



Energy Conservation and Demand Management Plan
Township of North Frontenac
From: 2024-01-01 to: 2028-12-31

**Energy Conservation and Demand Management Plan
Township of North Frontenac
From: 2024-01-01 to: 2028-12-31**

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1.0 Introduction

1.1 Overview:

The Township of North Frontenac's Energy Conservation and Demand Management Plan provides a brief background and summary of the requirements related to mandatory reporting in accordance with the Electricity Act. Results achieved under the previous plan (2019-2023) as well as reduction targets set by the new plan are summarized. The energy use and greenhouse gas (GHG) emissions from the 2019-2023 reporting period are provided in Appendix A. The 2018 baseline data and proposed energy reduction projects for the 2024-2028 plan can be found in Appendices B and C respectively. Appendix D includes a summary of the facilities, and the energy used (by type) at each.

Accomplishments from the 2019 to 2023 period include:

- Energy consumption was reduced by 10%. Our target reduction was 5%.
- GHG emissions were reduced by 20%.
- Rooftop photovoltaic panels continue to produce reliable annual income.
- Use of fuel oil was reduced from 29% of the total energy used in 2018 to 4 % in 2023.
- Use of propane increased from 41% in 2018 to 62% in 2023.
- Use of electricity remained relatively constant at 30+%.

1.2 Declaration of Commitment:

Council of the Township of North Frontenac will allocate the necessary resources to develop and implement a strategic Energy Conservation and Demand Management Plan that will reduce our energy consumption and related environmental impact and fulfill our regulatory obligations.

1.3 Vision:

North Frontenac will strive to reduce our energy consumption through the wise and efficient use of resources, while maintaining an efficient and effective level of service for our residents. We currently define energy consumption as the electricity and fossil fuel use associated with maintaining our corporate facilities as defined under Regulation 507/18 of the Electricity Act. We also include energy use for streetlights.

1.4 Objectives:

To maintain our current assets and improve the energy efficiency of our facilities and processes where feasible to reduce energy consumption, greenhouse gas emissions, and maintenance costs while improving the reliability of our operations.

The following are the strategic objectives of this energy plan: (1) Demonstrate energy management leadership and commitment within the Corporation and the community, (2) Improve the energy efficiency of our facilities by utilizing best practices to reduce our

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operating costs and energy consumption, (3) Demonstrate sound operating and maintenance practices, and (4) Create a culture of conservation.

2.0 Policy:

The Township of North Frontenac continues to face rising costs; to maintain and repair aging infrastructure, to deliver services to the community and to obtain the necessary energy to power facilities. The implementation and renewal of this comprehensive energy management program will ensure that energy conservation and efficiency is a key consideration in the township facility renewal actions which will reduce corporate GHG emissions and mitigate energy cost increases through decreased energy consumption. Similar to the Township's previous 2019 to 2023 Energy Conservation and Demand Management Plan (ECDMP), this five-year plan is valid from 2024 to 2028, at which time a thorough review process will be required to develop a subsequent five-year plan.

3.0 Report on 2019 to 2023 Results:

3.1 Performance Target:

The Township reports actual energy usage annually for the reporting period. The energy reduction target for our facilities per the previous 2019 to 2023 ECDMP was a 5% decrease from the 2018 baseline.

3.2 Summary of Energy Consumption 2019-2023:

The total annual energy consumption for the years 2019 and 2023 is provided in Appendix A. Staff will continue to report on energy consumption as required before the annual July deadline. In 2023, the total annual energy consumption in municipal facilities was 982,000 ekWh and GHG emissions of 157 tCO₂.

The total annual energy consumption for the baseline year of 2018 for the same municipal facilities was 1,127,000 ekWh and GHG emissions of 199 tCO₂

We are pleased to report the downward trend exceeding the 5% target, with a 10% reduction in Energy and a 20% reduction in GHG emissions, compared to the 2018 baseline.

This reflects well on the conservation efforts proposed and implemented during the last planning period.

3.3 Renewal Energy (Solar) Generation:

In 2013 the Township installed a 10kw rooftop photovoltaic on the Plevna Garage/ Municipal Office.

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Energy directed back to the hydro network includes:

Year	Energy kWh	Income (Annual)
2014	10,372	\$5,695
2015	10,721	\$5,885
2016	11,674	\$6,409
2017*	7,560	\$4,150
2018**	-	-
2019	14,300	\$7,870
2020	9,920	\$5,451
2021	8,900	\$4,891
2022	8,990	\$4,937
2023	8,630	\$4,741

Note: * - production impacted by building renovation.

** - records impacted by meter wiring issue.

4.0 Report on 2024 to 2028 Commitments:

Overall Performance Target:

Our renewed reduction target for the energy intensity of our facilities is 6% between now and 2028. The baseline year for comparison will be 2023. The new reduction target represents an increased commitment, beyond the commitment in the previous ECDMP.

Proposed energy conservation efforts for 2024 – 2028 are included as Appendix C.

5.0 Organizational Understanding:

5.1 Stakeholder Needs:

Internal stakeholders (Council, CAO, staff) need to be able to clearly communicate the corporate commitment to energy efficiency, and to develop the skills and knowledge required to implement energy management practices and measures. External stakeholders (the Province, community citizens and groups) need the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services.

5.2 How We Manage Energy Today:

The management of energy consumption and the energy performance of our facilities are the responsibilities of Finance (cost management), Public Works Department (maintenance), and Department Managers (operations).

5.3 Trends in Energy Consumption:

Staff will continue to report on energy consumption as required by the Ministry of Energy before the annual July deadline. Note – submission of the ECDMP for 2024 has been delayed due to the adoption of a new energy management program (LAS) and other multiple demands. The ECDMP will be placed on the Township’s website and a hardcopy will be available for the public at the Municipal Office.

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5.4 Renewable Energy Utilized or Planned:

The Township of North Frontenac aspires to show leadership in the promotion and development of renewable energy systems that are compatible with our Asset Management and Land Use Planning objectives. As a result, we have identified a considerable number of energy reduction projects / initiatives for the new 2024-2028 plan (see Appendix C).

6.0 Strategic Planning

Links with other Municipal Plans:

As an integral component of the management structure, the energy management plan is coordinated with the municipality's budget planning process, preventative maintenance plans and the overall asset management plan. Energy use, cost reduction and GHG reduction support Council's Strategic Directions to identify efficiencies, protect the environment and manage / mitigate climate change impacts; while delivering efficient, sustainable and inclusive services.

7.0 Structure Planning

Consideration of energy efficiency for all projects:

We will incorporate life cycle cost analysis into the design procedures for all capital projects as well as procurement decisions for facilities, equipment and other municipal assets.

8.0 Resources Planning

8.1 Energy Leader:

The Chief Administrative Officer (CAO) is designated as the Energy Leader with overall responsibility for corporate energy management. All Department Managers will assist the CAO, providing updates on energy saving programs, initiatives and operational changes.

8.2 Energy Team:

All Department Managers and Supervisors will demonstrate leadership for all Township employees in energy conservation objectives. We recognize that technology alone will not achieve our energy conservation and demand management objectives. Simple actions such as turning off lights and electrical equipment, reducing the heating and cooling demand in workplaces, ensuring doors and windows are properly sealed and properly maintaining heating and cooling equipment all contribute to a reduction in energy costs.

8.3 Energy Training:

We will develop and deliver energy training for relevant staff. This training will not be limited to operators and maintainers with "hands-on" involvement with energy consuming equipment but will also include others since they also make energy consumption decisions in their daily work. Training focused on energy use and

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conservation opportunities associated with employee job functions will be utilized whenever possible.

9.0 Procurement Planning

Energy Purchasing:

We tendered the purchase of oil/propane in 2020 to realize cost savings from a competitive procurement process that addresses cost considerations, available energy services, energy quality and reliability, and other performance factors.

The new fuel system includes an electronic means of tracking fuel use by Department, vehicle and driver, to better monitor and manage fuel use.

10.0 Implementation Planning

Building Standards:

We will continue to explore opportunities for the incorporation of energy reduction technologies and methods related to the design of new or renovated municipal buildings, appliances etc.

11.0 Projects Execution

11.1 Municipal Level:

North Frontenac will carry out the required development of business procedures and communication programs and implement them methodically according to the planned time lines within the resource constraints that apply. The administration and implementation of this plan will be the responsibility of the CAO and Senior Management, however, it will also be the responsibility of all Township staff to be aware of their energy use and work towards conservation.

11.2 Asset Level:

We will use Department and facility energy team representatives to facilitate the implementation of facility level business procedures and communication initiatives, including energy performance reporting.

