



CHIEFS OF ONTARIO

FIRST NATIONS ENERGY TOOLKIT

Toolkit 2: Energy planning and clean energy practical applications

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Table of Contents

Toolkit 2: Energy planning and clean energy practical applications	4
Purpose and overview	4
Key insights	4
How to use this toolkit.....	4
1. Planning for energy independence	5
1.1 Understanding energy independence	5
1.2 Community Energy Planning (CEP).....	6
1.3 Steps to developing a Community Energy Plan (CEP).....	8
1.4 Funding opportunities for CEP development	10
2. Using technology in energy planning: The GridWatch App (Ontario Edition).....	12
2.1 How to incorporate GridWatch in a Community Energy Plan (CEP)	13
2.2 Explaining the GridWatch tabs	14
3. Practical energy systems for First Nations communities in Ontario.....	20
3.1 Heat Pumps.....	20
3.2 Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs).....	24
3.3 Smart Thermostats.....	28
4. Ontario's energy efficiency programs and savings opportunities.....	31
4.1 Key programs	31
4.2 Eligible energy upgrades and rebates	32
4.3 Benefits for First Nations communities	32
4.4 Challenges and solutions in accessing programs.....	33

5. Financial resources and support for First Nations energy projects.....	34
5.1 National banks and financial institutions	34
5.2 Indigenous-specific financial institutions	34
5.3 Programs and funds	35
5.4 Provincial programs	37
5.5 Technical support and partnerships	37
5.6 Additional resources	37
6. Key organizations and resources for First Nations energy and infrastructure projects in Ontario.....	38
6.1 Energy consulting.....	38
6.2 Engineering and infrastructure	39
6.3 Clean energy partnerships	40
6.4 Advocacy and policy support	41

Toolkit 2: Energy planning and clean energy practical applications

Purpose and overview

Toolkit 2 serves as a step-by-step guide to help First Nations communities in Ontario transition to sustainable and energy-efficient solutions. Building on the foundational knowledge from Toolkit 1, this guide emphasizes the practical implementation of modern technologies such as heat pumps, energy recovery ventilators (ERVs), and smart thermostats. These solutions are designed to address the unique cultural, geographic, and energy needs of First Nations, enabling them to reduce energy costs, increase energy independence, and promote environmental sustainability.

Key insights

- **Planning for energy independence:** Introduces key concepts like energy sovereignty and tools such as the GridWatch App to support informed decision-making.
- **Practical energy systems:** Explains how specific technologies work, highlighting their benefits, maintenance needs, and available rebate opportunities.
- **Energy efficiency programs:** Showcases Ontario's key programs and funding options to support community energy projects.
- **Financial resources and partnerships:** Connects communities with banks, Indigenous financial institutions, and technical support resources.
- **Key organizations:** Provides a directory of energy consultants, engineering experts, and advocacy groups to assist with project implementation.

How to use this toolkit

This toolkit is designed to empower community leaders, energy champions, and decision-makers with the tools to:

- Plan and implement energy systems effectively, tailored to community priorities.
- Access funding, technical support, and partnerships to drive project success.
- Leverage additional resources outlined in Toolkit 1 (foundational knowledge) and Toolkit 3 (case studies and best practices).

1. Planning for energy independence

1.1 Understanding energy independence

Energy independence is a cornerstone of self-determination, economic resilience, and environmental sustainability for First Nations communities in Ontario. By transitioning from reliance on diesel and other external energy sources to renewable energy systems tailored to specific needs, communities can reduce costs, improve energy security, and enhance long-term economic opportunities. This transition also strengthens cultural preservation by aligning with First Nation Knowledge and community values.

First Nation Knowledge refers to the accumulated and living knowledge systems of Indigenous Peoples, encompassing cultural practices, methodologies, and beliefs rooted in relationships with the environment. It provides a deep understanding of local ecosystems, species, and environmental interconnections¹. Integrating First Nation Knowledge into energy planning ensures that energy systems are not only sustainable but also reflective of community priorities and respectful of cultural traditions.

Energy sovereignty, a vital component of energy independence, refers to the right of communities to make decisions about energy use and production that reflect their unique social, cultural, and environmental priorities. Locally governed energy projects enable First Nations to take greater control of their energy future, ensuring systems align with their values and support sustainable growth.

One notable example is the Gull Bay First Nation Microgrid in Northern Ontario. This innovative project integrates solar power with battery storage, reducing diesel consumption by approximately 25,000 liters annually². By replacing diesel reliance with clean energy, the microgrid has improved air quality, decreased greenhouse gas emissions, and created local economic opportunities. It serves as a model of how renewable energy systems can be designed to meet the unique needs of First Nations communities³.

By prioritizing energy independence and sovereignty, First Nations can build sustainable energy strategies that support self-reliance and environmental stewardship. This approach ensures the long-term resilience of their communities while promoting culturally aligned energy solutions. For instance, energy independence fosters local job creation in renewable energy sectors, such as solar installation, maintenance, and energy project management⁴.

¹ Chiefs of Ontario. (2024). *Aboriginal Traditional Knowledge (ATK)*. Retrieved from <https://chiefs-of-ontario.org/priorities/environment/>

² Independent Electricity System Operator. (2018). *Fully integrated microgrid at Gull Bay First Nation: First of its kind in Canada*. Retrieved from <https://www.ieso.ca/en/Powering-Tomorrow/2018/Fully-integrated-microgrid-at-Gull-Bay-First-Nation-first-of-its-kind-in-Canada>

³ IESO. (2024). *Indigenous Community Energy Projects*. Retrieved from <https://www.ieso.ca/get-involved/indigenous-relations>

⁴ The Canadian Press. (2017). *First Nations turn to renewable energy projects to build economic independence*. CBC News. Retrieved from <https://www.cbc.ca/news/politics/first-nations-renewable-energy-projects-1.4348595>

1.2 Community Energy Planning (CEP)

This section follows the guidelines of the Indigenous Community Energy Plan (ICEP) program, which provides funding and support to First Nations communities for energy planning initiatives.

A Community Energy Plan (CEP) is a strategic document that outlines pathways for transitioning to renewable energy systems while prioritizing energy sovereignty and sustainability. It aligns with a community's cultural values, priorities, and technical needs, serving as a roadmap to energy independence, economic resilience, and environmental sustainability. By identifying energy needs, setting priorities, and implementing tailored solutions, CEPs enable First Nations to develop energy strategies that respect their traditions and aspirations.

By integrating technical innovation with cultural preservation, CEPs empower communities to reduce reliance on external energy sources, lower costs, and improve quality of life.

Provincial and federal support for CEPs

CEPs are not strictly federal or provincial documents; instead, they are community-driven plans that can be supported by both provincial and federal initiatives.

In Ontario, CEPs are primarily supported through provincial programs such as the Indigenous Community Energy Plan (ICEP) program, funded by the Independent Electricity System Operator (IESO). The ICEP program provides financial and technical assistance for First Nations to develop localized energy strategies.

At the national level, agencies such as Indigenous Services Canada (ISC) and Natural Resources Canada (NRCan) offer funding, policy support, and resources for community energy planning. Additionally, a 2016 pre-budget submission to the House of Commons Standing Committee on Finance emphasized the importance of federal, provincial, and territorial collaboration in advancing community energy plans across Canada⁵. Additionally, the National Report on Community Energy Plan Implementation (2015) highlights that over 170 communities in Canada have developed CEPs with support from federal, provincial, and municipal programs⁶.

⁵ Getting to Implementation (GTI). (2016). Community energy planning: Getting to implementation in Canada. Pre-budget submission to the House of Commons Standing Committee on Finance. Retrieved from <https://www.ourcommons.ca/content/Committee/421/FINA/Brief/BR8398218/br-external/Community%20Energy%20Planning-Getting%20to%20Implementation%20in%20Canada-e.pdf>

⁶ QUEST, Community Energy Association, & Sustainable Prosperity. (2015). National report on community energy plan implementation. Retrieved from <http://www.gettingtoimplementation.ca>

Key components of a CEP



Community profile

A detailed community profile helps establish the context for energy planning by identifying:

- **Geographic features:** describe the community's location, terrain, and climate, as these factors influence energy options (e.g., suitability for solar, wind, or hydropower).
- **Demographic data:** include population size, age distribution, and household characteristics to gauge energy demand.
- **Infrastructure overview:** document transportation linkages (e.g., road access, air routes), housing stock, community buildings, and existing energy infrastructure (e.g., diesel generators, solar panels).



Baseline energy assessment

This assessment provides a snapshot of the community's current energy consumption and costs. Key elements include:

- **Energy sources:** break down energy usage by source (e.g., electricity, diesel, propane, wood, solar, wind).
- **Energy demand:** assess usage across sectors such as residential, commercial, and public services (e.g., schools, health centers).
- **Cost analysis:** calculate the financial burden of energy use, including fuel transportation and maintenance costs.



Community's future energy needs

Projecting future energy needs ensures the plan remains relevant as the community grows and evolves. Consider:

- **Population growth:** use demographic trends to estimate changes in energy demand.
- **Development goals:** align projections with planned infrastructure expansions, such as new housing or community facilities.
- **Economic activities:** account for energy requirements linked to local industries or new business ventures.



Community energy vision and goals

Establishing a clear vision and goals provides a roadmap for achieving energy, independence and sustainability:

- **Vision statement:** define the community's aspirations (e.g., "achieve 100% renewable energy by 2035").
- **Goal-setting:** develop specific, measurable, achievable, relevant, and time-bound (smart) goals.



