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INDIGENOUS PEOPLES
IN CLIMATE CHANGE POLICY

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Tech for Tomorrow: Engineering a Greener Future

This issue shines a spotlight on the powerful Indigenous-led sustainable energy projects and environmental tech innovations that are contributing to positive change. With over 200 new renewable energy initiatives underway across the country, Indigenous peoples are blending [traditional knowledge with cutting-edge technology](#) to create stronger solutions for a healthier planet. From the Meadow Lake Tribal Council's groundbreaking bioenergy facility to Inuit-led innovations like SmartICE, these projects are proving that culture, resilience, and innovation can lead the way to a sustainable future.

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Solar panels and wind turbines, Getty Photos



Indigenous Innovation: Powering Community, Sustainably

By cutting back on diesel fuel, communities are building resilient energy systems that not only reduce environmental harm but also bring local benefits like job creation, technical training, and economic growth. Many projects integrate hybrid systems, energy storage, and smart grids, proving that sustainability and innovation can go hand in hand. These Indigenous-led efforts don't just support Canada's transition to a low-carbon future—they're setting a powerful example for the world.



Left to right: Wind turbines, Getty Photos; People installing solar panels on a home, Getty Photos; Inukshuk stone sculpture at English Bay Beach, Vancouver City, Getty Photos.



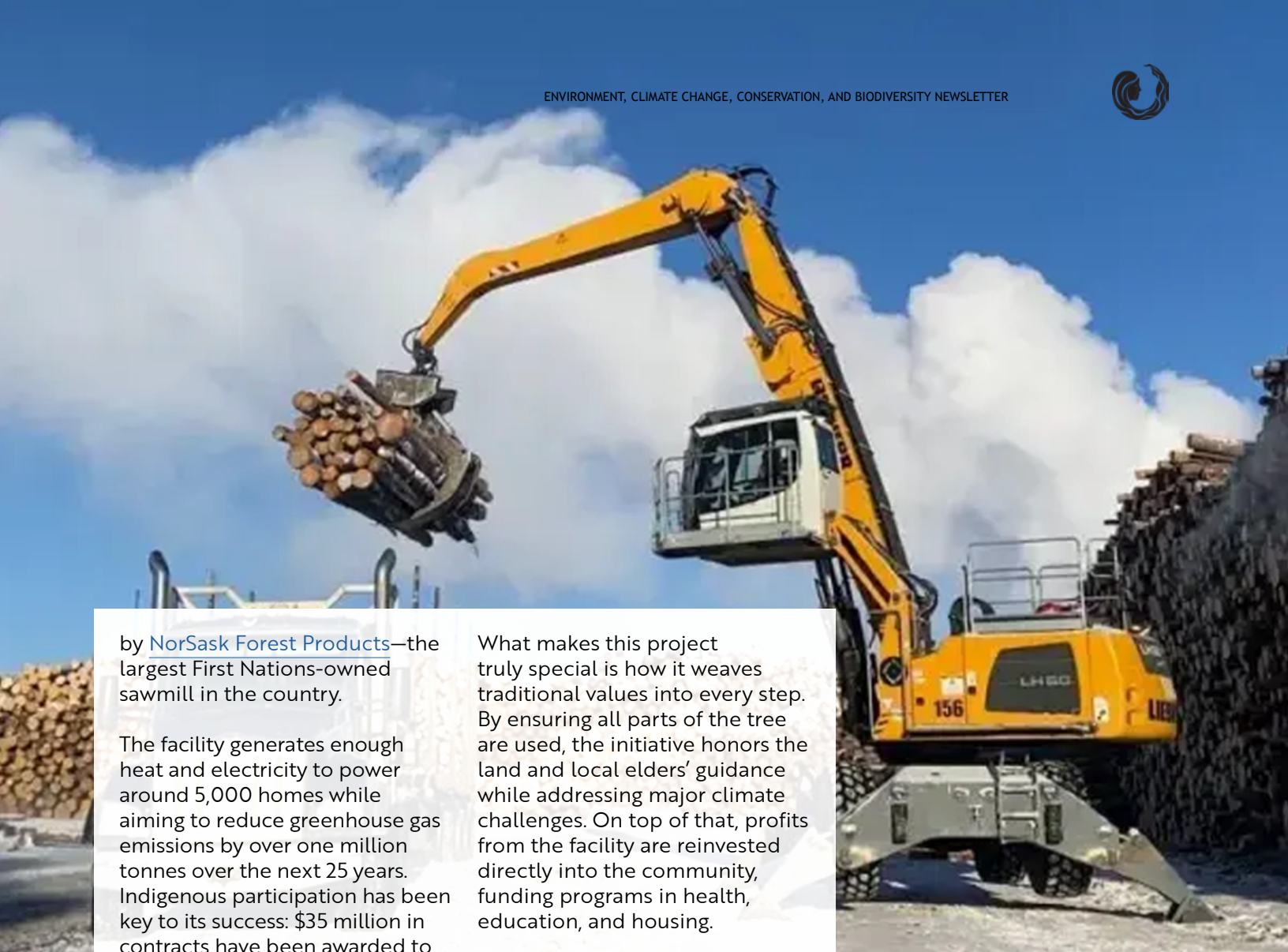
Spotlight: Meadow Lake Tribal Council (MLTC)

The Meadow Lake Tribal Council in northwestern Saskatchewan is making history with Canada's first 100% Indigenous-owned bioenergy facility. This \$100

million project transforms leftover wood waste into clean energy, replacing the outdated and environmentally harmful beehive burner previously used

Top: Exterior, BioEnergy Centre, Image from MLTC CCAB Presentation, <https://norsask.ca>.

