TOWN OF ERIN

Energy Conservation & Demand Management Plan (CDM)

Introduction

Here at the Town of Erin there is a recipe to develop and implement a successful energy conservation and demand management plan in 2014. The recipe will require at the outset equal parts initiative, vision, structure, commitment, and the broad brush of common sense.

Historical Energy Consumption

Please find attached as an appendix to this document, the Town of Erin's summary of annual energy consumption during the last full year for which complete information is available (2011).

The original energy consumption data presented in the CDM plan will provide a baseline for the energy consumed prior to development and implementation of our CDM plan.

As additional complete years of energy consumption data are compiled, they too will be added as appendices to the CDM plan. This will allow users and readers to track progress towards achieving the pre-set goals and objectives as stated below.

Goals and Objectives

1) To obtain and analyse critical data and information with regard to the individual components within our Town buildings which consume energy.
2) To obtain professional engineering advice on ten of our buildings (five large, five small) concerning potential energy savings within the duration of the plan.
3) To commit a targeted amount of $16,000 per annum over the duration of the plan towards investigating and implementing both short term and long term energy conservation initiates.
4) To cultivate, encourage and implement ideas from all staff with regard to behavioural actions that may be instituted to reduce energy consumption.
5) With respect to facilities where output can be measured in dollars (arenas), reduce the ratio of energy expense to revenue earned by 1% per annum.
6) With respect to facilities where output can be measured in units (pump houses), reduce the ratio of energy expense to units produced by 1% per annum.

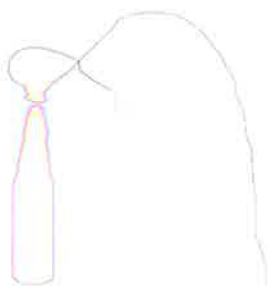
Measures

1) Purchase and utilize an 'Eyedro' or similar targeted electricity usage sub meter.
2) Engage the services of a 'Building Sciences' engineer in a strategically designed programme of annual research and deployment of resources.
3) Put forth the proposed $16,000 investment / commitment to CDM in the 1st draft of the annual proposed budget for the initial five year term of our CDM plan.
4) Develop and implement an employee engagement program to solicit ideas from targeted buildings in-house staff.
5) With respect to funds targeted directly towards annual energy conservation, a measure of economic feasibility i.e. total dollar savings, length of payback period, predictability of outcome, etc must be the determining factor in choosing between numerous proposed energy saving projects and ideas.
6) With respect to funds allocated in the normal course of operations budgeting, it will be the department head and / or facility manager's responsibility to at all times consider energy savings and demand management in their spending decisions.
7) With respect to funds allocated annually in the capital budgeting process, it is recognized that huge potential exists over the long term for both energy conservation and demand management strategies. Senior management must take a pro-active role in intervening to ensure fiscally rewarding opportunities are effectively implemented. This is accomplished in other Ontario municipalities through the establishment of an *'Energy Management Team'.*
8) With respect to town facilities where user fees generate the majority of revenue to fund their operation (i.e. arenas) it is imperative that changes to the cost of energy inputs are communicated to users and reflected in the pricing structure of facility rentals.

Monitoring and Evaluation

Externally, provincial legislation requires that we report on the results of our CDM plan at the end of the five year planning period (2019). The reporting requirements are prescriptive and extensive but most obviously include a breakdown of the actual results achieved.

Internally, actual and current statistical data will be available continuously to highlight operational areas of concern, guide effective decision making, and monitor real time results vs. benchmarked figures and expected achievement targets.



Conclusion

It is of critical importance that energy conservation and demand management strategies become part of the fabric of decision making at the Town of Erin. Not only are there operating costs to be saved annually, but particularly during the capital budgeting process there is a window of opportunity to re-look at how we intend to deliver services in the future which may reduce the demand for energy. We know intuitively that momentum down this path will require the input and consensus of council, management, all staff, and particularly our service users. Our careful, common sense allocation of budgeted funds, and our energy conservation decisions (both in the now and the future) must stand up to rigorous, non emotional financial scrutiny, and our successes and failures must be both measurable and transparent.