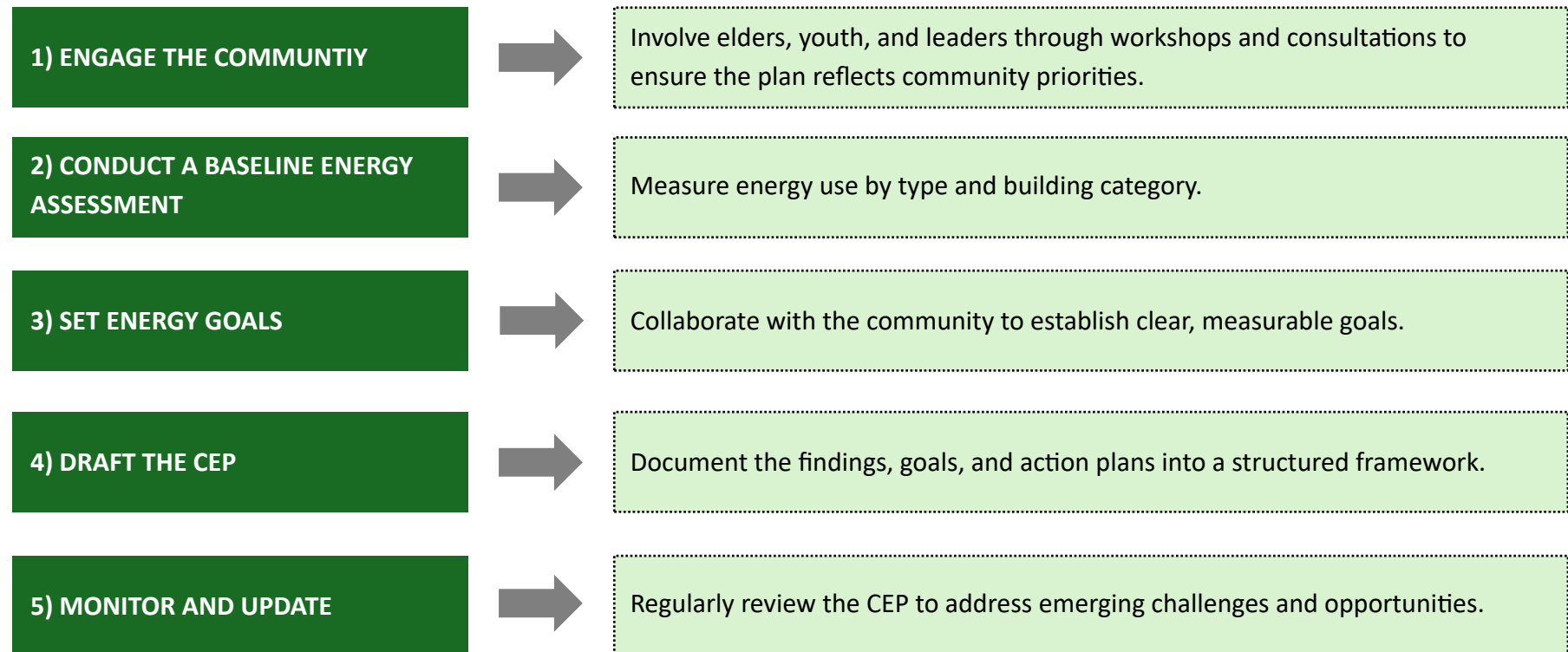
Implementation plan

The implementation plan translates the vision into actionable steps. Key components include:

- **Actionable steps:** break down goals into specific tasks, such as installing solar panels or conducting training programs.
- **Timelines:** establish short-, medium-, and long-term milestones to track progress.
- **Resource allocation:** identify funding sources, technical expertise, and materials required for each action.
- **Stakeholder responsibilities:** assign roles to community members, leadership, and external partners to ensure accountability.
- **Monitoring mechanisms:** include systems for tracking progress and adapting the plan as needed.

1.3 Steps to developing a Community Energy Plan (CEP)

To effectively develop a CEP, communities can follow a structured process that ensures cultural alignment, technical feasibility, and long-term success. The flowchart below illustrates the essential steps involved:



Where to collect the above information required for energy planning?

- Electricity bills
- Utility bills
- Energy utility
- Audits for buildings (representative sample of community buildings and houses)
- Physical inspections
- Discussions with Chief and Council
- Discussions with relevant departments (economic development, community development, environment focal points, housing, land-use, public works, water treatment plant operators etc.)
- Community engagement sessions, energy shows/fairs, open houses, surveys.

For more detailed information on the IESO Indigenous Community Energy Plan (ICEP) program, including eligibility criteria, funding details, and application guidelines, please refer to the official program guidelines available at the following link: [ICEP Program Guidelines](#).

Key benefits of a CEP



ECONOMIC DEVELOPMENT

A CEP opens pathways to skills development and employment opportunities such as:

- **Energy sector roles:** Power plant operators, renewable energy technicians, electricians.
- **Planning and development:** Community energy champions, GIS mapping technicians, project managers.
- **Support services:** Mechanics, welders, and surveyors for infrastructure upkeep.



REDUCED ENVIRONMENTAL IMPACT

Transitioning from diesel and other fossil fuels to renewable energy systems significantly reduces greenhouse gas emissions, helping mitigate climate change and promoting environmental stewardship.



IMPROVED HEALTH

Reducing reliance on traditional energy sources minimizes exposure to harmful pollutants, leading to better air quality and improved overall health for community members.



COMMUNITY EMPOWERMENT

Implementing a Community Energy Plan fosters self-determination by enabling communities to take control of their energy future. Aligning strategies with Aboriginal Traditional Knowledge (ATK) strengthens cultural preservation while addressing community priorities.

1.4 Funding opportunities for CEP development

First Nations in Ontario can access several funding programs to support the development and enhancement of Community Energy Plans (CEPs) and energy initiatives. The table below outlines available programs, funding amounts, eligibility, and application details to assist communities in achieving energy independence and sustainability.

PROGRAM	FUNDING AMOUNT	ELIGIBILITY	WEBSITE
IESO Indigenous Community Energy Plan (ICEP) Program	Up to \$90,000 for developing a new Community Energy Plan; up to \$25,000 for updating an existing plan.	First Nations in Ontario.	https://www.ieso.ca/ Search for “ Indigenous Community Energy Plan (ICEP) Program ”
Municipal Energy Plan (MEP) Program	Covers 50% of eligible costs, up to \$90,000 for creating a new plan; up to \$25,000 for updating an existing plan.	Ontario municipalities.	https://www.ontario.ca/page/municipal-energy-plan-program
Indigenous Energy Projects (IEP) Program	Up to \$200,000 per calendar year for energy projects, including CEP development.	Indigenous communities and organizations in Ontario.	https://www.ieso.ca/ Search for “ Indigenous Energy Projects (IEP) Program ”
Aboriginal Loan Guarantee Program (ALGP)	Provides loan guarantees to support Indigenous	Indigenous communities and organizations in Ontario.	https://www.ofina.on.ca/algp/

	participation in energy infrastructure projects.		
Indigenous Community Capital Grants Program (ICCGP)	Funding for infrastructure and energy projects; specific amounts vary based on project scope.	Indigenous communities in Ontario.	https://forms.mgcs.gov.on.ca/en/data/set/on00361

2. Using technology in energy planning: The GridWatch App (Ontario Edition)



The **GridWatch app** is a real-time energy monitoring tool that provides insights into Ontario's electricity grid, including data on generation, demand, and emissions intensity. By categorizing energy sources like nuclear, hydro, wind, solar, and gas, it helps First Nations communities make informed decisions about energy use, efficiency, and planning while monitoring environmental impacts.

Using the GridWatch app

The app is user-friendly and allows communities to monitor electricity demand, emissions, and generation sources. This information can be leveraged to optimize energy use and integrate renewable energy effectively.

Benefits of using GridWatch

GridWatch offers several benefits for First Nations communities, including:



ENERGY MONITORING

- Track real-time electricity generation and demand, identifying peak usage periods to optimize energy use.



CARBON FOOTPRINT AWARENESS

- Monitor emissions intensity in real-time to help prioritize renewable energy during periods of low emissions.



ENERGY PLANNING

- Evaluate the energy supply mix to understand the role of renewables and reduce reliance on fossil fuels.

Step-by-Step Guide to Using GridWatch

1. **Download the app:** Available on the iOS App Store or through alternative platforms for non-iOS users.
2. **Explore key features:** Review energy generation by source, emissions graphs, and electricity demand levels in real time.
3. **Plan energy activities:** Use app data to schedule high-energy activities during periods of renewable availability or low emissions.
4. **Support decision-making:** Track grid stability and identify opportunities to reduce reliance on high-emission energy sources for improved sustainability.

2.1 How to incorporate GridWatch in a Community Energy Plan (CEP)

Integrating **GridWatch** into a CEP empowers communities with data-driven tools for energy planning:

1. Baseline energy assessment

- Use GridWatch to collect real-time data on electricity use and power sources.
- Include insights in the CEP to identify current energy patterns and emissions levels.

2. Goal Setting and planning

- Set measurable goals (e.g., reduce reliance on non-renewable energy or lower peak demand) using GridWatch's emissions and energy source data.

3. Implementation and monitoring

- Track progress toward CEP goals and adjust strategies using GridWatch data.
- Share updates with community members to ensure transparency and accountability.

4. Community engagement

- Host workshops to teach community members how to use GridWatch for monitoring and reducing energy use.

5. Advocacy and reporting

- Use GridWatch data to create reports for stakeholders, funders, or government bodies.
- Leverage findings to advocate for cleaner energy policies or infrastructure upgrades.