12.0 Review

Energy Plan Review:

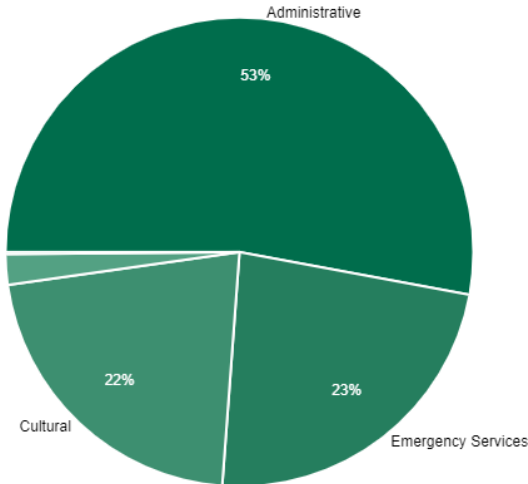
The CAO and Senior Management will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis within our corporate planning process

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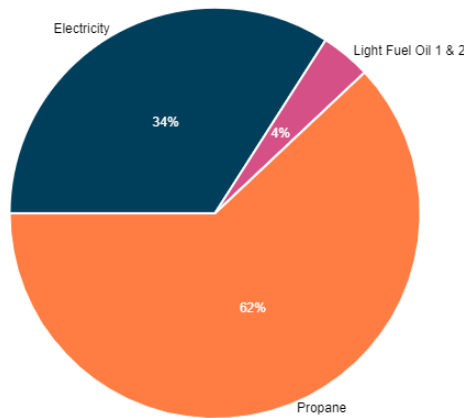
Appendix A – Energy Data 2019-1023

The following represents the Energy (ekwh/yr) use for the Township of North Frontenac from 2019 to 2023 inclusive. Energy Use is provided by facility type and energy type for 2023, and the annual usage for the previous five (5) years.

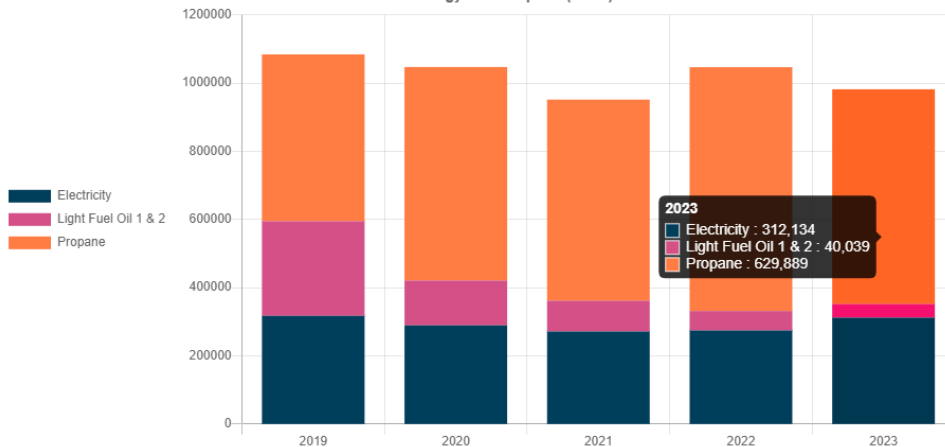
Total Energy Use (eKwh) by Building Type (2023)



Total Energy Use (eKwh) by Energy Type (2023)



Five Year Energy Consumption (ekwh)



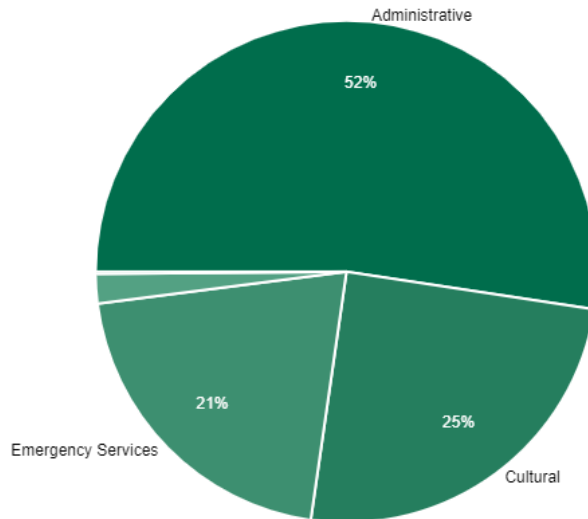
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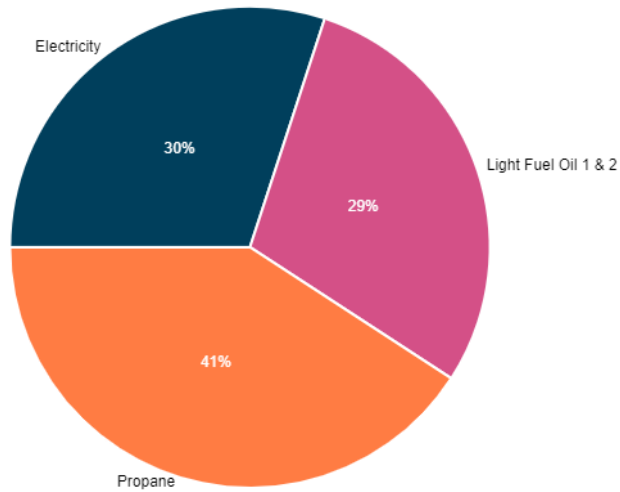
Appendix B – Baseline Data from 2018

The following represents the period from 2014 to 2018, with 2018 being used as the baseline year for comparison purposes.

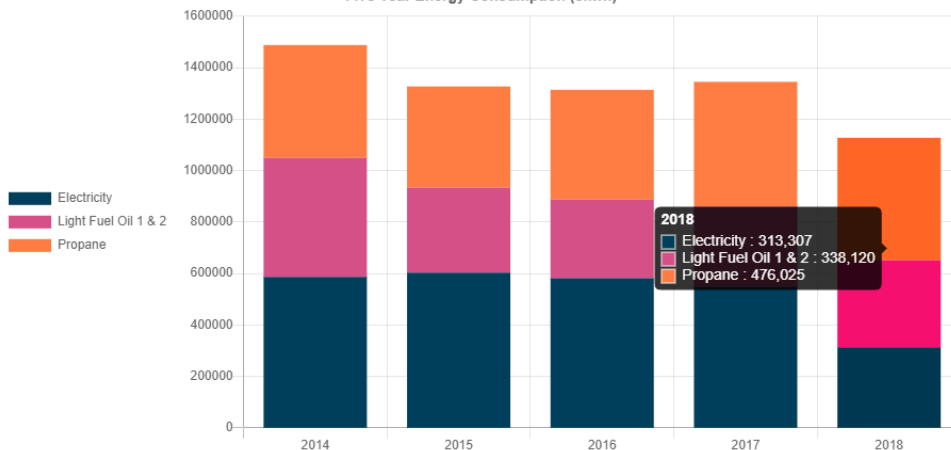
Total Energy Use (eKwh) by Building Type (2018)



Total Energy Use (eKwh) by Energy Type (2018)



Five Year Energy Consumption (ekwh)



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Appendix C - Proposed Energy Reduction Projects 2024 - 2028

Description	Facility	Contact	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Upgrades/repairs to windows, doors, insulation, caulking, exterior work, etc. To address needs identified by the Building Condition Assessment.	Various Facilities	Department Managers	Ongoing	tbd	0	0.00	
Details							
Replace out of service appliances etc. with energy star devices.	All Departments	Department Managers	Ongoing	tbd	0	0.00	
Details							
Consider use of cold climate heat pumps, when existing heating / cooling source requires replacement	Facilities	Appropriate Department Manager	Ongoing	tbd			
Details							
Continued transition to LED lighting with photocel switching	Facilities	Appropriate Department Manager	Ongoing	tbd			

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Details							
Support EV charging station initiatives	-	Manager of Community Development	Ongoing	tbd			
Details							
Assess potential use of EV for light duty vehicles when scheduled for replacement	Fleet	Appropriate Department Manager	Ongoing	tbd			
Details							
Consider use of battery powered maintenance tools when scheduled for replacement ie chain saws, lawn mowers etc	-	Appropriate Department Head	Ongoing	tbd			