Press TAB to move to input areas. Press UP or DO	Energy Consumption and Greenhouse Gas Emissions Reporting - for 2011			
Confirm consecutive 12-month period (month-year to month-year)	01-2011 to 12-2011			
Type of Public Agency (Sector):	**Municipal**			
Agency Sub-sector	**Municipality**			
Organization Name	Town of Erin			
Operation Name	Operation Type	Address	City	Postal Code
Town of Erin Office	Administrative offices and related facilities, including municipal council chambers	5684 Trafalgar Road, R.R. #2	Hillsburgh	N0B 1Z0
Erin Community Centre	Performing arts facilities	14 Boland Drive, PO Box 662	Erin	N0B 1T0
Erin Community Centre	Community centres	14 Boland Drive, PO Box 662	Erin	N0B 1T0
Erin Community Centre	Indoor ice rinks	14 Boland Drive, PO Box 662	Erin	N0B 1T0
Erin Community Centre	Indoor ice rinks	14 Boland Drive, PO Box 662	Erin	N0B 1T0
Erin Community Centre	Community centres	14 Boland Drive, PO Box 662	Erin	N0B 1T0
Water Shop	Storage facilities where equipment or vehicles are maintained, repaired or stored	1 Shamrock Road	Erin	N0B 1T0
Hillsburgh Heights Well #2	Facilities related to the pumping of water	5929 Trafalgar Road	Hillsburgh	N0B 1Z0
Hillsburgh Glendevon Well #3	Facilities related to the pumping of water	Covert Lane	Hillsburgh	N0B 1Z0
Erin Well #7	Facilities related to the pumping of water	9555 17 Side Road	Erin	N0B 1T0
Erin Well #8	Facilities related to the pumping of water	5555 8th Line	Erin	N0B 1T0
BelErin Wells #1 and #2	Facilities related to the treatment of water	5403 Wellington Road 52	Erin	N0B 1T0
Delerin Pressure Tank Building	Facilities related to the pumping of water	15-17 Delerin Cr	Erin	N0B 1T0
Water Tower	Facilities related to the pumping of water	3 William Street	Erin	N0B 1T0
Ballinafad Community Centre	Community centres	9382 Wellington Rd 42, Halton - Er	Ballinafad	N0B 1H0
Roads Equipment Depot	Storage facilities where equipment or vehicles are maintained, repaired or stored	5694 Trafalgar Road	Hillsburgh	N0B 1Z0
Hillsburgh Community Centre & Arena	Indoor ice rinks	95 Trafalgar Road, PO Box 275	Hillsburgh	N0B 1Z0
Hillsburgh Community Centre & Arena	Community centres	95 Trafalgar Road, PO Box 275	Hillsburgh	N0B 1Z0
Hillsburgh Community Centre & Arena	Indoor ice rinks	95 Trafalgar Road, PO Box 275	Hillsburgh	N0B 1Z0
Erin Fire Hall	Fire stations and associated offices and facilities	2 Erinville Drive	Erin	N0B 1T0

Total Floor Area of the Indoor Space in which Operation is Conducted		Average # Hours Per Week	Annual Flow (Mega Litres)	Energy Type and Amount Purchased a					
				Electricity	Natural Gas	Fuel Oil 1 & 2	Fuel Oil 4 & 6	Propane	Coal
650.00	Square meters	55		91,328.00000 *kWh*	2,628.00000 Cubic meter				
338.00	Square meters	50		51,454.63141 kWh	9,089.94462 Cubic meter				
1,461.00	Square meters	50		222,411.88311 kWh	39,291.15116 Cubic meter				
2,166.00	Square meters	50		329,735.89242 kWh	58,250.94689 Cubic meter				
374.00	Square meters	50		56,935.00635 kWh	10,058.10440 Cubic meter				
67.00	Square meters	50		10,199.58670 kWh	1,801.85293 Cubic meter				
480.00	Square meters	45		34,090.00000 kWh	794.00000 Cubic meter				
94.00	Square meters	168	26.24000	88,047.00000 kWh					
35.00	Square meters	168	38.48000	147,528.00000 kWh					
75.00	Square meters	168	195.79000	136,445.00000 kWh					
79.00	Square meters	168	240.59700	306,417.00000 kWh					
56.00	Square meters	168	0.00010	13,322.00000 kWh					
21.00	Square meters	168	240.59700	7,829.00000 kWh					
57.00	Square meters	168	195.79000	14,052.00000 kWh					
366.00	Square meters	10		40,194.00000 kWh				4,021.00000 Litre	
676.00	Square meters	55		44,075.00000 kWh	15,726.00000 Cubic meter				
1,532.00	Square meters	40		20,942.65555 kWh	16,501.53205 Cubic meter				
340.00	Square meters	40		4,647.84784 kWh	3,662.21991 Cubic meter				
47.00	Square meters	40		642.49661 kWh	506.24805 Cubic meter				
450.00	Square meters	168		87,391.00000 kWh	168.00000 Cubic meter				

