

REPORT

REPORT TO: Chair and Members of the Planning, Public Works & Transportation Committee

REPORT FROM: Michael Dean, Senior Sustainability Planner & Energy Coordinator

DATE: August 10, 2018

REPORT NO.: PLS-2018-0067

RE: 2018 Green Energy Act Submission (2016 Data)

RECOMMENDATION:

THAT Report No. PLS-2018-0067, dated August 10th, 2018, regarding the Town's annual Green Energy Act submission, be received for information.

BACKGROUND:

Per Regulation 397/11 of the Green Energy Act, the Town is required to submit energy use and greenhouse gas emission information for its facilities. This must occur each year, with the data submitted by July 1st. This year, the Town reported on its 2016 energy consumption. Through report No. PDS-2015-0031, Council authorized staff to make such Green Energy Act submissions without prior Council approval. This approach recognizes the fact that the submission is an annual legislated requirement and an operational matter.

COMMENTS:

1. Green Energy Act Submission

1.1 Submission Requirements

Under Ontario Regulation 397/11 of the Green Energy Act, the Town must complete and submit a prescribed energy consumption and greenhouse gas emissions template indicating energy use for prescribed Town facilities. As shown in Appendix 1 to this report, the 2018 submission covers energy use in 2016. It reflects any changes in Town

facilities that occurred in 2016, including any expansions, new openings and/or closings (as applicable).

For each Town facility, the required information includes:

- Address;
- Type of operation (e.g. administrative offices, community centres, indoor ice rinks, libraries, fire stations);
- Total floor area;
- Operating hours;
- Type of energy purchased (e.g. electricity, gas);
- Total amount of energy purchased by type;
- Total greenhouse gas emissions; and
- Energy intensity (i.e. energy use per area of facility).

Information contained in the prescribed template is:

- Submitted to the Minister of Energy;
- Published on the Town's website;
- Published on the Town's Intranet (HUB); and
- Made available to the public in printed form at the Town Hall.

1.2 Context and Trends

In 2016, the prescribed Town facilities used a total of 7,629,230 kilowatt-hours (kWh) of electricity and 813,554 cubic meters (m³) of natural gas.

Based on average Ontario household electricity use (Statistics Canada), the Town's 2016 electricity use is equivalent to that of about 916 households.¹

Based on average Ontario household natural gas use (Statistics Canada), the Town's 2016 gas use is equivalent to that of about 326 households.²

In order to see how 2016 compares to previous reporting years, Figure 1 summarizes the total electricity and natural gas consumption, the total facility square footage, and the electricity and natural gas consumption per square foot of the Town's facilities between 2011 and 2016.

¹ Statistics Canada (Household energy use, by fuel type and by province, 2011 - Average energy use):
<http://www.statcan.gc.ca/pub/11-526-s/2013002/t004-eng.htm>

² Statistics Canada (Household energy use, by fuel type and by province, 2011 - Average energy use):
<http://www.statcan.gc.ca/pub/11-526-s/2013002/t004-eng.htm>

Figure 1: Total Electricity and Natural Gas Consumption, Facility Square Footage, and Electricity and Natural Gas Consumption per Square Foot (2011-2016)

Year	2011	2012	2013	2014	2015	2016
Total electricity consumption (kWh)	5,625,077	5,291,083	6,523,468	6,369,156	7,032,595	7,629,230
Total natural gas consumption (m³)	679,065	631,061	629,085	838,326	832,051	813,554
Total Square Footage (ft²)	341,907	341,907	424,579	424,579	502,266	502,266
Electricity consumption per square foot (kWh/ft²)	16.45	15.48	15.36	15.00	14.00	15.19
Gas consumption per square foot (m³/ft²)	1.99	1.85	1.48	1.97	1.66	1.62

1.2 Electricity Consumption

The Town's total electricity consumption has generally followed an upward trend since 2011, as a result of the expansion of facilities and operations as seen in figure 2. While total floor space did not increase between 2015 and 2016, 2016 was the first full year of operation for the expanded Acton Arena and the Robert C. Austin Public Works Operations Centre. During this time, the increase in electricity consumption resulting from those expansions was partially offset by decreases elsewhere, including a 4.4% reduction in electricity consumption at the Mold-Masters SportsPlex. The change in total annual electricity consumption per facility between 2015 and 2016 is shown in Figure 3 below.

Electricity consumption per square foot increased by 8% in 2016 to 15.19 kWh/ft², up from 14 kWh/ft² in 2015. This increase was largely the result of the first full year of operations at the new Public Works Central Yard and the expanded Acton Arena.

