in industry, provincial, national and international governments, commercial organizations and

industry partners, academic institutions, Indigenous Nations and the communities in which we operate. In recent years, CNL has made a concerted and meaningful effort to expand our partnership network with these groups, and this hard work is now beginning to bear fruit, demonstrating that the goals we are pursuing are shared, and that we can accomplish so much more by working together.

That spirit of collaboration is at the very heart of our corporate strategy, Vision 2030, and it drives much of our organizational decision-making. And, I believe it is reflected within the pages of this report, which once again tracks our accomplishments in detail. This year, CNL once again realized many accomplishments – both big, and small – which are important to the future of our company, to the health and well-being of the people and communities that we are proud to serve, and to the prosperity that we all want for this country. It is a big responsibility, and a long journey, but it is most certainly one that we are not taking alone, with nuclear leading the way.

Jack Craig
CNL President and CEO



MESSAGE FROM THE CHIEF SUSTAINABILITY STRATEGY OFFICER

CNL is Poised to Support the Clean Energy Transition

I am delighted to be joining CNL as its new – and very first – Chief Sustainability Strategy Officer (CSSO). I am excited by the promise of our Corporate Strategy, Vision 2030, and commitment to integrate sustainability into our operations, our engagement with stakeholders and Indigenous Nations, communities and organizations, and our culture. As a world-class research organization, I believe we are in a strong position to showcase leadership in environmental, social and governance practices, and to facilitate the transition to a net-zero economy by helping to shape the future of clean energy in Canada and globally.

CNL has made steady progress over the past five years to advance our approach to corporate sustainability. As outlined in this Report, we have taken concrete steps to reduce our greenhouse gas emissions, protect nature and biodiversity, keep our employees safe and position them for success, and engage more meaningfully with Indigenous Nations and stakeholders. The strong commitment to sustainability from our Board of Directors, President and CEO, and the Executive Team, has helped to establish a solid foundation that I look forward to building on in the years ahead.

Over the next year, a key milestone in CNL’s sustainability journey will be the creation of a Sustainability Office to guide, coordinate and champion sustainability across the company. Guided by our mission, the Sustainability Office will work closely with all departments and subject matter experts to ensure that sustainability is integrated into our operations, as well as our guiding policies, plans and capital allocations. I am especially looking forward to engaging our employees in the development of a corporate-wide sustainability ambition and Sustainability Strategy in order to collectively strengthen our corporate

culture around sustainability. The Sustainability Office will provide yet another opportunity to meaningfully engage with Indigenous Nations, communities and organizations, and other stakeholders across government, academia and industry around sustainability goals and priorities in order to maximize value creation.

As I step into this new role as CSSO, I am excited about the opportunities that lie ahead for CNL to contribute to clean energy, manage legacy nuclear waste and advance medical science all with a view to create a better future for generations to come.

Dilhari Fernando
CNL Chief Sustainability Strategy Officer



Who We Are

CNL is Canada's national nuclear laboratory and a world leader with over 70 years of expertise in developing nuclear technology for peaceful and innovative applications. Operating as a private corporation under a Government-owned, Contractor-operated (GoCo) management model, CNL was incorporated in 2014 and subsequently assumed full responsibility for day-to-day operations carried out on behalf of Atomic Energy of Canada Limited (AECL). In 2015, following an international competition, the Government of Canada selected the Canadian National Energy Alliance (CNEA), a private sector consortium that represents some of the world's most experienced nuclear engineering and management firms, to act as the sole shareholder of CNL.

CNL's value proposition is shaped by our over 70 years of experience in research and innovation. We are delivering meaningful impact towards national and global objectives in energy resilience, climate change mitigation, nuclear safety and security, health care innovation, and environmental protection. The collaborations and strategic partnerships we develop are key to advancing these objectives – positioning CNL as the nexus point between government, the nuclear industry and the private sector, all while increasing our commercial revenue to build a more sustainable CNL.

Our purpose is to advance nuclear science and technology for a clean and secure world, guided by our mission and values (see Figure 2). Overall, we fulfill three strategic priorities of national importance on behalf of the Government of Canada and our commercial customers:

- Restoring and protecting the environment
- Advancing clean energy technologies
- Contributing to the health of Canadians

Our main campus, the Chalk River Laboratories, is Canada's largest science and technology complex, with expertise in various fields, including clean energy research, medical isotope production and environmental remediation, among others. On behalf of the Government of Canada, CNL is also managing some of the largest and most complex decommissioning and environmental remediation projects ever undertaken in Canada, including the Whiteshell Laboratories Restoration Project and the Port Hope Area Initiative (PHAI).

Through AECL's **Federal Nuclear Science and Technology (FNST) Work Plan**, CNL serves the collective interests of 14 federal departments and agencies in the areas of health, nuclear safety and security, energy, and the environment. The FNST Work Plan leverages CNL's vast expertise, highly qualified personnel and advanced nuclear research facilities, technologies and equipment located at our Chalk River campus. In addition to supporting the nuclear sector and the federal government, CNL also acts as the link between industry, academia, and government, working alongside like-minded organizations to discover and commercialize solutions to national priorities including clean energy and nuclear medicine.

CNL operates in a highly regulated environment. Regulations and regulatory bodies with which CNL complies include the *Nuclear Safety and Control Act* (NSCA), Canadian Nuclear Safety Commission (CNSC), Technical Standards and Safety Authority (TSSA), Environment and Climate Change Canada (ECCC), and Employment and Social Development Canada (ESDC), among others.

Visit our [website](#) to learn more about us.



Northern Transportation Route
Itinéraire de transport dans le Nord

National Innovation Centre
for Cyber Security
Centre national d'innovation
pour la cybersécurité

Whiteshell Laboratories
Laboratoires de Whiteshell

Nuclear Power Demonstration
Réacteur nucléaire de démonstration

Douglas Point Prototype Reactor
La centrale nucléaire de Douglas Point

Laprade
Gentilly 1

Chalk River Laboratories
Laboratoires de Chalk River

Port Hope Area Initiative
Initiative dans la région de Port Hope

Figure 1. CNL Managed Sites

4,400
EMPLOYEES
(approximate total workforce)

9
MANAGED SITES

30+
AGREEMENTS
WITH
INDIGENOUS
PEOPLES

7
PARTNERSHIPS
WITH
UNIVERSITIES

70 YEARS
OF EXPERTISE

14
FEDERAL
DEPARTMENTS
& AGENCIES
SUPPORTED

Figure 2. CNL's Mission and Values

MISSION

Restoring and protecting Canada's environment by reducing and effectively managing nuclear liabilities;
Providing the world with sustainable energy solutions including the extension of reactor operating lifetimes, hydrogen energy technologies, and fuel development for the reactor designs of tomorrow;
Together with partners, demonstrating the commercial viability of advanced reactor designs, including small modular reactors;
Working collaboratively with medical/educational institutions and pharmaceutical companies to pioneer new Alpha therapies for cancer treatments that save countless lives; and
Leveraging our capabilities for commercial success in Canadian and international markets.

VALUES

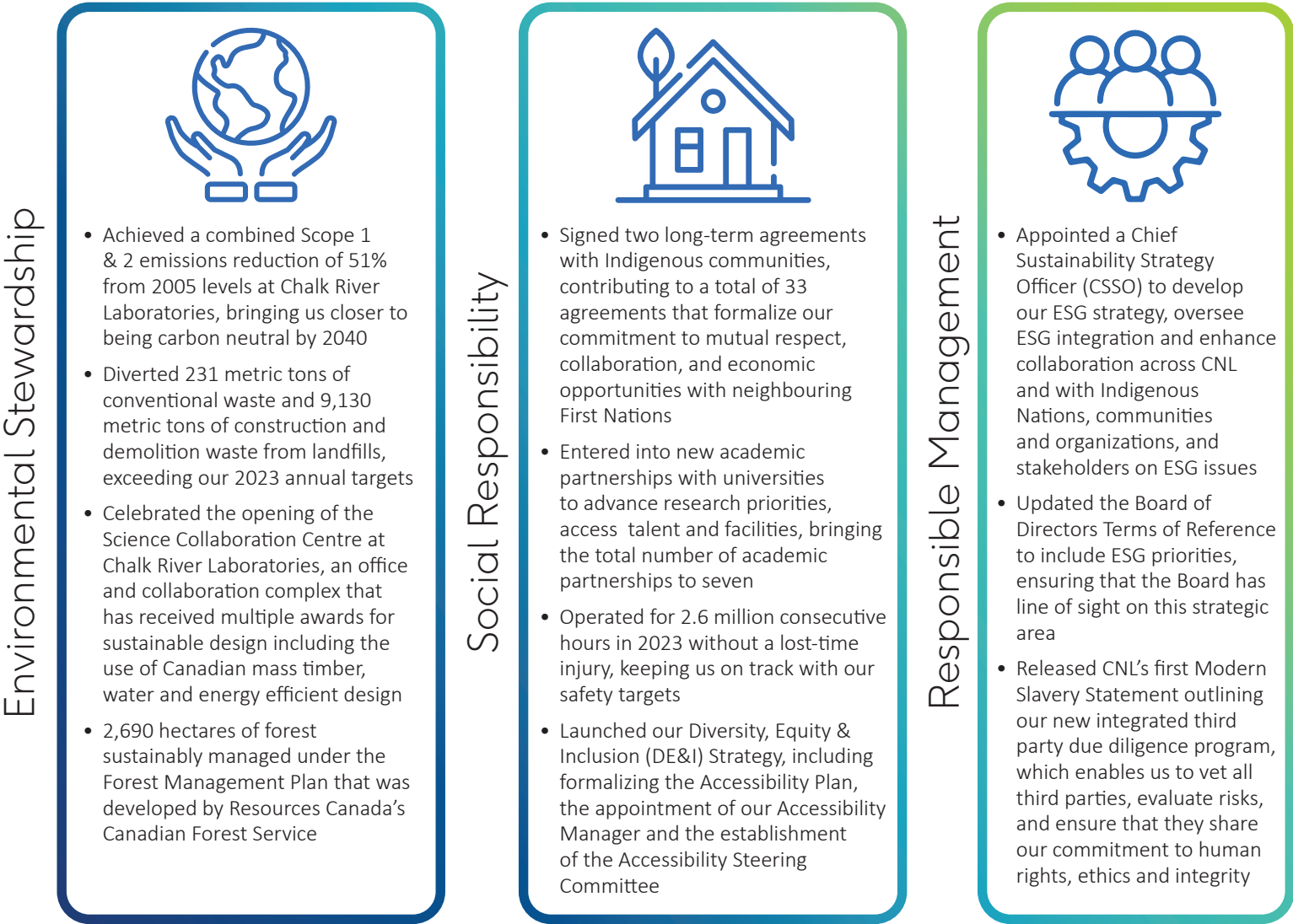


Sustainability Performance

Focused on our material ESG areas, this Sustainability Report showcases progress toward our commitments, goals and targets made during the 2023-24 fiscal year. Figure 3 outlines our key sustainability highlights

organized under the themes of Environmental Stewardship, Social Responsibility and Responsible Management and Table 1 showcases progress towards our targets.

Figure 3. Sustainability Highlights (2023-2024)



Progress Towards ESG Targets

Objective	Target	KPI(s)	2023 Performance	Status
CLIMATE CHANGE				
Achieve carbon neutrality ¹ at the Chalk River Site by 2040	By 2025, reduce our Scope 1 and 2 Greenhouse Gas (GHG) emissions by 40% from 2005 baseline By 2040, achieve carbon neutral operations (Scope 1 and 2) ² at the Chalk River campus from 2005 baseline	% reduction in Scope 1 and 2 GHG emissions	Scope 1: 34% reduction relative to 2005 levels Scope 2: 91% reduction relative to 2005 levels Combined Scope 1 & 2: 51% reduction relative to 2005 levels	In progress
Reduce environmental impact of structural construction materials	Beginning in 2025, reduce the embodied carbon of the structural materials of major construction projects by 30% using recycled and lower-carbon materials, material efficiency, and performance-based design standards	% reduction of embodied carbon for major infrastructure projects	Reporting on reduction of embodied carbon will begin in the 2025-26 Sustainability Report	Not Started
Zero-emission vehicles (ZEV) ³ in the light-duty fleet	By 2030, 75% of new light-duty unmodified fleet vehicle purchases will be ZEV By 2030, 80% of the light-duty fleet will be comprised of ZEVs	% of ZEV purchases % of ZEV in the fleet	11% of purchases made in 2023-24 were ZEV 6.5% of the total light duty fleet is ZEV	In progress
NON-RADIOACTIVE & NON-HAZARDOUS WASTE (CLEAN WASTE)				
Divert non-radioactive and non-hazardous operational, construction and plastic waste from landfill through reduction of waste production, reuse and recycling	By 2030, divert at least 75% of clean operational waste from landfill	% of clean operational waste diverted from landfills	~77% clean operational waste diverted from landfill	Target met
	By 2030, divert at least 90% of all construction and demolition waste from landfill	% of construction and demolition waste diverted from landfills	~83% construction waste diverted from landfill.	In progress
	By 2030, divert at least 75% of plastic waste by weight	% of plastic waste diverted from landfills	~50% plastic diversion rate at Chalk River Laboratories Diversion rate at other CNL sites to be assessed and reported in future disclosures	In progress

Table 1. ESG Target Performance

¹At least 90% reduction in Scope 1 and 2 GHG emissions, with the remaining achieved through offsets.

²ibid.

³As defined in the Government of Canada Greening Government Strategy, ZEVs include battery electric, plug-in hybrid and hydrogen fuel cell vehicles.

Table 1. ESG Target Performance cont'd

Objective	Target	KPI(s)	2023 Performance	Status
BIODIVERSITY				
Responsibly manage sites and activities to ensure the protection of local wildlife and the environments that surround them	Annually achieve a mortality rate of zero (0) individual animals that are classified as Species at Risk (SAR) ⁴ in the threatened (THR) or endangered (END) category	Number of SAR mortalities (THR and END)	2 SAR mortalities	Target not met
	Annually ensure that 95% of site applications do not result in land conversion	% of land conversion avoidance	100% land conversion avoidance	Target met
DIVERSITY, EQUITY, AND INCLUSION				
Increase representation of employment equity ⁵ groups in CNL's workforce	Increase women in the workforce by 2% by 2027 from a 2022 baseline	% of women in the workforce	0% increase in women in the workforce from a 2022 baseline.	In progress
	Increase Indigenous people in the workforce by 1% by 2027 from a 2022 baseline	% of Indigenous people in the workforce	0.4% increase in Indigenous people from a 2022 baseline	In progress
	Increase visible minorities in the workforce by 8% by 2027 from a 2022 baseline	% of visible minorities in the workforce	0.7% increase in visible minorities in the workforce from a 2022 baseline	In progress
	Increase the number of persons with disabilities in the workforce by 5% by 2027 from a 2022 baseline	% persons with disabilities in the workforce	0% increase in persons with disabilities in the workforce from a 2022 baseline	In progress
SAFETY				
Minimize the number of Total Recordable Cases (TRC) ⁶	Annual TRC rate of 0.51 or less.	TRC of 0.51 or less	TRC of 0.41	Target met
	Annual DART rate of 0.29 or less	DART rate of 0.29 or less	DART of 0.25	Target met
Minimize the number of Days Away, Restricted or Transferred (DART) incidents ⁷				
ETHICS, INTEGRITY, AND TRANSPARENCY				
Ensure all employees understand and comply with the CNL Code of Conduct	100% of CNL employees acknowledge the Code of Conduct ⁸	% of employees acknowledge the Code of Conduct	100%	Target met

⁴As defined in the federal *Species at Risk Act*

⁵Employment equity categories as defined by the Government of Canada. Representation is based on self-identification by CNL employees.

⁶TRC rate means Total Recordable Case Rate: The number of recordable injuries or illnesses by OSHA reporting requirements per 200,000 work hours (100 full-time employees) in any given time frame.

⁷DART stands for Days Away, Restricted or Transferred Case Rate. This is a calculated value that describes the number of recordable incidents per 100 (200,000 work hours) full time employees, which resulted in lost work days, restricted work days or job transfer due to workplace injuries or illnesses

⁸Acknowledge means that employees review and sign off on their agreement with the Code of Conduct.

Sustainability at CNL

Our Strategic Priorities and Approach to Sustainability

Vision 2030

Our strategic direction is guided by **Vision 2030**, our Corporate Strategy which was released in 2022. Vision 2030 charts an exciting new direction for CNL, guiding the company as it pursues next-generation solutions. Vision 2030 organizes CNL's activities into three strategic priorities: restoring and protecting the environment, advancing clean energy for today and tomorrow, and contributing to the health of Canadians. Sustainability is a core feature of Vision 2030, including references to many of the commitments that are elaborated in this Report.



Materiality Assessment

In 2023, we conducted CNL's first materiality assessment to identify key ESG areas of impact and strategic focus and enhance our alignment to AECL's ESG priorities. To inform our assessment, we completed an engagement exercise, across our value chain and business by surveying members of CNL's key stakeholder groups, for which we obtained over 750 responses. Stakeholders included the CNL Board of Directors and Executive Team as well as members of AECL's management team, our employees, suppliers and community committee members, as well as academic partners and industry peers. The perspective of Indigenous Nations, communities and organizations was captured through interviews with our CNL leads who regularly engage with them.

The results of the engagement exercise yielded 20 ESG topics of relevance to CNL, shown in the Materiality Matrix (Figure 4).

We conducted targeted and in-depth interviews with over 21 individuals to refine our ESG priorities and areas of impact across the business and value chain. We interviewed CNL Board members, Executives and subject matter experts, AECL's management, suppliers and industry peers, who were selected in consideration of their prominence in CNL's

strategic decision-making functions and expertise. The engagement allowed us to gain deeper insights and context on the chosen impact areas. Leveraging the insights shared through these interviews, we completed a qualitative impact assessment, aligned with our enterprise risk management framework, to identify our material risks and opportunities and the topics with the highest strategic impact. The outcome of this process helped us define our ESG focus areas:

- Relationships with Indigenous Nations, communities and organizations
- Waste Management
- Climate Resilience
- Ecosystem Services
- Community Relationships
- Employee Engagement and Wellbeing
- Effective Leadership
- Responsible Supply Chain

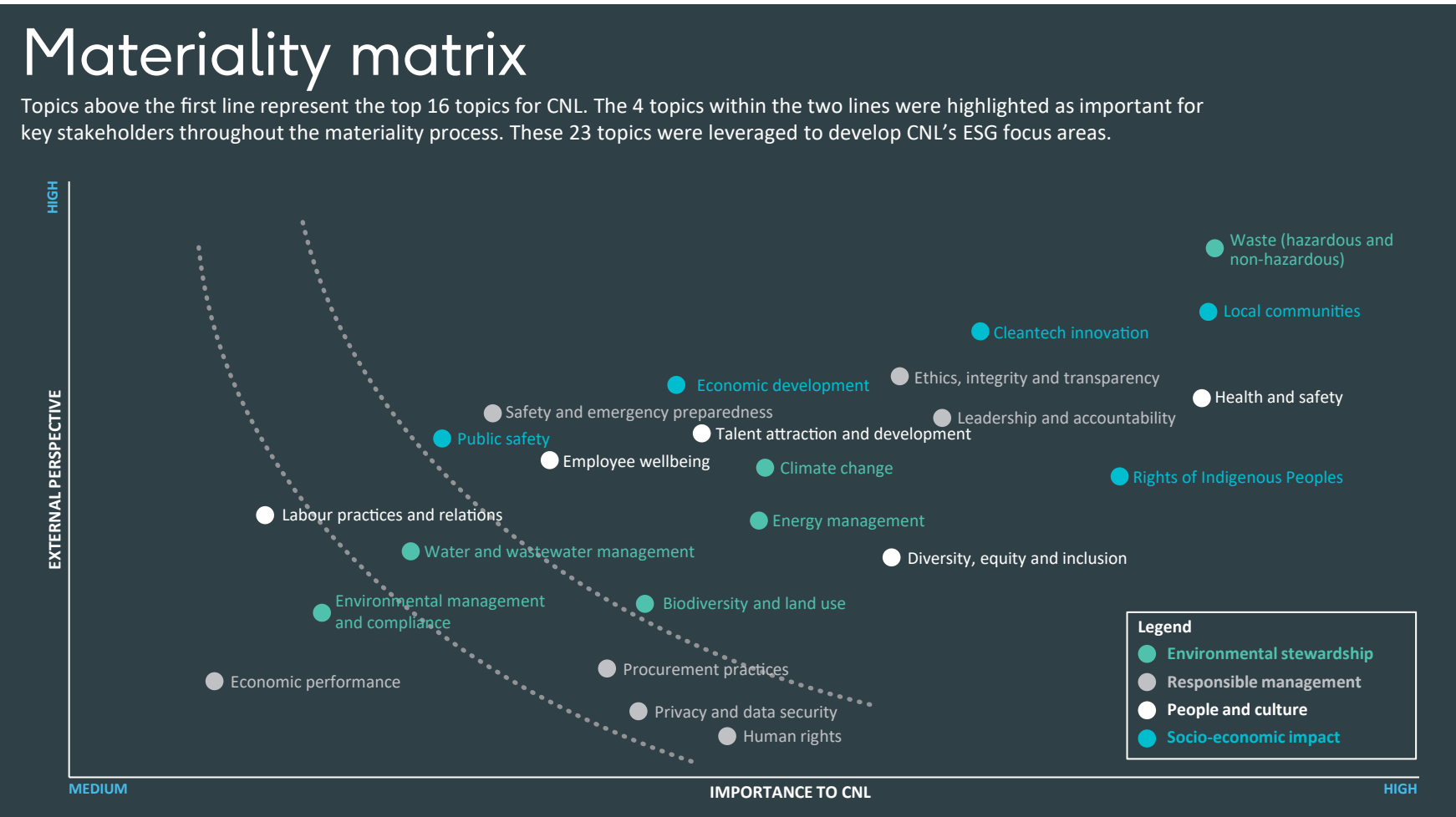


Figure 4. Materiality Matrix

Sustainable Development Goals

We strive to have global impact and contribute to the achievement of the UN Sustainable Development Goals (SDGs), with a focus on those SDGs where we can have the greatest impact.