ınd Consumed In Natural Units							Total (These columns will calculate when file is Saved)			
Wood	District Heating	Renewable?	If Yes, enter Emission Factor	District Cooling	Renewable?	If Yes, enter Emission Factor	GHG Emissions (Kg)	Energy Intensity (GJ/m2)	Energy Intensity (GJ/Mega Litres	Comments
		No			No		12,274.80776	0.66050		
		No			No		21,302.06524	1.57698		
		No			No		92,077.86189	1.57698		
		No			No		136,509.68436	1.57698		
		No			No		23,570.92426	1.57698		
		No			No		4,222.59873	1.57698		
		No			No		4,228.35784	0.31896		
		No			No		7,043.76000	3.37201	12.07962	
		No			No		11,802.24000	15.17431	13.80200	
		No			No		10,915.60000	6.54936	2.50882	
		No			No		24,513.36000	13.96331	4.58485	
		No			No		1,065.76000	0.85641	479,592.00000	
		No			No		626.32000	1.34211	0.11714	
		No			No		1,124.16000	0.88749	0.25837	
		No			No		9,423.87966	0.67342		
		No			No		33,258.00020	1.12477		
		No			No		32,873.65448	0.46132		
		No			No		7,295.71966	0.46132		
		No			No		1,008.52595	0.46132		
		No			No		7,308.90534	0.71341		

Energy Consumption and GHG Emmissions

From: 2011-01-01 To: 2011-12-31

Facility Name	Address	Total Area (m2)	Average Hours/Day	Fuel Types	Consumption	Cost ($)	Energy (ekWh/yr)	GHG Emissions (kg CO2e/yr)	GHG Intensity (kg CO2e/m2)	Energy Intensity
Facility Primary Type: Emergency Medical Services										
Hillsburgh Fire Hall	2 Station St	120	24.00							
Facility Type Total:						**0.00**	**0.00**	**0.00**		
Facility Primary Type: Fire										
Erin Fire Hall	2 Erinville Drive	450	24.00	NG	168.00 m3	43.97	1785.47	318.80	0.71	3.97 (ekWh/m2)
				Elect.	87391.00 kWh	12121.81	87391.00	6991.28	15.54	194.20 (ekWh/m2)
Hillsburgh Fire Hall	2 Station St	1122	24.00							
Facility Type Total:						**12165.78**	**89176.47**	**7310.08**		
Facility Primary Type: Community Centre										
Erin Community Centre	14 Boland Drive, PO Box 662	338	7.18	NG	9089.94 m3	4390.65	96605.90	17249.26	51.03	285.82 (ekWh/m2)
				Elect.	51454.63 kWh	6711.28	51454.63	4116.37	12.18	152.23 (ekWh/m2)
Erin Community Centre	14 Boland Drive, PO Box 662	1528	7.18	NG	41093.00 m3	19848.86	436727.28	77978.91	51.03	285.82 (ekWh/m2)
				Elect.	232611.47 kWh	30339.76	232611.47	18608.92	12.18	152.23 (ekWh/m2)
Ballinafad Community Centre	9382 Wellington Rd 42, Halton - Erin Townline, PO Box 104	366	1.42	Propane	4021.00 L	4790.71	28269.86	6208.36	16.96	77.24 (ekWh/m2)
				Elect.	40194.00 kWh	6448.50	40194.00	3215.52	8.79	109.82 (ekWh/m2)
Hillsburgh Community Centre & Arena	95 Trafalgar Road, PO Box 275	340	5.70	NG	3662.22 m3	1860.73	38921.26	6949.50	20.44	114.47 (ekWh/m2)
				Elect.	4647.85 kWh	690.05	4647.85	371.83	1.09	13.67 (ekWh/m2)
Facility Type Total:						**75080.54**	**929432.26**	**134698.66**		
Facility Primary Type: Public Works										
Water Shop	1 Shamrock Road	480	6.41	NG	794.00 m3	588.09	8438.45	1506.71	3.14	17.58 (ekWh/m2)
				Elect.	34090.00 kWh	5037.96	34090.00	2727.20	5.68	71.02 (ekWh/m2)
Facility Type Total:						**5626.05**	**42528.45**	**4233.91**		
Facility Primary Type: Tower										