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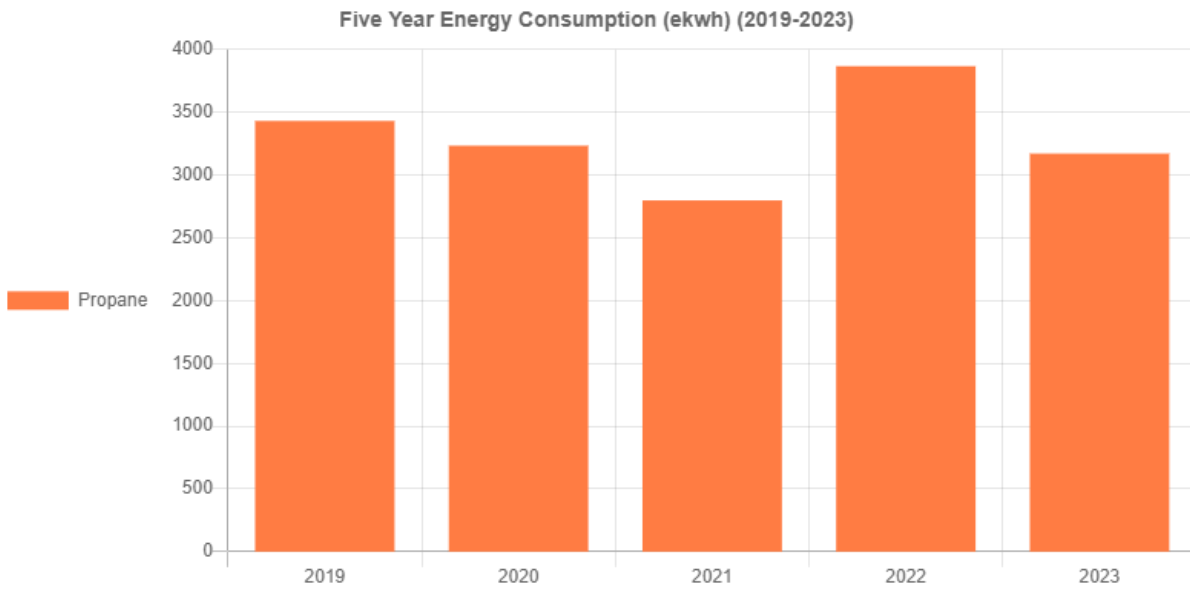
Appendix D - North Frontenac facilities / Operations summary, including streetlights

506 Waste Site 3444 Road 506 Cloyne ON K0H 1B0

Shelter

5 square meter floor space

782 Annual Hours of Operation



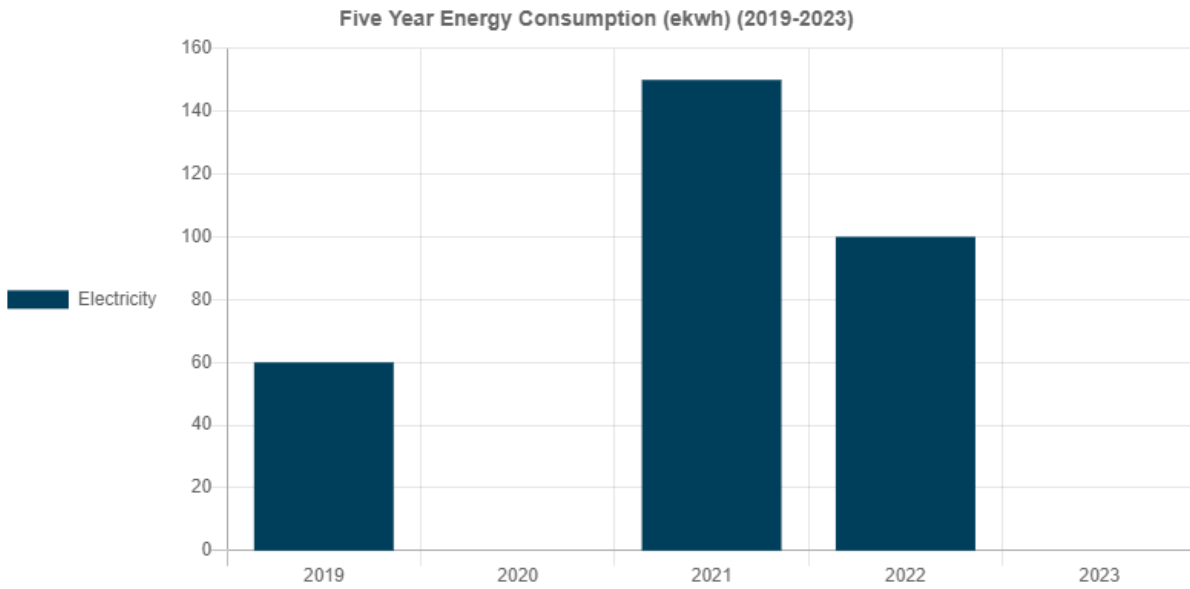
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Barrie Ball Park 14453 Hwy 41 Cloyne ON K0H 1K0

Barrie Ball Park/Recreation

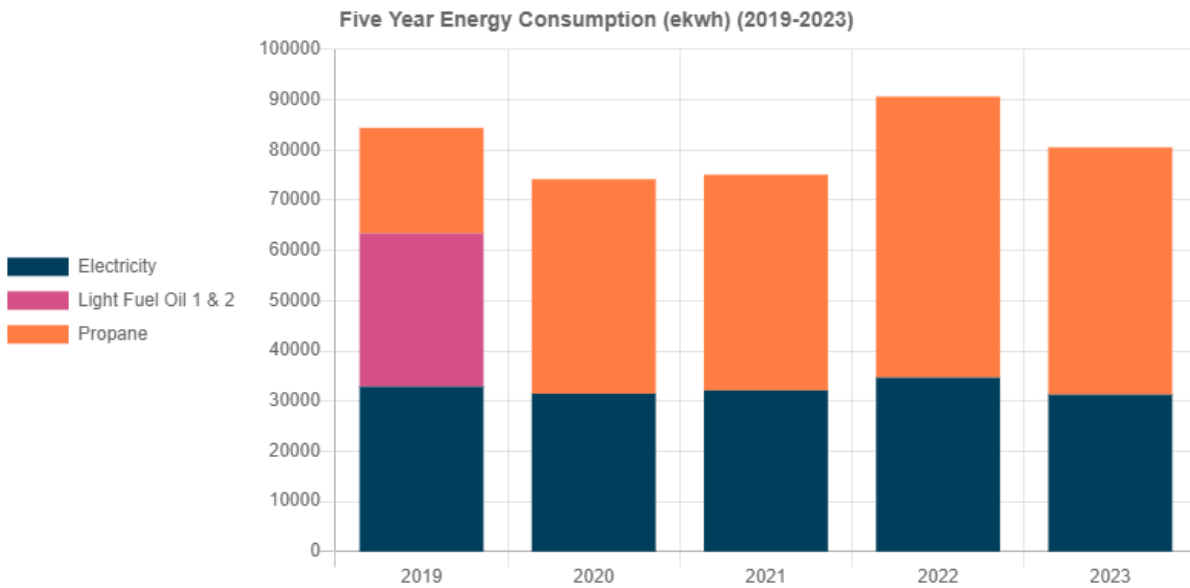
0 square meter floor space

8760 Annual Hours of Operation



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Barrie Hall/Library/Office HALL 14225 Hwy 41,
LIBRARY 1011 LITTLE POND ROAD Cloyne ON K0H 1K0
Community Hall/ Office/ Library
562 square meter floor space
2502 Annual Hours of Operation



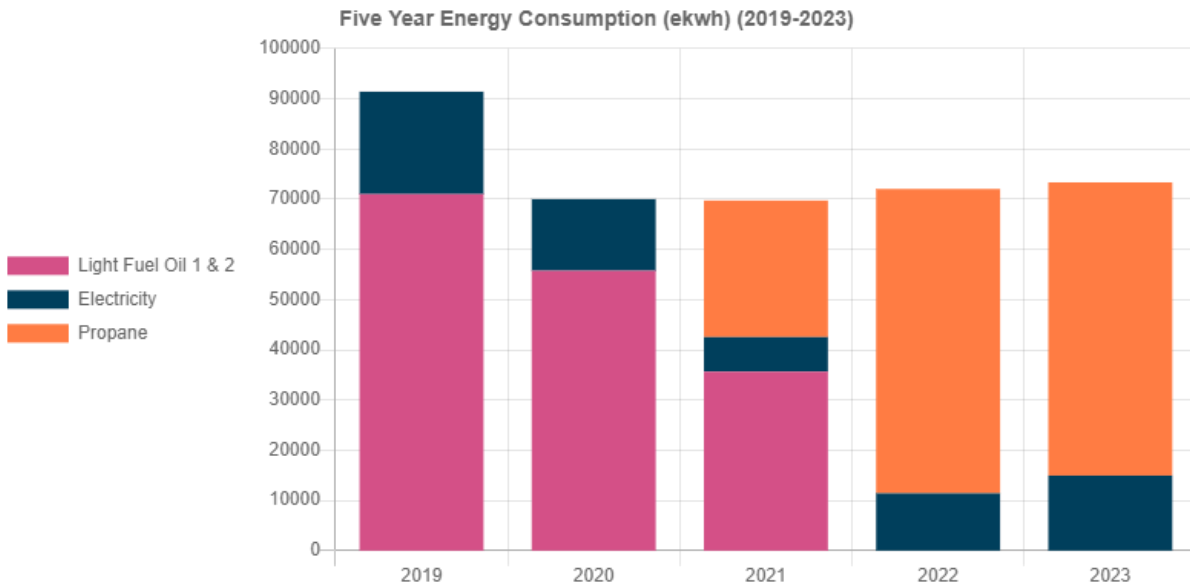
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Clar-Mill Hall/Plevna Rink 6598 Buckshot Road Plevna ON K0H 2M0