In 2023, as part of our materiality assessment, we sought feedback from our stakeholders on which SDGs they believed CNL could make an important contribution to, and whether we should play an advocacy, alignment, or leadership role related to each of them. The results are shown in Figure 5.

Building on the results from this exercise, and in reference to a study from the United Nations⁹ on the impact of nuclear energy on achieving the SDGs, CNL has identified eight SDGs – shown in Figure 6 – as areas where we believe nuclear innovation, and CNL’s role within this ecosystem, can have a material impact on the quality of life for Canadians and the global community.

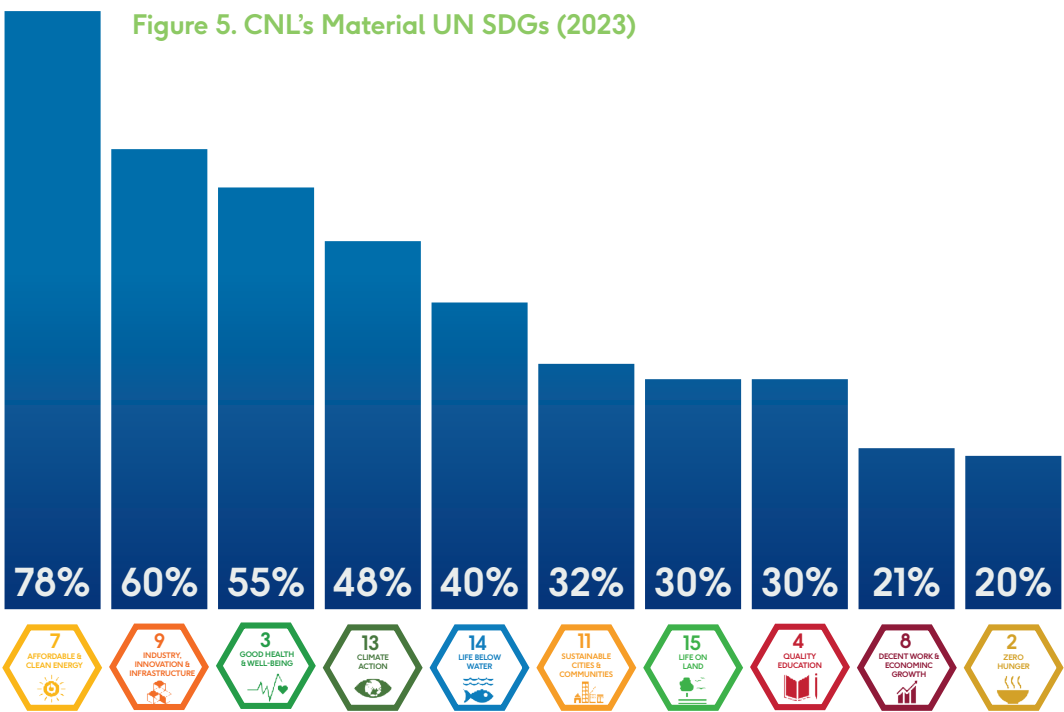


Figure 6. SDGs of focus for CNL where we can have the greatest impact.

⁹<https://unece.org/sustainable-energy/publications/nuclear-entry-pathways>

Our Sustainability Strategy

In 2024-25, CNL will release its enhanced Sustainability Strategy which will frame our ambitions around material environmental, social and governance factors. The Strategy will build on the sustainability objectives set out in Vision 2030 and our 10-Year Plan, and reflect the ESG ambitions of AECL and the Government of Canada. The Strategy will also reflect our contribution to the SDGs, identified in Figure 6.

The Sustainability Strategy will provide a cohesive approach to integrating, reporting and communicating CNL’s sustainability goals, targets, plans and programs, and will also be used to engage employees,

Indigenous Nations, communities and organizations, and stakeholders. The Strategy will include an updated governance approach to address material ESG factors across the enterprise to ensure that these factors become an integral component of our planning and decision-making. Central to this is the creation of a new Sustainability Office headed by the organization’s first Chief Sustainability Strategy Officer. Taken together, this signals a maturing of the sustainability function at CNL and demonstrates our commitment to integrating material ESG factors into all aspects of our business strategy, operations, culture and Rightsholder and stakeholder relations.

Our Value Proposition

Key examples of how we drive value for Indigenous Nations, communities and organizations and stakeholders

Clean energy

In June 2023, the Canada Energy Regulator released its Canada’s Energy Future 2023, projecting that the electricity system will become the most important end-use energy source in Canada’s net-zero future, and that considerable growth in nuclear technologies will play a pivotal role in supporting the electricity system. This projection aligns with the call for faster deployment of nuclear energy featured in the Global Stocktake agreed at the 2023 United Nations Climate Change Conference of the Parties (COP28) which recognized the critical role of nuclear energy in achieving deep and rapid decarbonization, especially in hard-to-abate sectors and in low carbon production of hydrogen. Building on this momentum, in August 2023, the Government of Canada’s



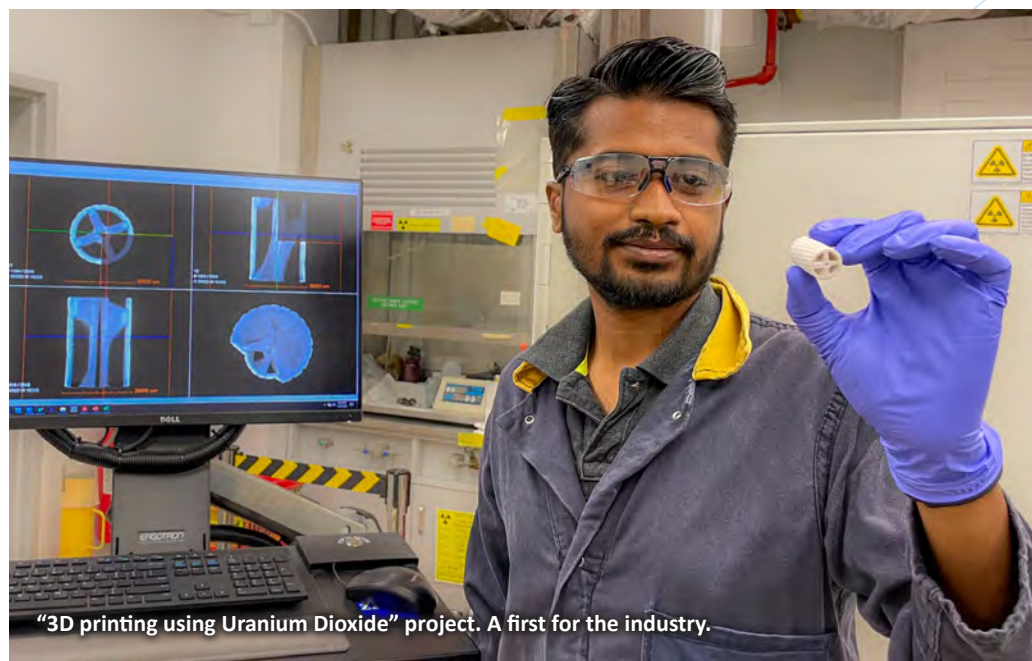
Powering Canada Forward: Building a Clean, Affordable, and Reliable Electricity System for Every Region of Canada reaffirmed the role of nuclear, hydrogen and other sources of renewable energy in Canada's path to net-zero.

CNL is well-positioned to advance the next generation of affordable clean energy solutions critical to achieving Canada's net-zero ambitions, including the commercialization of nuclear energy. The CANDU reactor, a hallmark of AECL/CNL innovation, is now responsible for powering six out of ten homes in Ontario, demonstrating our impact on the energy landscape. CNL is also at the forefront of advancing the safe deployment of advanced nuclear technologies, hydrogen and advanced nuclear fuels research, launching and initiating programs to capitalize on fusion energy, and developing technologies for tritium extraction.

CNL also has the infrastructure, expertise, and support services to contribute to innovation around Small Modular Reactors (SMRs) and other advanced reactors technologies. Advanced reactors hold promise for use in remote and northern locations to replace diesel and other carbon-intensive fuels and are capable of being integrated into diverse energy systems.

We also continue to expand our research into hydrogen production, storage, safety, and utilization in support of Canada's national hydrogen strategy. To continue to support Canada's growing hydrogen industry, CNL launched the Canadian Hydrogen Safety Centre (CHSC) in April 2023. Driven by a collaborative approach that integrates industry, government and academic membership, the mission of the CHSC is to deliver hydrogen safety solutions across multiple industrial sectors and regions (see call out box below).

Further, we are advancing the science behind how nuclear technologies can work alongside other renewable energy sources through hybrid energy systems. CNL's planned Clean Energy Demonstration, Innovation, and Research (CEDIR) Initiative will enhance our capabilities to integrate and demonstrate clean energy technologies, including hydrogen and renewables, serving as a collaborative platform for government, industry, and academic partners. Phase 1 of 3 of the CEDIR Initiative is currently underway to support modeling and lab-scale research and development, with an emphasis on clean energy research activities in the federal program and working with federal stakeholders and other potential commercial participants.



"3D printing using Uranium Dioxide" project. A first for the industry.

Canadian Hydrogen Safety Centre (CHSC)

Given the potential for hydrogen in the clean energy mix and to facilitate Canadian contributions to hydrogen safety, CNL launched the Canadian Hydrogen Safety Centre (CHSC) in 2023. The CHSC is a collaborative approach that integrates industry, government and academic membership to deliver hydrogen safety solutions across multiple industrial sectors and regions. CNL, with the support of AECL, has been actively engaging with Canada's hydrogen industry over the past year to better understand the challenges being experienced. During a Hydrogen Safety Workshop hosted by CNL last year, several key focuses were identified that can help guide the CHSC workplan, including the need for codes and standards for rapid hydrogen deployment at scale and the associated need to bolster training programs, among other priorities. For more information please visit the [CHSC website](#).



CNL researchers partner with Ottawa Hospital Research Institute to study impacts of targeted alpha therapy on leukemic stem cells

Health care innovation

CNL has been at the forefront of innovation in nuclear medicine, radiopharmaceuticals, and low dose radiation research for the past 75 years. Since the launch of our medical isotope industry in the 1950s, we revolutionized the way modern diseases are treated, and our research continues to

contribute to breakthroughs in how a wide range of medical conditions are treated. Today, CNL is leading a major effort in the production of Actinium-225, a promising but very rare medical isotope that can be crucial for treating illnesses, including cancer.

We continue to take significant steps towards producing larger quantities of Actinium-225 supplies through an agreement with the Sylvia Fedoruk Canadian Centre for Nuclear Innovation, as well as through our newly established joint venture, Actineer™ Inc., launched in collaboration with our long-term partner, ITM, to support the industrial scale production of Actinium-225. Together, these partnerships will significantly increase the annual global supply of Actinium-225. Moreover, our research in low-dose radiation increases understanding of impacts on human health to improve radiation safety and worker protection in the nuclear industry and beyond.



Quadruped robot used for decommissioning planning and radiation cleanup efforts.

Industry innovation and partnerships

Vision 2030 places an emphasis on formalizing alliances with Canadian academic institutions to develop and harness the next generation of highly qualified scientists, share knowledge and accelerate early-stage research to advance

common interests. This year, we entered an academic partnership with Queens University and strengthened our long-standing relationship with the University of New Brunswick through a new collaborative research agreement. CNL also established partnerships with Western University and the University of Waterloo, launched a new undergraduate Nuclear Research Experience Program with McMaster University and partnered with Ontario Tech University's New Student Enrichment Program to

enhance student learning and career readiness in nuclear science. As of March 2024, a total of seven Memoranda of Understanding had been signed between partner universities, CNL and AECL as part of CNL's Academic Partnership Program.

In addition to academic partnerships, CNL collaborated with several industry partners. In the area of fusion energy, CNL signed a Strategic Alliance Agreement with Kyoto Fusioneering Ltd. to accelerate the development and commercialization of fusion fuel cycle technologies and partnered with the United Kingdom Atomic Energy Authority to further develop technologies for managing tritium, a fusion energy fuel. Other industry collaborations this year include:

- TRIUMF, to leverage their particle accelerator expertise;
- Jubilant Radiopharma, to develop novel alpha radiopharmaceuticals for cancer treatment;
- Clean Core, to develop advanced nuclear fuel; and
- Stellarex, to develop fusion energy systems.



Our Engagement Approach

At CNL, we recognize the importance of building long-term relationships and trust with Indigenous Nations, the communities in which we operate and our other key stakeholders. By regularly engaging with Indigenous Nations and with stakeholders, both through direct

interactions and through disclosures such as this report, we continue to build our understanding of collective priorities and opportunities for value generation.

Relationships with Indigenous Nations, Communities and Organizations

CNL and AECL share a vision for reconciliation where all Canadians recognize, honor and celebrate First Nations, Métis and Inuit, and actively learn about Canada’s relationship with Indigenous Nations throughout history and today. CNL manages AECL projects and operations on Indigenous territories and lands in Alberta, the Northwest Territories, Manitoba, Ontario and Quebec. Our ongoing engagement with the Nations, communities and organizations in each of these areas provides valuable feedback, and we have taken steps to expand and strengthen our engagement approach.

Our approach to Indigenous relations is guided by the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the Truth and Reconciliation (TRC) Report, in particular the Call to Action #92. These documents are foundational to our Reconciliation Action Plan (RAP), currently under development and scheduled for release in 2024-25. The RAP formally outlines our vision and approach to Indigenous engagement and serves as a blueprint to operationalize our reconciliation ambitions.

CNL’s reconciliation journey includes an approach to engagement with Indigenous Nations, communities and organizations that has been evolving. CNL together with AECL has established regular forums of dialogue to better understand how Indigenous Nations, communities and organizations, wish to be engaged, to provide opportunities to raise questions and concerns about CNL’s operations and projects, and to ensure the integration, wherever possible, of Indigenous Traditional Knowledge and worldview in the lifecycle of projects.

Across all sites, we maintain ongoing engagement at a pace and via methods for communication determined by Indigenous Nations, communities and organizations, including through regular working group meetings, on-site visits, presentations and project updates, and Indigenous participation on committees such as our Environmental Stewardship Council, Citizens Advisory Panel, and the Sagkeeng Community Liaison Committee.

Our goals and actions in conducting our Indigenous Relations are structured into the following priorities:

- **Build healthy, long-term and respectful relationships with Indigenous Nations, communities and organizations through meaningful opportunities for engagement:**
To date, CNL has signed more than 30 agreements with Indigenous Nations, communities and organizations. These agreements aim to



Dale LeClair

Director, Indigenous Relations

“We are firmly committed to being an active participant in Canada’s journey towards healing and reconciliation. Relationships with Indigenous Peoples are a foundational ESG material area, and we are working to integrate reconciliation throughout our strategies, policies, processes, and engagement approaches. We aim to foster meaningful relationships and dialogue with Indigenous communities, across our ESG efforts”.

foster mutual respect, collaboration and economic opportunities, and they often focus on environmental protection, cultural promotion, and radioactive waste management, among other topics.

- ***Reduce barriers to Indigenous employment with CNL:***

We are an active employer of Indigenous people; in 2023-24, approximately 6.8% of CNL's workforce self-identified as Indigenous, surpassing the representation targets set out by Employment and Social Development Canada. We continued to offer our Indigenous Millwright Apprentice program at no cost to participants. This program enables participants selected from various Indigenous Nations to undertake six weeks of training in the areas of math, spatial reasoning and communication. Upon completion, participants can enter the Millwright Union as first-year apprentices.

- ***Promote opportunities for Indigenous businesses to prosper as contractors or sub-contractors in our projects:***

CNL has developed an Indigenous Procurement Strategy that works to leverage our annual acquisition of goods and services to drive economic opportunities for Indigenous businesses. Each year, based on the planned work and funding available, CNL will establish progressive targets (values or percentages of contracts) for contracts awarded to Indigenous-owned businesses. CNL aims to progressively target 5% of its total procurement spend to Indigenous businesses.

- ***Provide opportunities for CNL staff and management to gain a deeper understanding of Indigenous history in Canada, including Indigenous worldviews and relationship to the land, pre-colonial treaties and Indigenous law, and the history and impact of residential schools:***

We have advanced our Indigenous relations awareness efforts by creating a mandatory training module for all employees. A second learning module is being planned for next year. Over 250 staff attended the Algonquins of Pikwakanagan First Nation (AOPFN) cultural awareness training in 2023-24. Training will continue in 2024-25. In addition, approximately 120 staff participated in independent sessions on trauma-informed training.

- ***Include Indigenous Traditional Knowledge and participation in environmental stewardship and project work:***

Significant engagement was conducted with Indigenous Nations, communities and organizations, focusing on environmental interests, including over 1,500 person hours of field work and monitoring



Dave Mowat, Senior Advisor, Indigenous Engagement, sharing knowledge of the 1764 Great Belt of the Covenant Chain (replica) during a walk-down of the Ganaraska River in Port Hope with CNL staff and staff from the Municipality of Port Hope

support, as well as integration of Indigenous interests in impact assessment processes. More broadly, CNL engages Indigenous Nations, communities and organizations regarding environmental stewardship initiatives through guardianship programs such as Niigan Aki and Neyagada Wabandangaki, which enable those involved to have regular monitoring presence at designated AECL sites.

The AOPFN Neya Wabun, AECL and CNL Long-Term Relationship Agreement (LTRA)

Signed in 2023, the LTRA is the culmination of intensive efforts, negotiations and engagement to establish a productive relationship between Canada’s leading nuclear organizations and the First Nation. The agreement represents a step towards healing and trust-building, emphasizing transparency and respect. Key areas of concern identified by the AOPFN are addressed in the LTRA, including environmental protection, radioactive waste management, cultural protection and promotion, and the pursuit of collaborative economic and business opportunities. As a result of the extensive engagements that culminated into this agreement, AOPFN provided its consent to move forward with the construction of CNL’s new Near Surface Disposal Facility (NSDF), one of CNL’s environmental

remediation projects (see the Waste Management Section). The LTRA has empowered AOPFN with a role in CNL operations within their territories, incorporating Indigenous Traditional Knowledge and worldviews while protecting Algonquin Rights and the environment. Under the terms of the LTRA, a working group has been set up to facilitate ongoing engagement and collaboration between the parties, and a Guardian Program – “Neyagada Wabandangaki” – has been established to allow AOPFN Guardians to establish regular presence and monitor CNL managed sites within the territory to report back to the AOPFN, ensuring continued trust and collaboration.