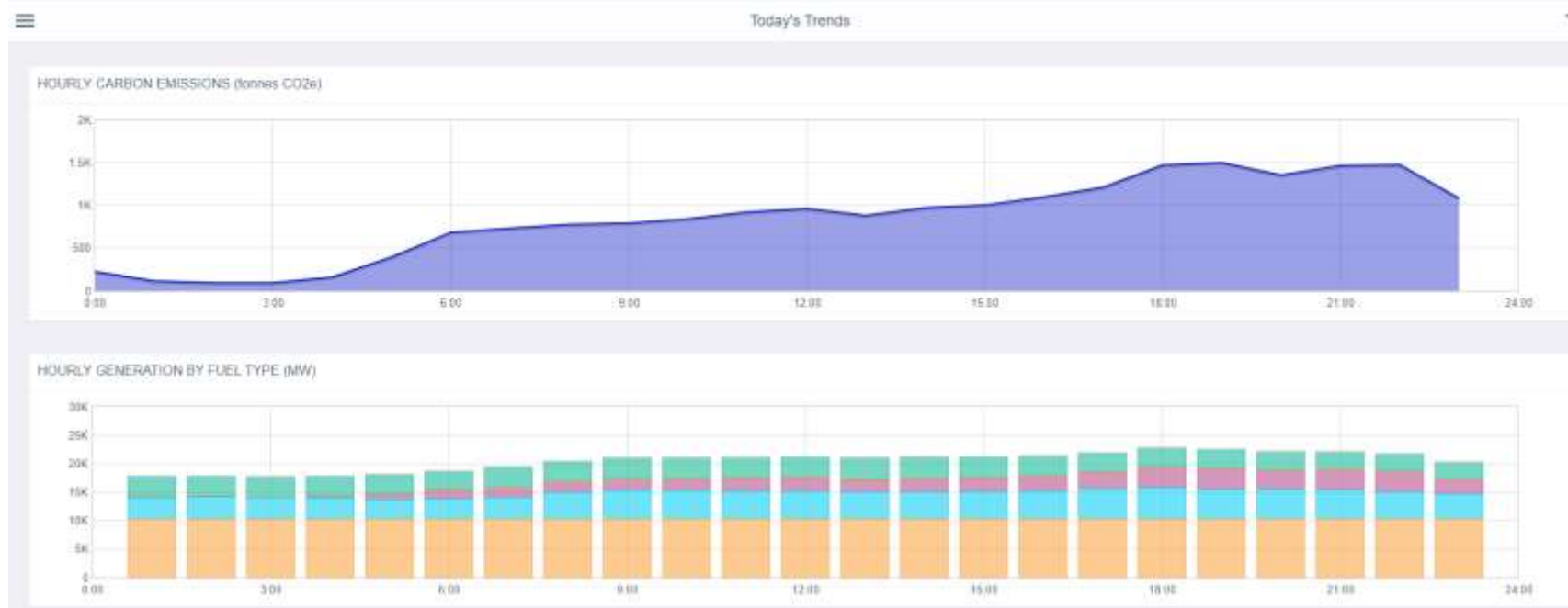
2.2 Explaining the GridWatch tabs

The GridWatch app provides a suite of tools to help communities monitor Ontario's electricity grid in real time. Each tab offers specific insights—ranging from carbon emissions and energy generation trends to grid stability and resource allocation.

TAB 1: HOURLY CARBON EMISSIONS AND ENERGY GENERATION TRENDS

This tab provides two essential insights:

1. **Hourly Carbon Emissions:** Tracks emissions (tonnes CO₂e) from Ontario's electricity grid (top chart).
2. **Hourly Generation by Fuel Type:** Shows electricity generation by source, such as nuclear, hydro, wind, solar, and gas (bottom chart).



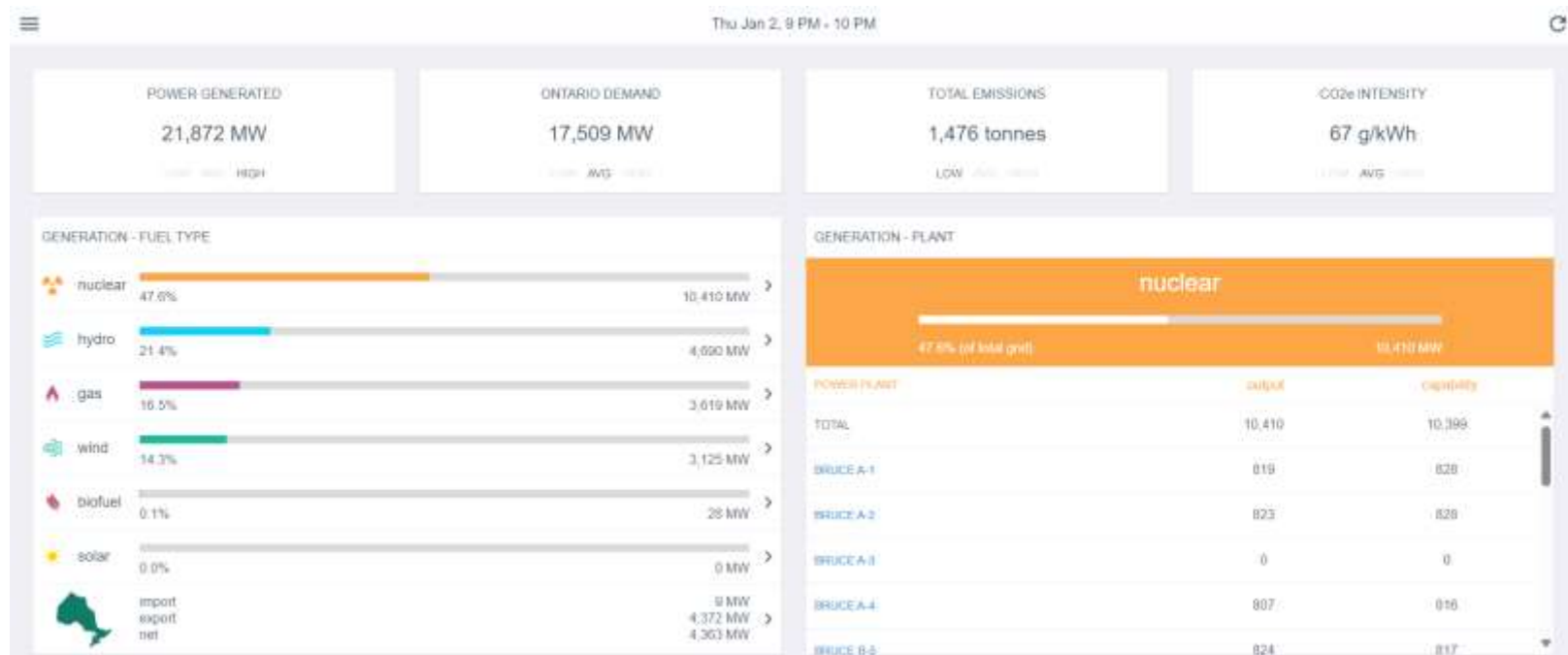
How to apply in energy planning

- Emissions awareness:** Monitor carbon emissions throughout the day to schedule energy-intensive activities during lower-emission periods.
- Resource optimization:** Use fuel type data to align energy use with renewable availability (e.g., wind or hydro dominance).

TAB 2: REAL-TIME ENERGY OVERVIEW (GENERATION, DEMAND, AND EMISSIONS)

This tab provides real-time data on Ontario's electricity grid, including:

- **Power generated:** Total electricity output, broken down by source (e.g., nuclear, hydro, wind, gas).
- **Ontario demand:** Current electricity demand across the province.
- **Emissions data:** Real-time carbon emissions (tonnes) and CO2 intensity (g/kWh).

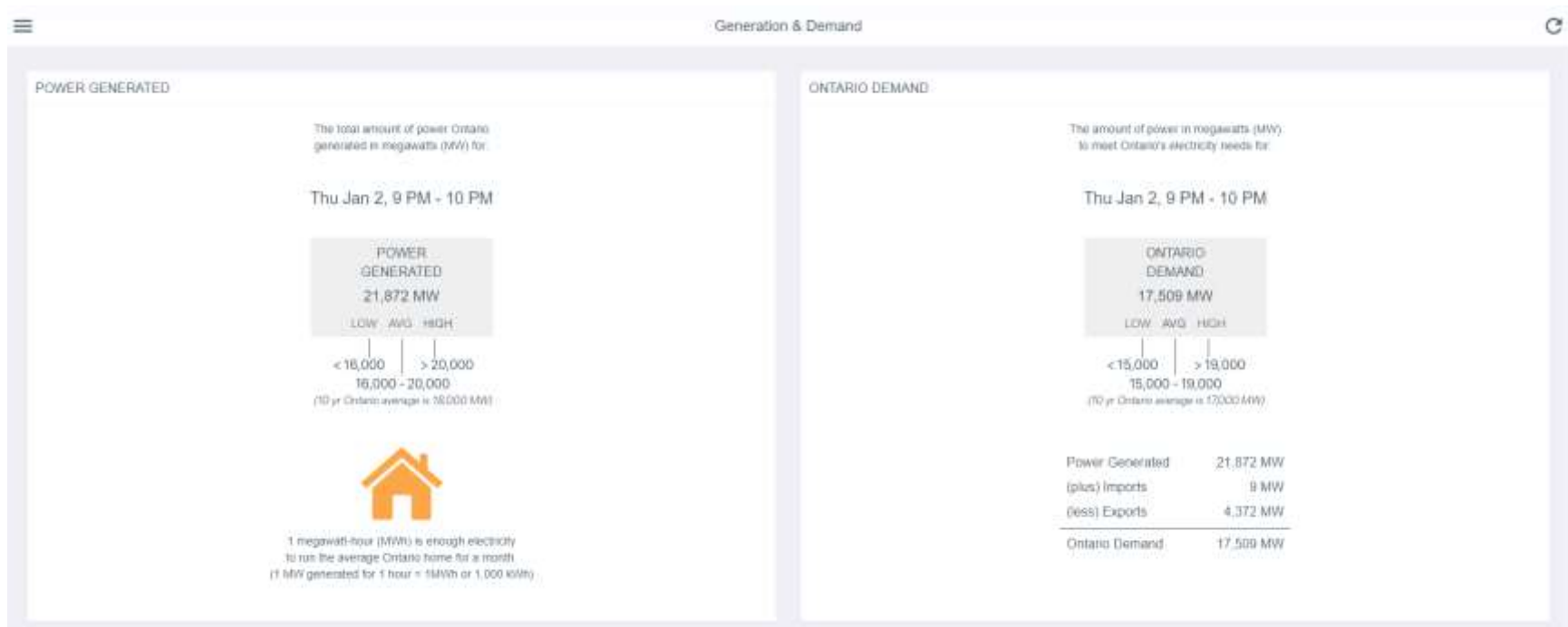


How to apply in energy planning

- ❑ **Informed decision-making:** Monitor grid conditions to identify optimal times for energy-intensive operations, reducing environmental impact.
- ❑ **Energy mix awareness:** Use insights on fossil fuel versus renewable reliance to guide long-term energy strategies.

TAB 3: TOTAL INSTALLED CAPACITY AND SUPPLY MIX

This tab provides real-time data on Ontario's electricity generation and demand, highlighting total power generated and consumed across the grid. It also offers insights into supply and demand trends to help communities better understand the province's energy capacity.