Community Hall / Rink and Change Room

1300 square meter floor space

1772 Annual Hours of Operation



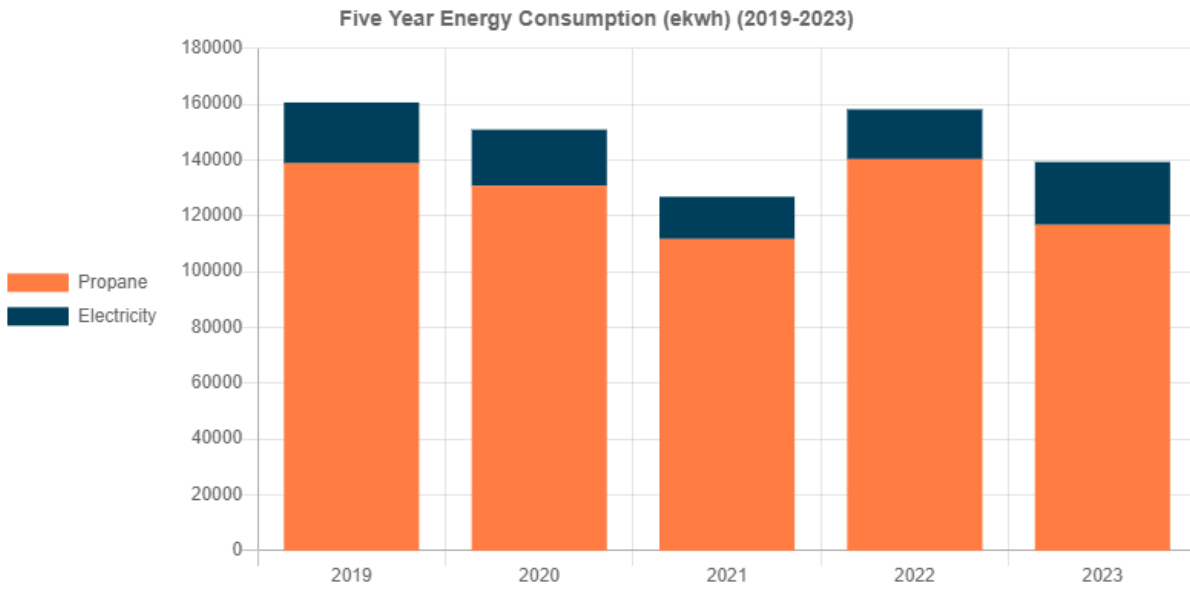
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Barrie Garage 1272 Hwy 506 Cloyne ON K0H 1K0

Garage

355 square meter floor space

2502 Annual Hours of Operation

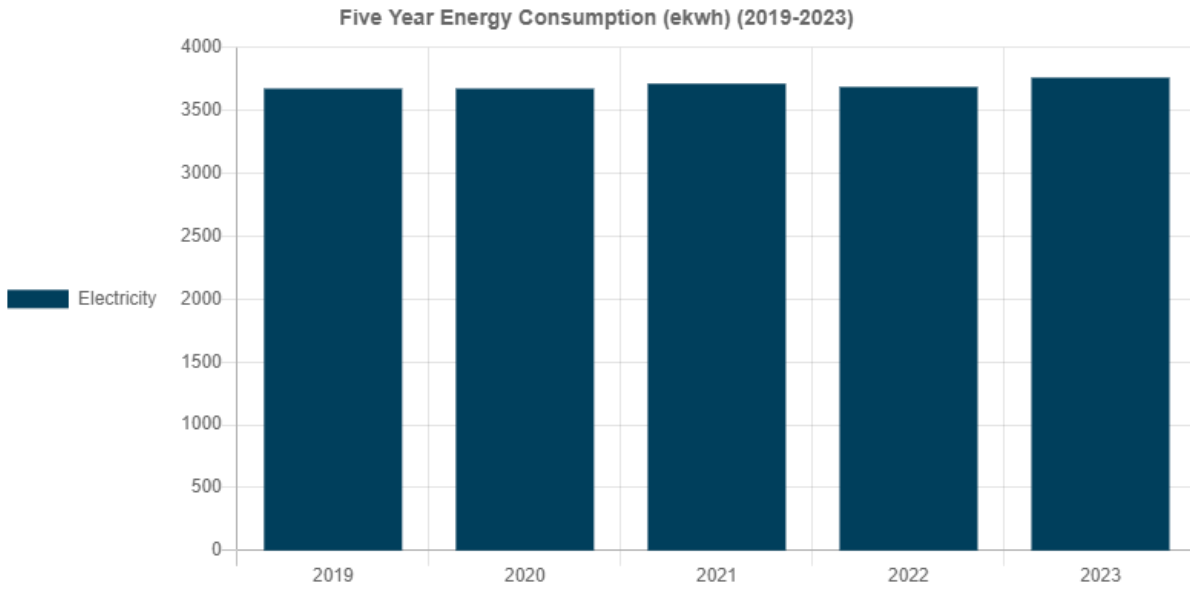


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Street Lights Cloyne

1 square meter floor space

3650 Annual Hours of Operation



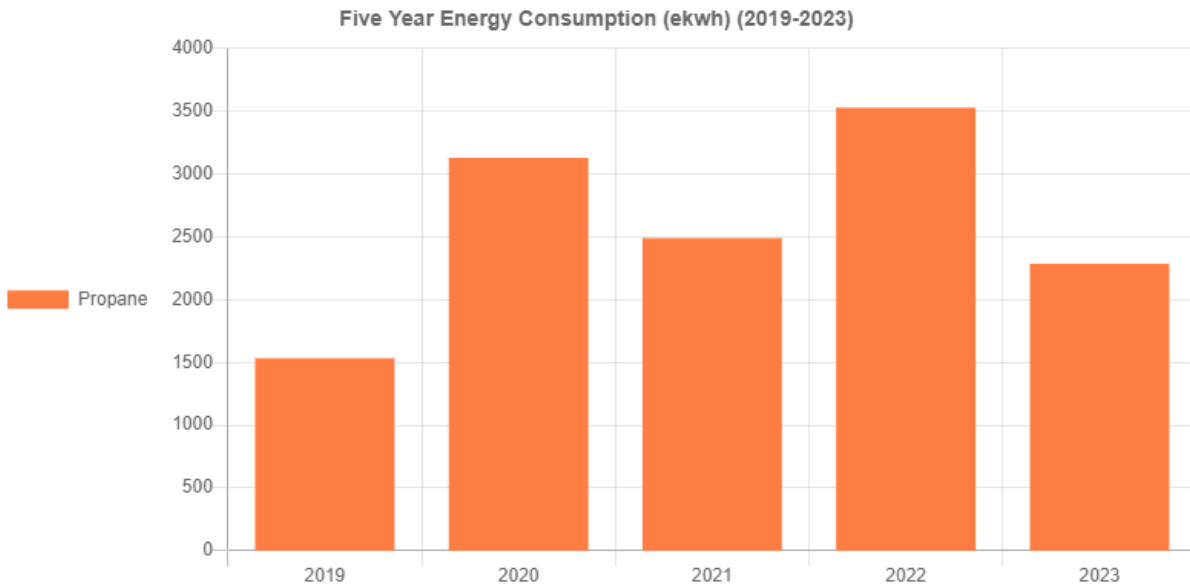
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Cloyne Waste Site Building 101 Skootamatta Lake Road Cloyne ON K0H 1K0