Guardian Program With the Sagkeeng Anicinabe First Nation (SAFN)

The independent Sagkeeng First Nation Community Environmental Monitoring Program, named Niigan Aki, meaning Land First, was launched in 2022 at Whiteshell Laboratories. Developed and administered by the SAFN, the program was established to empower SAFN's ability to monitor, steward and improve understanding of the Whiteshell site and operations, located in the SAFN's unceded traditional territory. The program aims to address land concerns through collaborative efforts, involving Guardians who act as stewards of the land, collecting data, monitoring priority areas, and maintaining cultural practices. The program is the culmination of years of detailed discussions between SAFN, AECL and CNL on the effects of decommissioning activities at Whiteshell on the SAFN, including the Whiteshell Reactor – 1 Decommissioning Project. Through these engagements, all parties agreed that it was important to design and implement a collaborative, rights-based, long-term environmental monitoring program. A



Brenda Morrisseau, Manager for Niigan Aki Program speaking at Waste Symposium in Niagara Falls

key component of the Niigan Aki Program is the incorporation of Indigenous Traditional Knowledge into CNL's monitoring and adaptive management system, which will provide SAFN with increased understanding and confidence in the monitoring results.

In 2023-24, the Niigan Aki guardianship program continued spreading awareness on environmental stewardship and the importance of giving back to the land. Throughout 2024, Niigan Aki's focus will be the health of riverbanks and restoring trees. As the program continues to flourish, it underscores the importance of reconciliation and the upholding of treaty rights.

Stakeholder Engagement

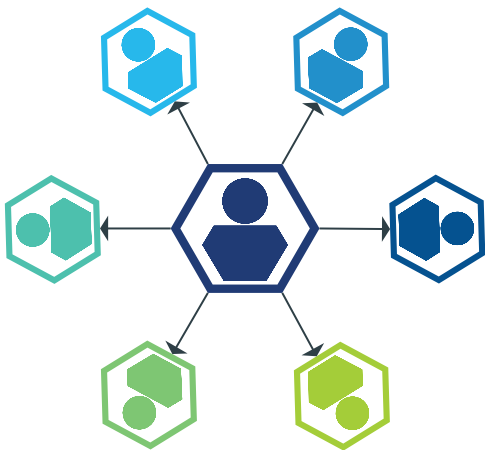
CNL maintains meaningful relationships with our stakeholders, including our staff, the local communities where we operate, the companies we do business with and the public at large. We believe in stakeholder capitalism and to achieve it, we have put emphasis on setting engagement objectives and developing several different communication and engagement channels with Indigenous Nations, communities and organizations, and stakeholders (see Table 2 and Figure 7).

We actively engage with our stakeholders through our Public Information Program, which works to proactively build awareness, trust and transparency. CNL’s Public Information and Disclosure Program ensures we remain in compliance with *CNSC’s Regulatory Document REGDOC-3.2.1: Public Information and Disclosure* and outlines our public disclosure protocols regarding events and developments at our facilities. This includes the publication of documents describing the potential radiological and environmental impacts at CNL sites, interactions with community stakeholders, and publication of CNL’s monitoring programs’ results. CNL’s communications channels and our standing Councils and Industry Groups is shown in Figure 7.

We embrace the need to establish a social license with the communities that surround our sites, including through regular information sharing and communication. Throughout the past year, CNL supported over 100 community events, providing a platform for direct interaction and updates to the public on our activities. These efforts are important for maintaining and reinforcing the positive feedback received from the public attitude survey conducted last year, which confirmed that the majority of the residents of the communities in which we operate are aware of CNL’s presence and activities within their communities.

Expanding Our Engagement Reach

- Throughout 2023-24, we leveraged a variety of different engagement channels to expand our reach, including:
- Growing our social media following, with annual impressions now more than 2.6 million; and
 - Growing our online presence, which generated 539,000 views on our corporate website, an increase of over 10% from the previous year.
 - Sharing over 50 media releases and online stories with local, national and international media;



REGULAR DISSEMINATION CHANNELS

- **CNL’s corporate website:** www.CNL.ca
- **CNL’s Intranet for staff**
- **Press releases**
- **CONTACT newsletters (Chalk River and Whiteshell)**
- **Kids CONTACT newsletters**
- **PHAI newsletter**
- **Voyageur newsletter for employees**
- **Community meetings and events**
- **Site visits**
- **Public engagement activities**
- **Community inquiries/media**
- **Social media (Facebook, X.com (Twitter), Youtube, LinkedIn and Instagram)**
- **Webinars and presentations**
- **An annual community webinar hosted by Presidents from both CNL and AECL**

COUNCILS AND INDUSTRY GROUPS

- **Chalk River Laboratories Environmental Stewardship Council (independently facilitated)**
- **Chalk River Laboratories Community Advisory Panel**
- **Whiteshell Public Liaison Committee**
- **Canadian Nuclear Association**
- **CANDU Owners Group and its Nuclear Safety Steering Committee**
- **Nuclear Environmental Affairs Peer Group**
- **Environmental Impact Task Team**

Figure 7. Public Information Program

Table 2. CNL's Engagement Objectives with Indigenous Nations, Communities and Organizations, Interested Parties and Stakeholders

EMPLOYEES	INDIGENOUS NATIONS, COMMUNITIES AND ORGANIZATIONS	COMMUNITY MEMBERS AND GROUPS	INDUSTRY	GOVERNMENT	ACADEMIC PARTNERS	SUPPLIERS
CNL employs approximately 4,400 staff working across our eight managed sites, in person, hybrid and remote.	CNL engages with approximately 30 Indigenous Nations, communities and organizations.	CNL engages with dozens of local communities surrounding our managed sites as well as local organizations.	CNL engages with numerous industry peers and organizations including laboratories, groups and associations integral to the nuclear industry. This includes international government bodies and regulatory agencies.	At the national level, CNL engages with multiple government stakeholders, including AECL, CNSC, Technical Standards and Safety Authority, Environment and Climate Change Canada, and Economic and Social Development Canada, among others.	CNL has partnerships with seven universities and institutions across Canada.	CNL collaborates with a diverse range of supply chain stakeholders to support its operations and projects including local, Indigenous, and industry vendors.
• Building capacity through employee training and upskilling to increase skills, enable growth, maintain motivation, and invest in the development of our workforce. • Focusing on health and safety to enable a strong sense of security and belonging while at work and foster a holistic approach to mental, physical and emotional health outside of work.	• Building capacity through employee training, skills development and apprenticeship programs. • Building respectful relationships through meaningful engagement supported by LTRAs. • Including Indigenous Traditional Knowledge and participation in environmental stewardship and project work including community led environmental monitoring programs. • Providing opportunities for Indigenous businesses to prosper as contractors and sub-contractors in projects through the Indigenous Procurement Strategy.	• Investing in socio-economic development through employment, procurement, projects and helping to build local capacity among youth. • Involving local communities in biodiversity projects that restore and protect the environment and developing strategies to leverage nature-based solutions. • Informing and engaging communities to ensure they are informed, consulted and given opportunity to provide perspectives on matters of our operations.	• Building capacity through collaboration within the industry to gain perspective, experience and feedback. • Driving innovation through competition, expanding products and services, and continuous improvements. • Working with industry and investors to help position nuclear technology as an investable asset to help deliver clean energy globally.	• Researching and innovating for federal priorities including health, nuclear safety and security, energy and the environment. • Supporting matters of federal interest through our Vision 2030 goals and our delivery of the FNST Work Plan.	• Researching and innovating to advance energy, environmental remediation, health and security. • Sharing resources to divide project costs, pool limited financial resources, reduce risk and expedite research through collaborative projects. • Sharing knowledge and investing in talent to develop future nuclear researchers and engineers and meet labour gaps.	• Investing in socio-economic development through investing in local goods and services. • Reducing human rights risks by working with our suppliers to maintain stringent standards, expectations and supply chain transparency that aligns with Canada's <i>Modern Slavery Act</i>.

Environmental Stewardship

CNL is focused on minimizing nuclear legacy obligations, leveraging nature-based solutions, building resilience in our operations and assets, and advancing a transition to a net-zero economy.

Climate Resilience

Climate Change

Climate change is a pressing global challenge that requires immediate and concerted efforts to mitigate its impacts. CNL is leveraging our expertise and resources to accelerate the transition to a net-zero economy in Canada and beyond. We are guided by international frameworks, including the TCFD and IFRS S1 and S2 recommendations, for assessing and disclosing climate-related risks and opportunities.

In 2022-23, CNL completed a qualitative climate scenario analysis to identify a shortlist of physical and transitional risks and opportunities and understand their impacts on our business and value chain (shown in Table 3). These climate risks and opportunities have been integrated into core business, strategic, and financial planning processes. We present climate risk reports to AECL every year, outlining details of our climate-related governance, strategy, risk management and metrics and targets. Information regarding our management of climate-related risks and opportunities has been embedded throughout this report.



Table 3. CNL's Climate Risks and Opportunities

RISK / OPPORTUNITY	IMPACT RATING	IMPACT NARRATIVE
Physical climate-related risks		
1. Flooding (fluvial and pluvial)	Moderate	Projected increases in flooding events may damage CNL's facilities, above ground infrastructure, equipment and power infrastructure, this may lead to power outages, blocked access roads, supply chain disruptions, erosion, and/or increased maintenance of retention ponds.
2. Increasing wildfires	Moderate	Projected increases in fire frequency and intensity may damage facilities, above ground infrastructure, equipment, power infrastructure leading to power outages, block access roads causing safety concerns and supply chain disruptions, and/or may pose human health impacts to workers on site.
3. Extreme temperatures - heat	Moderate	Projected increases in extreme temperatures (heat) may increase the demand on HVAC systems and/or other mechanical and electrical systems, as well as impacts to worker health and safety, and disruptions to laboratory work.
4. Extreme wind speeds	Moderate	Projected increases in extreme wind events (i.e., microbursts, cyclones) may damage infrastructure and/or may cause power outages that can cause delays or disruptions in operations.
5. Freeze-thaw	Moderate	More wide-ranging temperature ranges and rapid fluctuations in temperatures may lead to increased maintenance of infrastructure.
Transition climate-related risks		
1. Reputational risk	Moderate	Increased public scrutiny on accountability and management of climate-related issues may cause reputational damage. As the climate continues to change, the frequency and severity of extreme weather events increases, which in turn increases the risk of incidents that can be highly visible to the public. This may negatively impact the public's perception of CNL.
Transition climate-related opportunities		
1. Introduction of new technology	High	Introduction of advancements in nuclear technology including small modular reactors (SMRs) and other types of reactors will play a critical role for Canada to meet its greenhouse gas emission reduction goals.
2. Increasing demand for nuclear energy sources	High	Funding opportunities for low emission energy technologies are projected to increase. Coupled with additional government regulation (i.e., pricing on carbon), this will increase the demand for CNL's nuclear products and services. As existing infrastructure continues to age, the demand for additional energy supply, particularly in highly populated locations will drive growth, especially as grids look for low emitting energy sources going forward.
3. Land management planning & improvement	High	The management and remediation of CNL managed land will enhance biodiversity through the protection and rehabilitation of habitats and migration, the sequestration of carbon by including standing forest, and land conversion avoidance. CNL will continue to implement the Forest Management Plan, which builds land management and planning into our development plans.

Carbon Neutral¹⁰ by 2040 at Our Chalk River Campus

CNL is working to reduce our Scope 1 and 2 GHG emissions to achieve carbon neutral operations at Chalk River Laboratories by 2040. To date, our approach has included the following:

- Requiring life cycle carbon analysis for new builds and major retrofits;
- Giving priority to low carbon building materials and processes;
- Adopting net-zero/net zero-ready designs for new builds and retrofits;
- Adopting climate resilience planning for all new builds and retrofits;
- Considering building structures that can accommodate future renewable energy (e.g. solar panels);
- Reducing energy use through deep building and laboratory retrofits
- Making low-energy solutions such as LED lighting a standard, and implementing energy conservation measures;
- Decommissioning and demolishing dated and inefficient facilities; and
- Replacing gas vehicles in our light-duty fleet with hybrid and electric vehicles and supporting infrastructure.

In 2025-26, we plan to develop a CNL Climate Strategy which will see third party evaluation of our greenhouse gas inventory and formalization of science-aligned climate targets that cover all sites under our operational control. The Climate Strategy will be an overarching strategy to which operational plans, including the Net-Zero Operational Plan, Life Cycle Carbon Accounting Standard, Climate Resilient Planning Standard and other climate-related policies and guides, will be tethered. The Climate Strategy will also allow us to put in place specific strategies/tactics to help meet our climate goals and proactively identify the cost of these solutions.



We are committed to reducing the embodied carbon of structural materials for major construction projects by 30%, a new target that we will start to track in 2025. We have already started to require Life Cycle Assessment (LCA) and Life Cycle Cost Analysis (LCCA) to inform our decision making around material choice and engineering systems for new buildings and retrofits. This is helping us to make choices that favour recycled and lower-carbon materials, and low carbon options for both building design and operations, as part of our overall engineering, design and construction process.

We are also proud of our use of mass timber in three building on the Chalk River campus. In addition to being recognized for a number of industry awards, we are pleased to have had the opportunity to share our experience and best practices with the University of Alberta's Sustainable Construction Group and Natural Resources Canada's Greening Government Community of Practice.

¹⁰At least 90% reduction in Scope 1 and 2 GHG emissions, with the remaining achieved through offsets

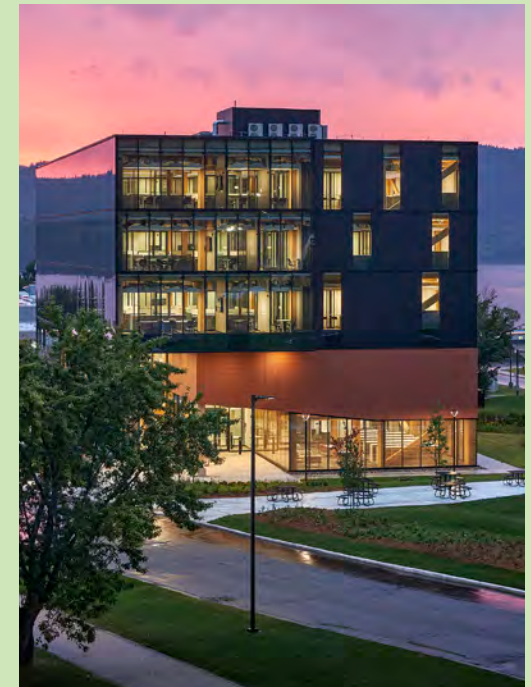
Use of Mass Timber for New Builds at the Chalk River Campus

CNL, together with its design and construction partners, have designed three new buildings on the Chalk River campus, each constructed with mass timber responsibly harvested from black spruce in Quebec. These are the first buildings on a federally-regulated site to be constructed out of mass timber. CNL was pleased to have been the recipient of a from Natural Resources Canada's Green Construction Through Wood Program to support research and other due diligence for the Science Collaboration Centre and Support Facility.

The **Minwamon Building** (4,900 m²), named with a word that means 'clear path' in the Algonquin language, has transformed the Chalk River campus entrance. This facility welcomes our visitors and provides a first impression for those entering our site.

The **Support Facility** (4,700 m²) enables centralized maintenance and manufacturing activities at Chalk River, featuring a two-storey fully open mass timber workshop, as well as a two-storey upper loft containing support offices, meeting rooms, and amenities.

Our flagship new building, the **Science Collaboration Centre** (8,700 m²), is an innovative six-storey office complex featuring modern office space, 44 meeting rooms, collaborative flex spaces, a university-style auditorium with 200 theatre-style seats, a library space and a roof-top terrace. These buildings used an estimated 3,750 m² of mass timber which is estimated to embody approximately 4,125 metric tons of carbon. These buildings have received several awards recognizing the use and design of mass timber in their construction.



Building Awards

CNL is proud of being recognized by the architecture industry for its newly constructed mass timber buildings.

New Builds

- Architizer A+ Awards 2024: Popular Choice Winner, Architecture +Wood
- Green Construction through Wood 2020: Mass timber construction and research
- Architizer A+ Awards 2020: Finalist, Architecture +Models & Rendering

Science Collaboration Centre

- Fast Company World Changing Ideas 2021: Honorable Mention Architecture Category, North America Category
- Architect's Newspaper Best of Design Awards 2020: Editor's Pick, Unbuilt – Commercial Category
- Ontario Engineering Projects Award of Distinction 2024

Minwamon Building

Ontario Wood WORKS: Wood Design Award 2020 Innovation Category

GHG Emissions

Scopes 1, 2 & 3 Data

Since 2009, CNL has collected data on its Scope 1 emissions using methodology consistent with the Government of Canada’s Greenhouse Gas Reporting Program (GHGRP). We calculate emissions from all AECL-owned or leased properties which are operated by CNL. Our GHG emissions reduction data is currently focused on the Chalk River campus; we plan to expand this coverage in the coming years.

Further to a review of our GHG emissions methodology and inventory, in 2023 we recalculated our baseline emissions to a new baseline that incorporated Scope 1 and Scope 2. Our Scope 2 emissions for 2005 were guided by the Greenhouse Gas Protocol, and calculated using receipts of CNL’s purchased electricity for the Chalk River campus in 2005 and the 2005 emission factor for Ontario¹¹. **Our new baseline is shown below:**

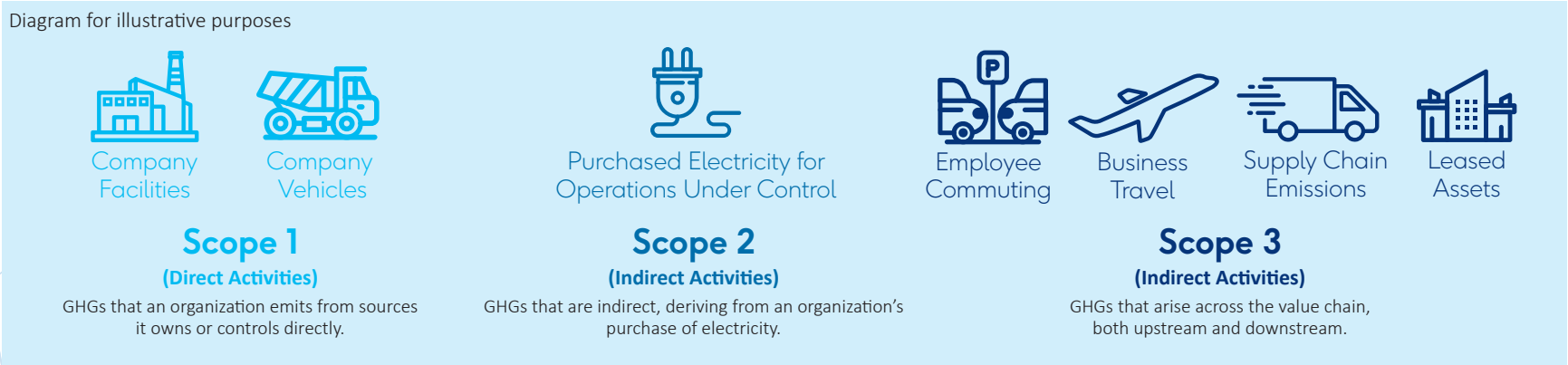
2005	
Scope	CO2e* - Metric tons
Scope 1	38,144
Scope 2	15,449
New Scope 1 & 2 Baseline	53,593

*CO2e refers to carbon dioxide and carbon dioxide equivalent gasses

We continue to make progress on quantifying Scope 3 emissions based on available data. We disclosed some Scope 3 emissions categories (upstream and downstream leased assets, employee commuting and business travel) for the first time in our 2022-23 report. We are working to quantify additional Scope 3 emissions before developing and disclosing a Scope 3 target in the future.