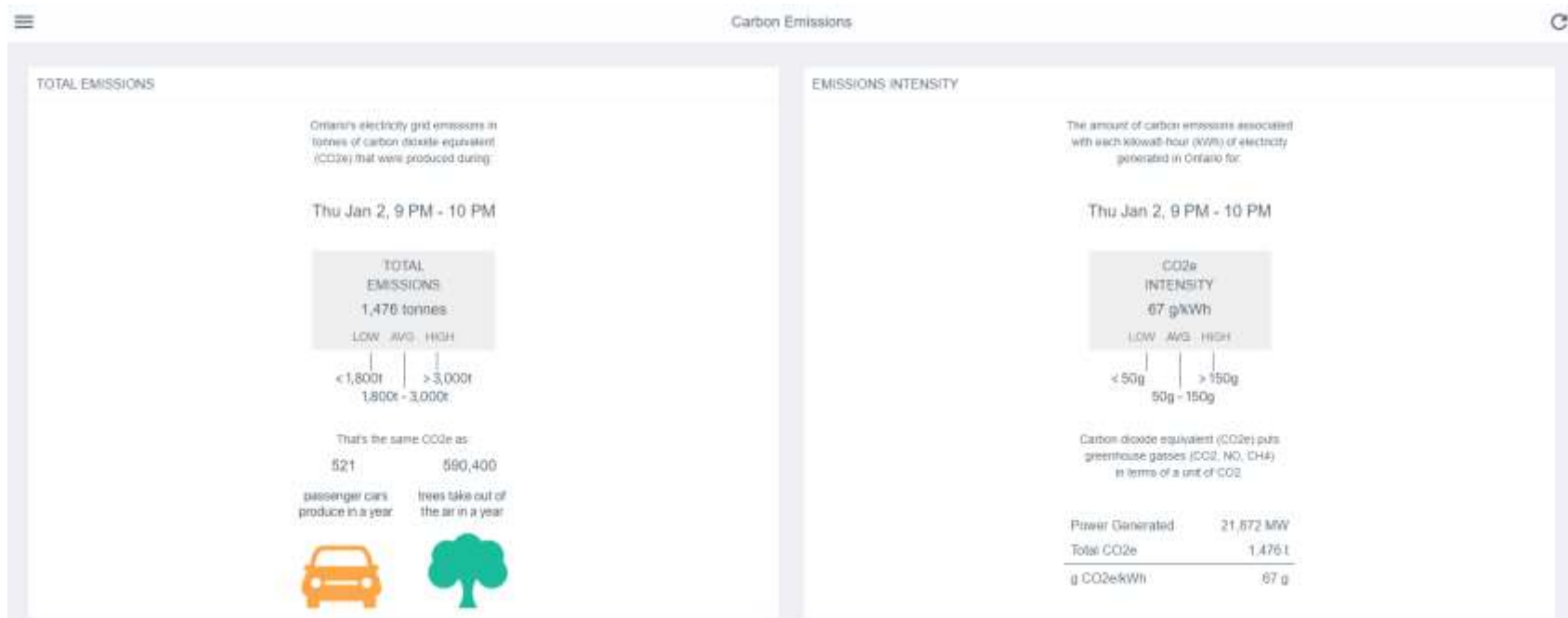
How to apply in energy planning

- Capacity insights:** Understand provincial generation capacity and identify opportunities for local energy projects.
- Distributed generation:** Explore potential for small-scale systems like solar panels or wind turbines to reduce reliance on centralized grids.

TAB 4: TOTAL EMISSIONS AND CARBON INTENSITY

This tab provides real-time data on Ontario's electricity grid emissions, including:

- **Total Emissions:** Carbon dioxide equivalent (CO₂e) emissions in tonnes during a specific time period.
- **Emissions Intensity:** CO₂e emissions (grams per kilowatt-hour) linked to electricity generation.
- **Comparative Metrics:** Real-world comparisons, such as emissions equivalent to passenger vehicles or trees' carbon sequestration over a year.

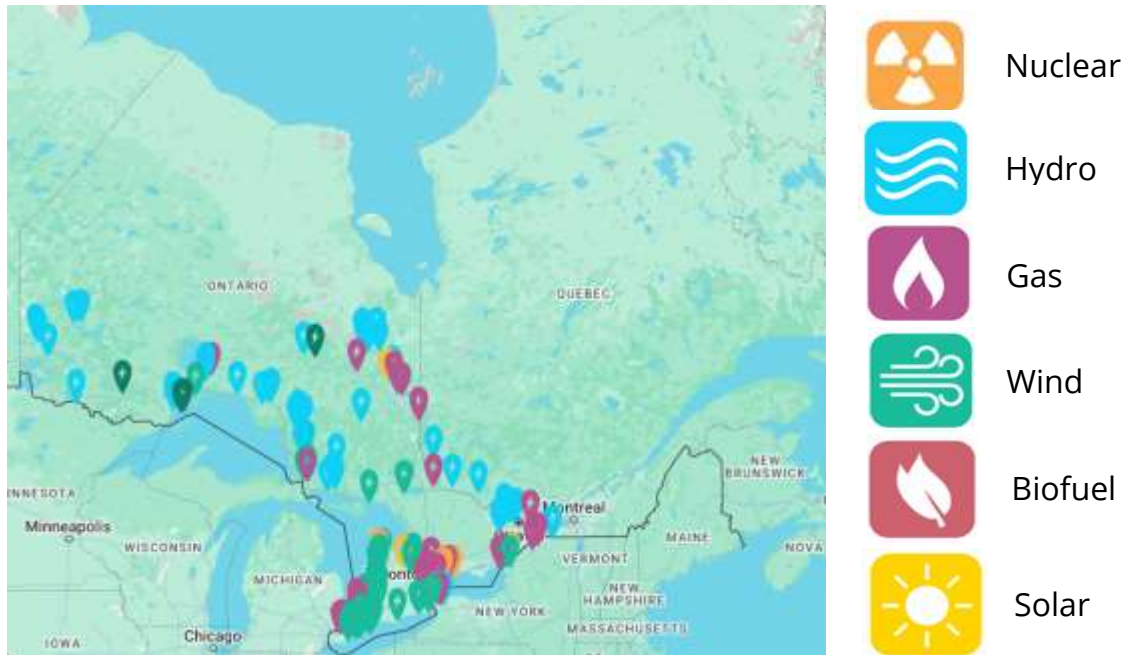


How to apply in energy planning

- ❑ **Sustainability awareness:** Use emissions data to educate communities about electricity's environmental impact and identify areas for improvement.
- ❑ **Energy-efficient practices:** Schedule energy-intensive activities during low-emission periods to minimize carbon footprints.
- ❑ **Strategic advocacy:** Leverage data to advocate for cleaner energy sources and renewable investment.
- ❑ **Community engagement:** Use relatable comparisons (e.g., cars, trees) to foster understanding and participation in sustainability efforts.

TAB 5: REGIONAL PLANT DISTRIBUTION MAP

The **GridWatch app** features an interactive map that provides an overview of Ontario's energy landscape. It highlights the geographical distribution of power generation facilities by energy type, including nuclear, hydro, solar, wind, biofuel, and gas.



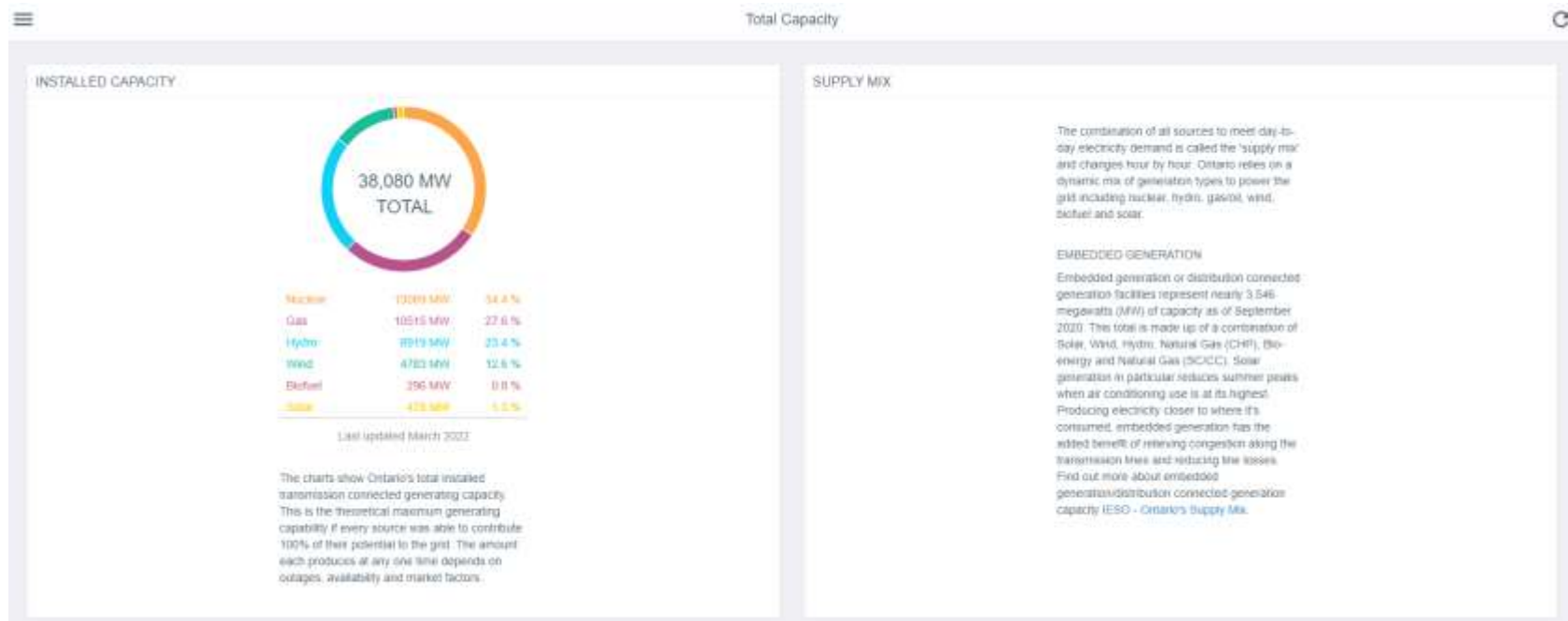
How to apply in energy planning

- Site feasibility analysis:** Assess proximity to generation facilities to determine grid connection or the potential for local energy projects.
- Resource availability:** Identify nearby renewable resources to support localized energy planning and sustainability efforts.

