

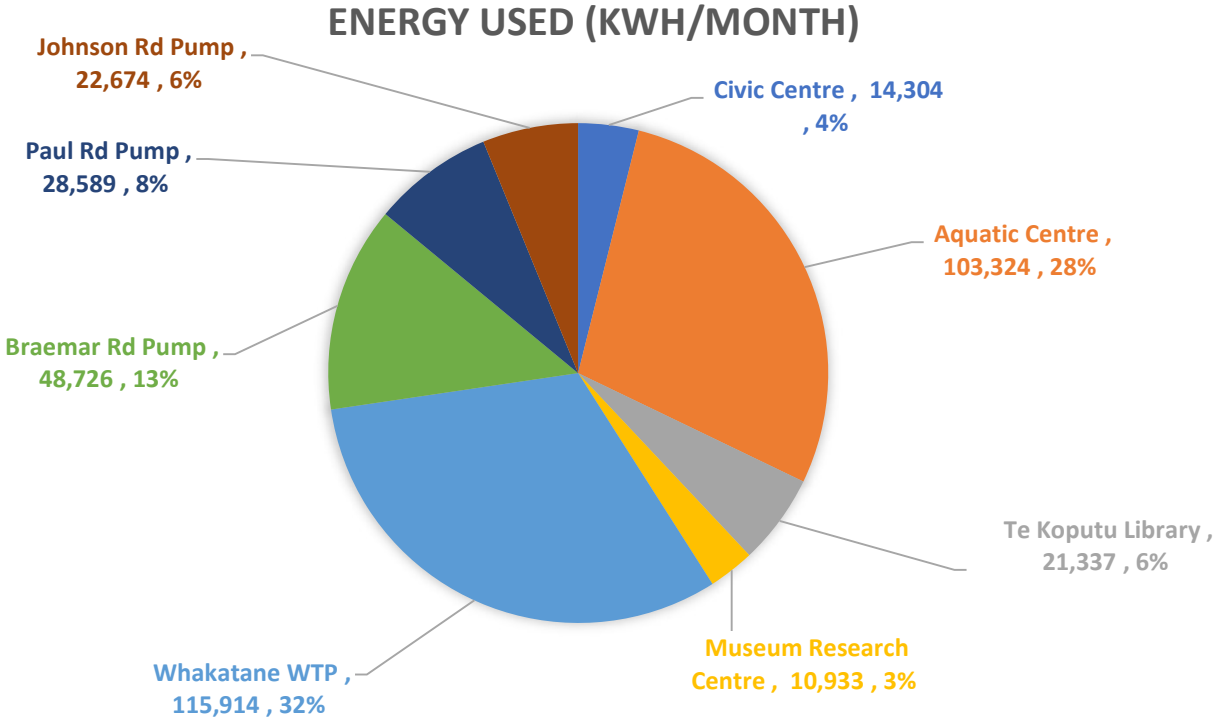


Whakatāne District Council Energy Performance Report

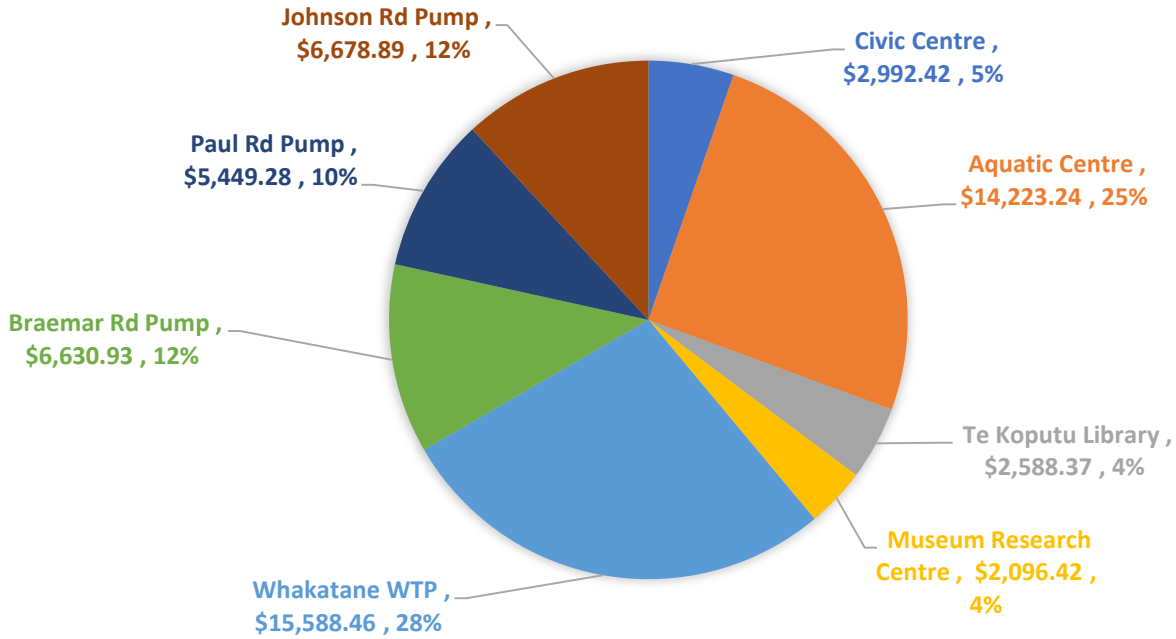
Summary

For Eight of Whakatāne District Council’s largest energy using sites:

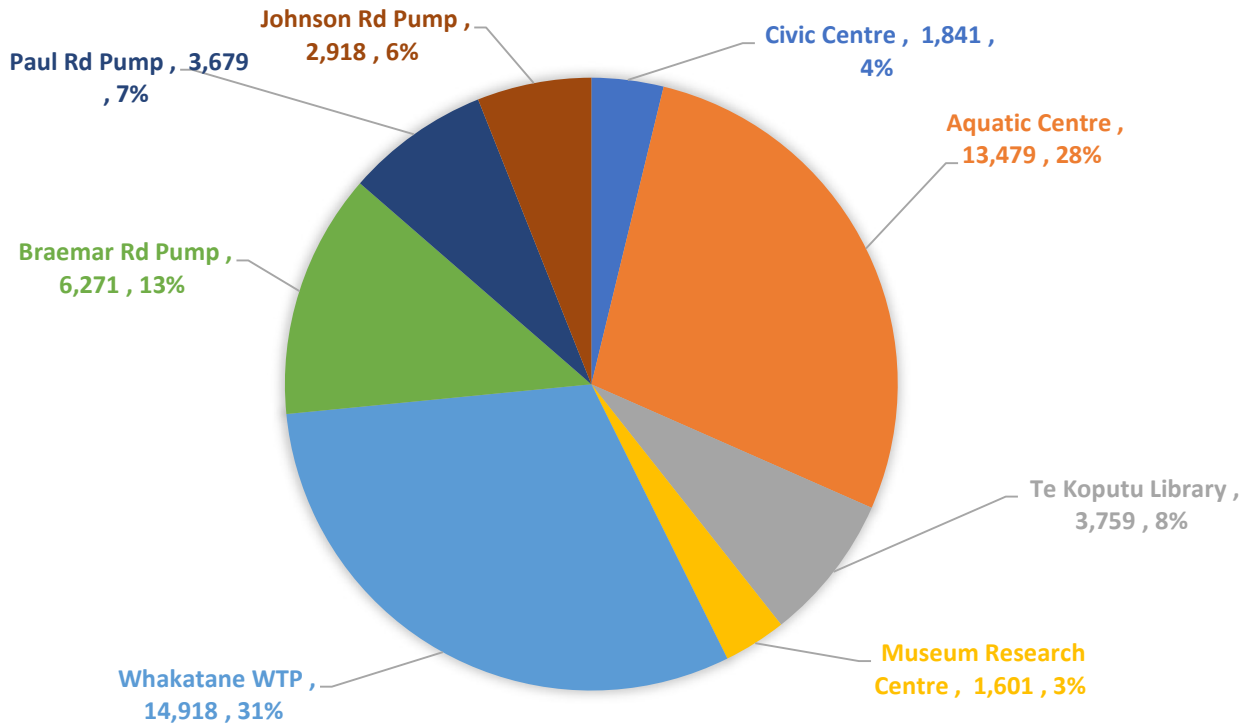
- Total energy used for the month was 377,001 kWh
- Total energy cost for the month was \$58,818
- Total carbon emissions for the month were 49,908 kgCO2e
- Rolling 12-month energy savings total 610,403 kWh
- Rolling 12-month energy cost savings total \$40,751
- Rolling 12-month carbon savings total 125,251 kgCO2e



ENERGY COST (\$/MONTH)



CARBON EMISSIONS (KGCO2E/MONTH)