We understand the importance of engaging our supply chain partners in the conversation around Scope 3 data. In February 2023, we sent out an ESG survey to our suppliers to identify and inform improvements to enhance our management of Scope 3 and value chain impacts. We continue to implement our Supply Chain Policy and Sustainable Procurement Plan, as well as provide supplier training, Request for Proposal (RFP) requirements, and encourage major suppliers to adopt science-based targets and to disclose their GHG emissions and environmental performance information. This year, 90% of suppliers engaged completed the ESG questionnaire sent out to assess their ESG performance. We also provided sustainable procurement training for staff in addition to encouraging contractors/service providers to implement resource efficient tools and equipment.

GHG Emission Types



¹¹Environment and Climate Change Canada, 2023 National Inventory report 1990-2021: Greenhouse Gas Sources and Sinks in Canada, Part 3. Annex 13 Electricity in Canada: Summary and Intensity Tables

GHG Emissions Reductions

As of December 2023, CNL has reduced its Scope 1 & 2 emissions at Chalk River Laboratories by 51% relative to 2005 levels as illustrated in Figure 8.

As shown in Table 4, we have made steady year over year progress in our GHG reduction journey.

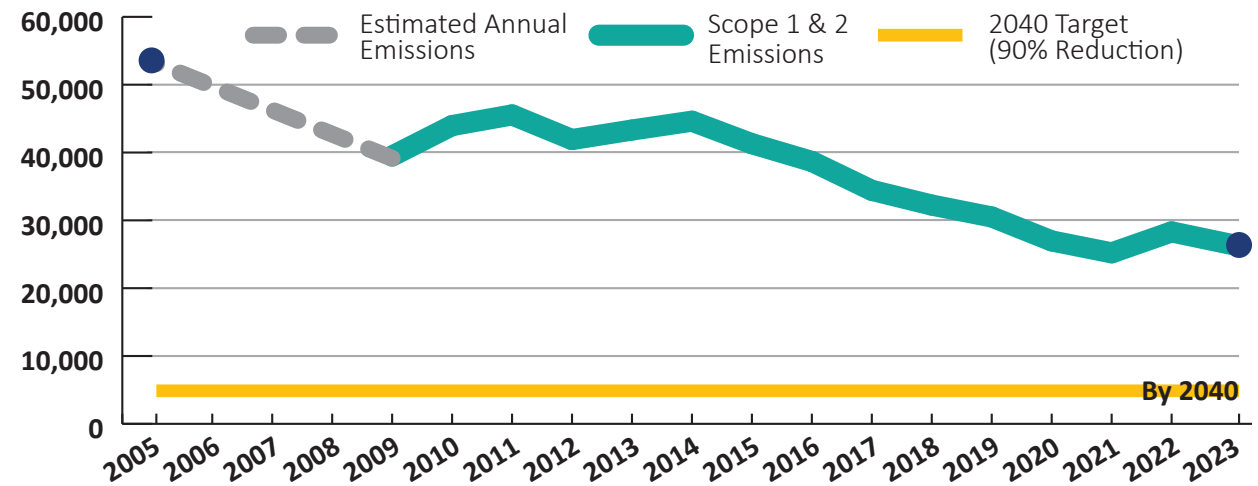


Figure 8. 2023 Chalk River Laboratories Scope 1 and 2 GHG Emission Reductions

Calendar Year	Annual Scope 1 CO2e metric tons	Annual Scope 2 CO2e metric tons	Total CO2e metric tons (Scope 1 & 2)	Reduction Compared to 2005 Baseline	
				↑ OR ↓	% Change
2005	38,144	15,449	53,593	--	--
2006	--	--	--	--	--
2007	--	--	--	--	--
2008	--	--	--	--	--
2009	34,342	5,144	39,486	--	--
2010	36,346	7,625	43,971	↓	-18%
2011	39,905	5,640	45,545	↓	-15%
2012	35,696	6,217	41,913	↓	-22%
2013	38,985	4,329	43,314	↓	-19%
2014	42,000	2,620	44,620	↓	-17%
2015	38,598	2,702	41,300	↓	-23%
2016	36,127	2,557	38,684	↓	-28%
2017	33,208	1,217	34,425	↓	-36%
2018	30,608	1,642	32,251	↓	-40%
2019	29,102	1,398	30,500	↓	-43%
2020	26,150	817	26,967	↓	-50%
2021	23,745	1,461	25,206	↓	-53%
2022	26,850	1,449	28,299	↓	-47%
2023	25,063	1,389	26,452	↓	-51%

Table 4. Year over year GHG emissions reductions at Chalk River for Scope 1 and 2 from a 2005 baseline.

We have reduced our Scope 1 CO2e emissions by just over 34% compared with our 2005 baseline and by almost 7% compared with 2022. These reductions are primarily attributed to the ongoing decommissioning and demolition of buildings on campus, the reduction of natural gas used in heating our buildings, tighter envelopes in our new buildings as well as a decrease in heating degree days in 2022-23. We also benefitted from the steady introduction of low and zero emission vehicles (ZEV) into our fleet.

We have reduced our Scope 2 CO2e emissions by approximately 91% as compared with our 2005 baseline and by approximately 4% compared with our 2022 performance. As illustrated in Table 5, the decarbonization of the Ontario electricity grid has contributed substantially to CNL’s Scope 2 performance. At the same time, we have also reduced our electricity use by 27% compared with the baseline. At our Chalk River campus, on-site electricity efficiency is attributed to the use of building automation, energy meters, energy modelling and LED lighting. At many of our other sites, we continued to reduce electricity through the use of LED lighting retrofits and temperature control systems.

Table 5. Scope 2 reductions attributed to decarbonization of the Ontario grid and reduced electricity use at the Chalk River campus.

REDUCTION DUE TO ONTARIO EMISSION FACTOR

Calendar Year	Annual Scope 2 CO2e metric tons	Reduction Compared to 2005 Baseline	
2005	15,449		
2020	817	↓	95%
2021	1,461	↓	91%
2022	1,449	↓	91%
2023	1,389	↓	91%

REDUCTION DUE TO REDUCED ELECTRICITY USE

Calendar Year	Annual Electricity Use	Reduction Compared to 2005 Baseline	
2005	66,730		
2020	47,256	↓	29%
2021	47,928	↓	28%
2022	50,929	↓	24%
2023	48,818	↓	27%

Fleet Carbon Management

CNL currently operates a fleet of 168 light-duty vehicles, collectively responsible for a total of approximately 470 metric tons of CO2e annually. Currently, Chalk River Laboratories has six hybrid SUVs, one hybrid truck, two electric trucks and one electric cube van.

We are in the process of shifting our fleet to ZEVs¹² to achieve the following two goals:

- Our light duty fleet will comprise 80% ZEVs by 2030; and
- 75% of new light-duty fleet vehicle purchases will be ZEVs by 2030

We have developed an interim Green Fleet Strategy which identified initiatives such as centralizing our operations, consolidating technology types, and focusing on hybrid technology and biofuels in the interim until the transition to fully electric vehicles can be made when and where feasible.

To support the deployment of our green fleet, as well as enabling our employees with green vehicles, we are building EV infrastructure by reconfiguring the parking lot to improve access to the existing electrical infrastructure, with a parking proposal in progress. At present, our Chalk River campus is equipped with seven EV chargers for the fleet and an additional six chargers for employee use. To meet the anticipated surge in EV usage by 2030, the Chalk River campus is preparing for a significant expansion of its EV charging capabilities.



Energy Management

We continue to pursue energy efficiency improvements across all CNL operations and are working towards our target of a 30% reduction in energy intensity at Chalk River Laboratories by 2035.

Chalk River accounts for 84% of our total building energy use across all sites. In 2023, the energy use intensity at the Chalk River campus was 2,955 MJ/m², representing a greater than 25% decrease in energy use intensity below our baseline year of 2015. Several initiatives which support conservation and efficiency measures were executed at the Chalk River campus in 2023, including:

- Continued execution of our Smart Building initiative that integrates Building Automation Systems with autonomous default detection technology to deliver benefits in energy savings and management of assets. For example, all CNL-owned and leased buildings now feature a standardized thermostat lockout to ensure optimal energy usage without compromising comfort. In 2023-24, the project was expanded by including five additional facilities, for a grand total of 20 facilities;
- Progressed the Energy Performance Contract (EPC) Program through proposed projects that focus on energy cost savings, GHG

reduction, and replacing the aging steam system. Key EPC activities in 2023-24 included developing a Power Transition Plan, resolving Quality Program Certification requirements, and negotiating master construction contracts;

- Developed contracts to secure improvement with Energy Meters and energy modelling software to manage and monitor energy consumption at all keeper buildings on the site by 2025;
- Refined the Energy Management Dashboard to include energy metrics that are aligned to ISO 50001; and
- Demolished one building at the Chalk River campus.

Energy conservation and efficiency measures were also implemented in other locations. At the Port Hope site all fluorescent and incandescent bulbs were replaced with Light Emitting Diode (LED) bulbs at three buildings. At the La Prade site, the comfort heating temperature of two buildings heated with electricity was reduced by 4°C, and a new temperature control/automation system was installed at one of the Administrative Centre buildings in efforts to optimize operations.

Waste Management

For more than sixty years, CNL has been a responsible steward of waste. CNL manages Canada's legacy nuclear waste liabilities across Canada.

At the Chalk River campus we also manage radioactive waste from other Canadian institutions, including hospitals and universities, to provide a safe long-term storage location for waste generated by these institutions.

We maintain the highest standards of waste management and are committed to developing the necessary technologies, facilities, and solutions to help ensure a clean and healthy environment for Canadians, mitigate climate change and importantly, address Canada's legacy and future nuclear liabilities.

We believe it is our responsibility to drive the future of waste management and we continuously strive to use innovative, safe, and secure ways to manage our waste and help to create a more sustainable future for all.

Our [Integrated Waste Management Strategy](#), was informed by Indigenous and public engagements and describes our strategic approach to managing six types of waste. Figure 9 provides a definition of each class of waste, details how each class is managed at CNL and illustrates the lifecycle disposal pathways associated with each.

¹²As defined in the Government of Canada Greening Government Strategy, ZEVs include battery electric, plug-in hybrid and hydrogen fuel cell vehicles

Class of Waste	Key Elements of the Strategy	Lifecycle Disposition Pathways
Clean Waste	- Implementing radiological and hazardous substances clearance processes for impacted or potentially impacted materials to enable the disposal of non-radiological wastes and non-hazardous wastes - Increase recycling opportunities as available	Reuse, recycling or disposal through third-party (off-site) facilities
Hazardous Waste (Non-Radiological)	- Characterizing wastes for handling, storage, transportation and/or further processing - Implementing radiological clearance processes for impacted or potentially impacted materials - Ensuring that compliance with regulations provides the foundation for lifecycle management processes	Reuse, recycling, processing and/or disposal through third-party (off-site) facilities
Radioactive Low-Level Waste (Solid)	WASTE HIERARCHY - Characterizing wastes, for radiological and non-radiological contaminants for handling, storage, transportation and future disposal - Processing and packaging to meet storage, transportation and disposal requirements - Implementing waste diversion approaches to minimize waste volumes requiring storage or disposal - Consolidating waste at the Chalk River campus - Time-phasing waste generation from cleanup work (decommissioning and environmental remediation) - Utilizing existing infrastructure and assets where suitable - Developing and implementing new capabilities (facilities and technologies) for optimized lifecycle management and enabling future clean-up work - Incorporating industry best practices and innovations as part of a fit-for-use approach at CNL - Driving continuous improvement to improve safety, effectiveness and efficiency	- Disposal in the proposed Near Surface Disposal Facility - Long-term management in the Port Granby and Port Hope Long-Term Waste Management Facilities - Proposed in-situ disposal for the NPD and WR-1 Facilities
Radioactive Intermediate-Level Waste (Solid)		- Disposal in the recommended national Deep Geological Repository - Proposed in-situ disposal for the NPD and WR-1 Facilities
Radioactive High-Level Waste (Solid)		Proposed disposal in the national Deep Geological Repository
Radioactive Liquid Waste		- Solidified waste to be managed as Low-Level Waste or Intermediate Level Waste - Discharge of treated liquids verified to meet effluent discharge limits

Figure 9. Disposition Pathways per Waste Class

Management of Radioactive Waste

At CNL, we manage six classes of waste including three types of radioactive waste, low-level radioactive waste, intermediate-level radioactive waste, and high-level radioactive waste. CNL is committed to implementing strategies that reduce the volume of nuclear waste generated. One of these strategies is the waste hierarchy which is considered for each project to maximize waste reduction (Figure 10).

CNL manages Canada’s largest and most complex environmental cleanup mission to address Canada’s nuclear waste legacy. Since 2015, CNL has decommissioned 120 structures and has continued to manage major decommissioning projects including the Nuclear Power Demonstration Closure Project, the Port Hope Area Initiative (PHAI) Cleanup Project, and the Whiteshell Laboratories Closure Project. CNL achieved several major milestones in 2023-2024, including:

- Continued to fulfill the commitments of the PHAI with progress that included the safe remediation of 47 private properties and various industrial sites, with 220,000 metric tons of waste safely moved to the Long-Term Waste Management Facility for long-term storage; and
- Passed the CNSC’s completeness check for the Environmental Impact Statement (EIS) for CNL’s Whiteshell Reactor – 1 Closure Project and progressed to the final technical review stage;

Over the next decade, further reduction of Canada’s nuclear waste liabilities will be accomplished with the planned construction and operation of the Modernized Combined Electrolysis Catalytic Exchange (MCECE), as well as the enhancement of existing waste processing capabilities in CNL’s Sort and Segregation facility.

Hierarchy Steps	Waste Strategy Examples
PREVENT	• Avoid generation of wastes • Planning for decommissioning at the design stage • Minimizing the use of single-use disposables
REDUCE	• Segregation of waste classes and streams • Prioritizing the durability the durability and reusability of equipment
REUSE	• Reusing concrete and ground materials on-sites • Reusing surplus equipment • Treating heavy water for reuse • Utilizing mobile systems that can be used at multiple projects/sites
RECYCLE	• Recycling of metals, plastics, paper products, wood products • Off-site metal melt processing of LLW metals
DISPOSE	• Landfill disposal of demolition waste • Future disposal of LLW in the Near Surface Disposal Facility • Proposed disposal of used fuel of the national Deep Geological Repository

Figure 10. Waste Hierarchy Steps and Actions

Modernized Combined Electrolysis Catalytic Exchange (MCECE)

The Modernized Combined Electrolysis and Catalytic Exchange (MCECE) facility proposed at the Chalk River campus will enhance waste management by processing used heavy water to remove contaminants which will be safely stored in accordance with the license conditions of the site. The result will be clean heavy water that can be reused in both nuclear and other industries. The

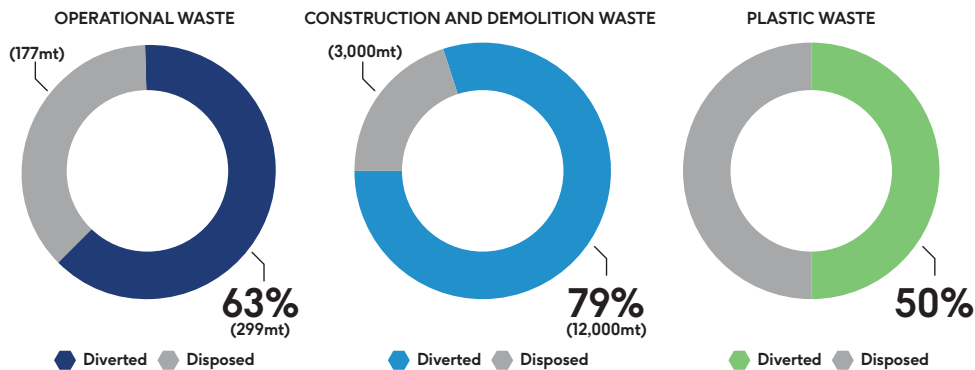
proposed MCECE facility will modernize the process that was used by the Combined Electrolysis and Catalytic Exchange Upgrading and Detritiation (CECEUD) Test Facility that was in operation from 1998 to 2001. The MCECE will be built on already disturbed land, minimizing environmental impact.

Management of Clean (Conventional) Waste

Clean or conventional waste includes non-radioactive and non-hazardous waste generated through CNL’s operations and construction, including plastics. To align with the waste targets outlined in AECL’s ESG Strategy and Canada’s Greening Government Strategy, we updated our sustainability targets for clean waste in March 2023. The new targets are:

- 1. Divert at least 75% by weight of conventional waste from landfills by 2030;
- 2. Divert at least 75% by weight of plastic waste from landfills by 2030; and
- 3. Divert at least 90% by weight of all construction and demolition waste from landfills and strive to achieve 100% by 2030.

The preliminary results of our 2023 conventional waste diversion targets are shown in Figure 10, which indicate that CNL is well on track towards achieving our 2030 targets. Our current efforts are focused on Chalk River Laboratories; in the future, we will expand our targets to other CNL sites and incorporate additional data sources.



Notes:

- Plots are based on data from Chalk River Laboratories site between 2023 January and December 31, 2023.
- Values in brackets are the weight of waste in metric tons (mt).
- As plastic co-mingles with other waste streams, the weight of plastic waste is not available. Diversion rate for plastic waste is based on 2023 waste audit data.

Figure 11. Composition of Waste at Chalk River Laboratories Site (Jan-Dec 2023)

To make progress toward our conventional waste targets, we put several initiatives in place during 2023-24, including:

- Developing project charters to explore different recycling routes;
- Reviewing our cafeteria contract to identify improvements to negotiate during 2024 (e.g. moving toward compostable and reusable food packaging);
- Engaging with municipal vendors, cities, and other nuclear organizations in search for new partnerships;
- Conducting two waste audits to evaluate CNL’s recycling practices, provide hands-on recycling experience for staff, and identify opportunities for prevention efforts like reusing and repurposing;
- Collaborating with the Asset Management Program to prevent waste through the reuse of assets;
- Establishing strategic contracts with external waste receivers enabling CNL to segregate, reuse and recycle majority of construction and demolition waste;
- Establishing concrete recycling capability at the Chalk River campus. This initiative enabled CNL to process and recycle concrete from construction and demolition projects across CNL. The crushed concrete has been used to grade back roads across Chalk River;
- Developed a soil management process and training to enable CNL projects to effectively manage soil as an asset, minimizing waste soil generation;
- Conducted a series of self-assessments to optimize waste management processes;
- Piloted new waste surveillance procedures to enhance waste management oversight, support effective implementation, and establish a feedback mechanism for continual improvements;
- Polled our staff to find out how to best improve recycling signage, which resulted in a redesign for more accessible, easier to understand clean waste sorting station signs;
- Procured improved sorting station credenzas for high traffic buildings at the Chalk River campus.

CNL engaged and raised employees' awareness on waste throughout the year. In May 2023, a staff recycling survey helped to identify barriers and potential areas of improvement for waste diversion across our sites. The Recycling Awareness Committee, established in 2023, organized events including a two-week "Waste Recycling Campaign", an interactive booth at the Chalk River cafeteria during the Earth Week Sustainability Fair and a week of activities themed "Planet vs. Plastic" to reduce plastic

pollution. We also began developing Waste Management computer-based training modules and introduced "Oscar Sort" smart recycling bins at the Chalk River campus to leverage artificial intelligence (AI) to engage staff on proper recycling habits and enhance data collection around waste and recycling. Ten Oscar Sort units are being installed across the Chalk River campus to provide data on waste and sorting rates, with plans for further refinement next year.

Oscar Sort Smart Recycling Bins at CNL's Chalk River Campus

Oscar Sort smart recycling bins are AI-powered waste sorting stations designed to improve recycling accuracy and efficiency. These bins use sensors and AI to automatically sort waste, reducing contamination and ensuring that recyclables are properly separated. By increasing recycling rates and reducing labor costs through automated sorting, Oscar Sort bins can optimize waste management practices at the Chalk River campus. Additionally, they provide real-time monitoring and notifications, further enhancing sustainability by promoting proper recycling habits. These features make Oscar Sort bins a valuable tool for improving waste management and environmental stewardship.