Shelter

5 square meter floor space

677 Annual Hours of Operation



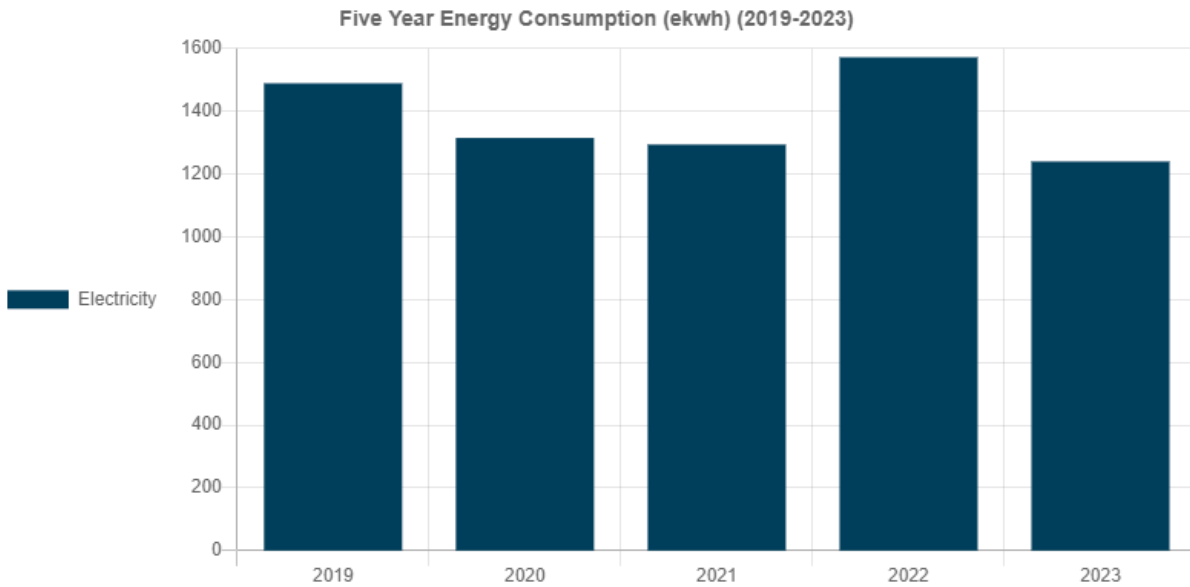
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Communications Tower/ Shelter RR 1 Ompah ON K0H 2J0

Tower/ Shelter

5 square meter floor space

8760 Annual Hours of Operation



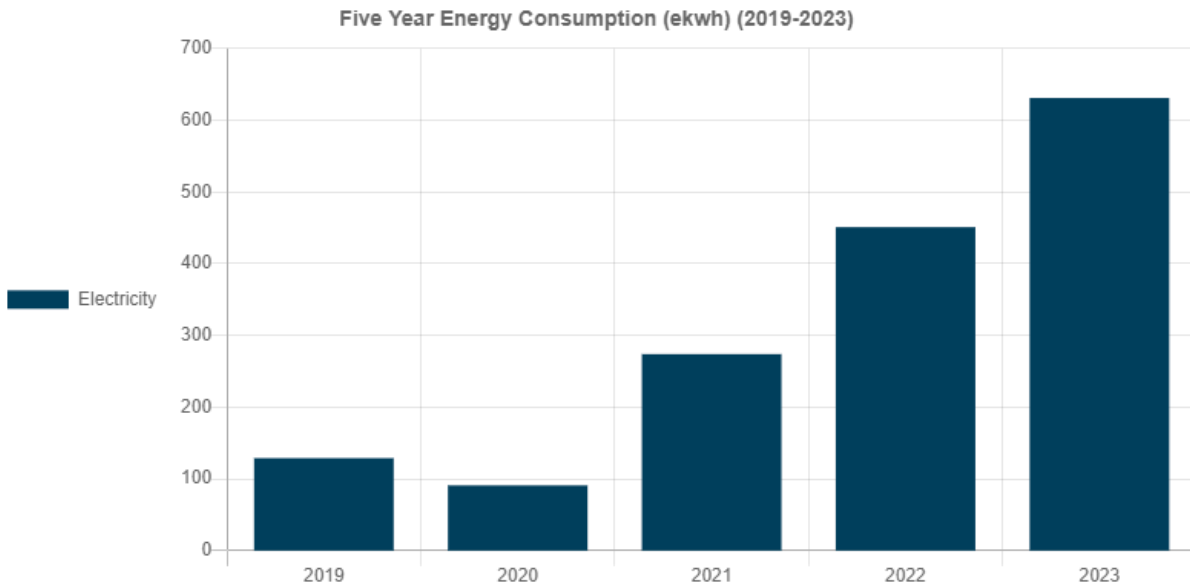
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Dark Sky Preserve 5816 Hwy 506 Plevna ON K0H 2M0

Star Gazing Pad

0 square meter floor space

3650 Annual Hours of Operation



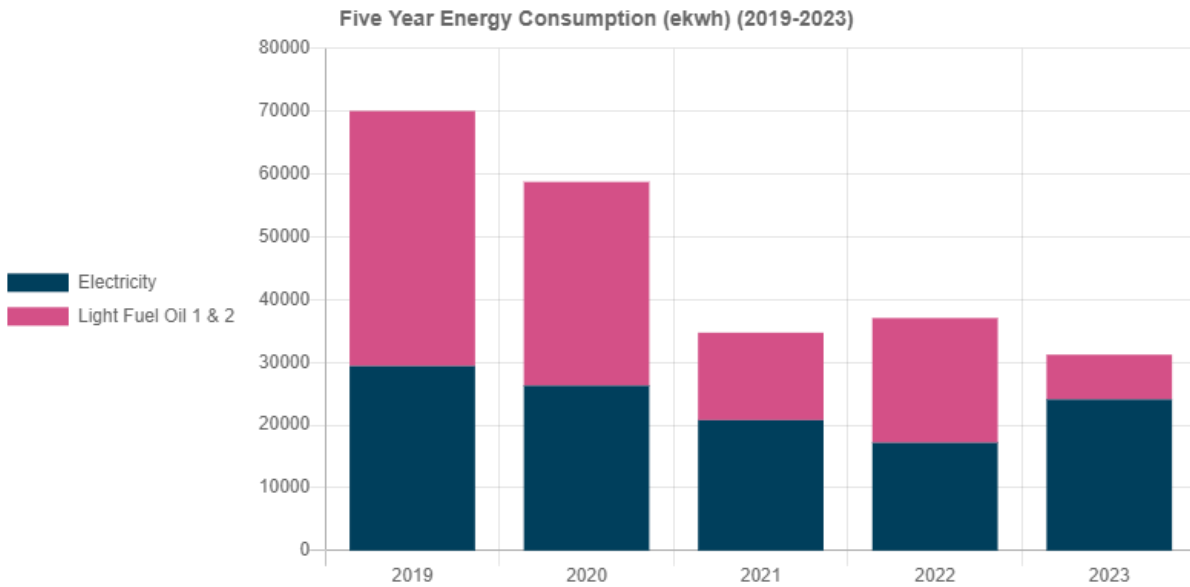
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Harlowe Hall 1047 Gull Lake Road Harlowe ON K0H 1B0

Community Hall

409 square meter floor space

625 Annual Hours of Operation



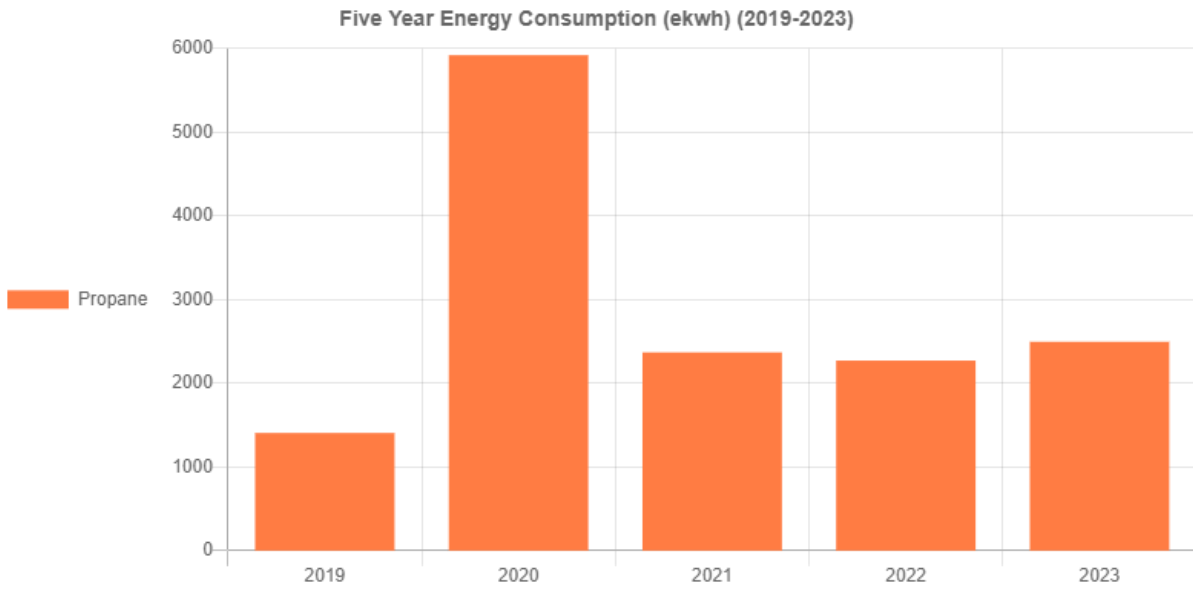
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Kashwakamak Waste Site 1749 Kashwakamak Lake Road Harlowe ON K0H 1B0