TAB 6: TOTAL CAPACITY AND SUPPLY MIX OVERVIEW

This tab offers an overview of Ontario's installed electricity generation capacity and supply mix:

- **Installed capacity:** Displays total generation capacity (MW) across energy sources (nuclear, gas, hydro, wind, biofuel, solar), with contributions shown as percentages.
- **Supply mix:** Explains how electricity sources are used dynamically to meet daily energy demands, including embedded generation like solar and wind.
- **Embedded generation:** Highlights smaller, localized sources (e.g., combined heat and power systems, biofuel plants) that reduce grid congestion and support renewables.



How to apply in energy planning

- Energy diversity awareness:** Understand the grid's renewable vs. non-renewable mix to assess environmental impacts.
- Infrastructure planning:** Identify areas to expand renewable capacity (e.g., solar or wind projects) to enhance sustainability.
- Community energy projects:** Explore embedded generation options (e.g., local solar or wind) to improve resilience and independence.

3. Practical energy systems for First Nations communities in Ontario

First Nations communities in Ontario are increasingly adopting modern energy technologies to achieve energy independence, reduce costs, and transition away from traditional energy sources like diesel. Systems such as heat pumps, energy recovery ventilators (ERVs), smart thermostats, and solar panels offer sustainable solutions tailored to community needs, fostering environmental stewardship and long-term resilience.

Successful implementation of these technologies requires more than installation. Ensuring that community citizens have the knowledge and tools to operate and maintain these systems is critical. Proper usage and upkeep not only enhance device lifespans but also maximize efficiency and cost savings. For instance, maintaining clean filters in heat pumps and ERVs or optimizing smart thermostat settings can significantly lower energy consumption and expenses.

This section outlines various energy systems, explaining how they work, their applications, benefits, available rebate programs, and essential maintenance practices to ensure their long-term effectiveness in First Nations communities.

3.1 Heat Pumps

Heat pumps are energy-efficient systems for heating and cooling, transferring heat between indoor and outdoor spaces without combustion. They offer significant energy savings, making them an excellent choice for First Nations communities aiming to reduce costs and environmental impacts⁷.

Types of Heat Pumps

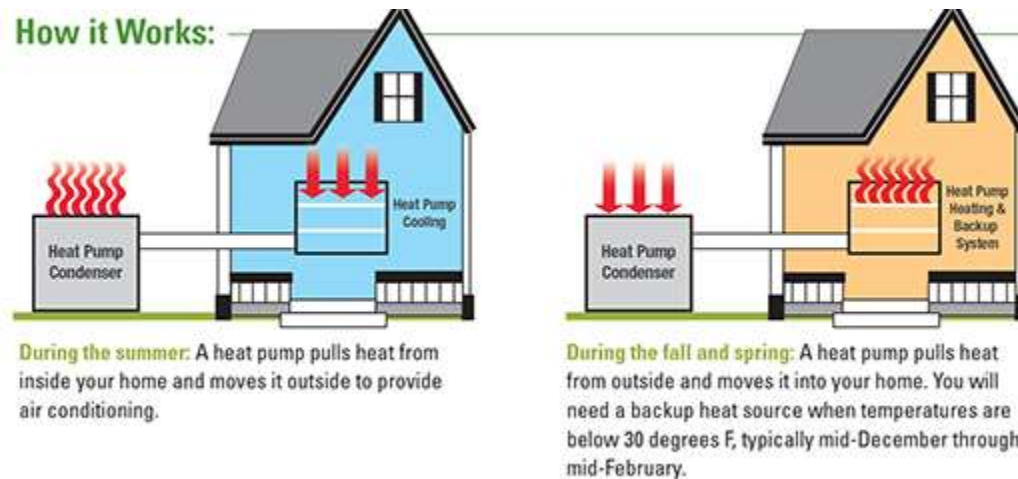
A) Cold Climate Air Source Heat Pumps (CC-ASHP)

These systems extract heat from the air, even in cold climates, and transfer it indoors. They are specifically designed to operate efficiently in extreme temperatures as low as -25°C.

⁷ Natural Resources Canada. (2023). *Energy Efficiency with Heat Pumps*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/electric-heat-pumps/25587>

How it works

CC-ASHPs use a refrigeration cycle, including a compressor, evaporator, and condenser, to extract heat from outdoor air. During summer, the process reverses to expel heat, providing cooling⁸.



Performance and operating conditions

- Operate efficiently in temperatures as low as -25°C with reduced efficiency below that range.
- Best suited for moderate to cold climates where outdoor air remains a viable heat source⁹.

Applications

- **Residential:** Heating and cooling for homes.
- **Supplemental Heating:** Ideal for homes with existing electric or propane heating systems.

⁸ Natural Resources Canada. (2023). *Electric Heat Pumps*. Retrieved from: <https://natural-resources.canada.ca/energy-efficiency/electric-heat-pumps/heat-pump-basics/25589>

⁹ Enercare. (2023). *How Heat Pumps Work*. Retrieved from <https://www.enercare.ca/cooling/heat-pump>

Benefits	Limitations
Reduces energy consumption by up to 50% compared to traditional heating systems ¹⁰ .	High upfront installation costs, although rebates help mitigate these ¹¹ .
Dual functionality for heating and cooling.	Reduced efficiency in temperatures below -20°C without supplemental heating ¹² .
Environmentally friendly, especially when paired with renewable energy sources like solar panels ¹³ .	

Rebate programs

- Up to \$7,500 through the Canada Greener Homes Grant¹⁴.
- Additional provincial rebates may apply.

Maintenance

- Replace or clean filters every 1–3 months to ensure efficient airflow and maintain indoor air quality¹⁵.
- Schedule annual servicing for refrigerant checks, coil cleaning, and system optimization to prevent malfunctions and maximize efficiency¹⁶.
- Clear debris from outdoor units to avoid obstructions that can impact airflow and reduce system performance¹⁷.
- For more detailed guidance on heat pump operation and maintenance, visit: [Natural Resources Canada - Heat Pumps](#).

B) Ground Source Heat Pumps (GSHP)

These systems extract heat from the ground using underground pipes filled with a heat transfer fluid, making them more stable in extreme weather conditions.

¹⁰ Natural Resources Canada. (2023). *Energy Efficiency with Heat Pumps*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/electric-heat-pumps/25587>

¹¹ Save on Energy. (2023). *Air Source Heat Pumps*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Energy-Affordability-Program/Air-Source-Heat-Pumps>

¹² Enercare. (2023). *How Heat Pumps Work*. Retrieved from <https://www.enercare.ca/cooling/heat-pump>

¹³ Save on Energy. (2023). *Air Source Heat Pumps*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Energy-Affordability-Program/Air-Source-Heat-Pumps>

¹⁴ Save on Energy. (2023). *Home Renovation Savings Program*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Home-Renovation-Savings>

¹⁵ Natural Resources Canada. (2023). *Energy Efficiency with Heat Pumps*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/electric-heat-pumps/25587>

¹⁶ Enercare. (2023). *How Heat Pumps Work*. Retrieved from <https://www.enercare.ca/cooling/heat-pump>

¹⁷ Save on Energy. (2023). *Air Source Heat Pumps*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Energy-Affordability-Program/Air-Source-Heat-Pumps>

How it works

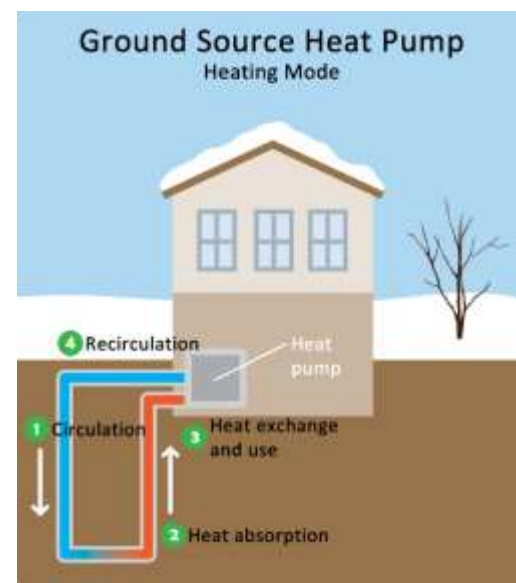
GSHPs rely on geothermal energy, using buried loops to absorb or expel heat. They provide consistent heating and cooling regardless of outdoor air temperature¹⁸.

Performance and operating conditions

- Operate efficiently year-round, unaffected by outdoor temperature fluctuations.
- Suitable for all climates, particularly areas with long winters or high heating needs¹⁹.

Applications

- **Residential and commercial:** Heating, cooling, and water heating for large spaces.
- **Off-grid systems:** Ideal for remote or rural locations with limited energy infrastructure.



Benefits	Limitations
Higher energy efficiency compared to air source systems.	Higher upfront costs due to the need for excavation and installation of ground loops.
Long lifespan of 20+ years for underground components.	Longer payback period compared to CC-ASHPs ²⁰ .
Stable performance in extreme weather conditions ²¹ .	

Rebate programs

- Home Renovation Savings Program offers up to \$12,000 through the Canada Greener Homes Grant²².
- Enbridge Home Efficiency Rebate Plus provides incentives for GSHP installations²³.

¹⁸ Natural Resources Canada. (2023). *Electric Heat Pumps*. Retrieved from: <https://natural-resources.canada.ca/energy-efficiency/electric-heat-pumps/heat-pump-basics/25589>

¹⁹ Natural Resources Canada. (2018). *Ground Source Heat Pumps*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/heating-equipment-for-residential-use/ground-source-heat-pumps/16028>

²⁰ Natural Resources Canada. (2018). *Ground Source Heat Pumps*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/heating-equipment-for-residential-use/ground-source-heat-pumps/16028>

²¹ Natural Resources Canada. (2023). *Electric Heat Pumps*. Retrieved from: <https://natural-resources.canada.ca/energy-efficiency/electric-heat-pumps/heat-pump-basics/25589>

²² Save on Energy. (2023). *Home Renovation Savings Program*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Home-Renovation-Savings>

²³ Enbridge Gas. (2023). *Home Efficiency Rebate Plus*. Retrieved from <https://www.enbridgegas.com/ontario/rebates-energy-conservation/home-efficiency-rebate-plus>

Maintenance

- Annual system inspection, including heat pump performance and ground loop integrity.
- Periodic cleaning of heat exchangers and fluid checks²⁴.