As a leader in waste management, CNL contributed to industry knowledge and best practices by participating in the Greening Government Fund's Interdepartmental Task Team on Greening of Scientific Laboratory Equipment and by releasing our program paper, "Sustainability by Design: Implementing the Greening Government Strategy for Waste Management Enabling Facilities". We also hosted the Baggs Road Landfill Site Liaison Committee at the Chalk River campus to

share waste diversion practices and build relationships with local waste receivers.

Looking ahead, we will continue to explore alternative recycling pathways, enhance our collaboration across departments and CNL sites, and advance and refine our waste metrics through improvements to our ESG dashboard.

Licensing Approval to Proceed With NSDF Construction

In January 2024, the Canadian Nuclear Safety Commission (CNSC) announced the Commission's decision to amend the licence for Chalk River Laboratories, authorizing CNL to construct a Near Surface Disposal Facility (NSDF) on the site.

Once complete, the NSDF will serve as an engineered containment facility to enable the permanent disposal of decommissioning waste from more than 100 legacy buildings and structures at the Chalk River Laboratories, as

well as waste from 70 years of science and technology research, contaminated lands, and operational activities. The mound is designed to contain one million cubic metres of low-level waste in a multi-layer base liner and cover system. A dedicated waste water treatment plant is also part of the design to safely remove contaminants from any precipitation that enters the facility.

This decision was the result of a comprehensive regulatory review process, including a federal environmental assessment under the *Canadian Environmental Assessment Act, 2012*, that began in 2016 and involved Indigenous and public participation throughout. The CNSC concluded, among other things, that the NSDF is not likely to



cause significant adverse environmental effects, provided that all proposed mitigation measures and follow-up monitoring measures are implemented.

Since this regulatory approval was announced, applications have been filed for judicial reviews of the CNSC's decision.

Ecosystem Services

Water and Wastewater Management

Monitoring and Conserving Water Use

We recognize that our withdrawal, consumption, and release of water can have major impacts on the health, wellbeing and quality of life of local communities and ecosystems. As part of our Smart Building Project to integrate a building automation system throughout CNL sites, we have installed water meters to monitor and manage water consumption more effectively.

Leveraging the GRI: 303 Water and Effluent standard, we annually monitor and report on water use from seven facilities across Ontario, Manitoba, and Quebec, none of which are located in an area of water stress. Total water intake¹³ across all CNL sites in 2023 was 16,523 ML, an increase of just over 300 ML, or 1.9% compared to 2022. As shown in Figure 12, as Chalk River Laboratories and Whiteshell Laboratories

have the highest amounts of water intake, they are the focus of our conservation efforts and external reporting. As our most material site, Chalk River also accounts for 99% of our total water consumption¹⁴.

Chalk River Laboratories is located in Ontario’s Ottawa River catchment area, which is part of the St. Lawrence River watershed. Water is drawn from three sources, including the Ottawa River, Corry Lake and groundwater, and is then spread out across various buildings and facilities and used as service water, process water and fire water. Service water for Chalk River is largely supplied by the nearby Town of Deep River. It is metered daily, then pumped into a reservoir for use in sinks, toilets, showers and some laboratory/experimental use across the Chalk River campus. Process water for Chalk River is drawn directly from the Ottawa River and is used as cooling water for process pumps and for a boiler, with an estimated 62.2 m³ of process water consumed per day in 2023 (based on daily flow rates). Fire water for Chalk River is also drawn directly from the Ottawa River through six fire water pumps, then circulated through a 1.14 ML holding tank that remains full and is only used for emergency purposes.

At Whiteshell, CNL draws water directly from the Winnipeg River. The water is utilized by the site for various fire suppression systems, site cooling in the summer, and a variety of cleaning and sanitary purposes. With the current decommissioning work at Whiteshell, the fire water system is also used for misting operations during demolitions. In 2023, extensive firefighter training and equipment testing were primarily responsible for the increased water used by the site, which was similar to the 2022 usage when an underground water main break on a fire water line occurred during the winter months.

¹³‘Water intake’ is the total amount of water withdrawn
¹⁴‘Water consumption’ is the total amount of water used through consumption, incorporation into products, contamination, or storage, and is therefore not released back to its original source.

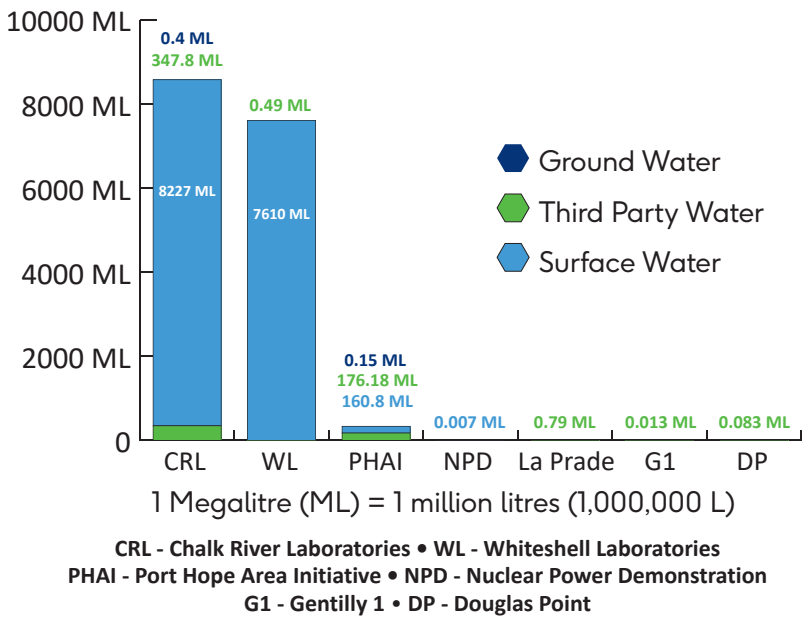


Figure 12. Total Water Intake Across CNL Sites in 2023

Wastewater and Effluent Management

At Chalk River Laboratories, most of the service, process and fire wastewater is discharged back into the Ottawa River. In 2023, 34.6% of Chalk River's incoming service water was treated at the Sanitary Sewage Treatment Facility and discharged into the Ottawa River, while the remaining water was included within our total consumption. The majority of Chalk River's process water is discharged into the Ottawa River, with a small portion discharged from the Powerhouse Drain. Overflow from the firewater tank at Chalk River has formed an overland stream which flows back to the Ottawa River. Any remaining water that is not overflowed is used for hydrant flushing, filling water trucks, some experimental processes, and cooling water.

The Whiteshell site returns the water it uses through a discharge outlet that releases effluent directly back to the Winnipeg River. The site operates a small lagoon that typically releases approximately 41.5 ML of effluent per year into a network of ditches that deliver water back to the Winnipeg River, however no releases were made in 2023. The site also has storm drains, which funnel water to the site discharge outlet. The volume of fire water used for misting is not tracked and is discharged to ground.

We maintain an extensive effluent, groundwater, and environmental monitoring program to track contaminants, understand the impact of our operations, and determine opportunities to reduce our environmental impact. More than 60,000 analyses are performed annually for radionuclides, major ions, trace elements, and a broad range of organic compounds. We maintain an efficient, centralized, GIS-based Environmental Data Management System, which holds over 800 million historical environmental data records related to air emissions, liquid effluents, soil, sediment, surface water, groundwater, vegetation, ambient air, game and wild animals, biodiversity, and cultural heritage information. We also conduct several internal and external audits annually. For example, this past year we underwent a Canadian Standards Association (CSA) monitoring standard audit for standards related to monitoring programs, effluent monitoring, and groundwater monitoring. We are working to implement actions to address findings identified as a result of these audits. Ultimately, the goal of these reviews is to ensure our monitoring program can address evolving concerns, reduce extraneous monitoring, and support protection of the environment.

Specific to wastewater, CNL conducts various routine assessments to



evaluate whether radiological or non-radiological contamination has occurred, including:

- Liquid effluent monitoring is completed through a monitoring program and reported in an Annual Compliance Monitoring Report, which is then submitted to the CNSC for approval;
- Derived Release Limits (DRL) are used across all sites to establish release rates for radiological parameters in liquid effluents at the public dose limit. CNL operates with releases at a small fraction of the DRL to ensure that public doses are kept as low as reasonably achievable; and,
- Site-wide Environmental Risk Assessments (ERA) are maintained for all CNL sites, including the comparison of liquid effluent results to federal and provincial ecological screening guidelines and risk-based benchmark values to assess the potential for ecological effects.

In February 2024, routine sampling at Chalk River Laboratories' Sanitary Sewage Treatment Facility indicated that the micro-fauna that are part of the treatment process had been disrupted, resulting in non-compliant test results. CNL notified all relevant regulatory agencies and initiated an investigation to identify the cause of the disruption. By June 2024, following three consecutive bi-weekly effluent tests, CNL confirmed that the facility is back to full compliance with all environmental regulations. We are implementing an action plan to mitigate against future incidents, including better oversight, improved sanitary drain practices, and infrastructure upgrades. The non-compliance did not involve radiological contaminants, and the treated effluent posed no threat to the environment nor public.

Biodiversity and Land Use

Protecting and Restoring Nature

In June 2024, Canada's 2030 Nature Strategy was introduced, outlining how Canada will implement the goals established under the international Kunming-Montréal Global Biodiversity Framework that was agreed upon at the UN Biodiversity Conference (COP-15).

CNL is doing its part to advance Canada's efforts to support international and domestic targets for protecting and restoring nature.

We are committed to responsibly managing our sites to ensure the protection of local wildlife and ecosystems through the implementation of land management strategies and the incorporation of Indigenous Traditional Knowledge. Our commitment to environmental stewardship was strengthened in 2023 as we completed the first draft of a Forest Management Plan for the forests surrounding the Chalk River campus.

Forest Management Plan for the Chalk River Campus

CNL's Forest Management Plan, developed by Natural Resources Canada's Canadian Forest Service, aims to enhance the environmental sustainability of the Chalk River campus by sustainably managing 2,690 hectares of forest. The benefits of forest management include increasing carbon sequestration capacity, mitigating climate risks, promoting ecosystem services, maintaining and enhancing wildlife habitat including protecting species at risk, restoring the forest to its pre-industrial conditions, and mimicking the natural disturbance cycle of the Great Lakes St. Lawrence Forest. The plan contributes to CNL's social license with surrounding communities, including Indigenous Nations, communities and organizations and to the successful certification of the Chalk River campus with the Wildlife Habitat Council.

In 2023, utilizing the Canadian Forest Service's Carbon Budget Modeling approach, we completed a preliminary forest carbon analysis that revealed that the forested ecosystems at the Chalk River site currently store approximately 2.4 million metric tons of carbon. If managed according to our Forest Management Plan, this forest is projected to be transformed into a carbon sink over the next century. This analysis is a key first step to underscoring the potential for nature-based solutions in carbon reduction and storage within the forested ecosystems at the Chalk River campus.

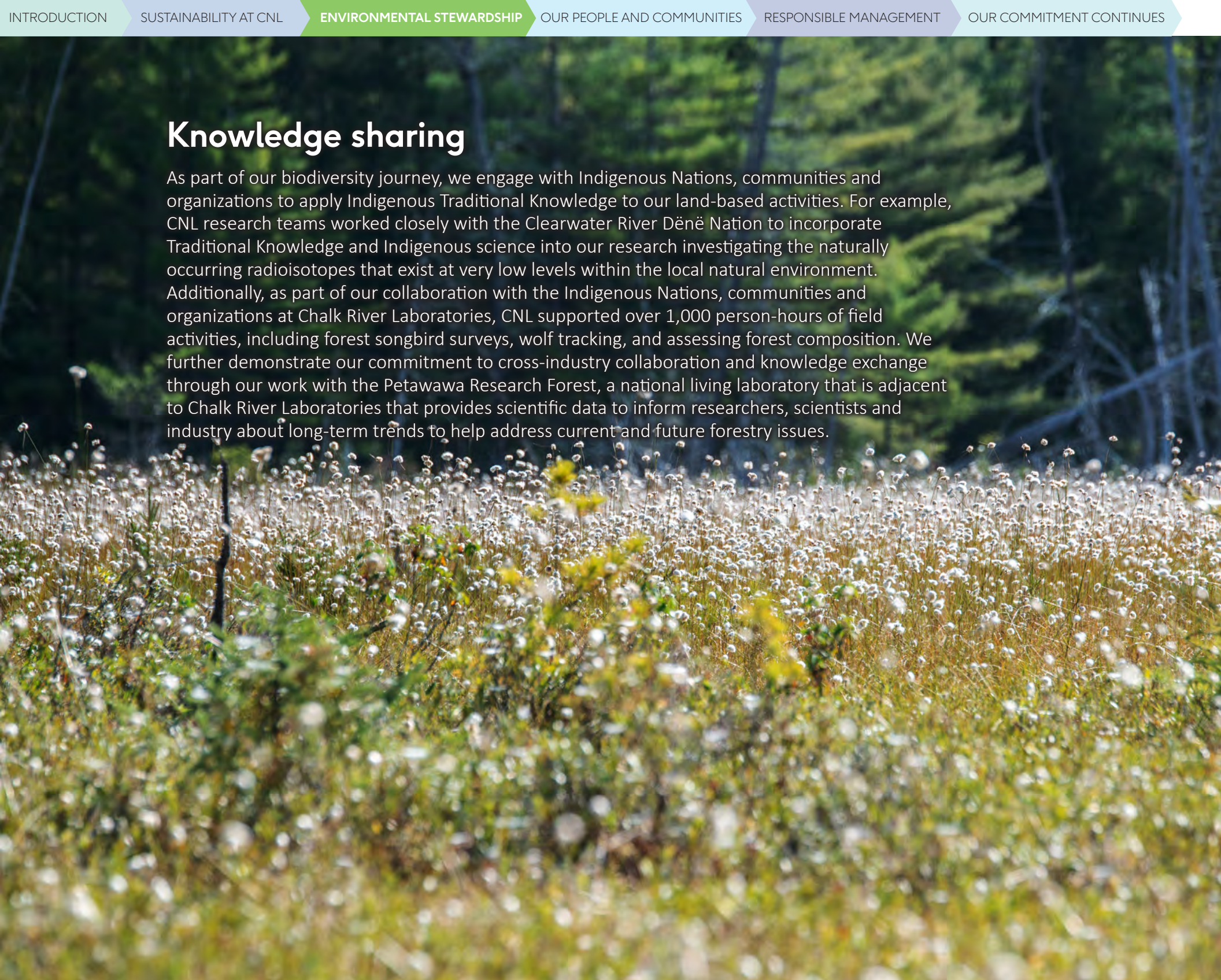
The Forest Management Plan includes the development of an annual work plan that involves elements such as field validation, management prescriptions, compliance, supervision, scheduling and reporting.



Collaboration with federal neighbours is a key component of the plan, such as on-going work with the Petawawa Research Forest.

Knowledge sharing

As part of our biodiversity journey, we engage with Indigenous Nations, communities and organizations to apply Indigenous Traditional Knowledge to our land-based activities. For example, CNL research teams worked closely with the Clearwater River Dënë Nation to incorporate Traditional Knowledge and Indigenous science into our research investigating the naturally occurring radioisotopes that exist at very low levels within the local natural environment. Additionally, as part of our collaboration with the Indigenous Nations, communities and organizations at Chalk River Laboratories, CNL supported over 1,000 person-hours of field activities, including forest songbird surveys, wolf tracking, and assessing forest composition. We further demonstrate our commitment to cross-industry collaboration and knowledge exchange through our work with the Petawawa Research Forest, a national living laboratory that is adjacent to Chalk River Laboratories that provides scientific data to inform researchers, scientists and industry about long-term trends to help address current and future forestry issues.



Biodiversity Projects From 2023-24



Bat houses

We have constructed bat houses at the Whiteshell Laboratory site and along the river at Chalk River Laboratories to support the declining bat populations.



Emerald Ash Borer Early Detection Survey

We continue our monitoring efforts, which started in 2019, to better understand the threats

to Black Ash, a species proposed to be added to the *Species at Risk Act* as a threatened species.



Ecopassages

We have constructed ecopassages which are designed to allow wildlife to safely cross beneath roads, thereby reducing the risk of vehicle collisions, reducing habitat fragmentation, and promoting biodiversity. One notable initiative is the installation of upgraded culverts along Plant Road (the principal vehicle roadway leading to our Chalk River campus), which are specifically designed for turtles.



Black Bear food source management

To reduce human bear conflict and ensure black bears are not attracted to waste as a food source, initiatives to reduce access opportunities to organic waste have been implemented, including the replacement of the 38 poly bins located in the Chalk River campus with bear proof steel sheds.



National Tree Day

For National Tree Day, CNL invited members of the Deep River community, Girl Guides of Canada and Scouts Canada to plant trees at Bill Rounding Park and Giant Tiger Park in Deep River. With the help of forestry

experts, CNL executives, guests and local children, about 100 of the 250 trees donated by CNL were planted. Participants also got to take trees with them to plant at home. These trees will help to ensure that the town of Deep River benefits from a strong tree canopy well into the future.

Our People and Communities

CNL is committed to developing and maintaining meaningful relationships with all our stakeholders, including the staff that we employ, the local communities where we work, the companies we do business with, as well as the public at large. We recognize our significant

responsibility to provide a safe and healthy working environment for all our employees, contractors and other persons who access our sites, as well as to ensure the safety of the communities that surround us.

Employee Engagement and Wellbeing

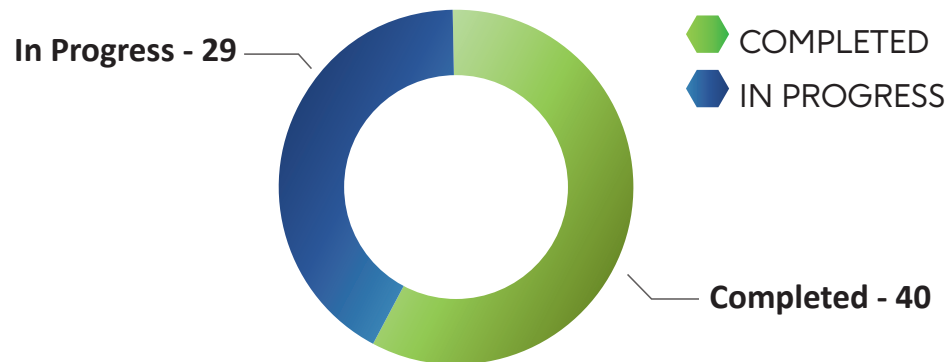
Health, Safety and Wellness

Safety Excellence Strategy

CNL is taking significant steps to enhance our safety and wellness practices across our organization in pursuit of our ambitious Safety Excellence Vision. Our four-year Safety Excellence Strategy and Implementation Plan, launched in 2022, outlines a plan to achieve this Vision. The Strategy centres around 15 priorities (shown at right) and over 69 aligned actions to accelerate and enhance safety measures and practices. As of December 2023, 40 of these actions had been successfully completed, with 17 more in progress, and 12 due by the end of 2024 (see Figure 13).



Figure 13. Safety Excellence Initiative Actions (as of December 2023)



To gain insight into our employees' perspectives and feedback on CNL's safety performance, we conduct an annual Safety Perception, Climate and Chemistry survey. This year, 1,711 staff completed the survey. Following the close of the survey, an analysis of the data was shared with CNL and AECL executive teams to guide the development of priorities and initiatives to ensure a safe and healthy environment for all. Moreover, we introduced our Safety Excellence Initiative, which prioritizes psychological health and safety.

Occupational and conventional health and safety

We are taking actions to ensure the safety and well-being of our employees in alignment with our regulations and standards.

We continuously monitor our safety performance, using various measures such as lost time injury rate (LTIR), days away restricted transfer rate (DART), days away (DA), and total recordable case rate (TRCR). In 2023, CNL achieved industry-leading Occupational Safety and Health Administration recordable injury rate performance and operated for 2.6 million consecutive hours without a lost-time injury. This year, we also realized significant improvements in radiation protection contamination controls with two skin contamination events recorded in 2023-24, representing a 67% reduction over the previous fiscal year. Our injury rate is consistent with the safety performance of the Professional, Scientific and Technical Industrial Sector in the Workplace Safety and Insurance Board injury database.

