

NAVIGATING TOWARD NET ZERO

net-zero

atlantic

2022-23 Annual Report



OUR CLEANER FUTURE FOCUS

At **Net Zero Atlantic**, we're producing the credible and objective data we need to decarbonize and move Atlantic Canada toward a more sustainable and inclusive future. Our team of scientists, engineers and program managers is producing credible and objective data related to cleantech and renewable energy, with current studies and projects focusing on areas including hydrogen, offshore wind, geothermal energy, and energy system modeling. Our team provides hands-on project support and collaborates with other experts when needed. We benefit from the insight and experience of our members and partners as we work together to support the energy transition and efforts to achieve net zero emissions by 2050.

VISION

Net Zero Atlantic is a leading energy research organization advancing Canada's transition to a carbon-neutral future.

MISSION

Lead applied research and contribute to projects that enable the transition of Atlantic Canada's energy system to a carbon-neutral future through collaboration with academia, governments, private sector, Indigenous Peoples and other non-government organizations.

PURPOSE

Advance a sustainable and inclusive transition to a carbon-neutral Atlantic Canada through the provision of credible and objective data and support services.

FORWARD MOMENTUM

We made significant progress and achieved many exciting milestones in 2022-23. Our team is continuing to move forward on projects and research in the following critical areas of focus in the push to meet our clean energy and climate targets, including achieving net-zero emissions by 2050:

ADVANCING EMERGING CONCEPTS AND TECHNOLOGIES

The first call for proposals for the Net Zero Emerging Concepts and Technologies (ECT) Research Program took place in mid-2023, resulting in the selection of 11 academic and industry-led research projects. The program is supporting advances in areas including long-term energy storage, nature-based solutions for carbon sequestration, agricultural emissions, fishing and ferry fleets, direct air capture and electricity system challenges post-2030. The second call for proposals takes place in fall 2023. Coordinated by Net Zero Atlantic, the Net Zero ECT Research Program is supported by \$3 million in funding provided by the Nova Scotia Department of Environment and Climate Change.

FURTHERING ENERGY SYSTEM MODELLING

We created the Atlantic Canada Energy System (ACES) model as a tool Atlantic Canadians can use to help answer 'what if' scenario questions regarding the future long-term development of our energy system. In 2023, we collaborated with the Energy Modelling Hub to organize and host the first regional Atlantic Canadian Energy System Modelling Conference, welcoming more than 100 participants and featuring presentations, panels, and workshops that explored how energy system modelling can support Atlantic Canada's transition to net zero greenhouse gas emissions.

DEMOCRATIZING OUR CLEAN ENERGY FUTURE

As one of five organizations worldwide selected in fall 2022 to join the clean energy cohort of the IBM Sustainability Accelerator, we're benefiting from access to IBM technology, subject matter experts and pro bono services. We're working with Indigenous communities in Nova Scotia to leverage advanced modeling capabilities using the ACES model and provide additional evidence and authority to support advocacy around clean energy policy and infrastructure buildout. Further details are available [here](#).

GROWING GEOTHERMAL KNOWLEDGE AND CAPACITY

We're building project development capacity for mid-depth geothermal energy projects in Mi'kmaw and rural Nova Scotia communities through the Community Geothermal Resource: Capacity Assessment and Training Program (GeoCAT). GeoCAT involves building relationships in communities across Nova Scotia to co-create and deliver information on geothermal energy opportunities. The goal is to help to create a roadmap for potential geothermal energy project development. This project builds upon earlier work by our team to build knowledge around Nova Scotia's geothermal resources.

EXPANDING OFFSHORE WIND EDUCATION

Through the Capacity Building for the Sustainable and Inclusive Development of Nova Scotia's Offshore Wind Resource project, we're helping communities prepare for a future that may include offshore wind. This project is focusing on building local capacity in Mi'kmaw, rural, and other equity-deserving Nova Scotian communities. Working with communities across Nova Scotia, we are co-creating and delivering community-tailored information related to the development of offshore wind in the province. This project provides an important opportunity to better understand community perspectives while sharing what we've learned to date through our offshore wind research and projects.

GENERATING CLEAN HYDROGEN KNOWLEDGE

Our commitment to building the hydrogen knowledge needed to support Atlantic Canada's energy transition toward a carbon-neutral future continues. We've coordinated hydrogen feasibility studies for Atlantic Canada and have led work in support of the creation of a regional hydrogen strategy. As well, to support the pursuit of regional hydrogen opportunities and address related challenges, we're continuing to lead the Atlantic Hydrogen Alliance - an organization created to support the development of an economically-viable clean hydrogen value chain that will enable the transition to a prosperous low-carbon economy in Atlantic Canada.

EXPLORING BEHAVIOURAL INTERVENTIONS

Work is now underway on a new multi-year project that's exploring the behavioural changes we'll all need to make to achieve net-zero emissions. The 'Determining critical behavioural interventions for enabling an effective transition to net-zero emissions in Atlantic Canada' project is focused on determining how best to influence the human-centered part of the transition to net-zero emissions, including how to motivate behavioural change that enables society to achieve emissions goals more quickly and cost effectively.

SUPPORTING BUILDING TO ZERO INITIATIVES

We're now serving as the secretariat for the Building to Zero Exchange, a Centre of Excellence bringing together industry, government and others to grow the number of net zero buildings in Nova Scotia. The Exchange is showcasing leadership and inspiring local innovation while promoting collaboration and equity and workforce opportunities in the clean energy transition.

COLLABORATING WITH MEMBERS AND PARTNERS

In 2022, Net Zero Atlantic began accepting private sector members including industry and non-profits with a clear commitment to supporting efforts to achieve carbon neutrality in our region. We're working collectively with our members and longstanding partners in government and academia to continuously advance the conversation around how to reach net-zero emissions by 2050.

FACTS & FIGURES

IN 2022-2023, WE HAD:

45 active projects

\$4.75M in projects completed or underway

16 in-person events hosted/co-hosted

17 live webinars held with **3,459** registrants

More than **1,000** people watched webinar recordings

41 members