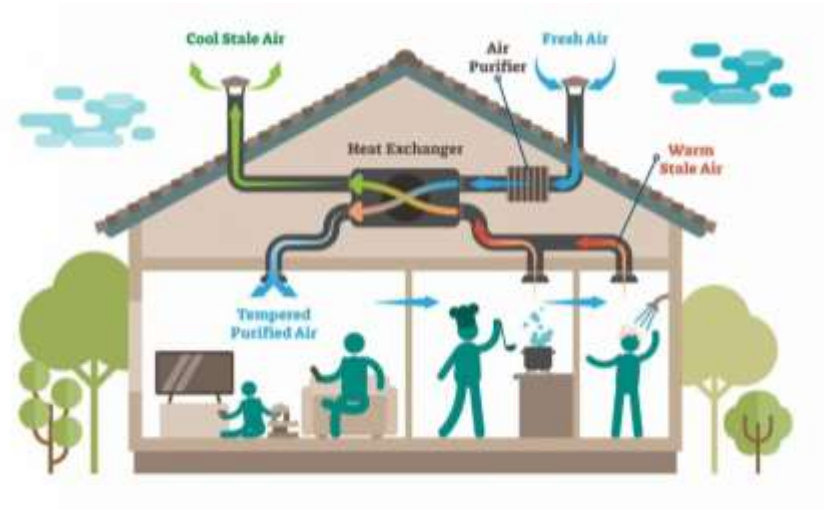
3.2 Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs)

Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs) are systems designed to improve indoor air quality by exchanging stale indoor air with fresh outdoor air while recovering energy. ERVs transfer both heat and moisture, making them ideal for homes in climates with high humidity. HRVs focus solely on heat transfer, which is better suited for colder, drier climates²⁵.

How They Work

Both systems use a heat exchanger to transfer energy between incoming and outgoing air streams:

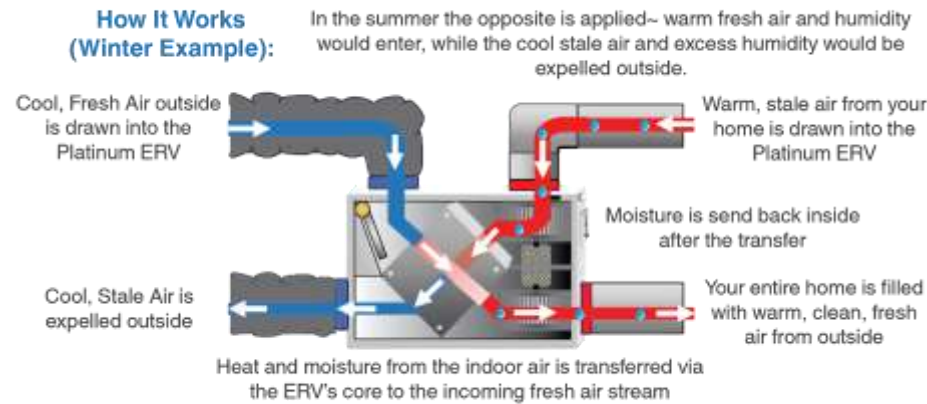
- **ERVs** recover heat and moisture, balancing indoor humidity and reducing heating/cooling loads.



²⁴ Evolved Thermal. (2022). *What maintenance is needed on a geothermal heat pump?* Retrieved from <https://evolvedthermal.com/what-maintenance-is-needed-on-a-geothermal-heat-pump/>

²⁵ HVAC.com. (n.d.). *Energy Recovery Ventilators vs. Heat Recovery Ventilators.* Retrieved from <https://www.hvac.com/expert-advice/energy-recovery-ventilators-vs-heat-recovery-ventilators/>

- **HRVs** recover only heat, reducing energy demands during cold weather.



Placement

- **Unit Location:**
 - Install in a mechanical or utility room, away from living spaces to reduce noise.
 - Ensure the unit is easily accessible for maintenance, such as filter replacement and cleaning²⁶.
- **Outdoor Vents:**
 - Position the intake vent away from pollution sources like chimneys or vehicle exhaust.
 - Ensure the exhaust vent is not near windows or doors to avoid recirculating stale air.
- **Ductwork:**
 - Use insulated ducts in unconditioned spaces (e.g., basements or attics) to prevent energy loss²⁷.

Performance and operating conditions

ERVs (Energy Recovery Ventilators)

Energy recovery ventilators (ERVs) are a type of HRV that can exchange both heat and moisture.

²⁶ Fine Homebuilding. (2015). *Ducting HRVs and ERVs*. Retrieved from <https://www.finehomebuilding.com/project-guides/energy-retrofit/ducting-hrvs-and-ervs>

²⁷ Panasonic. (2025). *Energy Recovery Ventilators (ERVs)*. Retrieved from <https://iaq.na.panasonic.com/erv>

- **Moisture control:** An ERV can give you more control over moisture levels in your home during warm and humid weather, by keeping excess moisture out of your home. Because less energy is required to lower the temperature of dry air compared to moist air, an ERV can reduce the work your air conditioner needs to do and save you money.
- **Moisture recovery:** If your winter climate is extremely dry, ERVs recover some of the moisture that would leave your house through a regular HRV. This helps you maintain a comfortable humidity level within your home, avoiding static electricity, sore throats and other discomforts caused by air that is too dry²⁸.

HRVs (Heat Recovery Ventilators)

- A heat recovery ventilator (HRV) is a ventilation device that helps make your home healthier, cleaner, and more comfortable by continuously replacing stale indoor air with fresh outdoor air. New homes built since 1977 are more airtight, which helps save energy but can make the inside air stale. To complement this airtightness, modern homes use HRVs to distribute fresh air throughout the house.
- **Recovering the heat:** During the heating season, the HRV captures heat from the stale air leaving your house and uses it to preheat the fresh air coming into your house. Similarly, an HRV can reverse this process during the cooling season, removing some of the heat from the incoming air and transferring it to the outgoing air²⁹.

Benefits	Limitations
ERVs: <ul style="list-style-type: none"> • Recover up to 80% of exhaust air energy³⁰. • Maintain balanced indoor humidity and improve comfort³¹. 	Higher initial costs compared to traditional ventilation systems.
HRVs: <ul style="list-style-type: none"> • Prevent excessive moisture buildup in colder climates³². 	Regular maintenance is required, including filter and heat exchanger cleaning ³⁴ .

²⁸ Natural Resources Canada. (2022). *Heat/Energy Recovery Ventilators*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/cooling-and-ventilating-equipment-for-residential-use/heatenergy-recovery-ventilators/16197>

²⁹ Natural Resources Canada. (2022). *Heat/Energy Recovery Ventilators*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/cooling-and-ventilating-equipment-for-residential-use/heatenergy-recovery-ventilators/16197>

³⁰ Natural Resources Canada. (2023). *Heat/Energy Recovery Ventilators*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/cooling-and-ventilating-equipment-for-residential-use/heatenergy-recovery-ventilators/16197>

³¹ Enercare. (2023). *How to Maintain Your ERV or HRV for Optimal Performance*. Retrieved from <https://www.enercare.ca>

³² Natural Resources Canada. (2023). *Heat/Energy Recovery Ventilators*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/cooling-and-ventilating-equipment-for-residential-use/heatenergy-recovery-ventilators/16197>

³⁴ Enercare. (2023). *How to Maintain Your ERV or HRV for Optimal Performance*. Retrieved from <https://www.enercare.ca>

- | | |
|--|--|
| <ul style="list-style-type: none">• Reduce heating and cooling costs by recovering heat from exhaust air³³. | |
|--|--|

Rebate programs

Canada Greener Homes Grant:

- Provides rebates for ventilation system upgrades, including ERVs and HRVs, as part of energy-efficient retrofits³⁵.
- Rebates cover a portion of the cost for installing energy recovery or heat recovery ventilators.

Enbridge Gas Home Efficiency Rebate Plus:

- Offers rebates for ERVs and HRVs when included in larger home energy retrofit projects³⁶.
- Eligibility is contingent on a home energy audit and meeting specific retrofit requirements.

Maintenance

Your ERV needs to be regularly maintained to keep it running efficiently. Homeowners should perform the following tasks:

- Never turn your HRV/ERV off (other than for servicing), it should always be running.
- Arrange for annual servicing by an accredited contractor. If possible, have your furnace and HRV/ERV serviced at the same time. This will reduce the inconvenience and cost of two service visits.
- Clean your unit regularly, including the air filters every 1-3 months
- Consult your owner's manual for detailed instructions³⁷.

³³ HVAC.com. (2023). *Energy Recovery Ventilators vs. Heat Recovery Ventilators*. Retrieved from <https://www.hvac.com/expert-advice/energy-recovery-ventilators-vs-heat-recovery-ventilators/>

³⁵ Todo Canada. (2025). *You Can Now Signup for Ontario's New Energy Efficiency Rebates for Home Renovations*. Retrieved from <https://www.todocanada.ca/you-can-now-signup-for-ontarios-new-energy-efficiency-rebates-for-home-renovations/>

³⁶ Todo Canada. (2025). *You Can Now Signup for Ontario's New Energy Efficiency Rebates for Home Renovations*. Retrieved from <https://www.todocanada.ca/you-can-now-signup-for-ontarios-new-energy-efficiency-rebates-for-home-renovations/>

³⁷ Natural Resources Canada. (2022). *Heat/Energy Recovery Ventilators*. Retrieved from <https://natural-resources.canada.ca/energy-efficiency/products/cooling-and-ventilating-equipment-for-residential-use/heatenergy-recovery-ventilators/16197>

3.3 Smart Thermostats

A smart thermostat is a Wi-Fi-enabled device that allows for precise control of a home's heating and cooling systems. These devices can be programmed to optimize energy use based on occupancy, time of day, or preferences. Smart thermostats operate effectively in standard indoor temperatures (15°C to 30°C) and can adjust heating and cooling systems to maintain desired comfort levels year-round³⁸.

How it works

Smart thermostats use sensors to detect occupancy and automatically adjust temperature settings based on the presence or absence of people in the home. Users can create custom schedules or remotely control their systems via apps, ensuring optimal comfort and efficiency even when away from home³⁹. Additionally, many models offer detailed energy usage reports to help users track and improve energy efficiency.