Figure 2: Electricity Consumption 2011-2016

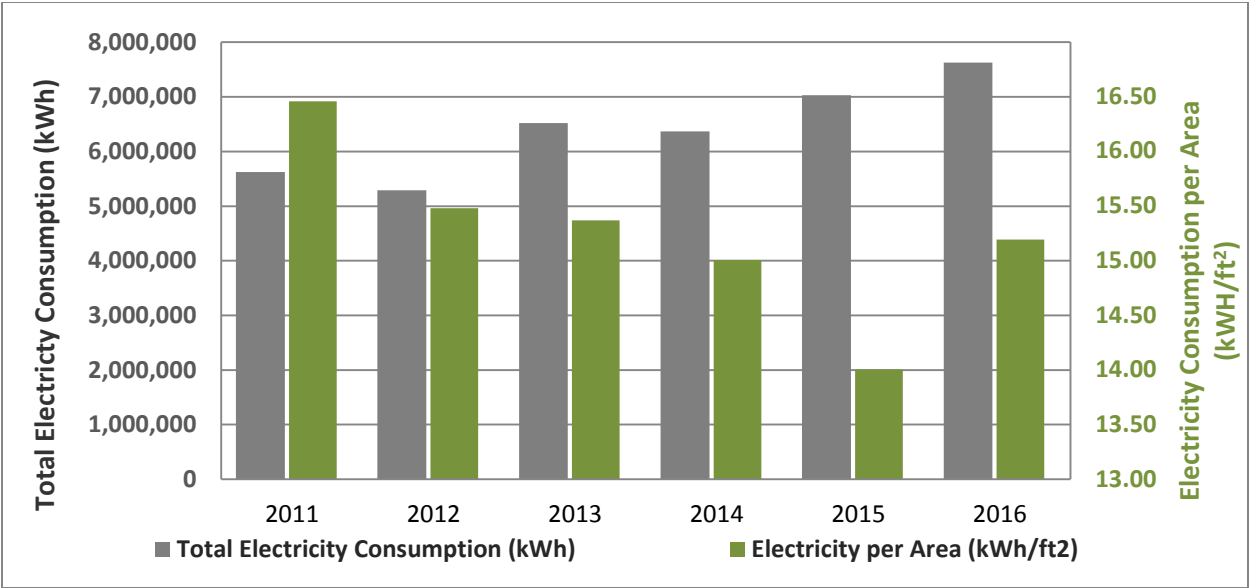
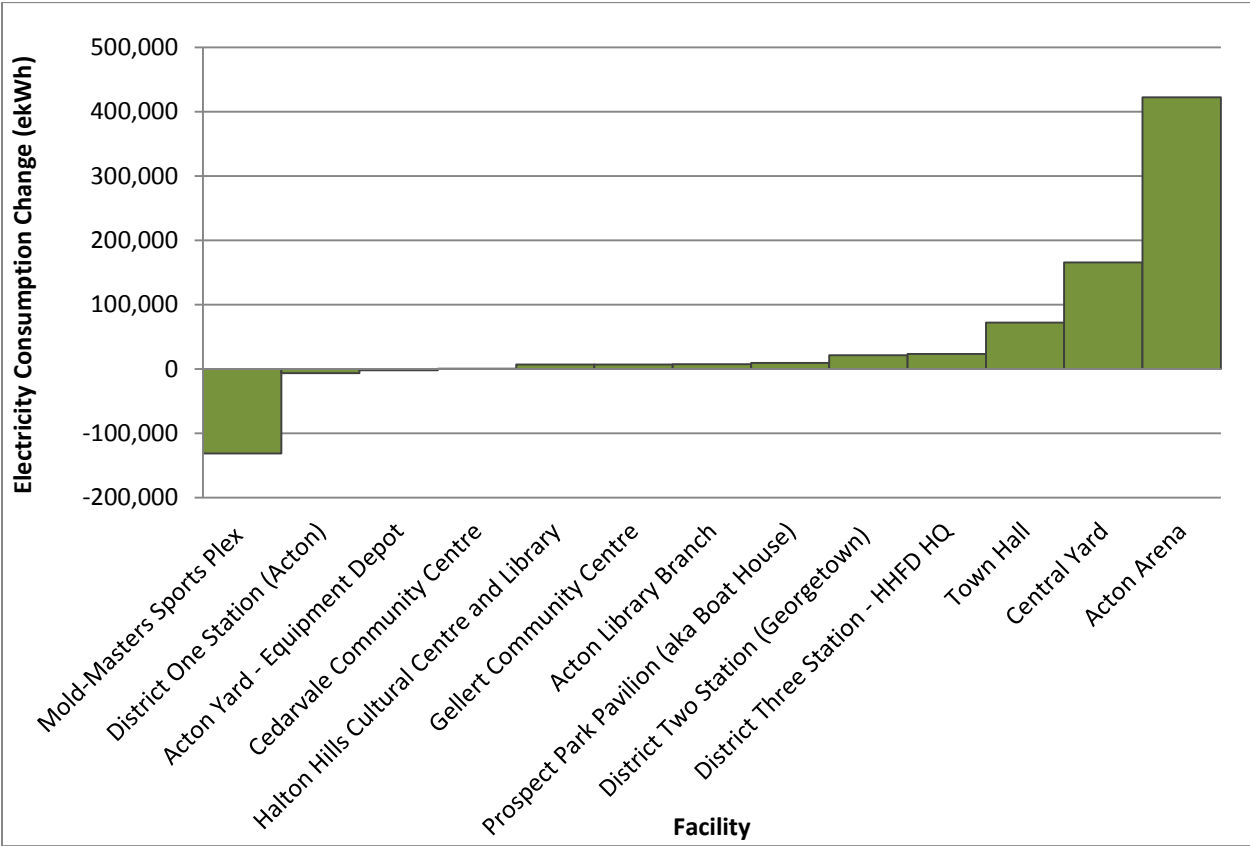