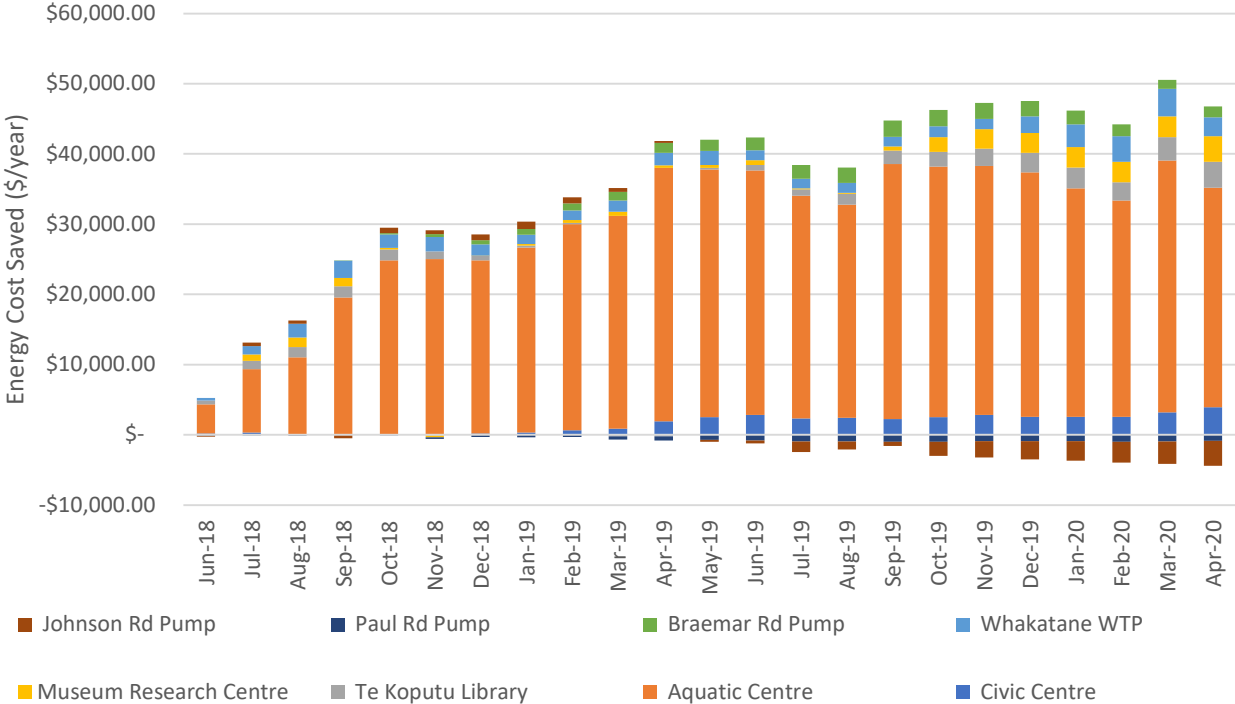




Rolling 12 month Energy Savings



Rolling 12 month Energy Cost Savings



Civic Centre

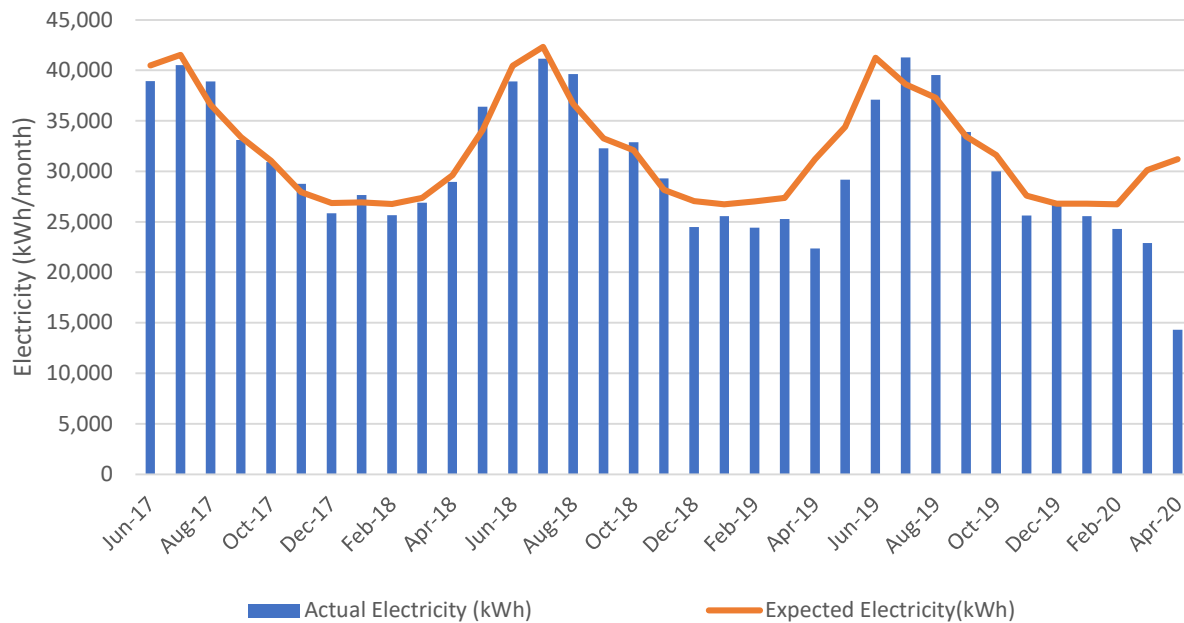
Summary

- Electricity savings for the month were 16,894kWh, a saving of 54.2%.
- Energy cost savings for the month were \$1,758.
- Carbon savings for the month were 2,174 kgCO₂e, a saving of 54.2%.
- Rolling 12-month electricity savings are 35,382 kWh, a saving of 9.2%.
- Rolling 12-month energy cost savings are \$3,907.
- Rolling 12-month carbon savings are 4,554 kgCO₂e, a saving of 9.2%.

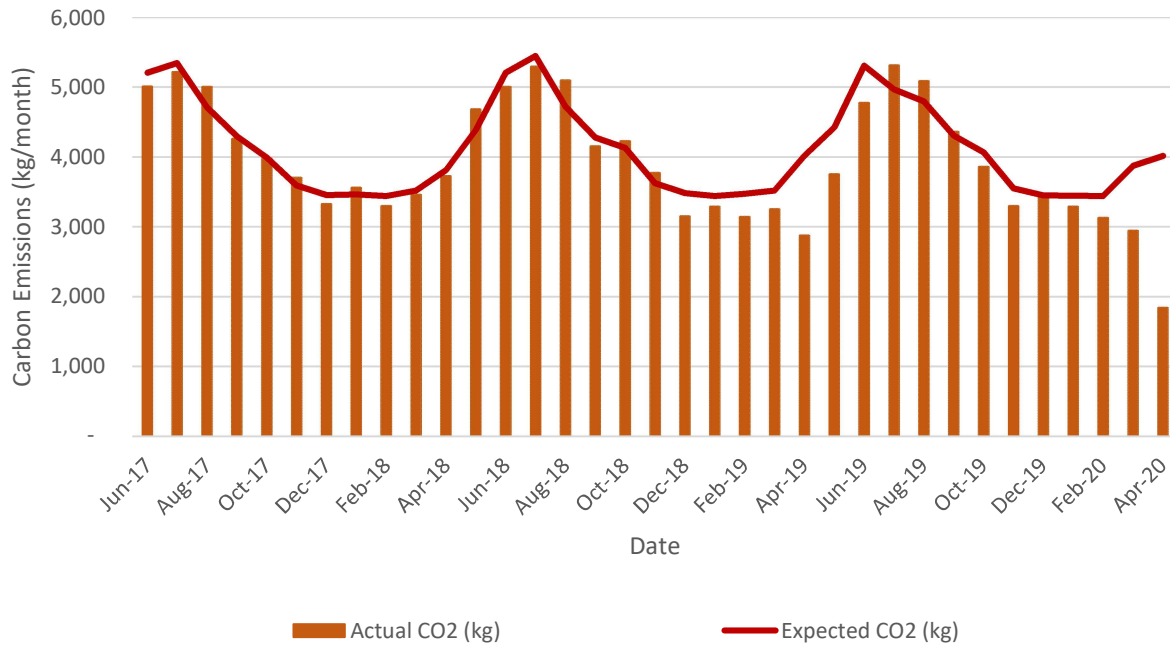
Comments

April 2020 electricity use at the Civic Centre was less than half of expected. This is clearly related to the Covid 19 lockdown. The baseline adjusts for heating degree days which is a measure of ambient temperature, however it does not adjust for occupancy because under normal circumstances this is relatively constant. It is interesting to note that electricity use was still 46% of normal use. This indicates the level of electricity use that is a baseload such as servers that are required to operate 24/7 irrespective of occupancy.