Shelter

5 square meter floor space

208 Annual Hours of Operation



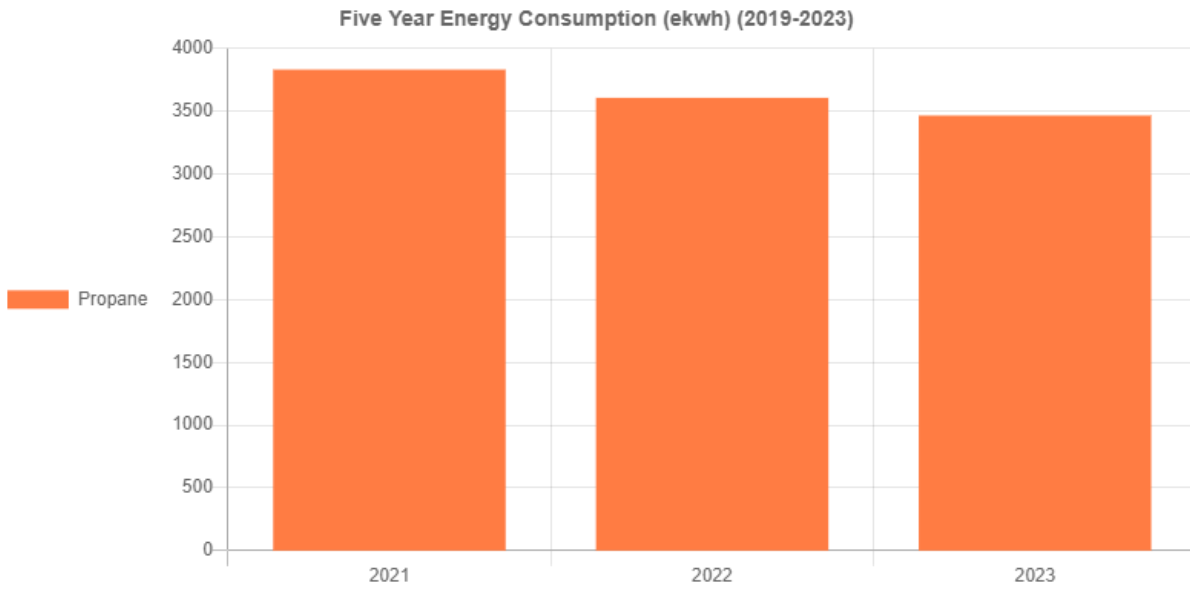
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Mississippi Waste Site 1177 Shiner Road Mississippi Sta ON K0H 2R0

Shelter

5 square meter floor space

417 Annual Hours of Operation



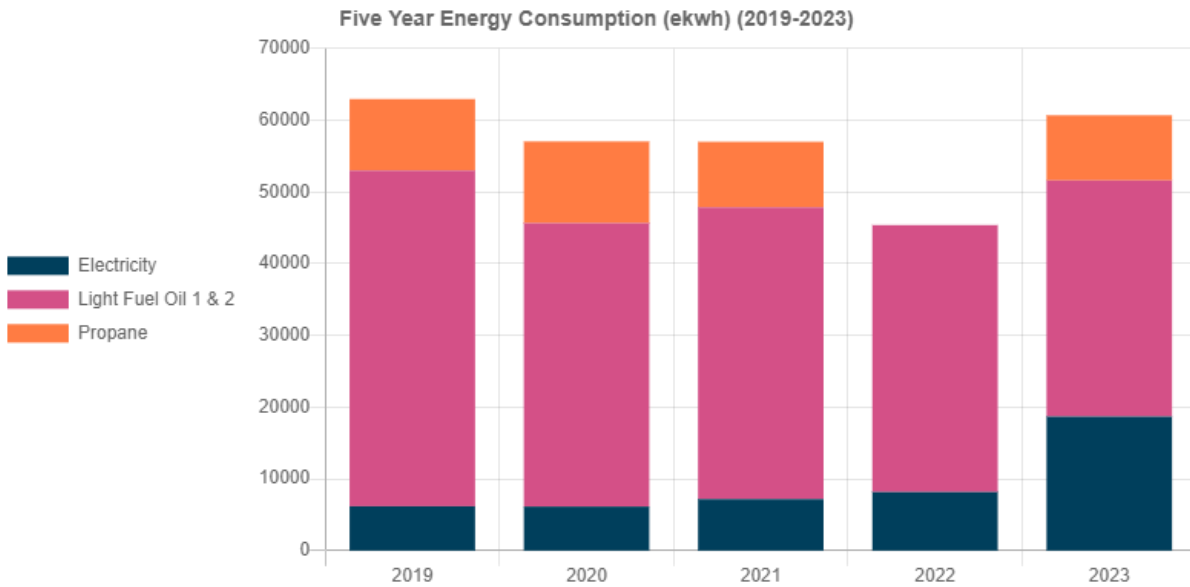
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Old MNR Office/ Library / Garage 6638 Buckshot Lake Road Plevna ON K0H 2M0

Office / Library / Garage

411 square meter floor space

729 Annual Hours of Operation



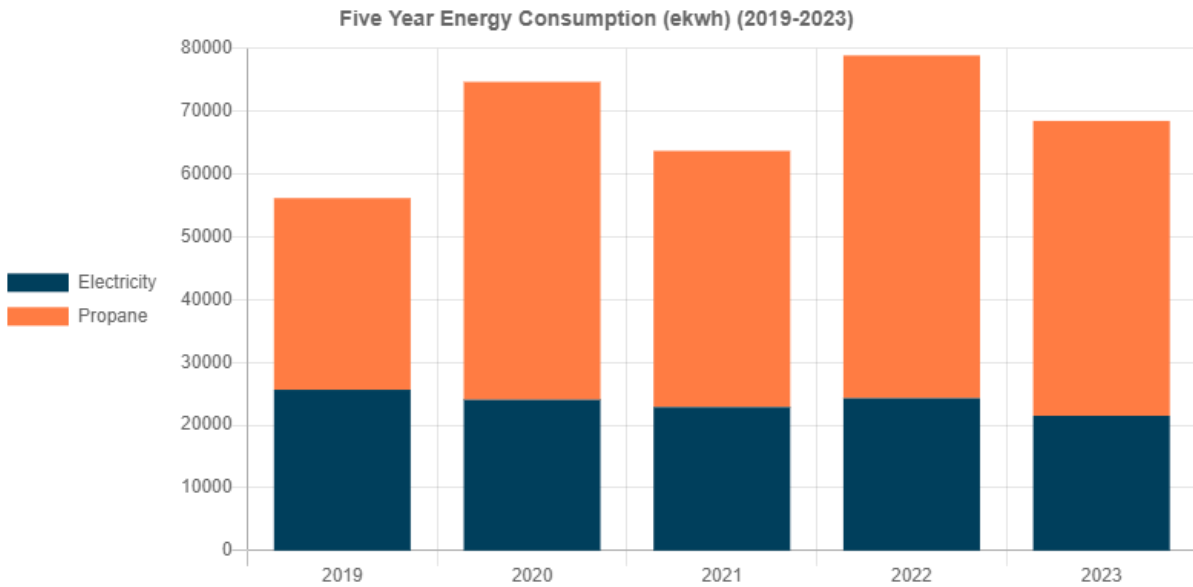
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Ompah Fire Hall/ Community Center/ Library 10200 Hwy 509 Ompah ON K0H 2J0