Figure 3: Electricity Consumption Change by Facility (2015-2016)



1.4 Natural Gas Consumption

As shown in figure 5, total natural gas consumption decreased between 2011 and 2013 before increasing by over 100,000 m³ in 2014. Consumption decreased slightly in 2015 and again in 2016. The increase in 2014 was largely attributable to the first full operational year of the expanded Mold-Masters SportsPlex. Between 2015 and 2016, eight out of thirteen facilities reduced their natural gas consumption, including a 16% reduction at the Public Works Central Yard, however, this reduction was partially offset by the increased natural gas use resulting from the expansion of operations at the Acton Arena. These reductions combined with warmer average temperatures (shown in figure 6), led to a 2% decrease in natural gas consumption for the Town's facilities.

With regards to natural gas consumption per square foot of floor space, figure 5 shows that, at 1.62 m³/ft², 2016 was the second most efficient year since 2011, and represents an 18.4% reduction in natural gas per square foot since that year.

Figure 5: Total Natural Gas Consumption (2011-2016)

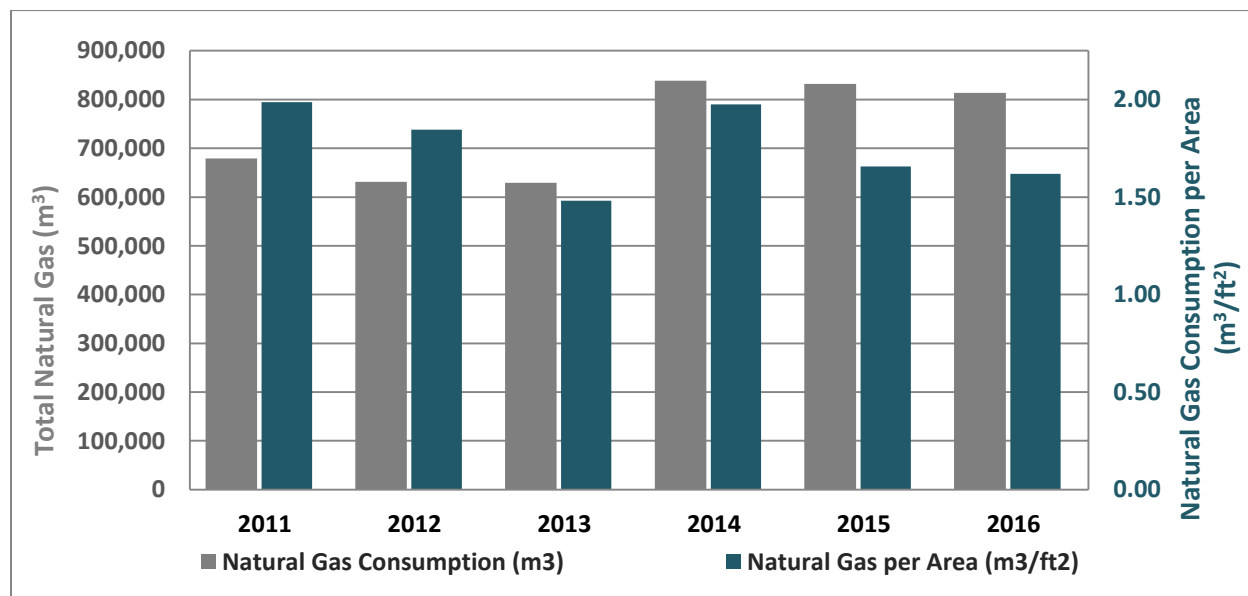
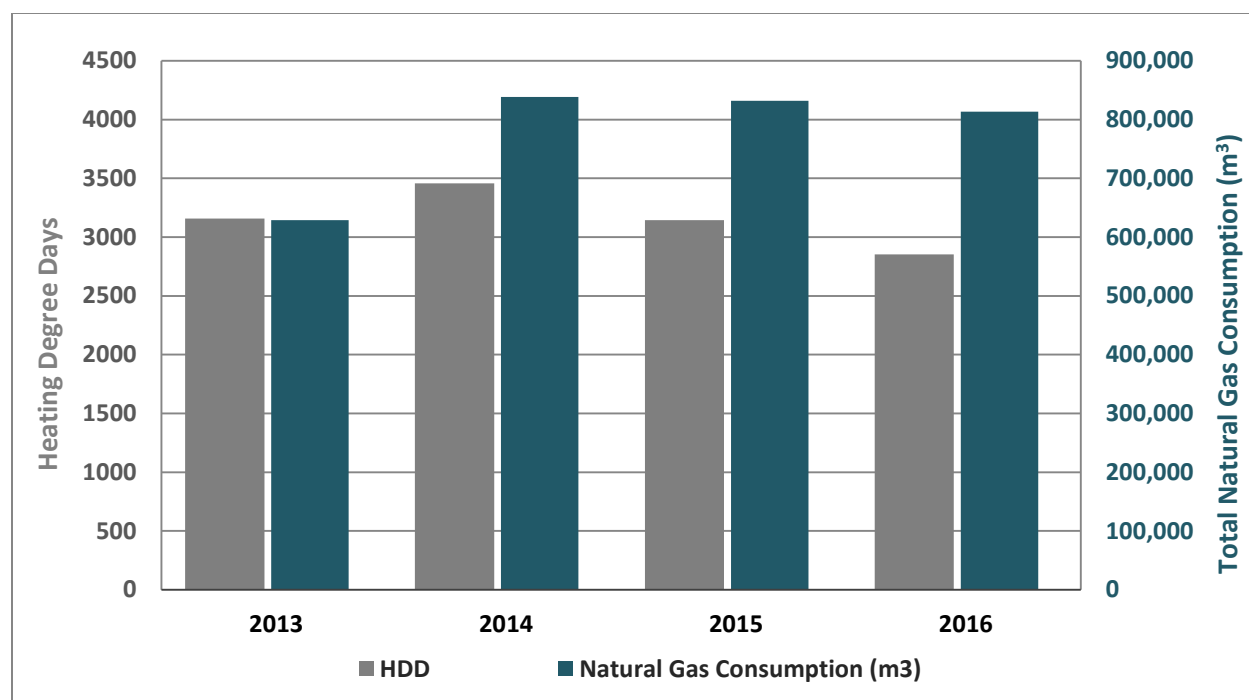


Figure 6: Natural Gas Consumption and Heating Degree Days (2013-2016)



RELATIONSHIP TO STRATEGIC PLAN:

Sustainability is one of eight Council priorities identified in the Town's Strategic Action Plan. Tracking and benchmarking the Town's energy use and greenhouse gas emissions, as well as the implementation of the Mayor's Community Energy Plan will enable the Town to fulfill its many sustainability objectives, including those directly related to energy.