³⁸ Ward, Lauren. (2024). *Everything to Know About Smart Thermostats*. This Old House. Retrieved from <https://www.thisoldhouse.com/smart-homes/21097136/everything-to-know-about-smart-thermostats>

³⁹ Ayes, Rayn. (2024). *What Are Smart Thermostats and How Do They Work?* Retrieved from <https://www.carrier.com/residential/en/us/products/thermostats/smart-thermostats/what-are-they-how-do-they-work/>

Placement

Select an optimal location on an interior wall away from direct sunlight, drafts, doorways, and windows. The spot should provide consistent temperature reading⁴⁰.

Applications

- Suitable for residential homes and community facilities to optimize HVAC systems.

Performance and operating conditions

- Perform well in homes with Wi-Fi connectivity and modern HVAC systems.
- Depend on the compatibility with heating/cooling systems (e.g., multi-stage systems, heat pumps).
- Indoor temperatures need to remain within HVAC operating limits for consistent performance.



Benefits	Limitations
Reduces heating and cooling costs by up to 15% by optimizing system performance ⁴¹ .	Requires a reliable internet connection for full functionality.
Control your thermostat from anywhere via smartphone apps or voice assistants ⁴² .	May not work with older HVAC systems, requiring upgrades or additional components ⁴³ .
Provides detailed reports on energy usage, helping users identify inefficiencies and potential savings ⁴⁴ .	Some users may find advanced features difficult to set up and fully utilize.
Allows users to program specific settings for different times of the day or week to suit their lifestyle.	

⁴⁰ Enercare (2024). *How Smart Thermostats Work and Placement Tips*. Retrieved from <https://www.enercare.ca/ecobee-smart-home-solutions>

⁴¹ Power Efficiency. (2024). *Pros and Cons of Smart Thermostat*. Retrieved from <https://powerefficiency.com/pros-and-cons-of-smart-thermostat/>

⁴² Power Efficiency. (2024). *Pros and Cons of Smart Thermostat*. Retrieved from <https://powerefficiency.com/pros-and-cons-of-smart-thermostat/>

⁴³ Power Efficiency. (2024). *Pros and Cons of Smart Thermostat*. Retrieved from <https://powerefficiency.com/pros-and-cons-of-smart-thermostat/>

⁴⁴ Power Efficiency. (2024). *Pros and Cons of Smart Thermostat*. Retrieved from <https://powerefficiency.com/pros-and-cons-of-smart-thermostat/>

Rebate Programs

- **Save on Energy Smart Thermostat Rebate:** Up to \$75 for eligible thermostats⁴⁵.

Maintenance

- Dust and debris can accumulate on the thermostat's sensors and screen. Clean the device gently with a microfiber cloth every few months to ensure optimal performance.
- Regularly check for and install firmware updates via the app or thermostat settings to improve functionality and security.
- Ensure the thermostat is connected to Wi-Fi to avoid disruptions in remote control capabilities and energy-saving features.
- For models with backup batteries, replace them annually or as needed to maintain uninterrupted operation⁴⁶.

⁴⁵ Save on Energy. (2025). *Home Renovation Savings Program*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Home-Renovation-Savings>

⁴⁶ Jones, Marcus P.(2023). *Thermostat Maintenance: Frequency and Costs*. Retrieved from <https://smartlivingway.com/thermostat-maintenance-frequency-and-costs/>

4. Ontario's energy efficiency programs and savings opportunities

Ontario's energy efficiency programs offer a transformative pathway for First Nations communities to reduce energy costs, promote environmental sustainability, and enhance energy independence. These initiatives are supported by a \$10.9 billion investment over 12 years to modernize energy systems, encourage conservation, and expand access to energy-saving technologies. Programs like Save on Energy and the Canada Greener Homes Grant provide valuable incentives for upgrading to efficient systems such as heat pumps, energy recovery ventilators (ERVs), and smart thermostats, while reducing reliance on traditional energy sources like diesel⁴⁷. By leveraging these opportunities, First Nations can not only achieve significant cost savings but also advance local energy sovereignty and create community-based economic opportunities.

4.1 Key programs

PROGRAM NAME	DETAILS	MORE INFORMATION
Home Renovation Savings Program	Launching January 28, 2025, this program offers rebates of up to 30% for upgrades like windows, doors, insulation, heat pumps, smart thermostats, rooftop solar panels, and battery storage.	Save on Energy - Home Renovation Savings Program https://www.saveonenergy.ca/homerenovationsavings Home Renovation Savings Program Ontario Enbridge Gas https://www.enbridgegas.com/homerenovationsavings
Peak Perks Program	Aimed at small businesses, this program offers \$75 upon enrollment and \$20 annually for each eligible smart thermostat connected to central air or heat pump systems.	Save on Energy https://www.saveonenergy.ca/
Save on Energy Programs	Existing programs offering incentives for energy-efficient upgrades for low-income households, municipalities, on-reserve communities, and agricultural sectors.	Save on Energy Programs https://www.saveonenergy.ca/
Affordable Energy Act Expansion	Ensures rebates are extended to homeowners using propane and oil for heating, making these	Ontario Government - Affordable Energy Act https://www.ontario.ca/page/manage-energy-costs-your-home

⁴⁷ Natural Resources Canada. (2023). *Canada Greener Homes Grant: Save energy and reduce costs*. Retrieved from <https://www.nrcan.gc.ca/energy-efficiency/homes/canada-greener-homes-grant/23441>

⁴⁸ Save on Energy. (2023). *Home Renovation Savings Programs*. Retrieved from <https://saveonenergy.ca/For-Your-Home/Home-Renovation-Savings>

⁴⁹ Government of Ontario. (2023). *Investing in Ontario's Clean Energy Future*. Retrieved from <https://www.ontario.ca/page/energy-efficiency-programs>

	programs more accessible to First Nations communities.	
Additional Information	Visit the Ontario government's resources for more details:	Manage Energy Costs for Homes Manage Energy Costs for Businesses Ontario's Affordable Energy Future

4.2 Eligible energy upgrades and rebates

UPGRADE	REBATE DETAILS	REFERENCES
Windows and doors	Up to 30% rebate for replacing inefficient windows and doors.	Ontario Home Renovation Savings Program https://www.enbridgegas.com/homerenovationsavings
Insulation and air sealing	Rebates for improving home insulation and sealing to prevent energy loss.	Save on Energy Home Renovation Savings Program https://www.saveonenergy.ca/homerenovationsavings
Heat pumps	Incentives for installing high-efficiency air-source, ground-source, or hybrid heat pumps.	Canada Greener Homes Grant https://www.nrcan.gc.ca/energy-efficiency/homes/canada-greener-homes-grant/23441
Smart thermostats	Financial incentives of up to \$75 for installing Wi-Fi-enabled thermostats.	Peak Perks Program - Save on Energy https://www.saveonenergy.ca/
Solar panels and battery storage	Rebates for rooftop solar panel installations and energy storage systems.	Affordable Energy Act Expansion https://www.ontario.ca/page/manage-energy-costs-your-home

4.3 Benefits for First Nations communities



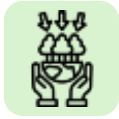
Energy cost reductions: By participating in these programs, households and businesses can significantly lower energy bills and reduce reliance on costly diesel or propane systems.



Increased accessibility: Rebates are now extended to homeowners using propane and oil heating systems.



Economic opportunities: The Home Renovation Savings Program creates job opportunities for local contractors, electricians, and HVAC professionals within First Nations communities.



Environmental impact: Access to solar panels, battery storage, and energy-efficient technologies aligns with First Nations' cultural values of sustainability

4.4 Challenges and solutions in accessing programs

While energy efficiency programs offer transformative opportunities for First Nations communities, accessing these programs can present certain challenges:

- **Eligibility requirements:** Strict eligibility criteria, such as income thresholds or specific project guidelines, can exclude some applicants.
- **Geographic limitations:** Remote or rural communities may face difficulties accessing contractors, services, or materials required to implement upgrades.
- **Application complexities:** Navigating paperwork and technical requirements for funding applications can be time-intensive and overwhelming.

To overcome these barriers, communities are encouraged to:

- **Leverage support from Technical Advisors:** Organizations like the Ontario First Nations Technical Services Corporation (OFNTSC) and Indigenous Clean Energy (ICE) offer guidance to navigate eligibility requirements and simplify application processes.
- **Utilize local resources:** Partner with local contractors, utility providers, and community organizations to develop feasible projects and streamline material acquisition.
- **Applications guidance:** Work with program administrators to organize community-accessible workshops to clarify funding opportunities.

By addressing these barriers, communities can maximize the benefits of energy efficiency programs, ensuring more equitable access and long-term success.

5. Financial resources and support for First Nations energy projects

Access to financial and technical resources is key to supporting First Nations energy initiatives. This section outlines banks, funding programs, and technical partnerships tailored to meet community needs.