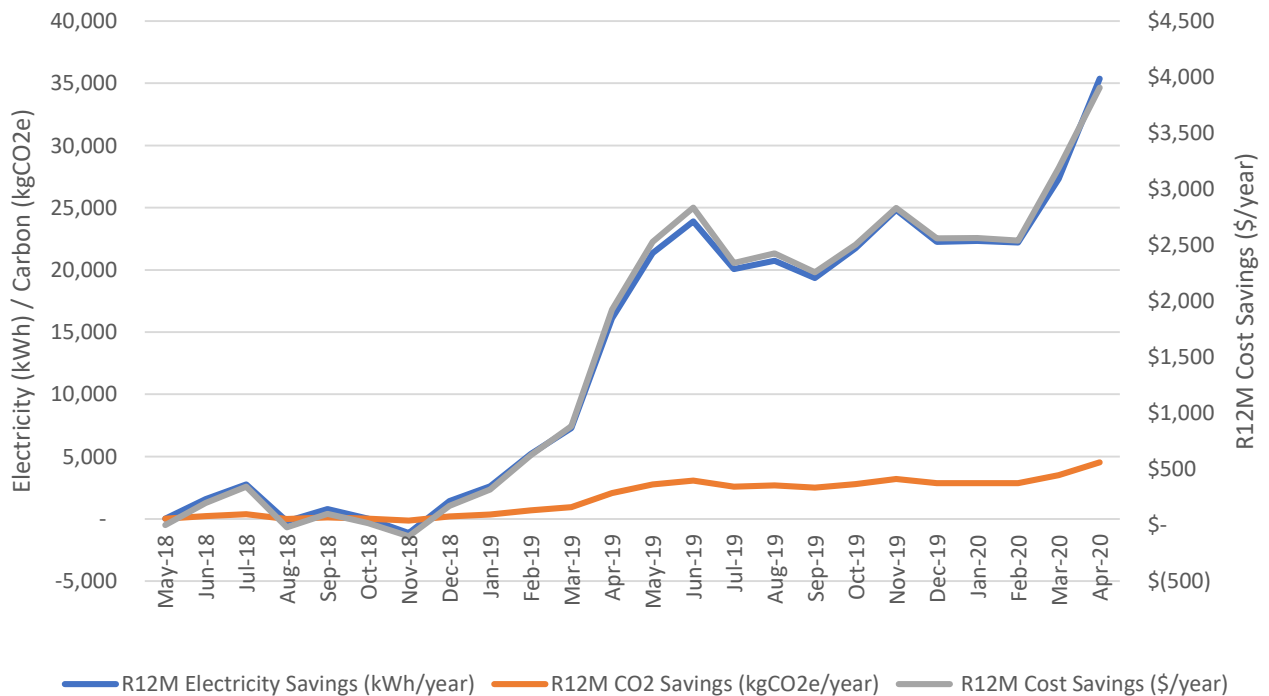
Civic Centre Actual versus Expected Electricity



Civic Centre Actual versus Expected CO2



Civic Centre Cumulative Rolling 12 Month Savings





Aquatic Centre

Summary

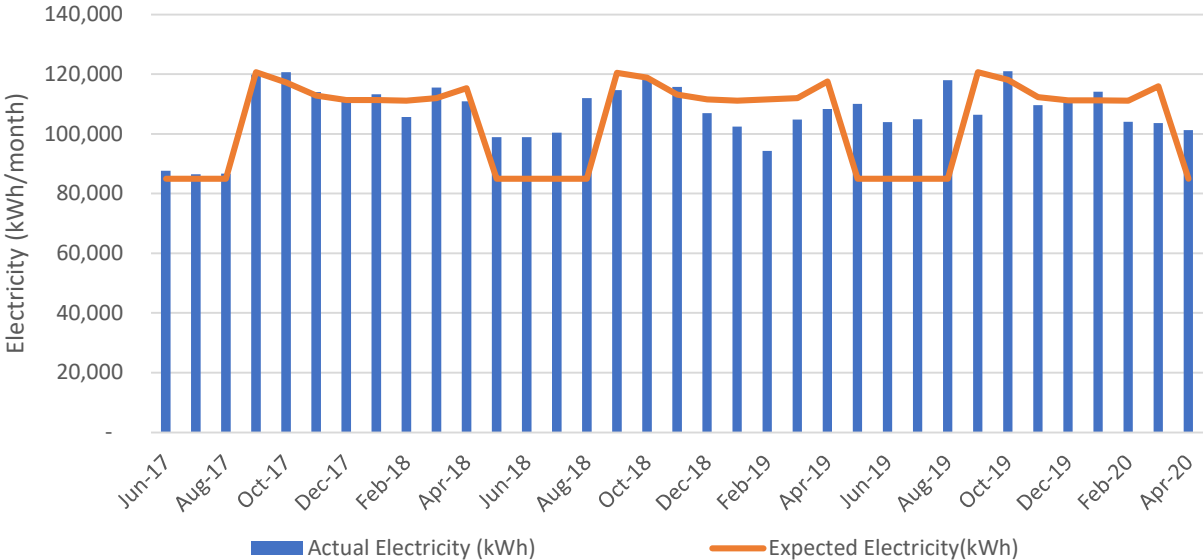
- Electricity savings for the month were -16,269kWh, an extra 19.1%.
- Natural gas savings for the month were 31,377 kWh, a saving of 93.9%
- Energy cost savings for the month were \$1,151.
- Carbon savings for the month were -2,058 kgCO2e, an extra 18%.
- Rolling 12-month electricity savings are -82,996 kWh, an extra 6.8%.
- Rolling 12-month natural gas savings are 571,467 kWh, a saving of 58.3%
- Rolling 12-month energy cost savings are \$31,251.
- Rolling 12-month carbon savings are 104,708 kgCO2e, a saving of 28.9%.

Comments

For the month of April, a baseline was used that does not have the outdoor pool in use. April is normally a month where the outdoor pool is in use, however circumstances in April were unusual. Electricity use at the Aquatic Centre did not change much in April 2020 compared to March 2020 despite no occupancy. This indicates a large electrical baseload associated with water and space heating, and circulating water.

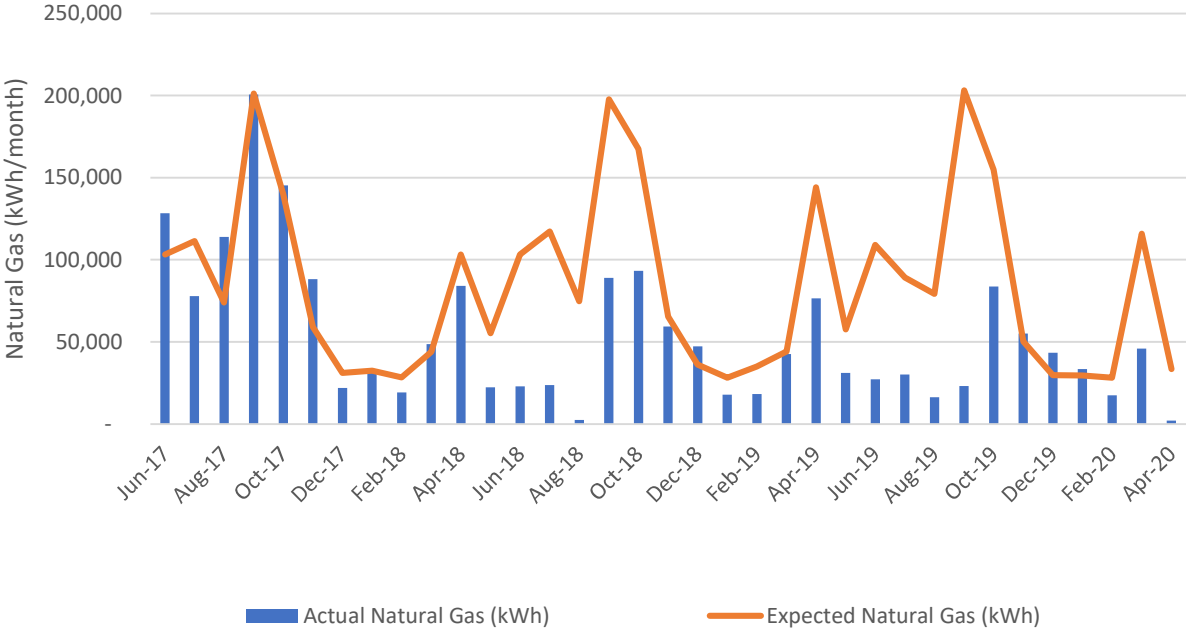
Natural Gas use in April 2020 is minimal. Since the closure of the pool on 25 March, the boilers have been using approximately 94% less gas than usual. The outdoor pool has been off and the boilers have been idling only.

