

April 18, 2013



Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: Performance & Operational Information on the Four (4) Solar MicroFit Installations

Please find attached administration report prepared by Travis Rob, CBO, Facilities/Projects Coordinator outlining pertinent information on the 4 solar installations; PW Garage, WTP, Memorials Sport Center & Daycare. 2012 was the first full year of generating revenue.

The Operations and Facilities Executive Committee recommends that the administration report be forwarded to Council for review and that no action is required as it is just an information report.

Respectfully submitted,
Operations & Facilities Division

Doug Brown P. Eng

Doug Brown, P. Eng.
Operations & Facilities Manager

Council approval of this report will ensure that the performance and operational report on the four (4) solar installations was reviewed and accepted. No action required.

2013Aprilsolareport

RECOMMENDED
MAY 08 2013
DIV. MNG. *Doug Brown*
EXECUTIVE COMM. *L. Wiedenkopf*

April 16, 2013

Report To: Doug Brown, Manager of Operations and Facilities

From: Travis Rob, CBO, Facilities/Projects Coordinator

RE: Town of Fort Frances Solar MicroFIT Installation Performance

The four MicroFIT Solar installations installed on the Memorial Sports Centre, Public Works Building, Children's Complex, and Water Treatment Plant have now been installed for approximately 15 months. Through this time we have seen the performance over all four seasons and varying weather conditions. We have, and continue to learn how different weather conditions affect the generation capacity, how well the panels shed snow, how often the panels require cleaning, and how reliable the systems are. The solar panels will shed snow up to around 3 inches of accumulation followed by mild sunny weather, within a day or two, and it was discovered, this summer, that the originally thought summer panel cleaning, to remove pollen and other debris, was not required as the panels cleaned themselves sufficiently in the rain. We have, to date, experienced only minor issues with the panel systems, and the main issues have been with the online monitoring and had no effect on generation (revenue).

At the end of their first full year of generation, January 1, 2012 to December 31, 2012, the total energy generated and the associated revenue can be seen in the table below.

	Totals		
	Expected kWh	Actual kWh	Percent Generated
January	3444	1666.5	48%
February	4720	3399.9	72%
March	6658	4555.7	68%
April	6740	6130.0	91%
May	7192	6074.8	84%
June	7143	7380.1	103%
July	7417	7619.3	103%
August	6794	7570.4	111%
September	5312	6301.4	119%
October	4116	3303.5	80%
November	2675	1683.7	63%
December	2942	730.6	25%
TOTALS:	70465	56415.9	80%

2012 Summary	
Total Generation (kWh):	56415.9
Total Revenue:	\$ 45,841.96

The 2012 year spring, summer, and early fall months saw generation close to, or exceeding the proposed amount in the feasibility studies, while the winter months saw below predicted generation.

Through the first quarter of 2013 the Town of Fort Frances saw snow fall totals far exceeding normal levels. In addition to this, storms were in close succession and accompanied by high winds causing severe drifting, especially at the Children's Complex site, resulting in difficulty removing the snow from all of the sites in a timely fashion after a snowfall. This fact has led to below predicted numbers for the winter time generation in the 2013 year. A breakdown of the generation can be found in the tables below.