5.1 National banks and financial institutions

BANK/INSTITUTION	CATEGORY	WEBSITE	CONTACT INFORMATION
Royal Bank of Canada (RBC)	Indigenous financial services	https://www.rbc.com/indigenous/	1-800-769-2511 (Customer Care)
Toronto-Dominion Bank (TD)	Indigenous banking group	https://www.td.com/ca/en/personal-banking/indigenous	1-866-222-3456
Bank of Montreal (BMO)	Indigenous Partnerships and Services	https://www.bmo.com/main/business/indigenous-banking/	1-877-225-5266
Canadian Imperial Bank of Commerce (CIBC)	Indigenous markets group	https://www.cibc.com/en/business/indigenous-banking.html	1-888-947-9025
Scotiabank	Indigenous Banking Services	https://www.scotiabank.com/indigenous	1-800-472-6842

5.2 Indigenous-specific financial institutions

INSTITUTION	DESCRIPTION	WEBSITE	CONTACT INFORMATION
First Nations Bank of Canada (FNBC)	A Canadian chartered bank focused on Indigenous communities.	https://www.fnbc.ca	Phone: 1-888-454-3622
Aboriginal Financial Institutions (AFIs)	A network providing loans and financial support to Indigenous entrepreneurs.	https://nacca.ca	Contact through website
First Nations Finance Authority (FNFA)	Provides financing for infrastructure and economic development.	https://fnfa.ca	Phone: 1-250-768-5253

5.3 Programs and funds

PROGRAM/FUND	DESCRIPTION	ELIGIBILITY	WEBSITE
Canada Infrastructure Bank (CIB)	Indigenous Infrastructure Initiative for clean energy projects.	Open to First Nations and Métis communities.	https://cib-bic.ca/en/indigenous-community/
Clean Energy for Rural and Remote Communities (CERRC)	Supports renewable energy projects in Indigenous communities to reduce diesel reliance.	First Nations in remote communities.	https://natural-resources.canada.ca/reducingdiesel
Indigenous Services Canada (ISC)	Provides funding for capital and infrastructure projects.	Open to Indigenous communities.	https://www.canada.ca/en/environment-climate-change/services/climate-change/low-carbon-economy-fund/indigenous-leadership.html
Aboriginal Loan Guarantee Program (ALGP)	Supports Indigenous participation in renewable energy and transmission projects by providing loan guarantees for up to 75% of an Indigenous entity's equity investment.	Indigenous communities and businesses with equity stakes in renewable energy projects.	https://www.ofina.on.ca/algp
Smart Renewables and Electrification Pathways (SREPs)	Supports renewable energy and grid modernization projects to enhance the integration of clean energy solutions, reduce greenhouse gas emissions, and improve energy security in Indigenous and remote communities.	Open to Indigenous communities, utilities, and project developers leading renewable energy initiatives.	https://natural-resources.canada.ca/climate-change/green-infrastructure-programs/sreps/23566
Indigenous Community Capital Grants Program (ICGP)	Provides funding for feasibility studies, design, and construction of community infrastructure	Open to First Nations, Métis, and Inuit communities for capital or infrastructure projects.	https://www.ontario.ca/page/indigenous-economic-development-fund

	projects, including those related to energy.		
New Relationship Fund (NRF)	Assists First Nations and Métis communities in building consultation and engagement capacity, which can be applied to energy project planning.	Indigenous communities looking to develop consultation and engagement capacity.	https://www.ontario.ca/page/new-relationship-fund
Indigenous Energy Support Programs (IESP)	Offered by Ontario's Independent Electricity System Operator (IESO), these programs provide funding for energy education, capacity building, and project development support.	Open to First Nations organizations and communities participating in energy projects.	https://www.ieso.ca/en/Sector-Participants/Indigenous-Relations/Support-Programs
First Nations Community Building Retrofit Program	Provides up to \$100,000 in funding and technical support to improve energy efficiency in band-owned facilities.	First Nations communities and organizations managing band-owned facilities.	https://www.daisyenergy.ca/
Indigenous Economic Development Fund (IEDF)	Offers grants and financing to support economic development projects, including energy initiatives, within Indigenous communities.	Indigenous communities and organizations undertaking economic development initiatives.	https://www.ontario.ca/page/indigenous-economic-development-fund

5.4 Provincial programs

ORGANIZATION	DESCRIPTION	ELIGIBILITY	WEBSITE
Ontario's Independent Electricity System Operator (IESO)	Indigenous Energy Support Programs (IESP). Provides technical and financial assistance.	Open to Indigenous organizations.	https://www.ieso.ca/Get-Involved/Indigenous-Relations/Indigenous-Energy-Support-Program/IESP-Overview https://www.ieso.ca/en/Sector-Participants/Indigenous-Relations/Programs-and-Initiatives

5.5 Technical support and partnerships

ORGANIZATION	DESCRIPTION	WEBSITE	CONTACT PAGE
Ontario First Nations Technical Services Corporation (OFNTSC)	Provides project planning, engineering support, and training for First Nations communities.	https://ofntsc.org	https://ofntsc.org/contact-us
First Nations Power Authority (FNPA)	Assists in developing Indigenous-led power projects and partnerships.	https://fnpa.ca	https://fnpa.ca/contact-us
First Nation Power Development Inc. (FNPower)	Supports First Nations participation in the clean energy market.	https://fnpower.ca	N/A
Indigenous Clean Energy (ICE)	Provides funding programs and capacity-building for clean energy projects.	https://indigenoucleanenergy.com	N/A

5.6 Additional resources

RESOURCE	DESCRIPTION	WEBSITE
Environment and Climate Change Canada (ECCC)	Programs for renewable energy under climate initiatives.	https://www.canada.ca/en/environment-climate-change.html

6. Key organizations and resources for First Nations energy and infrastructure projects in Ontario

This section highlights key organizations, consulting firms, and project developers specializing in energy and infrastructure initiatives with First Nations communities in Ontario. These groups provide essential expertise in renewable energy, infrastructure development, and advocacy, enabling communities to achieve energy independence and sustainability.

Each table is categorized by service type, making it easier for communities to quickly find relevant resources, contact details, and services. Use this section as a guide to connect with experienced professionals who can support your energy and infrastructure goals.

6.1 Energy consulting

ORGANIZATION	WEBSITE	CONTACT INFORMATION	SERVICES
Compass Energy Consulting	https://compassenergyconsulting.ca/	Tel.: (647) 812-7320	Renewable energy consulting, risk assessment.
Indigenous Clean Energy (ICE)	https://indigenoucleanenergy.com/	Tel.: (613) 416-9300 ext. 700 Email: info@indigenoucleanenergy.com	Clean energy capacity-building and funding programs.
Minogi	https://minogi.ca/	Tel.: (905) 985-3337 ext. 700 Or 1-800-647-8454 ext. 700	Clean energy consulting, infrastructure development.
Oshkaabewis Engineering and Consulting	https://www.oshkaabewis.ca/	Tel.: (249) 225-8088 Email: info@oshkaabewis.ca	Energy modeling, renewable energy systems design, feasibility studies.
Rise Consulting	https://riseconsultingltd.ca/	info@riseconsultingltd.ca or contact through their webform at: https://riseconsultingltd.ca/contact-us/	<ul style="list-style-type: none"> • Sustainability and ESG strategy development • Guidance on UN initiatives such as UNDRIP, SDGs, and PRI, with a focus on Indigenous inclusion in ESG strategies • Expertise in governance, risk management, regulatory compliance,

			workplace safety, and climate change policy
Tatâga Inc.	https://www.tataga.ca/	Contact through their webform at: https://www.tataga.ca/contact	ESG advisory, economic development, anti-oppression training.

6.2 Engineering and infrastructure

ORGANIZATION	WEBSITE	CONTACT INFORMATION	SERVICES
Crozier Consulting Engineers	https://www.cfcrozier.ca/our-markets/first-nations/	Tel.: (416) 477-3392	Infrastructure engineering, construction management.
First Nations Engineering Services Ltd. (FNESL)	http://www.fnesl.ca/	Tel.: (519) 445-0040	Water systems, wastewater systems, land development.
Neegan Burnside Ltd.	https://www.neeganburnside.com/	Tel.: 1-800-595-9149 Email: info@neeganburnside.com	Feasibility studies, energy audits, community energy plans.
Saulteaux Consulting & Engineering	https://sceinc.ca/	Tel.: 807 274 7114 Email: jmattson@sceinc.ca	Renewable energy integration, project coordination, contract administration.
SOAR Professional Services	https://www.soarps.ca/	Tel.: 416.229.4646 Email: itoso@dillon.ca info@soarps.com	Planning, engineering, environmental science, management consulting.
Nibi Bamijkewin	https://nibibamijkewin.ca/	Tel.: (807) 863-0101 Email: inquiries@nibibamijkewin.ca	Expertise in permitting, water treatment optimization, and forestry-related services

6.3 Clean energy partnerships

ORGANIZATION	WEBSITE	CONTACT INFORMATION	SERVICES
Ontario Power Generation (OPG)	https://www.opg.com/about-us/our-commitments/indigenous-relations/	Tel.: (416) 592-2555	Renewable energy development, hydroelectric projects.
Wataynikaneyap Power	https://www.wataypower.ca/	Tel.: (807) 577-5955 ext. 117 Email: watayinquiries@wataypower.ca Community members of the Project's 24 First Nation owner communities are also invited to call (807)-577-5955 ext. 117 for questions or concerns.	Transmission and distribution systems, renewable energy projects.
Noozhoo Nokiiyan Limited Partnership (NNLP)	https://nnlp.ca/about	Tel.: (905) 985-1661	Infrastructure development partnerships.
Social Energy and Infrastructure	https://www.socialenergy.ca/	Contact through their webform at: https://www.socialenergy.ca/contact	<ul style="list-style-type: none"> • Renewable energy development • Solar energy solutions • Community-focused clean energy initiatives
Creative Fire Consulting	https://creative-fire.com/	Tel.: +1 306-934-3337 Email: hello@creative-fire.com	<ul style="list-style-type: none"> • Sustainability strategy • ESG materiality assessment • ESG goal setting • ESG reporting
The Firelight Group	https://firelight.ca/	Tel.: (778) 851-0264 Email: info@firelight.ca	<ul style="list-style-type: none"> • Research services, environmental

			assessments, Indigenous knowledge studies
Coral Rapids Power	https://coralrapidspower.com	Tel.: (705) 272-1148 Email: info@coralrapidspower.com	<ul style="list-style-type: none"> • First Nations-led hydroelectric development, renewable energy projects, infrastructure partnerships

6.4 Advocacy and policy support

ORGANIZATION	WEBSITE	CONTACT INFORMATION	SERVICES
Ontario Sustainable Energy Association (OSEA)	https://ontario-sea.org/	Tel.: (416) 493-9232 Email: info@ontario-sea.org	Advocacy for community energy, development of sustainable energy projects.
Miikana Consulting	https://miikana.ca/	Tel.: 1-833-497-8423	Indigenous strategy, governance consulting, leadership development.
CREE8ive Advisory	https://cree8iveadvisory.com/	Email: admin@cree8iveadvisory.com Or contact through their webform at https://cree8iveadvisory.com/contact-us	Strategic planning, capacity building, communication consulting.
Williams Consulting and Management services	https://williamsconsulting.ca/	Work: 905 485 1800 Toll-Free: (855) 728-4367 Cell: (587) 284-4029 Fax: (587) 317-7338 Email: andrea@williamsconsulting.ca	Policy reviews, community development, and environmental scanning services