Aquatic Centre Actual versus Expected Electricity

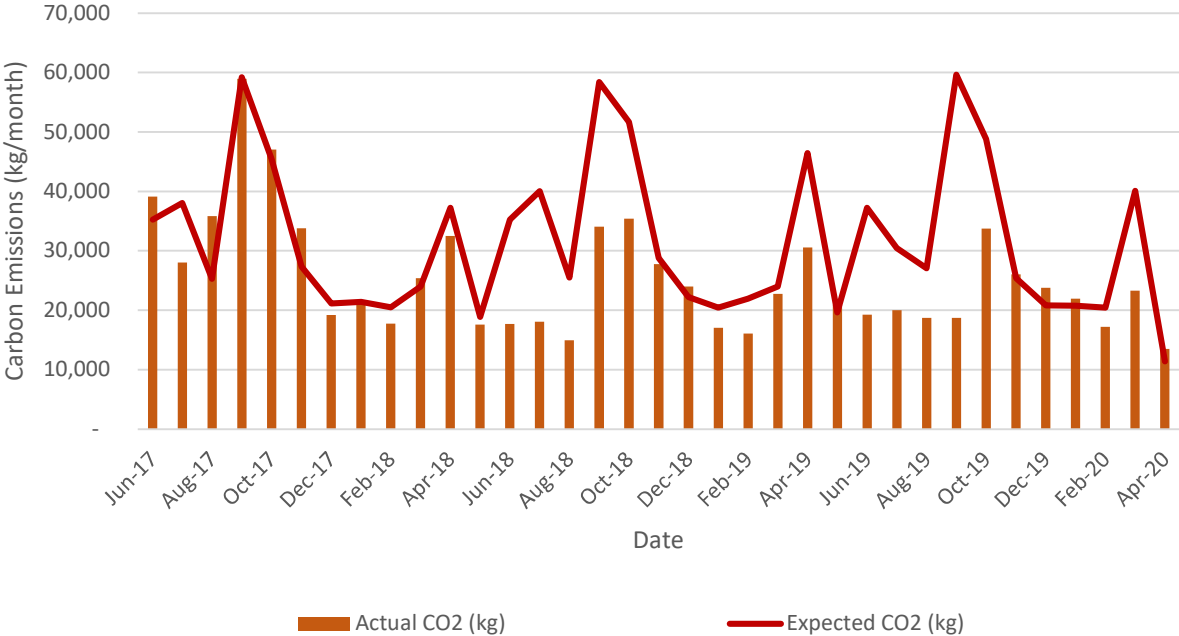




Aquatic Centre Actual versus Expected Natural Gas

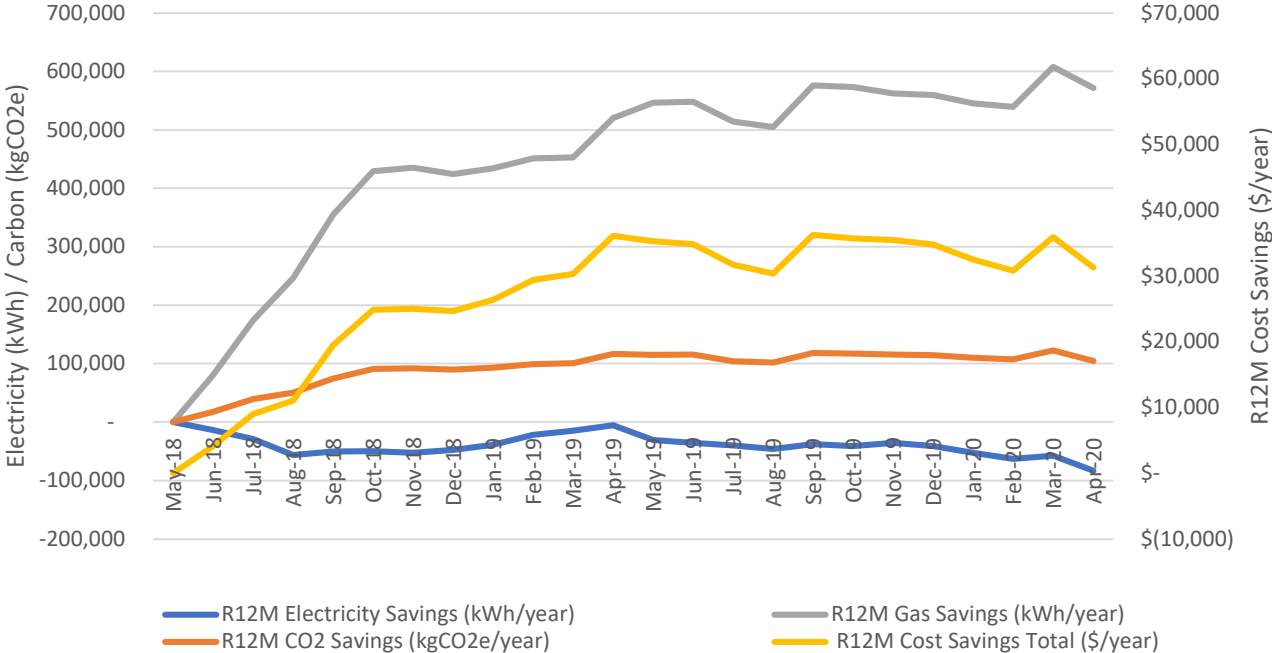


Aquatic Centre Actual versus Expected CO2





Aquatic Centre Cumulative Rolling 12 Month Savings





Te Koputu Library

Summary

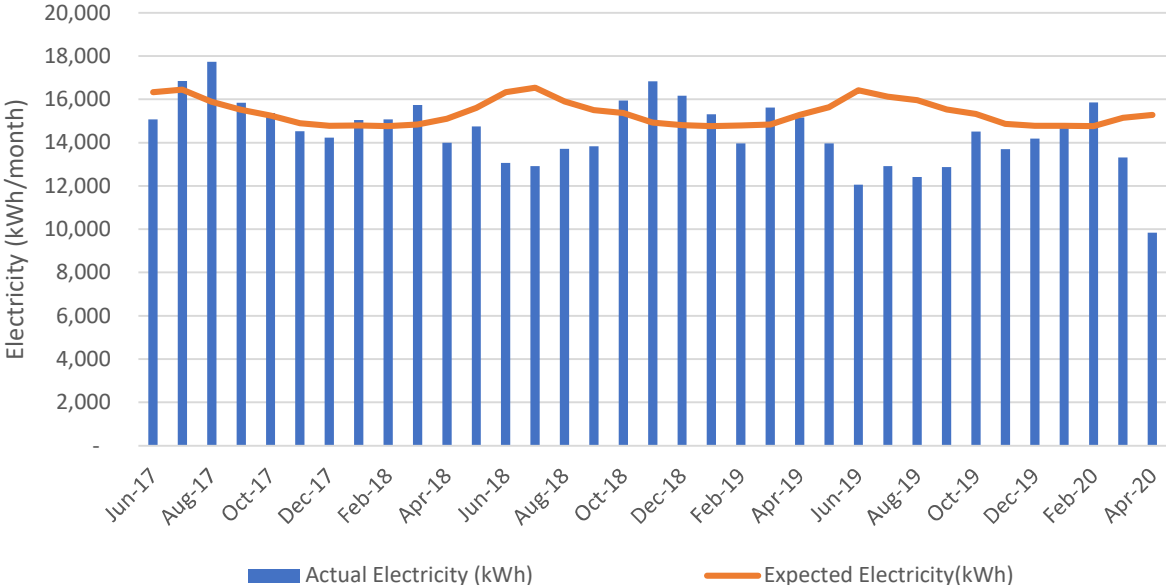
- Electricity savings for the month were 5,439kWh, a saving of 35.6%.
- Natural gas savings for the month were -2,170 kWh, an extra 23.3%
- Energy cost savings for the month were \$410.
- Carbon savings for the month were 234 kgCO2e, a saving of 5.9%.
- Rolling 12-month electricity savings are 24,280 kWh, a saving of 13.2%
- Rolling 12-month natural gas savings are 11,702 kWh, a saving of 9.8%
- Rolling 12-month energy cost savings are \$3,721.
- Rolling 12-month carbon savings are 5,715 kgCO2e, a saving of 11.5%.

Comments

The library achieved significant electricity savings for April 2020. This shows the impact of the lockdown, since the library was closed for all of April. Electricity use was still 65% of expected usage which shows the baseload (energy use not affected by occupancy) is relatively high.

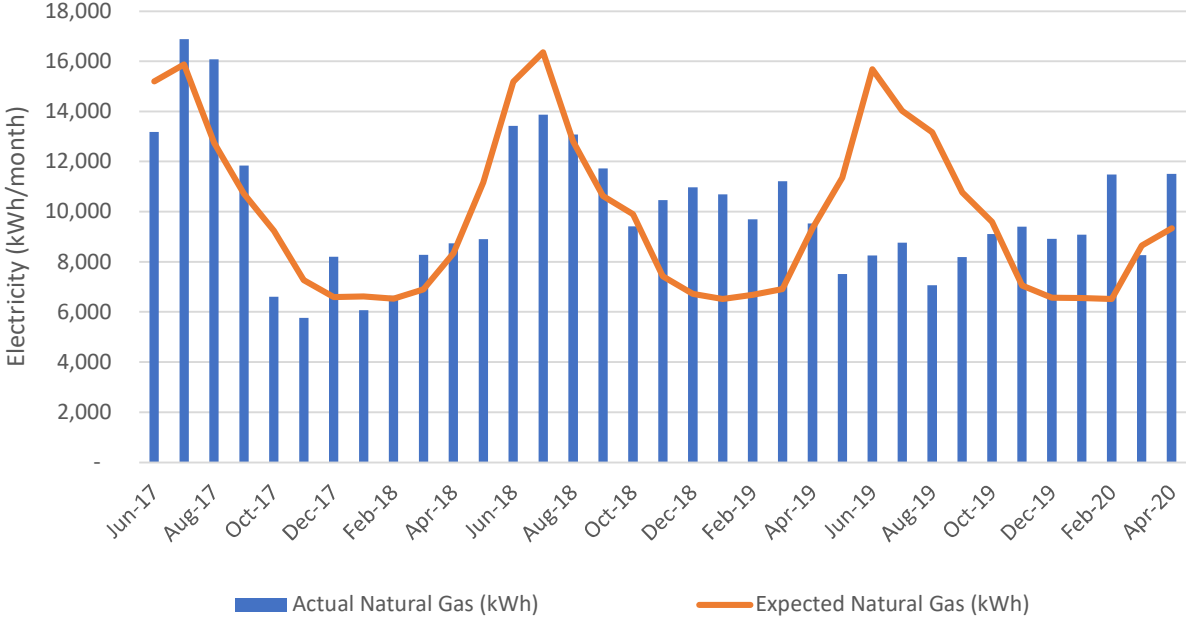
Gas use at the library was more than expected for the month. Gas use is for air handling only and is only minimally affected by occupancy. In fact, lower occupancy may actually increase space heating a small amount because the heat given off by people (typically approx 70W each), lighting, and appliances are not present. April gas use is similar to February which was also well above expected.