FINANCIAL IMPACT:

Financial benefits are being realized through improved energy efficiency.

CONSULTATION:

A copy of this report will be provided for discussion at the next meeting (Q3) of the Corporate Energy Management Team.

SUSTAINABILITY IMPLICATIONS:

The Town is committed to implementing our Community Sustainability Strategy, Imagine Halton Hills. Doing so will lead to a higher quality of life. The relationship between this report and the Strategy is summarized below:

Do the report's recommendations advance the Strategy's implementation? Yes

Which pillar(s) of sustainability does this report support?
Economic Prosperity, Environmental Health and Social Well-Being

In Summary, the Sustainability Implications of this report are as follows:

By focusing on energy conservation and greenhouse gas emission reductions, the Town's Green Energy Act submission and implementation of the Mayor's Community Energy Plan (of which the Corporate Energy Plan is part) achieve strong alignment with the Community Sustainability Strategy, especially the focus areas of:

- Diversified and Resilient Economy
- Knowledge-Based Industry & Research and Innovation
- Energy
- Air Quality and Greenhouse Gas Emissions
- Green Economy
- Infrastructure
- Natural Heritage
- Land Use
- Housing
- Transportation

Overall, the alignment of this report with the Community Sustainability Strategy is:
Very Good

COMMUNICATIONS:

The Town's energy data is publically available through the Town as well as via the Province.

