

November 4, 2021

Report To: Travis Rob

From: Abdullahi Shehu, Interim Asset Management Coordinator

## **RE: Annual Energy Consumption Report**

---

### **Background:**

The Town of Fort Frances has been providing energy reports in compliance with O. Reg. 397/11 since the first filing date of July 1st, 2013. However, the Green Energy Act of 2009 was repealed in 2018, leading to the annulment of O.Reg. 397/11. Part II.3 Conservation and Energy Efficiency was added to the Electricity Act of 1998, and O.Reg. 507/18: Broader Public Sector: Energy Reporting and Demand Management Plans was created to replace O.Reg. 397/11.

All broader public sector (BPS) organizations (including municipalities, schools, and hospitals) are mandated to disclose their energy consumption and greenhouse gas (GHG) emissions yearly under O.Reg. 507/18. These organizations must also develop and implement a Conservation and Demand Management (CDM) plans that are revised every five years to fulfill the terms of the regulation. In 2020 the Town of Fort Frances completed its Energy Reporting and Conservation and Demand Management Plans.

### **Upcoming Regulation Milestones:**

The Town of Fort Frances is committed to reporting yearly energy consumption and greenhouse gas (GHG) under the Electricity Act, 1998 (Ontario Regulation 507/18). Our objective is to continue reducing GHG emissions to positively impact our environment. The Town also continues to improve on its Energy Conservation and Demand Management Plan in a manner that is consistent with the requirements of the provincial regulation.

### **Analysis:**

This report contains an overview of electrical and natural gas energy use and solar energy generation at various Town of Fort Frances facilities for the 2020 year.

### **Electrical**

The electricity usage for each year from 2017-2020, as well as the baseline year of 2011, is detailed in Spreadsheet #1 attached to this report. A column under the 2020-year data highlights the difference in consumption between the reporting year and the baseline year (2011).

The USEPA GHG Equivalencies Calculator was utilized to estimate GHG emissions from electrical energy consumption. Electricity use in 2020 accounts for approximately 3831 metric tons of carbon dioxide equivalent of emissions. The resulting value is equivalent to 461 homes energy use for a year. It is worth noting that electrical energy consumption was at an all-time low since the first reporting year (2013).

### **Natural Gas**

Spreadsheet #2 attached to this report shows natural gas use in each of the Towns' facilities for each year from 2017-2020, including the baseline year of 2011. The 2019 merger of Union Gas and Enbridge resulted in a new set of available consumption estimates that do not include heating degree day (HDD) figures. In this report, HDD data from the Fort Frances airport weather station with ID number CTAG (71962) was used to generate HDD billing values with a base temperature of 18 degree Celsius.

The USEPA GHG Equivalencies Calculator was utilized to estimate GHG emissions from energy consumption using natural gas at the Towns' facilities. Natural gas use in 2020 accounts for approximately 800 metric tons of carbon dioxide equivalent in emissions. This resulting value is equivalent to 97 homes energy use for a year.

## **Solar**

The solar energy generated by the Town of Fort Frances is detailed in Spreadsheet #3, which is attached to this report. Although revenues for the year 2020 increased from those reported in 2019, they are below the annual average. The Town will continue to profit from this 20-year deal, which pays \$0.80 per kilowatt-hour generated until 2032. Although the Ministry of Energy does not mandate an annual report on solar generation, the data has historically been included in the annual report to Council.

Utilizing the USEPA GHG Equivalencies Calculator. Electricity generation from the solar system accounts for approximately 24.4 metric tons of avoided carbon dioxide equivalent emission. This is equivalent to 3 homes' energy use for a year.

## **Summary of Additional Energy Initiatives:**

The Town of Fort Frances continues to seek ways to avoid emissions and increase energy efficiency at all its facilities via capital projects or operational procedures. The Memorial Sports Complex (MSC) consumes the most energy among the Town's facilities. Steps were taken in 2020 to plan, procure and seek financing for the following upgrades at the MSC:

- Replacement of rooftop air handling unit (AHU)
- New Furnace and heat recovery ventilation (HRV) unit installation
- Roof replacement
- Energy recycling dehumidifier (DRY-O-TRON), duct heater replacement
- LED lighting retrofit

## **Conclusion and Recommendations:**

The COVID-19 pandemic forced the Town of Fort Frances to close some of its facilities for most of 2020, only allowing limited access to employees. Although most buildings were barely occupied or vacant, energy consumption was still required. However, there was a decrease in electrical energy consumption in 2020 which resulted in a five-year low. Reductions were noted at multiple facilities however, the most significant reductions occurred at the MSC, daycare (facility sold, 2020), and sewage treatment plant.

In 2020, electricity consumption demand reduced by 998,167 kWh's from all facilities compared to values from 2019. Natural gas consumption also trended downwards in 2020, dropping below the average (441,298 m<sup>3</sup>) consumption between 2011 and 2019. The drop in energy need is most likely due to the Covid-19 pandemic and milder winter temperatures across the year. However, the library in town has seen its gas consumption double in 2019 and 2020, compared to recent preceding years. The library is in discussion with Enbridge to seek root cause of the issue.

The Towns' solar power systems show an uptrend in kWh's generated from the system compared to the all-time low in 2019. After nine years of operation, the program has generated \$359,170.41 with an average annual return of \$39,907.82. Additionally, with some of the pandemic restrictions lifted earlier in 2021, work commenced to upgrade various aspects of the MSC with more energy-efficient materials

and equipment. The project is scheduled to continue with the planned upgrades up until March 31<sup>st</sup>, 2025.

It is the recommendation of the Administration that:

1. The annual energy consumption report be made available to the public per the Towns' Energy Conservation and Demand Management Plan.

Respectfully Submitted



Abdullahi Shehu

H:\Energy Management\Energy Monitoring\Data\ECDM Plan Data\Reports To Council\2021 Report\ECDM Annual Energy Consumption - Report to Council 2021.docx