Ompah Fire Hall/ Community Center/ Library

320 square meter floor space

1094 Annual Hours of Operation



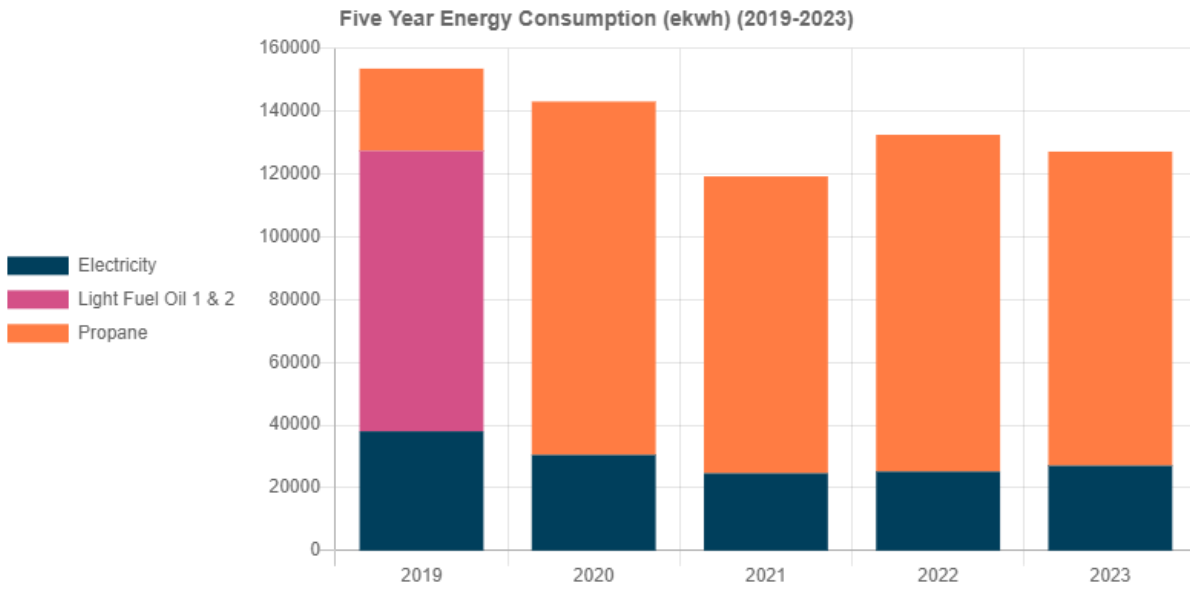
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Ompah Garage 11586 Hwy 509 Ompah ON K0H 2J0

Garage

551 square meter floor space

2919 Annual Hours of Operation



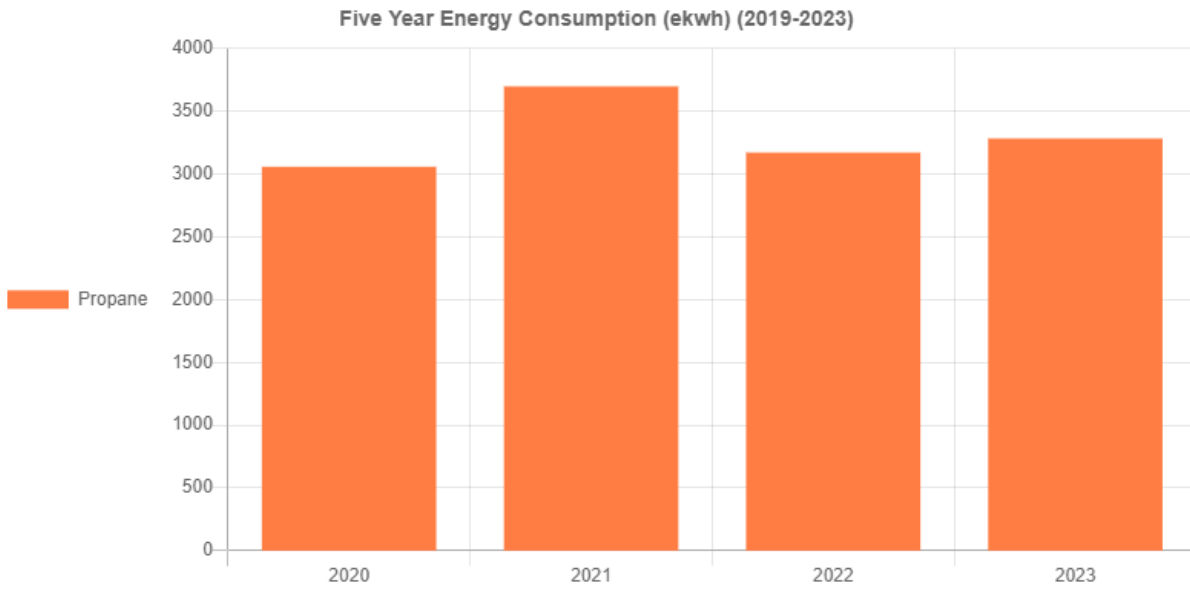
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Ompah Waste Site 10458 Road 509 Ompah ON K0H 2J0

Shelter

5 square meter floor space

208 Annual Hours of Operation



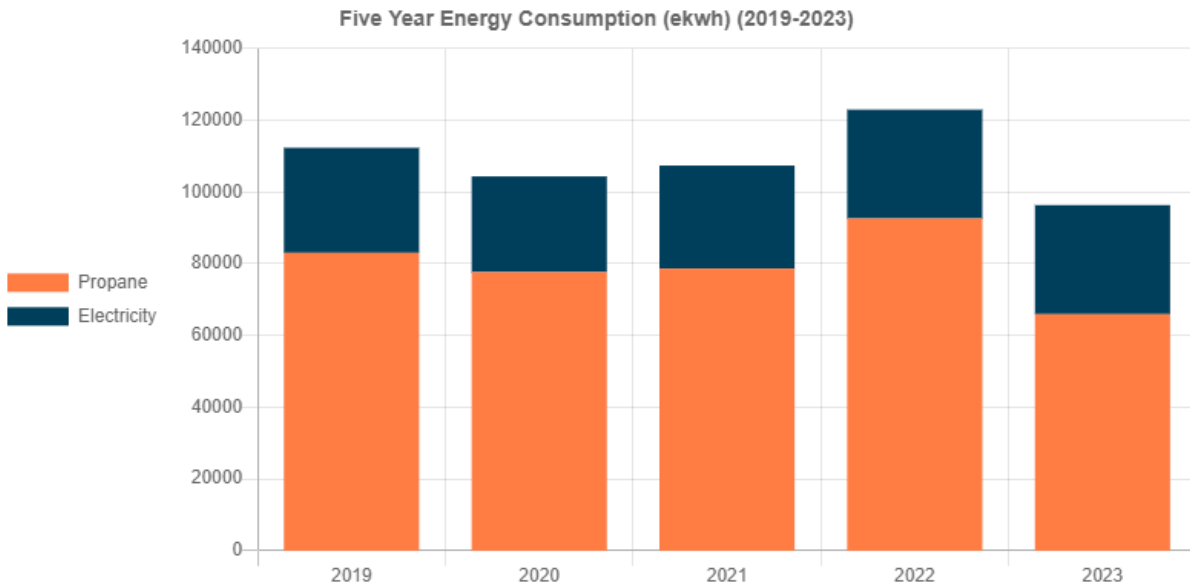
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Plevna Fire Hall 6648B Hwy 506 Plevna ON K0H 2M0

Fire Hall

484 square meter floor space

260 Annual Hours of Operation



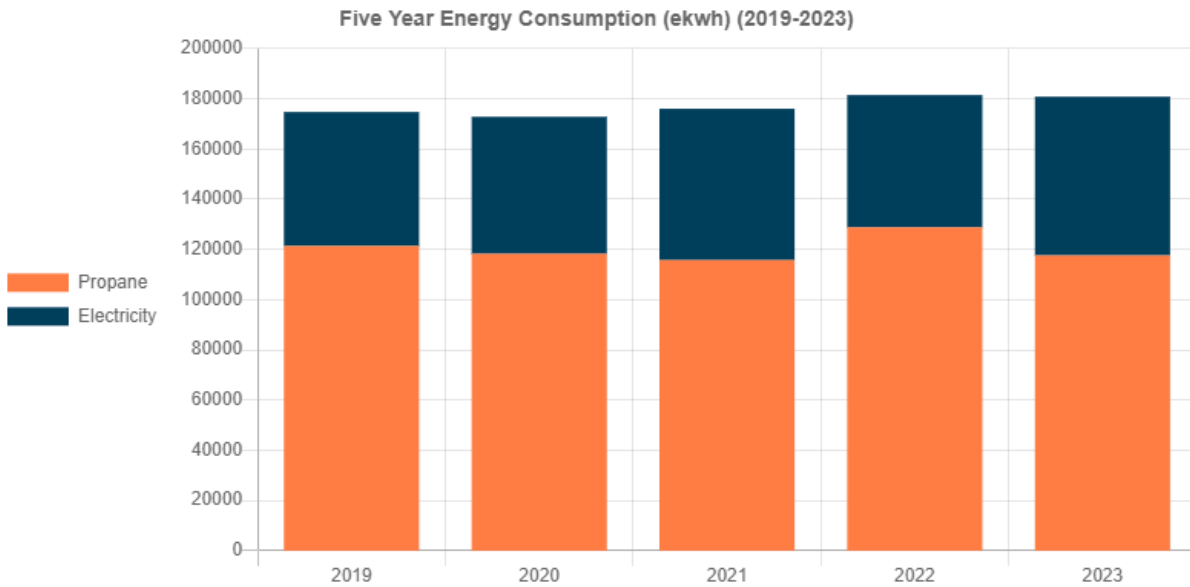
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Plevna Garage/ Municipal Office 6648 Hwy 506 Plevna ON K0H 2M0