Left: Interior, BioEnergy Centre, Image from MLTC CCAB Presentation, <https://norsask.ca>.



by [NorSask Forest Products](#)—the largest First Nations-owned sawmill in the country.

The facility generates enough heat and electricity to power around 5,000 homes while aiming to reduce greenhouse gas emissions by over one million tonnes over the next 25 years. Indigenous participation has been key to its success: \$35 million in contracts have been awarded to Indigenous companies, and seven of the 13 employees at the facility identify as Indigenous.

What makes this project truly special is how it weaves traditional values into every step. By ensuring all parts of the tree are used, the initiative honors the land and local elders' guidance while addressing major climate challenges. On top of that, profits from the facility are reinvested directly into the community, funding programs in health, education, and housing.

A tractor loads lumber onto a semi-truck at NorSask Forest Products. Photo by [Bonnie Allen/CBC](#)

Inuit man in the Arctic landscape, Getty Images



Environmental Technology in the North

Inuit communities in the Arctic are on the frontlines of climate change. Warmer winters mean thinner ice and shorter "safe" ice seasons, making traditional activities like hunting and fishing riskier than ever. Even entire homes have sunk into the sea as permafrost melts. For Inuit, the ice isn't just a highway or

a hunting ground—it's central to their identity, culture, and livelihoods. But unpredictable ice conditions also threaten tourism, fisheries, and other local economies. The challenge? Finding sea-ice information that's accessible, accurate, and easy to understand.



Spotlight: SmartICE

SmartICE is an incredible Inuit-led solution helping communities adapt to these changes. Founded in 2017 in St. John's, Newfoundland and Labrador, this initiative combines technology with traditional knowledge to monitor and map sea ice. Here's how it works:

- **SmartBUOY:** Stationary sensors measuring ice thickness.
- **SmartQAMUTIK:** Mobile sensors towed on sleds, providing real-time ice data along community trails.

Using satellite imagery, on-the-ground reports, and traditional ecological knowledge, SmartICE generates colour-coded **"Go, Slow, No-Go"** maps every 7–10 days (or more often during freeze-up or break-up). These maps help travellers plan safer routes and reduce risks. A user-friendly app also lets travellers view updates, track changes in ice thickness, and contribute their own observations. Since 2018, SmartICE has monitored over 19,000 kilometres of sea ice



Person drives snowmobile carrying SmartICE technology behind it along frozen waters with a backdrop of snowy mountains. Photo by [Michael Schmidt](#)

Community First

At its core, SmartICE is about community. It operates as a social enterprise rooted in Inuit values, creating jobs and training opportunities for Inuit. In Nain, the Northern Production Centre trains youth in building and operating the technology, combining technical skills with personal development.

By weaving together social well-being, technology, and traditional Inuit knowledge, SmartICE is more than a tool—it's a lifeline for communities navigating a rapidly changing Arctic.



Resources in Environmental Training and Technical Skills Advancement

The Indigenous Guardians Toolkit, a project by Nature United, has compiled a list of comprehensive training programs made my partnering Indigenous communities and various education institutions across Canada:

- [BEAHR - Environmental Training for Aboriginal Communities](#)
- [Centre for Indigenous Environmental Resources \(CIER\) Workshops](#)
- [Coastal First Nations/ Vancouver Island University – Stewardship Technicians Training Program Website and Brochure](#)
- [Nanwakolas Council/ Vancouver Island University – Stewardship Technicians Training Program](#)
- [Gorsebrook Research Institute at Saint Mary's University: Innu Guardian training program](#)
- [Vancouver Island University Environmental Technician Certificate Program for Aboriginal communities](#)
- [Ecotrust Canada Fisheries Observer Training](#)
- [Canadian Aquatic Biomonitoring Network \(CABIN\) program and protocols, training and certification](#)
- [Arctic Response training programs \(certificates, safety, survival etc.\)](#)
- [Lakeland College - environmental management degrees \(managerial and senior jobs\)](#)
- [Native Education College - Indigenous Land Stewardship Certificate](#)

Historically, mainstream environmental advocacy has often excluded the voices of Indigenous peoples, but growing awareness of the climate crisis is changing that. As climate change reaches a critical tipping point, ethical engagement and partnerships are fueling meaningful change. Projects like the ones mentioned in this article are proof of the unique wisdoms that Indigenous Peoples bring to healing our planet.

Books on bookshelf Getty Images





View from Mont Cascades and the Rideau River in the Gatineau Hills near Ottawa, Getty Photos.



Indigenous women, girls, 2-Spirit, and gender-diverse peoples carry invaluable knowledge that can create the paradigm shifts needed to address the crisis. These perspectives are increasingly influencing the broader climate action dialogue, demonstrating how Indigenous leadership is key to shaping a sustainable future for all.