Te Koputu Library Actual versus Expected Electricity

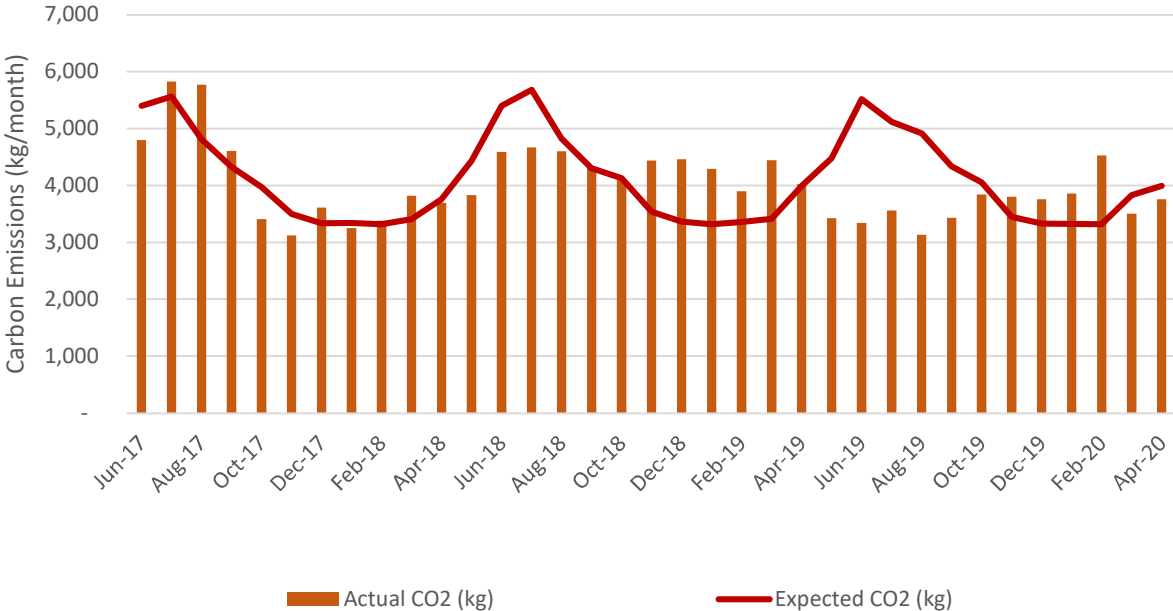




Te Koputu Library Actual versus Expected Natural Gas

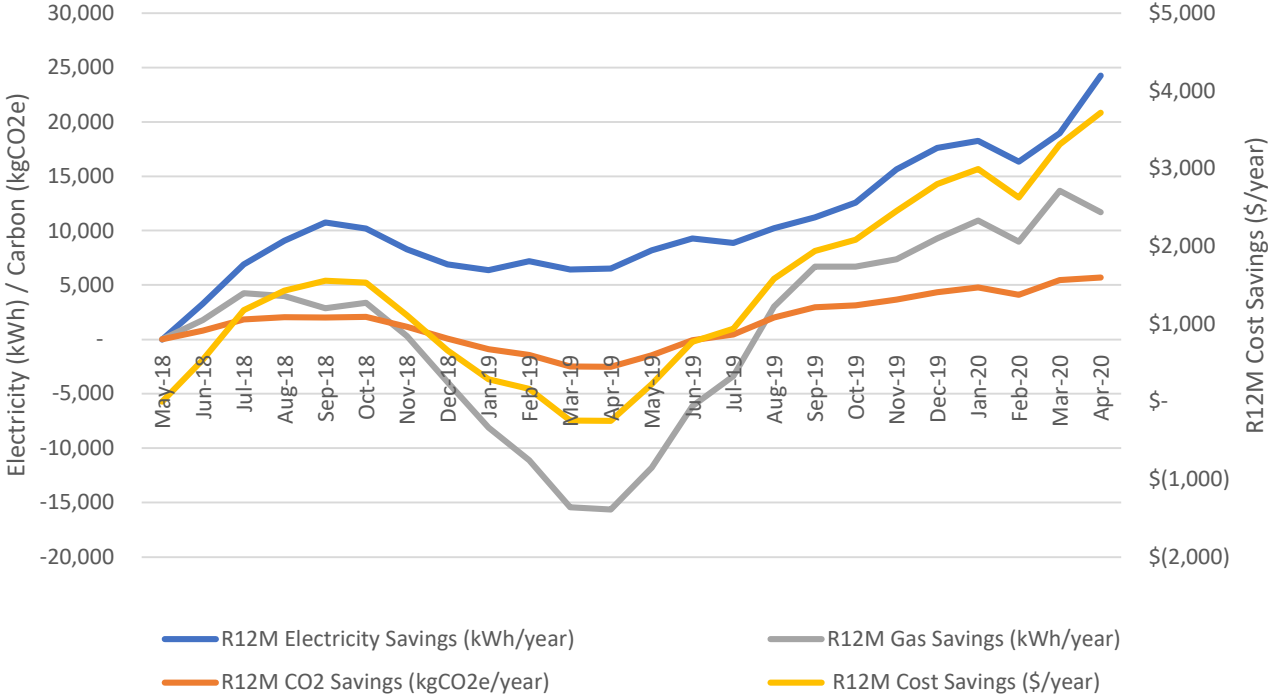


Te Koputu Library Actual versus Expected CO2





Te Koputu Library Cumulative Rolling 12 Month Savings





Museum Research Centre

Summary

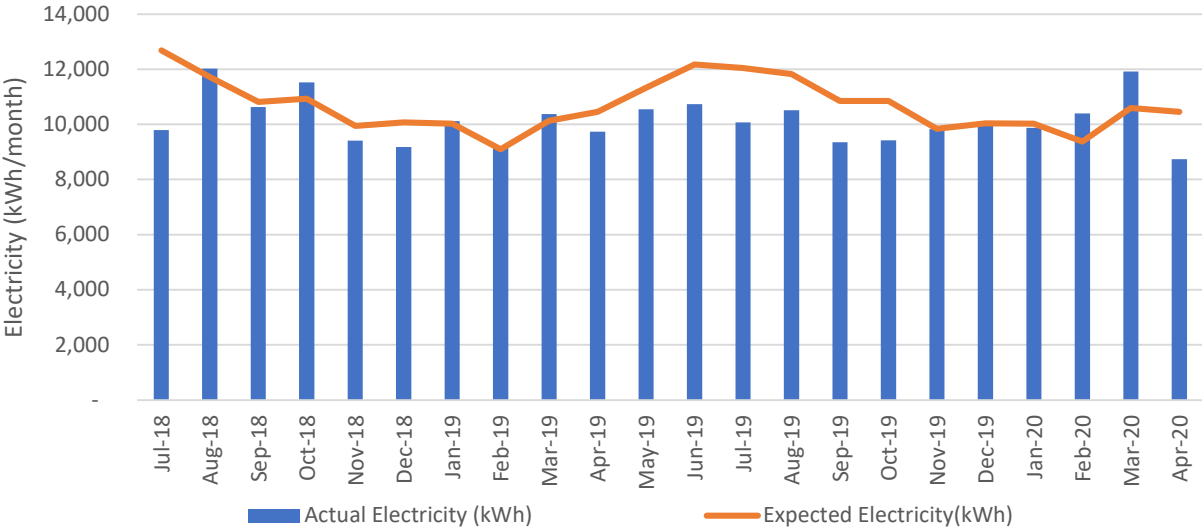
- Electricity savings for the month were 1,725kWh, a saving of 16.5%.
- Natural gas savings for the month were 4,176 kWh, a saving of 65.5%
- Energy cost savings for the month were \$486.
- Carbon savings for the month were 1,127 kgCO2e, a saving of 41.3%.
- Rolling 12-month electricity savings are 7,937 kWh, a saving of 6.1%
- Rolling 12-month natural gas savings are 35,835 kWh, a saving of 46.3%
- Rolling 12-month energy cost savings are \$3,651.
- Rolling 12-month carbon savings are 8,791 kgCO2e, a saving of 26.3%.