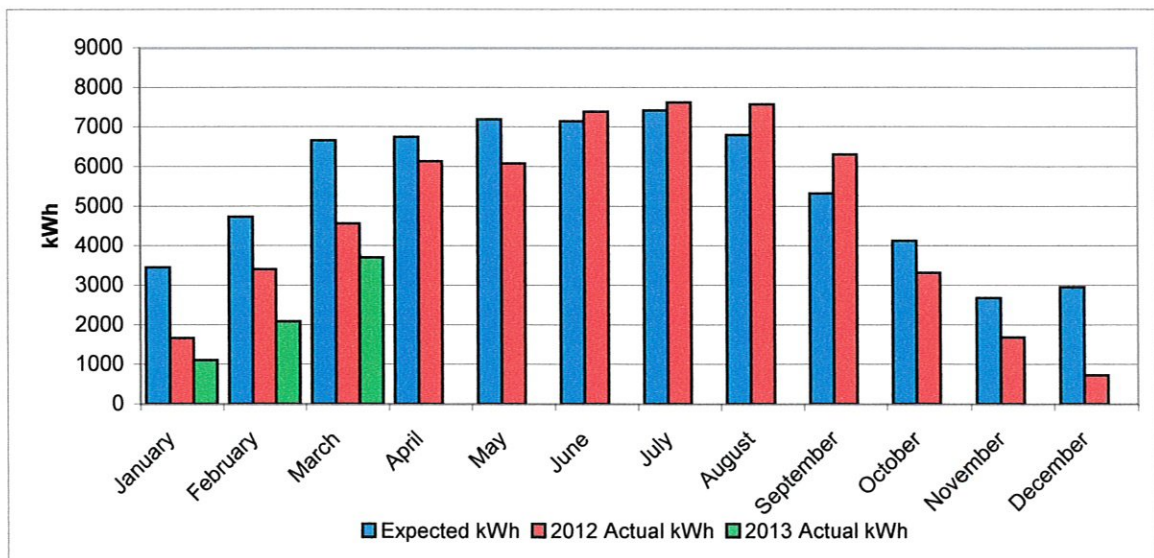
2013

	Public Works			Children's Complex			Memorial Sports Centre			Water Treatment Plant		
	Expected kWh	Actual kWh	Revenue \$	Expected kWh	Actual kWh	Revenue \$	Expected kWh	Actual kWh	Revenue \$	Expected kWh	Actual kWh	Revenue \$
January	977	371.4	\$ 297.88	677	47.0	\$ 37.66	918	306.2	\$ 245.54	872	386.2	\$ 309.71
February	1280	528.1	\$ 423.55	1022	74.9	\$ 60.07	1212	742.0	\$ 595.09	1206	737.2	\$ 591.26
March	1742	1148.7	\$ 921.23	1554	488.0	\$ 391.37	1692	1104.2	\$ 885.54	1670	951.9	\$ 763.42
April	1704		\$ -	1671		\$ -	1681		\$ -	1684		\$ -
May	1769		\$ -	1869		\$ -	1781		\$ -	1773		\$ -
June	1753		\$ -	1825		\$ -	1797		\$ -	1768		\$ -
July	1831		\$ -	1891		\$ -	1853		\$ -	1842		\$ -
August	1699		\$ -	1698		\$ -	1708		\$ -	1689		\$ -
September	1362		\$ -	1287		\$ -	1339		\$ -	1324		\$ -
October	1094		\$ -	950		\$ -	1049		\$ -	1023		\$ -
November	749		\$ -	560		\$ -	706		\$ -	660		\$ -
December	825		\$ -	563		\$ -	772		\$ -	782		\$ -
TOTALS:	16785	2048.205	\$ 1,642.66	15567	609.851	\$ 489.10	16508	2152.33	\$ 1,726.17	16293	2075.31	\$ 1,664.40

	Totals		
	Expected kWh	Actual kWh	Percent Generated
January	3444	1110.7	32%
February	4720	2082.3	44%
March	6658	3692.7	55%
April	6740	0.0	0%
May	7192	0.0	0%
June	7143	0.0	0%
July	7417	0.0	0%
August	6794	0.0	0%
September	5312	0.0	0%
October	4116	0.0	0%
November	2675	0.0	0%
December	2942	0.0	0%
TOTALS:	14822	6885.7	46%

2013 Summary	
Total Generation (kWh):	6885.7
Total Revenue: \$	5,522.33

Since construction has completed the generation of the four sites totals approximately 67 Megawatt hours translating to approximately \$53,800.00 in revenue. When the monthly generation values are graphed, a trend can easily be seen showing the spring and summer peak in generation, as seen below.



As the spring and summer months approach, the generation at these sites will continue to increase as the days become longer and the sun moves higher in the sky.

Respectfully Submitted,

Travis Rob, EIT
CBO, Facilities/Project Coordinator