Plevna Garage/ Municipal Office

864 square meter floor space

2085 Annual Hours of Operation



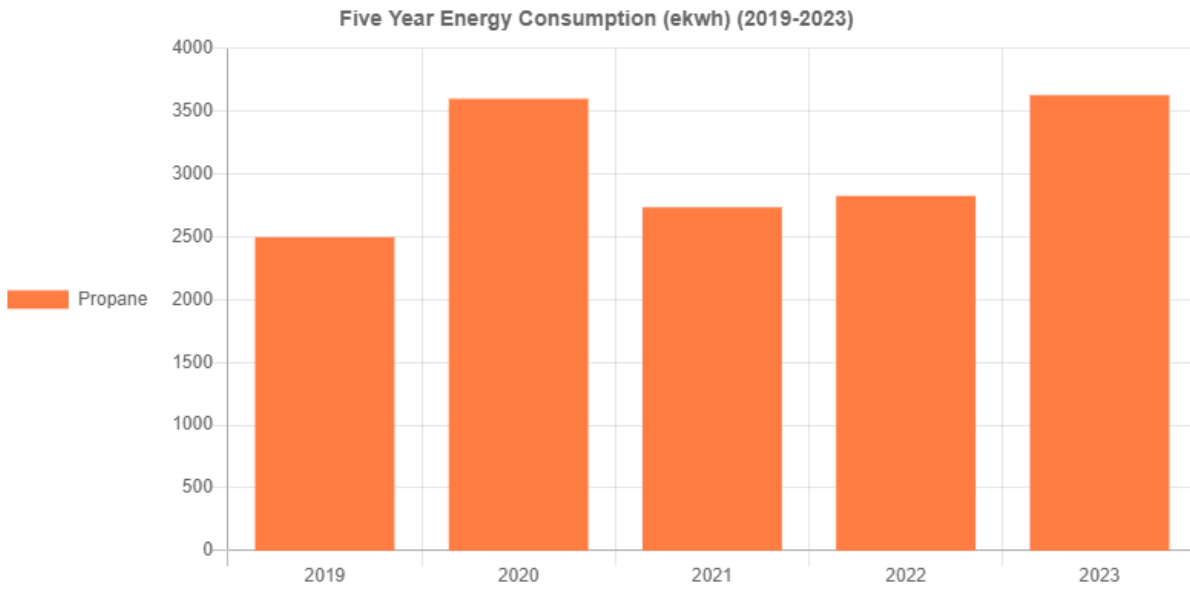
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Plevna Waste Site 6476 Buckshot Lake Road Plevna ON K0H 2M0

Shelter

5 square meter floor space

938 Annual Hours of Operation



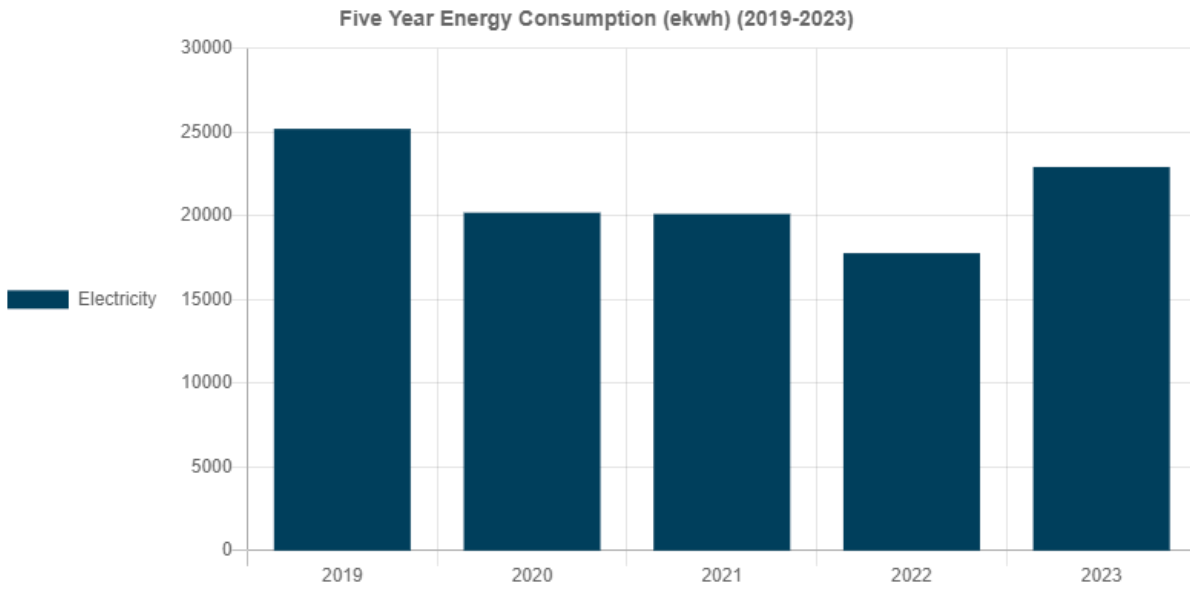
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Snow Road Community Hall 14073 Hwy 509 Snow Road ON K0H 2R0

Community Hall

107 square meter floor space

312 Annual Hours of Operation



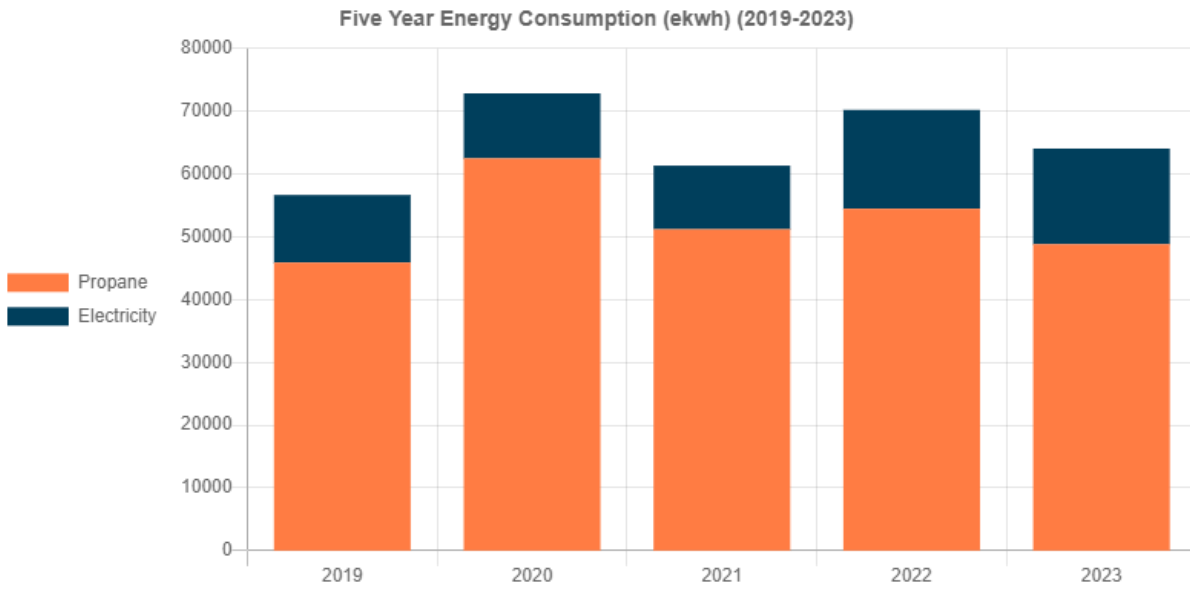
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Snow Road Fire Hall 14105 Hwy 509 Snow Road ON K0H 2R0

Fire Hall

313 square meter floor space

1459 Annual Hours of Operation



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Snow Road Street Lights	10 concession * lot 11	Snow Road ON	K0H 2R0
Tappins Bay Lights	RB Concession * lot 41	Plevna ON	K0H 1K0
Shabomeka Access Lights	12 Concession* lot 23	Plevna ON	K0H 1K0
Plevna Street Lights	NER Concession * lot 40	Plevna ON	K0H 2M0
Ompah Street Lights	3 Concession * lot 29	Ompah ON	K0H 2J0
Mississippi Street Lights	10 Concession * lot 7	Mississippi ON	K0H 2R0
Cloyne Street Lights	RB Concession *lot 15	Cloyne ON	K0H 1K0
Ardoch Street Lights	NER Consession * lot 40	Ardoch ON	K0H 1C0
Fernleigh Street Lights	11 Concession * lot 26	Fernleigh ON	K0H 1K0
Harlowe Street Lights	2 Concession *lot 21	Harlowe ON	K0H 1B0
Harlowe at 41 Street Light	8 Concession lot 31,	41 & Harlowe Rd	K0H 1K0

Street Lights (typical for all installations – usage ranges from 600 to 5500 ekwh depending on the number of lights)

1 square meter floor space

3650 Annual Hours of Operation