Comments

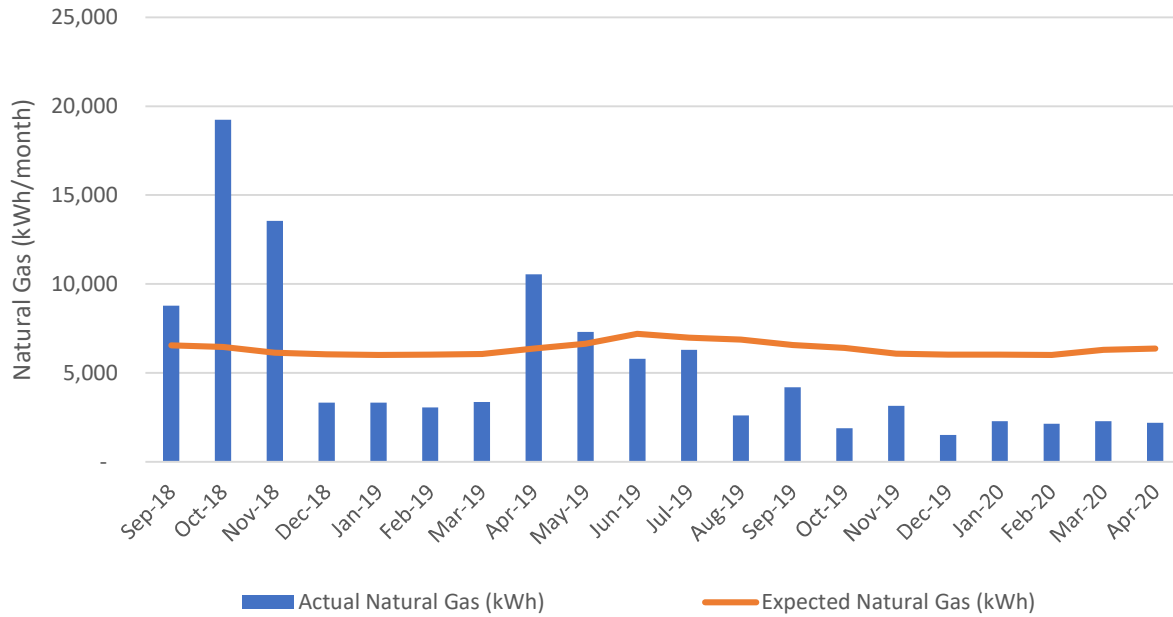
Electricity use at the Museum and Research Centre was 16.5% below baseline for April 2020. This is likely to be largely due to lockdown effects, however it indicates that a large part of the electricity use is baseload and not affected by occupancy.

Gas use for the month was below baseline, however it was similar to the previous three months, indicating that lockdown had little to no effect on gas use.

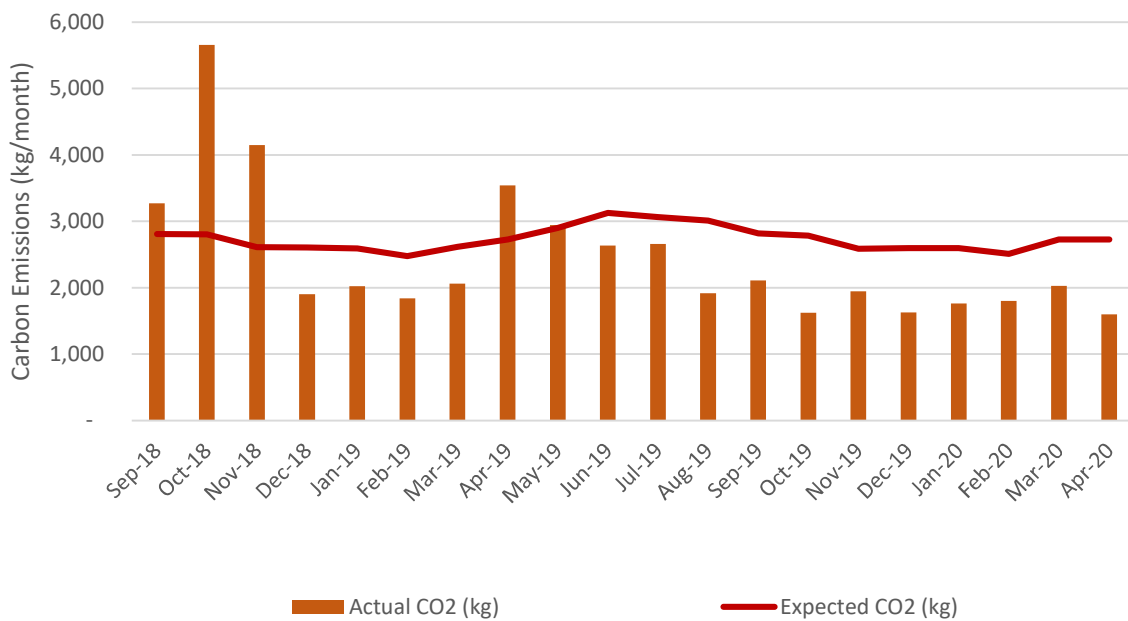
Museum Research Centre Actual versus Expected Electricity

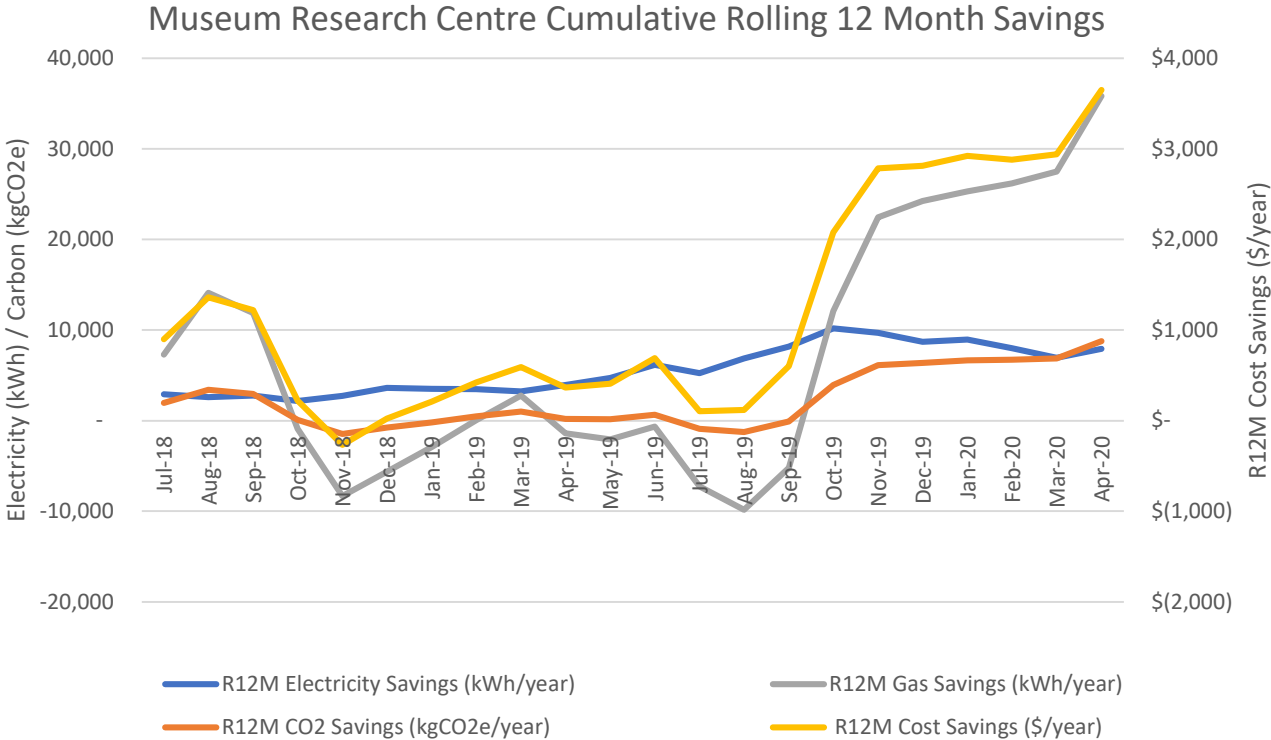


Museum Research Centre Actual versus Expected Natural Gas



Museum Research Centre Actual versus Expected CO2







Whakatāne Water Treatment Plant

Summary

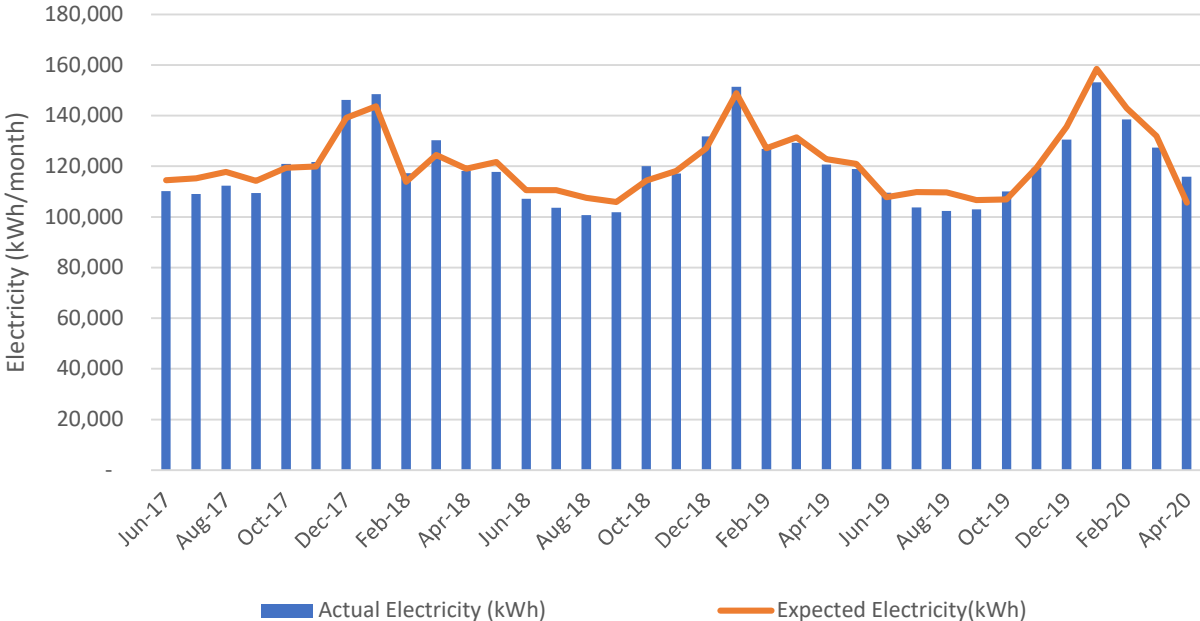
- Electricity savings for the month were -10,196kWh, an extra 9.6%.
- Energy cost savings for the month were -\$1,051, which is an increase.
- Carbon savings for the month were -1,312 kgCO2e, an extra 9.6%.
- Rolling 12-month electricity savings are 23,443 kWh, a saving of 1.6%.
- Rolling 12-month energy cost savings are \$2,676.
- Rolling 12-month carbon savings are 3,017 kgCO2e, a saving of 1.6%.