CNL's Health Centre plays a key role in enhancing the relationship between our employees, corporate physicians and third-party disability management providers, and aids in identifying the appropriate accommodations and recommendations to ensure both the overall health and safety of our workplace.



CNL Awards of Excellence

The CNL Awards of Excellence is an annual program that recognizes employee excellence and celebrates the outstanding achievements of individuals and teams across CNL's departments and sites whose hard work, determination and accomplishments helped CNL deliver its science and technology programs and major projects. Over 250 CNL employees were recognized at the 2023 Awards of Excellence ceremony for accomplishments that include the development of new technical capabilities, key accomplishments in decommissioning and environmental remediation, improvements in organization health and safety, significant progress in Indigenous and public engagement, and the completion of important commercial projects.



Supporting our employees' wellbeing

We adhere to a set of guidelines known as the National Standard of Canada for Psychological Health and Safety in the Workplace to ensure that our employees' mental well-being is among our top priorities and that it contributes to their overall job satisfaction. This year, we continued to implement our 10-year Health and Wellness Strategy with a focus on rolling out health and wellness initiatives. We announced a new partnership with Evernew Recovery and Rehabilitation to deliver Athletic Therapy treatments on site in order to make health and wellness more accessible at Chalk River. Additionally, we offered our employees a one-day Mental Health First Aid training course and began collaborating to develop offerings for the Working Mind training to provide knowledge and reduce stigma around mental health. These initiatives complement existing initiatives such as the Wellness Program, the Lifeworks Employee and Family Assistance Program, the Aging Management and Fitness Service, the Fitness for Duty Program, LIFT, the LifeSpeak series, CNL's intranet (my CNL) bulletins. Each of these initiatives is carefully designed to improve the work environment and provide valuable support to our workforce. By prioritizing the well-being of our workforce, CNL is successfully able to foster a culture of excellence that benefits both our employees and the success of our business.

Fostering a respectful work environment and preventing harassment

CNL is committed to providing a respectful work environment that is free from harassment. Last year, CNL introduced two voluntary training programs, HR101 (Building Respectful Workplaces program) and HR1008 (Harassment and Violence-Free Workplace Prevention Program for Managers and Supervisors), which further reinforced our commitment to fostering a respectful workplace environment and preventing harassment and violence. Through these programs, employees engaged in activities promoting diversity, handling conflicts respectfully, and fostering a culture of mutual respect, contributing to a more cohesive workplace culture free from discrimination. At the time of writing, over 250 managers and supervisors have participated in the aforementioned programs.



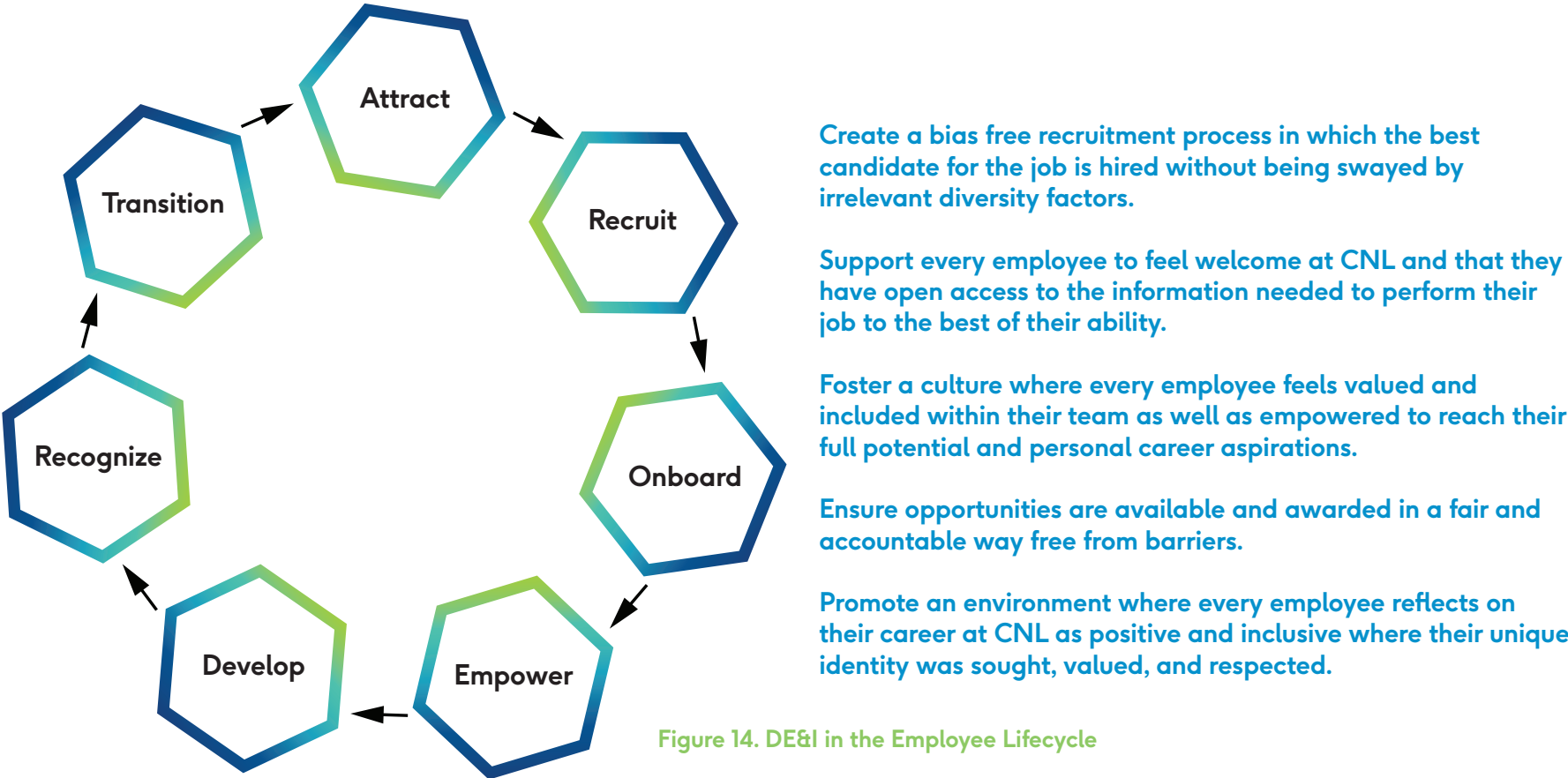
Wellness Fair Positivity Pathway

Diversity, Equity and Inclusion

At CNL, we are dedicated to entrenching Diversity, Equity, and Inclusion (DE&I) in all areas of our organization. To that end, we have taken steps toward gaining a sound understanding of the state of diversity and inclusion at CNL. As of December 2023, 1,861 CNL employees, belonged to one of the four designated groups – Women, Members of Visible Minorities, Indigenous Peoples, and Persons with Disabilities, representing an increase of 1% from 2022. Throughout the year, we maintained a steady participation of these groups in the workforce. We exceeded the representation expectations from ESDC with regards to the representation of Indigenous People in our workforce, with approximately 6.8% of CNL’s current workforce self-identifying as Indigenous this past year. Although our representation rate remains lower than the ESDC expectations across the other three groups, we

have noted an increase in representation across the Persons with Disabilities and Visible Minorities designated groups in comparison to 2022. The representation of women remained stable at only 3.3 percentage points below ESDC expectations Please refer to the data table in Appendix A for details.

As part of our Vision 2030, we crafted a DE&I Strategic Action Plan that aims to cultivate and maintain a diverse and inclusive workplace for all employees. CNL’s DE&I Strategic Action Plan seeks to embed DE&I into the employee lifecycle, creating a modernized, flexible, and innovative workplace where all employees are respected and supported to achieve their full potential while embracing and showcasing their unique identity (see Figure 14).



In fiscal year 2023-24, we launched and initiated execution of our DE&I Strategic Action Plan. To ensure its successful integration and awareness across our organization, we are committed to enhancing DE&I in our recruitment and onboarding processes, fostering a workplace culture that prioritizes DE&I, and improving policies, practices, and programs to ensure a diverse and inclusive workplace. In addition, we have significantly enhanced our internal communication efforts regarding

DE&I to increase awareness around this topic. This included Indigenous reconciliation topics and conversations, as well as recognizing diverse holidays and days of recognition. CNL's DE&I Committee, created and launched in 2023-24, acts as a forum for employees and management to collaborate on the implementation of DE&I initiatives that align with CNL's core values. The Committee is composed of individuals from diverse backgrounds, identities and business units.

Accessibility Plan

CNL is committed to ensuring equal access and participation for all its employees, and to providing individuals with resources that promote inclusion and enable them to have full careers at CNL. To meet our commitments to the *Accessible Canada Act*, in the spring of 2023, CNL's **Accessibility Plan** was officially approved for use and implementation. This Plan identifies 25 barriers for people with disabilities and outlines 75 specific actionable steps to remove these barriers, with the goal of becoming barrier-free by 2040.

To spearhead these efforts, CNL has appointed an Accessibility Manager to serve as the central point of contact for feedback regarding the organization's accessibility efforts. Additionally, CNL established an Accessibility Steering Committee, composed of

15 representatives from across the organization, committed to implementing the Accessibility Plan.

CNL will implement the plan and publish annual progress reports. The Accessibility Committee will meet periodically under the guidance of the Accessibility Manager, and each member will be responsible for monitoring accessibility actions in the various CNL departments. There will be a mechanism for employees to provide ongoing feedback and raise accessibility concerns so that the Plan can be continually updated and improved upon. In 2026, we will then publish a revised plan, considering the feedback received and progress reported, and then begin this three-year cycle of implementation, feedback, and revision again.

Gender Equality and Pay Equity

CNL is committed to meeting its obligations and is taking strides towards eliminating gender-based discrimination in pay practices and systems through the implementation of the *Pay Equity Act* and the established timelines.

To drive our commitment to gender equality and pay equity, we actively support the **Equal by 30 campaign**. This initiative is designed to accelerate the proactive participation of women in the energy sector, striving for diversity and equality in the clean energy transition, and aiming to close the pay gap by 2030. CNL became a signatory to the Equal by 30 campaign in 2018, committing to work toward equal pay, equal leadership and equal opportunities for women in the clean energy sector by 2030.

Over the past year, CNL has formalized and published our targets and commitments to Equal by 30. By 2030, CNL will:

- Increase overall female representation and meet the ESDC's representation guideline for women;
- Increase female representation in leadership roles;
- Implement a pay equity plan which aims to eliminate unequal pay practices and systems;
- Provide professional development opportunities for women at CNL; and
- Partner with CNL's unions, educational institutions and industry organizations to champion the drive to Equal by 30 initiative forward.

As part of our Equal by 30 commitments, CNL has devised a project plan that meets the requirements of the *Pay Equity Act*, ensuring equal pay for work of equal value.

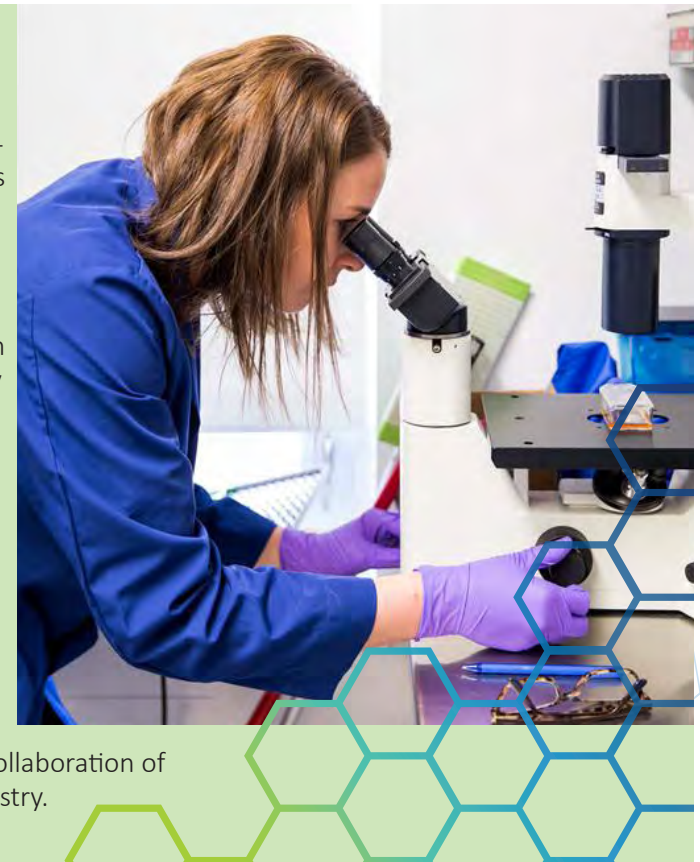
To achieve this goal, we have established a dedicated Pay Equity Committee, consisting of representatives from various backgrounds, including both union and non-union members across the organization. This ensures the representation of the workforce's interests and their integral consideration when addressing pay equity concerns. The committee's primary responsibility is to thoroughly review and assess CNL's compensation practices, specifically addressing the under-evaluation of women's work that contributes to the gender wage gap. By comparing job classes based on skill, effort, responsibility, and working conditions, we are committed to rectifying pay disparities and promoting gender equity within our workforce.

CNL also continues to seek and create opportunities to support the advancement of women in nuclear and STEM careers. CNL actively participates in events that provide a platform for women to highlight their achievements, while also offering mentorship to aspiring young women considering careers in STEM to inspire and encourage the next generation of female talent to pursue and excel in these careers. For example, this year, we developed a [podcast episode](#) featuring interviews with female scientists and leaders discussing challenges, achievements, and strategies to encourage more women to pursue careers in scientific fields.

Equal by 30 Campaign

As part of our commitment to the Equal by 30 campaign, CNL is dedicated to advancing the careers of women in the clean energy industry through a range of initiatives and activities that are designed to increase representation, support development, and create opportunities for women in the industry. CNL will establish partnerships with key stakeholders in the clean energy industry to achieve our Equal by 30 commitments. This includes collaborations with our unions, which represent a significant portion of CNL's workforce and play a pivotal role in advocating for the rights and well-being of employees. Additionally, we will collaborate with educational institutions, non for profits and industry associations for recruitment and other activities aimed to enhance the careers of women. These partnerships will focus on the following areas:

- Collaborating with CNL's unions through joint union consultation, to ensure alignment on the policies and practices related to the Equal by 30 campaign, allowing for the representation of the workforce's interests and concerns.
- Collaborating with educational institutions such as universities to source candidates in clean energy courses and programs.
- Working with industry associations to promote best practices and share knowledge and resources related to advancing women in the clean energy industry.
- Engaging with non-profit organizations and advocacy associations to increase awareness and support for women in the clean energy industry.
- Engaging with Indigenous Nations, communities and organizations and partners to build trust and foster opportunities for the meaningful involvement and collaboration of women in the industry.



DE&I communication and engagement

CNL's DE&I Strategic Action Plan outlines a series of measures designed to foster an inclusive workplace culture. This plan focuses on implementing specific initiatives aimed at promoting respect and value for every individual within the organization. It includes training programs to enhance employee understanding and acceptance of diverse perspectives and clear policies and programs to ensure equitable treatment across all levels of the company. By actively involving all employees in these initiatives, CNL aims to create an environment where everyone can thrive and feel genuinely included.

We have also established a partnership with the Canadian Centre for Diversity and Inclusion (CCDI), a Canadian nonprofit organization with a mandate to build a more inclusive Canada. Through our partnership, employees have access to educational resources, reports and webinars on various DE&I topics, such as unconscious bias, cultural competency and Indigenous reconciliation. This collaboration has resulted in the development of targeted toolkits, crafted using CCDI's resources, specifically tailored to meet the unique needs of our workforce and enhance their learning. CNL has taken a proactive role in engaging youth through CCDI's SEE Different program. Furthermore, to further foster diversity and inclusion, CNL continues to deploy educational materials and toolkits, along with hosting conversations on a range of DE&I topics.

We have also launched our DE&I web page on our external CNL website. This webpage serves to showcase CNL's commitment to fostering a diverse and inclusive workplace and supports our objective to enhance our communication efforts regarding DE&I goals and commitments. This webpage highlights CNL's commitment to DE&I, our Strategic Action Plan, and our commitments to the Equal by 30 campaign.

For the first time, CNL sponsored the Conference on Diversity in

Menstrual Equity

CNL is ensuring that all individuals have access to menstrual products at CNL workplaces by providing free menstrual products in all washrooms to eliminate barriers such as affordability and availability. This initiative is part of CNL's broader efforts to create a workplace that is inclusive, considerate and responsive to the diverse requirements of our workforce. CNL further demonstrated its support for this issue

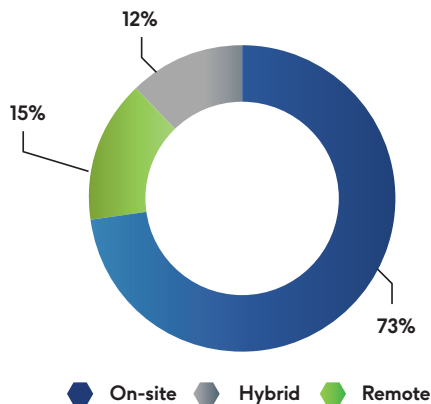


Engineering (CDE). This conference aims to promote diversity and inclusion within engineering communities by fostering positive interactions and creating spaces that value differences among engineering students and professionals. The theme of the conference, "Be Brave, Feel Safe, Take Up Space," underscores the importance of creating both brave and safe spaces where delegates can engage in meaningful conversations, share perspectives, and gain actionable insights to drive positive change in their respective environments.

by partnering with Women in Nuclear (WiN) Canada to organize a Feminine Hygiene Drive at Chalk River Laboratories as part of CNL's month of giving. This underscores CNL's commitment to ensuring that all those who need menstrual products at the workplace and community are able to secure them without hardship.

Talent Attraction and Development

CNL is actively engaging in the pursuit of top-tier scientific, technical, and professional talent, as well as securing access to a wide variety of skilled trades. Our commitment extends beyond maintaining a qualified workforce; it's about cultivating a dynamic environment where continuous development and the attraction of diverse, talented professionals are critical to our current and future success. To continue this success, we are dedicated to fostering a workforce that thrives through continuous development and the attraction of diverse and talented professionals.



Part of our strategic approach to workforce management is CNL's commitment to accommodating a hybrid workplace to ensure that employees are supported whether they work on-site, remotely, or in a hybrid capacity. This year, 73% of employees worked on-site, while 15% worked fully remote and 12% worked in a hybrid manner.



This reflects a dedication to fostering a modern corporate culture that embraces flexibility, inclusion, and talent development. This approach not only contributes to a positive work environment but also allows CNL to draw from a broader workforce, enhancing diversity and inclusion within the organization.

Training

At the heart of CNL's commitment to employee success lies our Human Performance Program, which is designed to drive workforce empowerment and organizational excellence. Core aspects of the program include training, observation and coaching, communications and event reporting.

Through our Learning and Management System (LMS) called LearnCNL, CNL has been building the capability to deliver training courses with precision and efficiency, and to issue certificates when training (a course or bundle of courses) is completed.

As part of CNL's journey to become a premier learning organization, feedback is routinely requested from employees on CNL's training and development programs and initiatives. Employees are engaged at all levels to gain insights and perspectives to shape the learning culture to be developed. CNL is continually improving training reporting and tool capability and reliability to ensure our training is effective and satisfactory.



Radiation Protection students from Algonquin College completing training.

Performance and Coaching

Last year, our Human Performance team developed an observation card which can be leveraged as a management tool to assess performance influencing factors, such as the unique characteristics of people, work, or organization. Supporting coaches to observe and optimize these factors will improve reliability.

To support individual employee development, we hosted two Individual Development Plan and Career Discussion sessions in 2023-24 to help guide employees in creating career development plans, emphasizing

its importance in career growth. The session offered tips on leveraging resources for skill enhancement, empowering employees for continuous learning and a motivated workforce. Part of these discussions included identifying responsibilities and preparation required for future leadership roles for identified successors. At the same time, we enhanced CNL's Mentoring Program by equipping CNL employees with tools to actively engage in and derive benefits from CNL's ongoing leadership development initiatives.