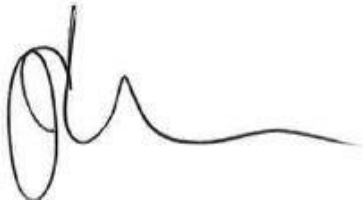
CONCLUSION:

This report provided the Committee with information on the Town's 2018 Green Energy Act submission, covering 2016 facility energy use and associated greenhouse gas emissions.

Reviewed and Approved by,

A handwritten signature in black ink, appearing to read 'Gabriel Clarke', with a stylized, cursive script.

Gabriel Clarke, Manager of Sustainability and Climate Change

A handwritten signature in black ink, appearing to read 'John Linhardt', with a stylized, cursive script.

John Linhardt, Commissioner of Planning and Sustainability

A handwritten signature in black ink, appearing to read 'Jane Diamanti', with a stylized, cursive script.

Jane Diamanti, Acting CAO

Appendix 1: Town of Halton Hills Green Energy Act Submission (2016 Data)

	Energy Consumption and Greenhouse Gas Emissions Reporting - for 2016										
Confirm consecutive 12-mth period (mth-yr to mth-yr)	Jan/2016 - Dec/2016										
Organization Name	Town of Halton Hills										
Operation Name	Operation Type	Address	City	Postal Code	Total Floor Area (sqft)	Avg hrs/wk	Energy Type and Amount Purchased and Consumed in Natural Units		GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)	Comments
							Electricity (kWh)	Natural Gas (m³)			
Acton Arena	Indoor ice rinks	415 Queen Street	Halton Hills	L7J 2N2	92,000	133	1,359,257	145,611	330,938	31.17	
Acton Library Branch	Public libraries	17 River Street	Halton Hills	L7J 1C2	9,000	52	130,787	2,024	9,077	16.86	
Acton Yard - Equipment Depot	Storage facilities where equipment or vehicles are maintained, repaired or stored	1 Commerce Court	Halton Hills	L7J 2X2	3,700	40	13,860	7,647	15,078	25.16	Canada Post does not list a postal code for the address. Postal code is for 19 Commerce Cres.
Cedarvale Community Centre	Community centres	185 Main Street South	Halton Hills	L7G 5M5	11,500	35	15,026	15,932	30,862	15.66	
Central Yard - Works Garages and Sand/Salt & Equipment Storage	Storage facilities where equipment or vehicles are maintained, repaired or stored	11620 Trafalgar Road	Halton Hills	L7G 4S4	62,795	42.5	465,600	64,956	141,999	18.13	
District One Station (Acton)	Fire stations and associated offices and facilities	21 Churchill Road South	Halton Hills	L7J 2J5	11,136	70	114,596	17,161	37,179	26.26	
District Three Station - HHFD HQ	Fire stations and associated offices and facilities	14007 10 Side Road	Halton Hills	L7G 4S5	13,616	98	247,920	4,537	18,534	21.66	
District Two Station (Georgetown)	Fire stations and associated offices and facilities	53 Maple Avenue	Halton Hills	L7G 1X8	15,934	42	227,760	16,802	41,024	25.22	
Gellert Community Centre	Community centres	10241 Eighth Line	Halton Hills	L7G 4S5	36,285	101	910,371	203,881	423,656	83.31	
Halton Hills Cultural Centre and Library	Public libraries	9 Church Street	Halton Hills	L7G 2A3	50,500	56	696,600	2,591	32,785	14.33	
Mold-Masters Sports Plex	Indoor ice rinks	221 Guelph Street	Halton Hills	L7G 4A8	151,000	133	2,822,971	305,042	692,301	39.63	
Prospect Park Pavilion (aka Boat House)	Community centres	30 Park Avenue	Halton Hills	L7J 1Y5	4,800	45	25,082	2,596	5,934	10.83	Hours are for summer operation
Town Hall	Administrative offices and related facilities, including municipal council chambers	1 Halton Hills Drive	Halton Hills	L7G 5G2	40,000	65	599,400	24,774	71,030	21.40	
Total:							7,629,230	813,554	1,850,397	Average:	26.89