Comments

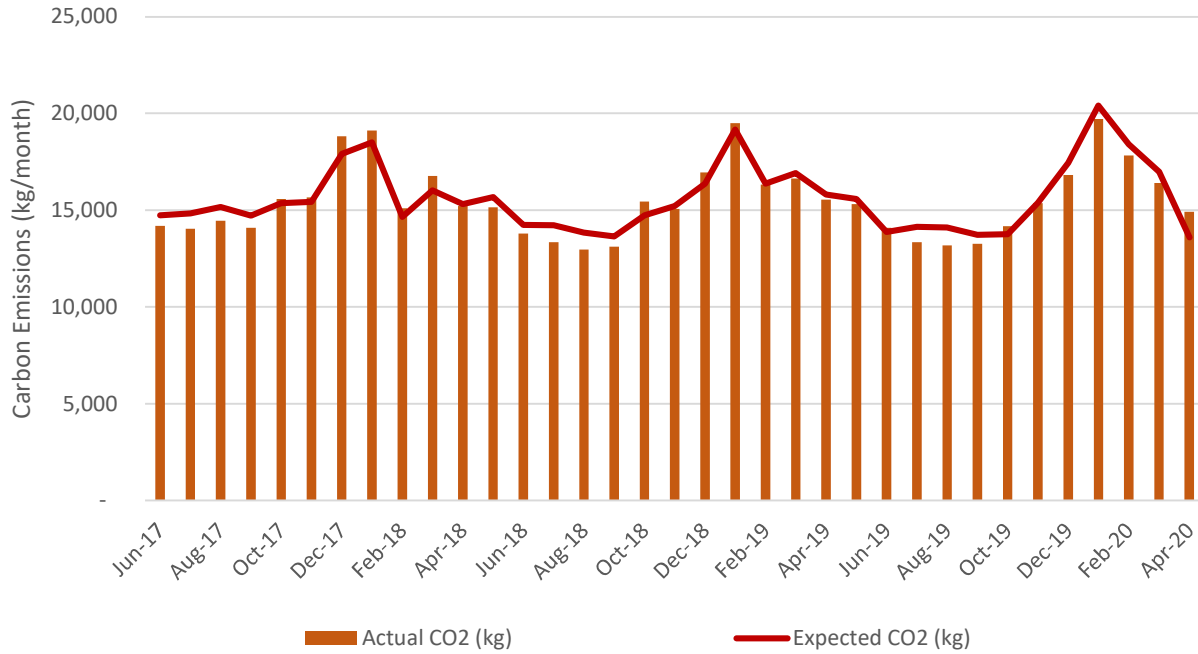
Electricity use was approximately 10% higher than baseline at the water treatment plant in April 2020. Electricity use was approximately 4% lower compared to April 2019, however the volume of water supplied was 15% less. The baseline adjusts for water supplied.

This result is an anomaly compared to both recent months and historical use over the past three years. Electricity use has typically correlated strongly with water supplied, April 2020 is the largest deviation observed since monitoring began in Jun 2017.

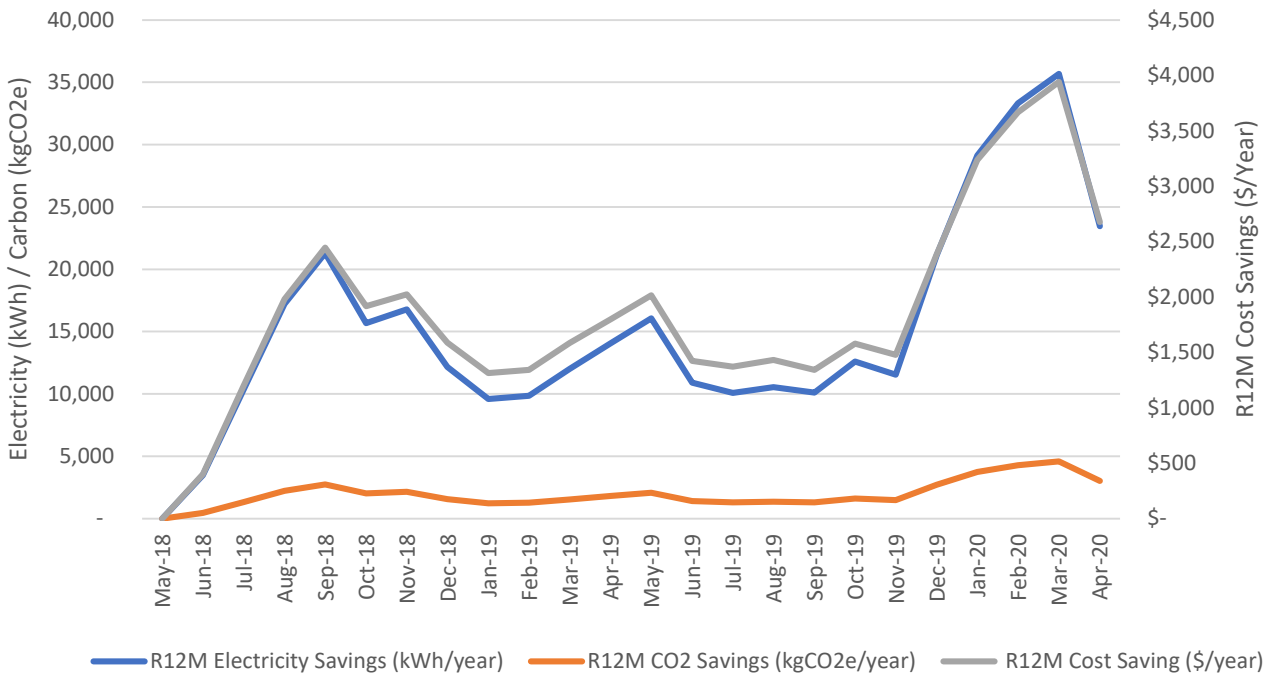
Water Treatment Plant Actual versus Expected Electricity



Water Treatment Plant Actual versus Expected CO2



Whakatane Water Treatment Plant Cumulative Rolling 12 Month Savings



Braemar Rd Pump Station

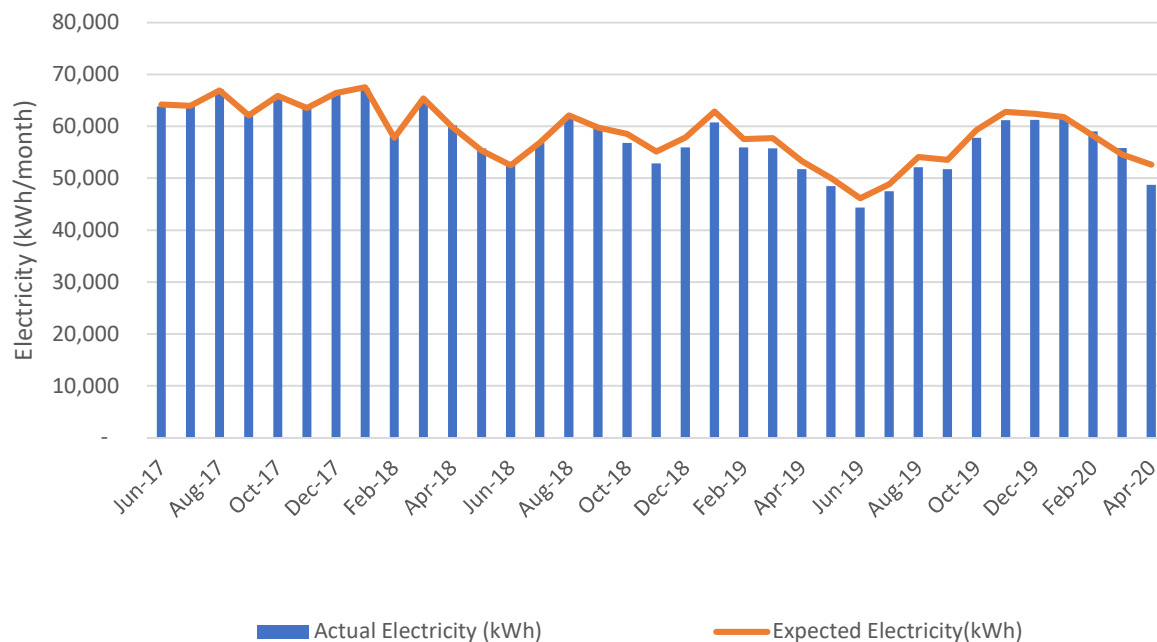
Summary

- Electricity savings for the month were 3,893kWh, a saving of 7.4%.
- Energy cost savings for the month were \$408.
- Carbon savings for the month were 567 kgCO₂e, a saving of 7.4%.
- Rolling 12-month electricity savings are 14,303 kWh, a saving of 2.2%.
- Rolling 12-month energy cost savings are \$1,541.
- Rolling 12-month carbon savings are 2,429 kgCO₂e, a saving of 2.2%.