Recruitment

CNL's workforce continued to grow in 2023-24, from over 3,700 to 4,400 employees – an increase of nearly 19%. Throughout this growth, we continue to update our recruitment and selection processes, both internal and external, with a view to greater inclusivity. In 2023-24, Requests to Hires (RTH) filled with internal and external candidates totaled 402 and 600, respectively.

Through our hiring, we actively strive to enhance the representation of designated groups across the organization by adopting a DE&I lens. This is implemented through targeted recruitment programs that foster an inclusive culture, and regular evaluation of DE&I recruitment efforts to drive continuous improvement and progress towards greater representation. Recently, we enhanced our "Workforce Survey Questionnaire" and included a self-identification form in the Applicant Tracking System to enable the accurate capture of designated groups and diverse perspectives in workforce data analysis and recruitment practices.

Our approach to talent attraction includes new workforce entrants, mid-career hires and highly qualified persons with international experience.

To continue attracting the qualified workers necessary for the fulfillment of our activities, we are consistently expanding our outreach for talent across communities by participating in open houses, career fairs, local community engagement and implementing inclusive training and hiring practices. We also partner with universities and offer student placements; where possible, we leverage our existing pool of students as employment opportunities become available. This is reflected in our rate of student conversion into CNL employees, which stands at 8.33% across the past 4 years.

To ensure all steps of the recruitment process reflect the same level of commitment to inclusivity and belonging, we are currently updating our onboarding process with a revamped program designed to be inclusive and responsive to the diverse needs of new employees, acknowledging that individuals come with varied experiences and backgrounds. This approach ensures that each new employee receives customized and nuanced support tailored to their specific requirements, thereby facilitating their success at CNL.

Promotion

CNL takes a strategic approach to succession planning to identify, develop, and retain capable leaders, ensuring a transfer of knowledge and expertise for future leadership readiness. We consistently incorporate DE&I principles into our succession planning process and actively engage employees through Performance Management to ensure diverse representation in leadership roles. This approach aims to develop leadership teams that reflect the diversity of our workforce

and provide targeted support to promote equitable opportunities for advancement for individuals from all backgrounds.

As a result of our efforts, we have observed an overall increase in the number of successors from designated groups. Notably, this year we surpassed the ESDC targets for two critical groups: Women and Indigenous Peoples. The proportion of successors identifying as women rose by 2.9%, reaching 39.9% and successors identifying as Indigenous

Persons increased from 4.0% to 4.2%. With regards to promotion, there was a marked increase in the promotion rates within employment

equity groups, with approximately 41.7% of the employees promoted to leadership positions being from designated groups.

Community Relationships

CNL aims to build meaningful relationships with the communities where it operates. This includes not only keeping our communities apprised of our activities through our communications channels and engagement

methods outlined in the Stakeholder Engagement section, but also providing educational opportunities and supporting the economic development of our communities.

Communities and Economic Development

Community education

At CNL, we seek to explore new ways of igniting the younger generation's interest in science. In July 2023, CNL once again hosted the CNL Science Summer Camp, a two-week summer science camp at the Chalk River Laboratories that provided hands-on scientific learning experiences for 40 students aged 9 to 12. This year, we focused on providing young people with an insight into the research CNL does and how it contributes to our environment.

These camps are made possible through the support of Let's Talk Science at The University of Ottawa and Carleton University, the Town of Petawawa and the Town of Deep River, as well as the CNL staff who shared their research and knowledge with the students. The Science Summer Camp will return in July 2024.

CNL also hosted more than 20 school tours and 15 student engagements at the Chalk River Laboratories, such as in-class presentations and merit badge programs for Girl Guides and Scouts Canada. In the fall of 2023, CNL supported Team Canada at the FIRST Global Robotics Challenge in Singapore. The challenge, themed "Hydrogen Horizons," highlighted the transformative potential of



hydrogen as a clean energy source and aligns with CNL's broader aim to foster cleantech innovation.

Economic development in local communities

As one of the largest employers in many of the communities where we operate, we work to extend economic and procurement opportunities to local companies and businesses. Each year, CNL conducts events to support small, local and Indigenous businesses to help nurture economic prosperity by working with sustainability-minded suppliers

and incorporating socially responsible standards into our procurement policies. In 2023-24, CNL spent almost \$415M or about 56% of its total procurement spending on local suppliers located within 200 km. of CNL's managed sites. For additional information, please refer to our [vendor portal](#) for our local procurement practices.



Supporting Our Local Communities

In 2023-24, nearly \$300,000 in donations were contributed by CNEA on behalf of CNL to invest in our communities and support local causes. This encompasses funding to support economic development in communities surrounding the Whiteshell Laboratories campus, support for local Indigenous communities, and contributions to employee fundraising initiatives. This also includes \$187,000 that was distributed to 41 different charities and organizations chosen by employees. These charities and organizations contribute to the health and well-being of our local communities, such as children's charities, violence prevention centres, local food banks, and sports clubs.

CNL employees also dug deep into their own pockets to contribute to those in need this past fiscal year. Through a series of exciting events and payroll donations at the Chalk River, Port Hope and Whiteshell sites, CNL staff raised combined donations of over \$85,000 through our annual United Way campaign, which helps local individuals and families experiencing mental

health challenges or struggling with poverty or homelessness, and provides youths and kids within our communities the support they need to explore their full potential. Finally, CNL employees once again organized and hosted their annual Black Bears hockey tournament, raising a record-breaking \$67,000, which was donated to local hospital foundations in Deep River and Pembroke, a fellow employee battling cancer, and the Robbie Dean Family Counseling Centre.



Turtle sign contest



Cans of Kindness holiday food drive.



Earth Week roadside cleanup

Public Safety and Emergency Preparedness

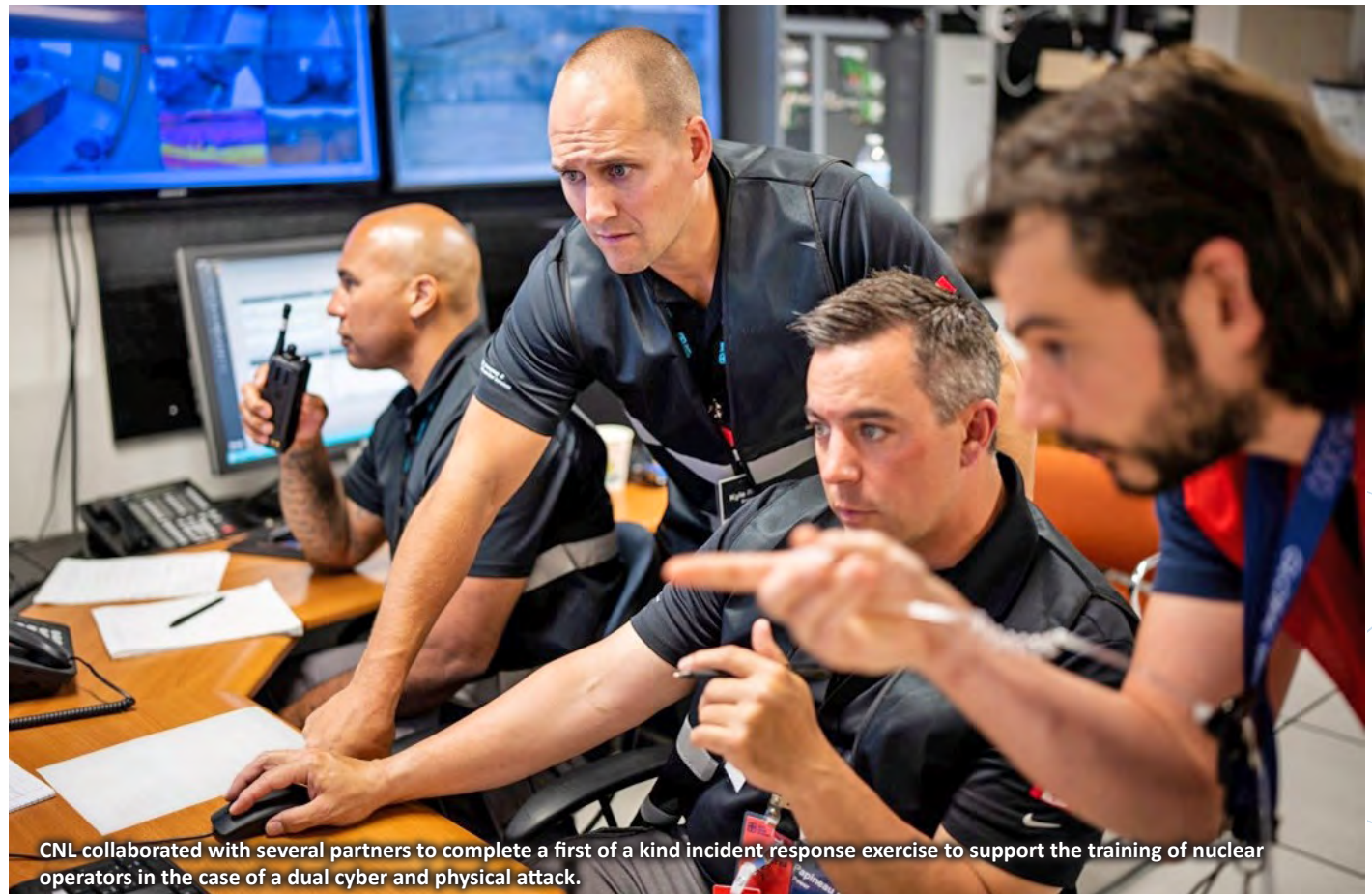
Protecting public safety is paramount to CNL. To ensure our communities remain safe, CNL has developed and implemented various emergency response and safety programs and assessments.

CNL's Emergency Preparedness Program focuses on preventing and mitigating abnormal or emergent events, and on our response and recovery to such incidents. We conducted over 250 emergency response drills this year, featuring scenarios that ranged from transportation accidents involving radiological material, chemical spill response and site-wide emergencies. These drills ensure that emergency responses are practiced and exercised, and support CNL staff in meeting safety, legislative and regulatory requirements to respond to abnormal or emergency events. The following are some of our Emergency Preparedness Program highlights for 2023-24:

- Supported the Federal Nuclear Emergency Plan through continued exercise participation and coordination of response actions;
- Participated in the sixth International Nuclear Emergency Exercise, from January to May 2024. This initiative brought together 27 countries in exercises aimed at improving the international aspects

of nuclear or radiological accident emergency, preparedness and response;

- Worked with the CANDU Owners Group to provide comments on the International Atomic Energy Agency's (IAEA) new procedure titled *Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency*; and
- Updated protocols and safety processes under the Nuclear Criticality Safety Program and Radiation Protection Program, respectively, to ensure our programs remain up to date.



CNL collaborated with several partners to complete a first of a kind incident response exercise to support the training of nuclear operators in the case of a dual cyber and physical attack.

Responsible Management

We are governed by a corporate model and supporting policies that establishes the highest degree of ethical and quality standards,

accountability to the CNEA, and fulfills our obligations under contract to AECL.

Sustainability Oversight and Governance



Several members of the CNL Board of Directors and Executive Team on tour of the Port Hope Area Initiative

Board Oversight of Material ESG Factors and Issues

CNL's Board of Directors is composed of independent directors, CNEA-appointed Board representatives, and senior executives from CNL. The Board is supported by its three committees: the Audit Committee, Safety Committee, and Strategy Committee.

CNL's Board oversees and approves strategic direction for ESG, considering guidance from AECL's ESG Strategy, and annually reviews and endorses our corporate policies. The Board receives ESG updates on a quarterly basis. In 2023, the Terms of Reference for CNL's Board were updated to include the need for the Board to ensure that CNL's

strategic and long-term plans align with sustainability and ESG-related goals and targets, as well as the duty to review and monitor progress on meeting ESG responsibilities and integrate ESG into business decisions and practices. As a result of incorporating ESG into CNL’s Enterprise Risk Register in 2023, the Audit Committee of the Board receives quarterly reports from the Enterprise Risk Committee (ERC) on CNL’s top ESG risks, opportunities and mitigation strategies.

Executive Leadership of Sustainability

As outlined in Figure 15, ultimate accountability for sustainability at CNL sits with the CEO, who oversees, and is responsible for, driving the corporate-wide effort and progress towards our sustainability goals, priorities, and targets. The CEO is supported by the Executive Team, who have functional accountability for key ESG topics that fall within their scope. The following CNL executives have strategic oversight for developing sustainability strategy, executing sustainability goals, and identifying, tracking and reporting on ESG priority topics:

- The Chief Operating Officer (COO), who oversees ESG execution across operations;
- The Chief Financial Officer (CFO), who is the executive member responsible for overall ESG strategy and reporting, and the integration of ESG and financial reporting; and
- The Chief Sustainability Strategy Officer (CSSO), who is the functional lead for ESG, head of the Sustainability Office that will be stood up in 2024-25, and is responsible for the development, implementation and monitoring of the ESG strategy, and for integrating ESG cross-enterprise.

Oversight of Sustainability

We are formalizing a Sustainability Office (see Figure 15) under the CSSO to coordinate our overall approach for sustainability, oversee its integration into CNL policies, programs, projects and culture, and ensure collaboration across CNL and with key partners, including AECL, on ESG priorities. The organizational structure, roles and responsibilities of the team, scope of influence and budget will be developed in 2024-25.

Figure 15. CNL ESG Governance Structure



Sustainability Governance

Sustainability is the ultimate team sport. We believe that sustainability needs to be integrated within all key departments and functions. As part of the CNL Sustainability Strategy, we will review and enhance our approach to sustainability governance to streamline and improve overall strategy development, data, disclosure and integration across the company.

In addition to the official Board and Executive Committees, the following committees and working groups have direct or associated ESG-related responsibilities:

- **Sustainability Leadership Committee (SLC)**, provides strategic direction and advice on sustainability-related issues related to CNL's material ESG topics.
 - Technical sub-committees to the SLC include capital projects, engineering and energy management.
- **Environmental Stewardship Council**, comprises internal and external stakeholders, who meet three times a year to share

perspectives on a range of ESG-related issues.

- **Enterprise Risk Committee (ERC)**, comprises key members of CNL's executive team, meets quarterly and is mandated to oversee CNL's Enterprise Risk Register and risk management processes.
- **Accessibility Steering Committee**, comprises 15 representatives from across the organization, and is focused on implementing the Accessibility Plan and monitoring accessibility actions in the various CNL departments.
- **Diversity, Equity and Inclusion (DE&I) Committee** serves as a resource to both management, union and non-union employees to review and provide recommendations on issues related to DE&I in an effort to create a diverse and inclusive workplace. The Committee is the principal forum for consultation and collaboration for employees and management in the implementation of DE&I initiatives that align with the company's core values.

Remuneration for ESG

Sustainability requirements are identified as overarching corporate requirements as well as embedded within each mission (business line) and corporate functions. For fiscal year 2023-24, our performance incentive plan established award fees for demonstrating progress in key

ESG areas such as disclosures and reporting, GHG reduction initiatives within capital projects, new builds, operations, and asset management, and sustainable procurement.

Integrated Management System

CNL is governed and managed through CNL's Integrated Management System, an integrated set of policies, expectations, standards, procedures and responsibilities that set the direction and guide day-to-day operations within a control and accountability framework. CNL's corporate policies provide intentions and expectations to management and employees that inform all that we do and how we do it. The corporate policies are reviewed, updated, and authorized annually by our Board of Directors.

Several policies are closely aligned with, and actively contribute to, our ESG priorities and actions. The forthcoming Sustainability Strategy will take stock of and review all policies, procedures and other guiding documents that contain ESG priorities to ensure alignment with

overarching ESG goals and targets. Moving forward, CNL is committed to continuously integrating sustainability considerations and priority ESG topics into policies and practices, ensuring they remain central to operations and the decision-making processes.

CNL's management system also leverages a Contractor Assurance System (CAS) to measure and assess contractual performance, provide transparency between CNL, CNEA, and AECL, and manage processes, resources, and outcomes. There are several ESG performance indicators within the CAS, including metrics for GHG emissions, water usage, species at risk, safety, and cyber security, among others.

Ethics and Business Conduct

CNL's Ethics and Business Conduct Policy establishes expectations that all business related to CNL be conducted in accordance with a high standard of ethics and compliance, particularly in relation to managing conflicts of interest, respecting human rights, and eliminating bribery and corruption or anti-competitive behaviour. CNL's Code of Conduct stems from this Policy and provides specific guidance and rules around several areas related to business conduct. Compliance with the Policy and the Code of Conduct is a condition of employment for all staff at CNL.

To ensure adherence to and compliance with CNL's Code of Conduct, CNL maintains a dedicated internal Ethics, Business Conduct & Investigations program. This function is comprised of trained fraud investigators and is responsible for conducting internal investigations into allegations of violations of CNL's Code of Conduct, including fraud, conflict of interest, theft of intellectual property, integrity issues, and many other areas. In 2023-2024, CNL's Ethics & Business Conduct Office handled 259 complaints, reports, files and engagements from staff. Under the GoCo model, CNL is faced with potential unique conflict of interest situations based on our ownership structure. In 2023-24, our Ethics & Business Conduct Office successfully managed 41 different potential conflict of interest situations. To educate staff around conflict-of-interest situations, and to promote ethical business conduct more broadly, the Ethics & Business Conduct office ensures that all staff receive appropriate and adequate annual ethics training and have access to ethics-related initiatives, such as our annual Ethics Month campaigns.

Another major program function is third-party due diligence. Before engaging with third parties, CNL takes steps to evaluate risk and ensure that third parties share our same commitment to human rights, ethics and integrity. In 2023-24, CNL established an integrated third-party due diligence program that employs a centralized screening function for business compliance risks related to modern slavery, bribery and corruption, import/export compliance and economic espionage/foreign interference. Risks identified in this screening process are categorized and rated to enable CNL to undertake due diligence investigations and to ascertain and mitigate the risks.

Between January 2024 and August 2024, the third-party due diligence program screened over 700 third-party engagements across all business lines at CNL, conducting over 50 enhanced due diligence investigations.

The program's target is to achieve a 100% compliance rate, in terms of all third-party engagements going through the risk screening process.

The Ethics and Business Conduct Policy outlines that all aspects of our business must remain free of modern slavery in all its forms. In 2023-24, CNL released its [initial statement](#) in compliance with Canada's *Modern Slavery Act* outlining CNL's risk screening and due diligence process, remedial measures, and advanced training and awareness for all staff. We maintain a Supplier Code of Conduct to ensure suppliers take responsibility for their conduct and adhere to the highest ethical standards. More information is provided in the call out box on CNL's obligations under the *Modern Slavery Act*



On January 1st, 2024, Canada's *Modern Slavery Act* came into force (formally, *Fighting Against Forced Labour and Child Labour in Supply Chains Act*). This legislation imposes on entities

to which it applies, including CNL, reporting requirements to the Minister of Public Safety and Emergency Preparedness related to all the steps each entity is taking to identify and eradicate forced and child labour from their respective supply and value chains. CNL has complied with this legislation by filing and posting the mandatory annual report with the government by the deadline in 2024, found here: [Site Licences, Certifications and Programs - Canadian Nuclear Laboratories \(cnl.ca\)](https://www.cnl.ca/site-licences-certifications-and-programs). In response to this legislation, CNL has established an internal compliance program related to modern slavery, including training, internal governance, third party due diligence, a Supplier Code of Conduct, and organization-wide risk assessment/mapping.

ESG Risk Management

Strengthening our processes for identifying and managing material ESG risks has been a focus for CNL at both the enterprise and project levels. In 2023, we continued to mature our approach by starting to integrate ESG risks into our Enterprise Risk Management framework. This work will continue in 2024-25 to ensure ESG risk events are appropriately stated, mitigation measures aligned, and financial implications defined.

The Enterprise Risk Committee (ERC), comprised of CNL's executive team and subject matter experts, meets quarterly and is mandated to oversee CNL's risk framework, including evaluating and approving additions and retirements to the risk framework, ensuring alignment between CNL's strategic objectives and risk tolerance, and reviewing and endorsing any changes to the ERM process.