Water Tower	3 William Street	57	24.00	Elect.	14052.00 kWh	2340.84	14052.00	1124.16	19.72	71.41 (ekWh/ML)
Facility Type Total:						**2340.84**	**14052.00**	**1124.16**		
Facility Primary Type: Town Hall										
Town of Erin Office	5684 Trafalgar Road, R.R. #2	650	7.86	NG	2628.00 m3	1539.55	27929.80	4986.95	7.67	42.97 (ekWh/m2)
				Elect.	91328.00 kWh	12737.83	91328.00	7306.24	11.24	140.50 (ekWh/m2)
Facility Type Total:						**14277.38**	**119257.80**	**12293.19**		
Facility Primary Type: Water Treatment Facility										
Hillsburgh Heights Well #2	5929 Trafalgar Road	94	24.00	Elect.	88047.00 kWh	12247.36	88047.00	7043.76	74.93	3232.27 (ekWh/ML)
Hillsburgh Glendevon Well #3	Covert Lane	35	24.00	Elect.	147528.00 kWh	21807.04	147528.00	11802.24	337.21	3736.78 (ekWh/ML)
Erin Well #7	9555 17 Side Road	75	24.00	Elect.	136445.00 kWh	20359.16	136445.00	10915.60	145.54	693.35 (ekWh/ML)
Erin Well #8	5555 8th Line	79	24.00	Elect.	306417.00 kWh	36595.97	306417.00	24513.36	310.30	1268.30 (ekWh/ML)
BelErin Wells #1 and #2	5403 Wellington Road 52	56	24.00	Elect.	13322.00 kWh	2165.71	13322.00	1065.76	19.03	13320.67 (ekWh/ML)
Delerin Pressure Tank Building	15-17 Delerin Cr	21	24.00	Elect.	7829.00 kWh	1535.26	7829.00	626.32	29.82	32.41 (ekWh/ML)
Facility Type Total:						**94710.50**	**699588.00**	**55967.04**		
Facility Primary Type: Single-Pad Arena										
Erin Community Centre	14 Boland Drive, PO Box 662	2540	7.18	NG	68309.05 m3	32994.84	725973.36	129624.62	51.03	285.82 (ekWh/m2)
				Elect.	386670.90 kWh	50433.89	386670.90	30933.67	12.18	152.23 (ekWh/m2)
Hillsburgh Community Centre & Arena	95 Trafalgar Road, PO Box 275	1579	5.70	NG	17007.78 m3	8641.45	180754.89	32274.30	20.44	114.47 (ekWh/m2)
				Elect.	21585.15 kWh	3204.65	21585.15	1726.81	1.09	13.67 (ekWh/m2)
Facility Type Total:						**95274.83**	**1314984.31**	**194559.41**		
Facility Primary Type: Depot										
Roads Equipment Depot	5694 Trafalgar Road	676	7.86	NG	15726.00 m3	5805.36	167132.42	29841.97	44.14	247.24 (ekWh/m2)
				Elect.	44075.00 kWh	6859.55	44075.00	3526.00	5.22	65.20 (ekWh/m2)
Facility Type Total:						**12664.91**	**211207.42**	**33367.97**		
Grand Total:						**312140.83**	**3420226.71**	**443554.42**		