Privacy and Cyber Security

CNL's Nuclear Cyber Security team delivers cyber security services and solutions and ensures the confidentiality, availability, and integrity of CNL's systems, information, data, and intellectual property. Cyber security highlights in 2023-24 included:

- CNL's privacy and data security teams enhanced their preparedness for cyber and physical attacks on critical infrastructure in a mock incident response exercise in June 2023;
- CNL created a number of new cyber security positions to increase our capacity in this rapidly evolving field;
- Introduced new cybersecurity training courses as mandatory training for all employees; and
- Introduced campaigns to raise employee awareness and ability to identify cyber risks.





Our Commitment Continues...

As the fourth annual release in our sustainability journey, this report summarizes our strategic approach to identifying and managing material ESG topics, achievements and ongoing efforts to increase our positive impact as a business, on society and the environment at large. With each Sustainability Report, we are advancing our approach to managing ESG and showcasing our impact and value creation for all those who are part of, and interact with, CNL.

At CNL, we are embracing our potential to enact change and touch lives. We are privileged to contribute to the global knowledge base of nuclear research, pushing the boundaries of science and technological

innovation to make a tangible difference in Canada and abroad.

We offer a heartfelt thank you to the dedicated employees at CNL whose talents and tireless efforts are the driving force behind our progress. To everyone who has engaged with our report, your interest and contributions are pivotal in realizing our vision for a sustainable future. We want to thank the Indigenous Nations whose lands we have the honour of operating upon, as well as the communities that we are a part of. As we look to the future, we are steadfast in building a legacy of resilience, innovation, and stewardship—a brighter, cleaner and more sustainable tomorrow for all.



Appendix A

2023-24 ESG DATA TABLE

Metric	Unit	2023 Data	2022 Data	SASB/TCFD	CY/FY ¹⁵
ENVIRONMENTAL STEWARDSHIP					
EMISSIONS					
Total GHG emissions (Scopes 1, 2 and 3)	tCO2e	48,326	40,419		CY
Total Direct GHG emissions (Scope 1)	tCO2e	28,506	30,496	IF-EU-110a.1 / TCFD	CY
Total Indirect GHG Emissions (Scope 2)	tCO2e	1,588	1,623	TCFD	CY
Total Indirect GHG emissions (Scope 3)*	tCO2e	18,232	8,300	TCFD	CY
Reduction of GHG emissions (Scope 1 Chalk River Laboratories site) from 2005 baseline	Percentage	34	30		CY
Reduction of GHG emissions (Scope 2 Chalk River Laboratories site) from 2005 baseline	Percentage	91	91		CY
Reduction of GHG emissions (Scope 1 and Scope 2) Chalk River Laboratories site from 2005 baseline	Percentage	51	47		CY
Total Air Emissions					
Total Nitrogen Oxides (NOx) (excluding N2O)	Kilograms	52,398	94,807	IF-EU-120a.1	CY
Total Particulate Matter (PM10)	Kilograms	17,664	30,686	IF-EU-120a.1	CY
Total Lead (Pb)	Kilograms	0.093	0.088	IF-EU-120a.1	CY
ENERGY					
Non-renewable fuel consumption	GJ	423,973	485,000		CY
Electricity consumption	GJ	256,662	267,000		CY
Energy consumption	GJ	3,371	6,850		CY
Reduction of energy consumption					
Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives (Chalk River campus only)	Percentage	25	16		CY
WATER AND EFFLUENTS					
Total water withdrawn	Megalitres	16,524	16,218	IF-EU-140a.1	CY
Third-party water withdrawn	Megalitres	525	322		CY
Total Surface Water withdrawn	Megalitres	15,998	15,896		CY
Total Groundwater withdrawn	Megalitres	0.59	0.54		CY
Total Discharged Water	Megalitres	16,468	16,252		CY
Third-party discharge	Megalitres	3.32	4.20		CY
Total Surface Water discharged	Megalitres	9,776	10,095		CY
Total Groundwater discharged	Megalitres	6,689	6,153		CY
Total Consumed Water	Megalitres	55.3	41.6	IF-EU-140a.1	CY
Total Water Storage	Megalitres	180	102		CY
Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations	Number	2¹⁶	8 ¹⁷	IF-EU-140a.2	CY

*Only a partial inventory

¹⁵ Calendar year (CY) runs from January 1, 2023, to December 31, 2023, and Fiscal year (FY), which is the scope of this report is from April 1, 2023, to March 31, 2024.

¹⁶ Port Hope action level exceeds copper and zinc

¹⁷ 1 Chalk River Laboratories toxicity, 1 Whiteshell Laboratories Action Level (over 4 months), 2 Port Hope Administrative Level non-radiological exceeds, 1 Port Hope regulatory limit exceeded

Appendix A - continued

2023-24 ESG DATA TABLE

Metric	Unit	2023 Data	2022 Data	SASB/TCFD	CY/FY
ENVIRONMENTAL STEWARDSHIP					
WASTE					
Total conventional waste generated	Metric tons (t)	14,224	6,958		CY
Total weight of conventional waste diverted from landfill	Metric tons (t)	10,887	4,572		CY
Total weight of conventional waste directed to landfill	Metric tons (t)	3,337	2,386		CY
Total weight of hazardous, non-radioactive waste diverted from landfill	Metric tons (t)	32.47	0		CY
Total weight of hazardous, non-radioactive waste directed to landfill	Metric tons (t)	15,721	259		CY
Percentage of conventional waste diverted from landfill	Percentage	77	66		CY
BIODIVERSITY¹⁸					
Total number of critically endangered species from the International Union for Conservation of Nature (IUCN) Red List and the national conservation list	Number	1	1		CY
Total number of endangered species from the IUCN Red List and the national conservation list	Number	6	6		CY
Total number of vulnerable species from the IUCN Red List and the national conservation list	Number	5	3		CY
Total number of near threatened species from the IUCN Red List and the national conservation list	Number	5	5		CY
Total number of data deficient species from the IUCN Red List and the national conservation list	Number	0	0		CY
Total number of least concern species from the IUCN Red List and the national conservation list	Number	20	20		CY
Total number of endangered species from the SARA registry	Number	6	6		CY
Total number of threatened species from the SARA registry	Number	12	12		CY
Total number of special concern species from the SARA registry	Number	12	13		CY
Total number of not-at-risk species from the SARA registry	Number	1	1		CY
OUR PEOPLE					
DIVERSITY AND INCLUSION					
Total Permanent Employees	Number	3,773	3,419		CY
Percentage of total employees covered by a collective bargaining unit	Percentage	63	64		CY
Permanent Employee Percentages					
Percentage of Women	Percentage	31	31		CY
Percentage of Indigenous employees	Percentage	6.8	6.4		CY
Percentage of employees that are visible minorities	Percentage	9.5	8.8		CY
Percentage of employees with disabilities	Percentage	2.1	2.1		CY
TALENT ATTRACTION, DEVELOPMENT AND RETENTION					
Percentage of Request to Hires (RTH) Filled with Internal Candidates	Percentage	46	50		Cumulative CY
Percentage of Request to Hires (RTH) Filled with External Candidates	Percentage	54	50		Cumulative CY
Percentage of students who held placements at CNL in the last 4 calendar years, who became CNL employees	Percentage	10	5		Cumulative CY

¹⁸ All counts of species present at a CNL site are based on if the species was observed in a targeted survey or incidentally at any CNL site or in the case of Douglas Point Waste Facility if the species is commonly observed at Bruce Power.

Appendix A - continued

2023-24 ESG DATA TABLE					
Metric	Unit	2023 Data	2022 Data	SASB/TCFD	CY/FY
HEALTH AND SAFETY					
The number of fatalities as a result of work-related injury	Number	0	0		2023 FY, 2022 CY
Number of recordable work-related injuries	Number	18 ¹⁹	15		2023 FY, 2022 CY
Number of hours worked (all employees, excluding contractor hours)	Number	8,849,760	7,215,938		2023 FY, 2022 CY
Fatality rate	Rate	0	0	IF-EN-320a.1	2023 FY, 2022 CY
Near miss frequency rate (NMFR)	Rate	1.54		IF-EN-320a.1	2023 FY, 2022 CY
Total recordable incident frequency rate	Rate	0.41	0.42	IF-EN-320a.1	2023 FY, 2022 CY
Near misses	Number	68	52	IF-EU-140a.1	2023 FY, 2022 CY
Near miss injury rate	Rate	1.54	1.59		2023 FY, 2022 CY
Number of mandatory reporting incidents	Number	24	15		2023 FY, 2022 CY
Number of lost-time incidents	Number	6	2		2023 FY, 2022 CY
Number of days away or restricted transfer (DART)	Number	5	7		2023 FY, 2022 CY
Rate of DART incidents	Rate	0.25	0.19		2023 FY, 2022 CY
Percentage of employees covered by an occupational health and safety management system	Percentage	100	100		2023 FY, 2022 CY
Percentage of employees covered by an occupational health and safety management system that has been internally audited	Percentage	100	100		2023 FY, 2022 CY
COMMUNITY ENGAGEMENT					
Total cash donations	Dollars	\$300,000	\$274,497		FY
RESPONSIBLE MANAGEMENT					
CNL BOARD COMPOSITION					
Females	Number (%)	2 (25%)	2 (25%)		2023 FY, 2022 CY
Non-Executives	Number (%)	8 (100%)	3 (38%)		2023 FY, 2022 CY
Independent	Number (%)	5 (63%)	4 (50%)		2023 FY, 2022 CY
Average Board Tenure	Number of years	3.6	4.6		2023 FY, 2022 CY
ETHICS					
Percentage of employees acknowledging the code of conduct	Percentage	99	99		FY
% of relevant ethics & business conduct areas addressed by policy or other governance document	Percentage	100	100		FY
% of organizational COIs proactively identified and managed	Percentage	100	100		FY
% of issues reported or matters investigated resolved	Percentage	100	100		FY
SUPPLIERS					
Spend on local suppliers (within a 200km radius of Chalk River Laboratories, Whiteshell Laboratories and Port Hope Area Initiative sites)	\$ Million	\$414.6	\$386.7		FY
% spend of local suppliers	Percentage	56	61		FY
Spend on Indigenous suppliers	\$ Million	\$8.88			FY
% of visible minority employees reported from suppliers	Percentage	29			FY

¹⁹ 7 medical treatments, 5 DART, 6 DA

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 2: General Disclosures 2021	2-1 Organizational details	Who We Are	8
	2-2 Entities included in the organization’s sustainability reporting	About This Report	4
	2-3 Reporting period, frequency and contact point	About This Report	4
	2-4 Restatements of information	About This Report; Climate Resilience	4; 26
	2-5 External assurance	CNL does not get external assurance for ESG disclosures at this time	
	2-6 Activities, value chain and other business relationships	Who We Are	8
	2-7 Employees	Appendix A: ESG Data Table (Total employees in Figure 1 and total permanent employees in Appendix A.)	9; 65
	2-8 Workers who are not employees	Not disclosed at this time	
	2-9 Governance structure and composition	Who We Are; Sustainability Oversight and Governance	8; 59
	2-10 Nomination and selection of the highest governance body	Not disclosed at this time	
	2-11 Chair of the highest governance body	CNL website (www.cnl.ca)	N/A
	2-12 Role of the highest governance body in overseeing the management of impacts	Sustainability Oversight and Governance	59
	2-13 Delegation of responsibility for managing impacts	Sustainability Oversight and Governance	59
	2-14 Role of the highest governance body in sustainability reporting	Sustainability Oversight and Governance	59
	2-15 Conflicts of interest	Sustainability Oversight and Governance: Ethics and Business Conduct	59; 61
	2-16 Communication of critical concerns	Sustainability Oversight and Governance	59
	2-17 Collective knowledge of the highest governance body	Sustainability Oversight and Governance	59
	2-18 Evaluation of the performance of the highest governance body	Sustainability Oversight and Governance	59
	2-19 Remuneration policies	Sustainability Oversight and Governance	59
	2-20 Process to determine remuneration	Not disclosed at this time	
	2-21 Annual total compensation ratio	Not disclosed at this time	
	2-22 Statement on sustainable development strategy	Sustainability at CNL: Our Sustainability Strategy	17
	2-23 Policy commitments	Responsible Management	58
	2-24 Embedding policy commitments	Sustainability at CNL; Responsible Management	14; 58

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 2: General Disclosures 2021 (cont'd)	2-25 Processes to remediate negative impacts	Our Engagement Approach	20
	2-26 Mechanisms for seeking advice and raising concerns	Ethics and Business Conduct	61
	2-27 Compliance with laws and regulations	Who We Are	8
	2-28 Membership associations	Our Value Proposition; Our Engagement Approach	17; 20
	2-29 Approach to stakeholder engagement	Our Engagement Approach	20
	2-30 Collective bargaining agreements	Appendix A: ESG Data Table	65
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Sustainability at CNL: Our Strategic Priorities and Approach to Sustainability	14
	3-2 List of material topics	Sustainability at CNL: Our Strategic Priorities and Approach to Sustainability	14
	3-3 Management of material topics	Sustainability at CNL: Our Strategic Priorities and Approach to Sustainability	14
GRI 101: Biodiversity 2024	101-1 Policies to halt and reverse biodiversity loss	Ecosystem Services (See Forest Management Plan)	39
	101-2 Management of biodiversity impacts	Ecosystem Services	39
	101-3 Access and benefit-sharing	Ecosystem Services	39
	101-4 Identification of biodiversity impacts	Ecosystem Services (See BIODIVERSITY PROJECTS FROM 2023-24: EAFMP)	39
	101-5 Locations with biodiversity impacts	Ecosystem Services (See BIODIVERSITY PROJECTS FROM 2023-24: EAFMP)	39
	101-6 Direct drivers of biodiversity loss	Not disclosed at this time	
	101-7 Changes to the state of biodiversity	Appendix A: ESG Data Table	65
	101-8 Ecosystem services	Ecosystem Services	39
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Ecosystem Services: Biodiversity and Land Use (See Forest Management Plan)	41
	304-2 Significant impacts of activities, products and services on biodiversity	Ecosystem Services: Biodiversity and Land Use (See Environmental Assessment Follow-up Monitoring Program for NSDF)	41
	304-3 Habitats protected or restored	Ecosystem Services: Biodiversity and Land Use (See Forest Management Plan)	41
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Appendix A: ESG Data Table	65

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Not disclosed at this time	
	201-2 Financial implications and other risks and opportunities due to climate change	Climate Resilience: Climate Change (See “”Impact Narrative”” column of Table 3.)	26
	201-3 Defined benefit plan obligations and other retirement plans	Not disclosed at this time	
	201-4 Financial assistance received from government	Not disclosed at this time	
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Not a material topic for CNL	
	202-2 Proportion of senior management hired from the local community	Not disclosed at this time	
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Communities and Economic Development; Appendix A: ESG Data Table	54; 65
	203-2 Significant indirect economic impacts	Communities and Economic Development	54
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	Appendix A: ESG Data Table	65
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	Ethics and Business Conduct (See reference to third-party due diligence)	61
	205-2 Communication and training about anti-corruption policies and procedures	Ethics and Business Conduct (See reference to ethics and business conduct policy)	61
	205-3 Confirmed incidents of corruption and actions taken	Not disclosed at this time	
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Not a material topic for CNL	
GRI 207: Tax 2019	207-1 Approach to tax	Not a material topic for CNL	
	207-2 Tax governance, control, and risk management	Not a material topic for CNL	
	207-3 Stakeholder engagement and management of concerns related to tax	Not a material topic for CNL	
	207-4 Country-by-country reporting	Not a material topic for CNL	
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Not a material topic for CNL	
	301-2 Recycled input materials used	Not a material topic for CNL	
	301-3 Reclaimed products and their packaging materials	Not a material topic for CNL	

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Appendix A: ESG Data Table	65
	302-2 Energy consumption outside of the organization	Not disclosed at this time	
	302-3 Energy intensity	Climate Resilience: Energy Management (for Chalk River site only)	33
	302-4 Reduction of energy consumption	Appendix A: ESG Data Table	65
	302-5 Reductions in energy requirements of products and services	Not disclosed at this time	
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Ecosystem Services:Water and Wastewater Management	39
	303-2 Management of water discharge-related impacts	Ecosystem Services:Water and Wastewater Management	39
	303-3 Water withdrawal	Appendix A: ESG Data Table	65
	303-4 Water discharge	Appendix A: ESG Data Table	65
	303-5 Water consumption	Appendix A: ESG Data Table	65
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Appendix A: ESG Data Table	65
	305-2 Energy indirect (Scope 2) GHG emissions	Appendix A: ESG Data Table	65
	305-3 Other indirect (Scope 3) GHG emissions	Appendix A: ESG Data Table	65
	305-4 GHG emissions intensity	Not disclosed at this time	
	305-5 Reduction of GHG emissions	Appendix A: ESG Data Table	65
	305-6 Emissions of ozone-depleting substances (ODS)	Not disclosed at this time	
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Appendix A: ESG Data Table	65
GRI 306: Effluents and Waste 2016	306-3 Significant spills	Not a material topic for CNL	
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Waste Management; Appendix A: ESG Data Table	33; 65
	306-2 Management of significant waste-related impacts	Waste Management	33
	306-3 Waste generated	Appendix A: ESG Data Table	65
	306-4 Waste diverted from disposal	Appendix A: ESG Data Table	65
	306-5 Waste directed to disposal	Appendix A: ESG Data Table	65

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Climate Change: GHG Emissions (see completion of ESG questionnaire)	30
	308-2 Negative environmental impacts in the supply chain and actions taken	Ethics and Business Conduct (See Integrated third-party due diligence program)	61
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Appendix A: ESG Data Table	65
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employee Engagement and Well-being	44
	401-3 Parental leave	Not disclosed at this time	
GRI 402: Labour/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Not disclosed at this time	
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-2 Hazard identification, risk assessment, and incident investigation	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-3 Occupational health services	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-4 Worker participation, consultation, and communication on occupational health and safety	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-5 Worker training on occupational health and safety	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-6 Promotion of worker health	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Employee Engagement and Well-being: Health, Safety and Wellness	44
	403-8 Workers covered by an occupational health and safety management system	Appendix A: ESG Data Table	65
	403-9 Work-related injuries	Appendix A: ESG Data Table	65
	403-10 Work-related ill health	Appendix A: ESG Data Table	65

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Not disclosed at this time	
	404-2 Programs for upgrading employee skills and transition assistance programs	Talent Attraction and Development	52
	404-3 Percentage of employees receiving regular performance and career development reviews	Not disclosed at this time	
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Appendix A: ESG Data Table	65
	405-2 Ratio of basic salary and remuneration of women to men	Not disclosed at this time	
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Not disclosed at this time	
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Not disclosed at this time	
GRI 408: Child Labour 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	Our Engagement Approach, Ethics and Business Conduct	20; 61
GRI 409: Forced or Compulsory Labour 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Our Engagement Approach, Ethics and Business Conduct	20; 61
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Not a material topic for CNL	
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of Indigenous peoples	Our Engagement Approach (No incidents of violations involving the rights of Indigenous peoples were identified in the ESG Report during the reporting period)	20
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	Our Engagement Approach; Community Relationships	20; 54
	413-2 Operations with significant actual and potential negative impacts on local communities	Our Engagement Approach; Community Relationships	20; 54

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GRI STANDARD	DISCLOSURE	LOCATION (SECTION OF ESG REPORT - 2024)	PAGE NUMBER
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Communities and Economic Development: Economic development in local communities ; Climate Change: GHG Emissions; Appendix A: ESG Data Table	54; 30; 65
	414-2 Negative social impacts in the supply chain and actions taken	Ethics and Business Conduct	61
GRI 415: Public Policy 2016	415-1 Political contributions	Not a material topic for CNL	
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Public Safety and Emergency Preparedness	57
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	Public Safety and Emergency Preparedness; Appendix A: ESG Data Table	57; 65
GRI 417: Marketing and Labeling 2016	417-1 Requirements for product and service information and labeling	Not a material topic for CNL	
	417-2 Incidents of non-compliance concerning product and service information and labeling	Not a material topic for CNL	
	417-3 Incidents of non-compliance concerning marketing communications	Not a material topic for CNL	
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Not a material topic for CNL	