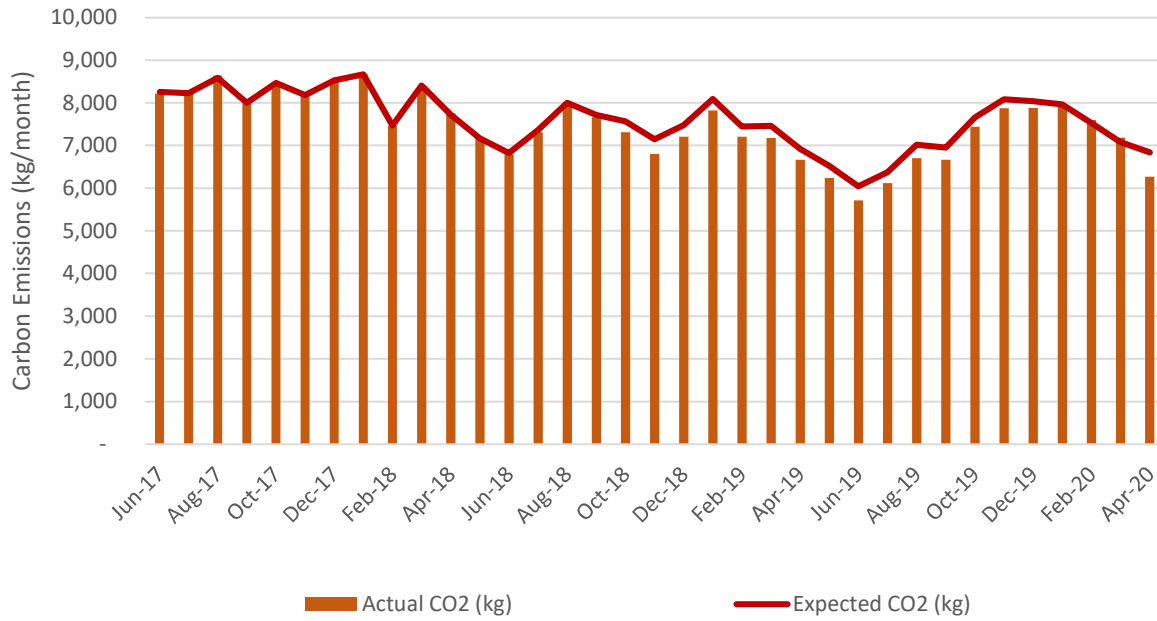
Comments

Braemar Rd achieved an energy savings of 7.4% from baseline and used approx. 6% less electricity than April 2019. Savings in the last 12 months have increased from 1.8% to 2.2%. In the past, the 2-3% savings attributed to Braemar Rd have been accompanied by increased usage at the Johnson Rd pump station. This month follows that trend: Johnson road was 12% above baseline for electricity use. One of the two Braemar Rd pumps has failed and the system is due to be replaced by a more modern pumping system.

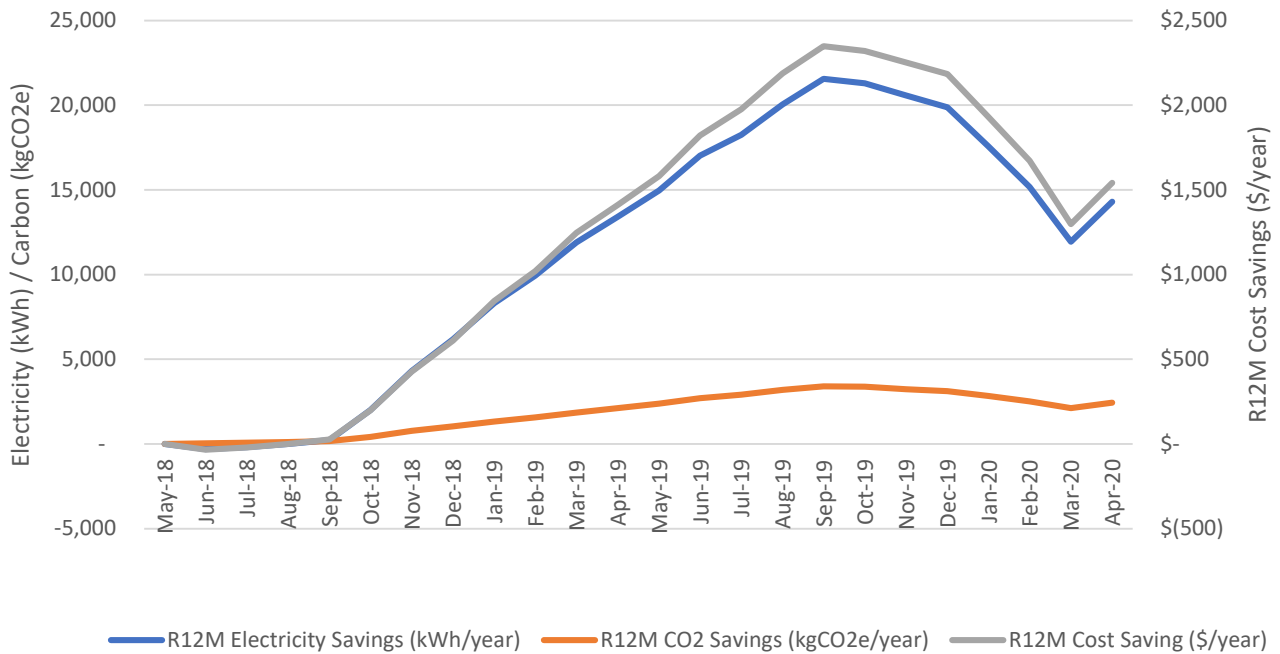
Braemar Rd Actual versus Expected Electricity



Braemar Rd Actual versus Expected CO2



Braemar Rd Pumps Cumulative Rolling 12 Month Savings





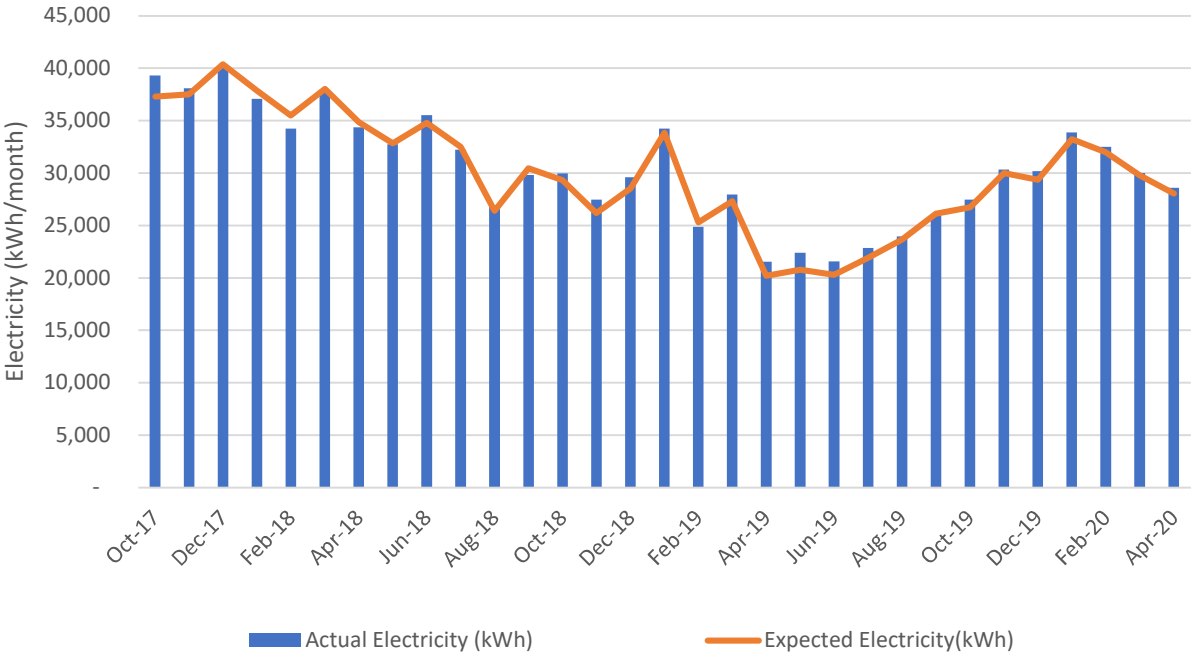
Paul Rd Pump Station

- Electricity savings for the month were -550kWh, an extra 2%.
- Energy cost savings for the month were -\$57, which is an increase.
- Carbon savings for the month were -70 kgCO2e, an extra 2%.
- Rolling 12-month electricity savings are -7,767 kWh, an extra 2.4%.
- Rolling 12-month energy cost savings are -\$873, which is an increase.
- Rolling 12-month carbon savings are -993 kgCO2e, an extra 2.4%.

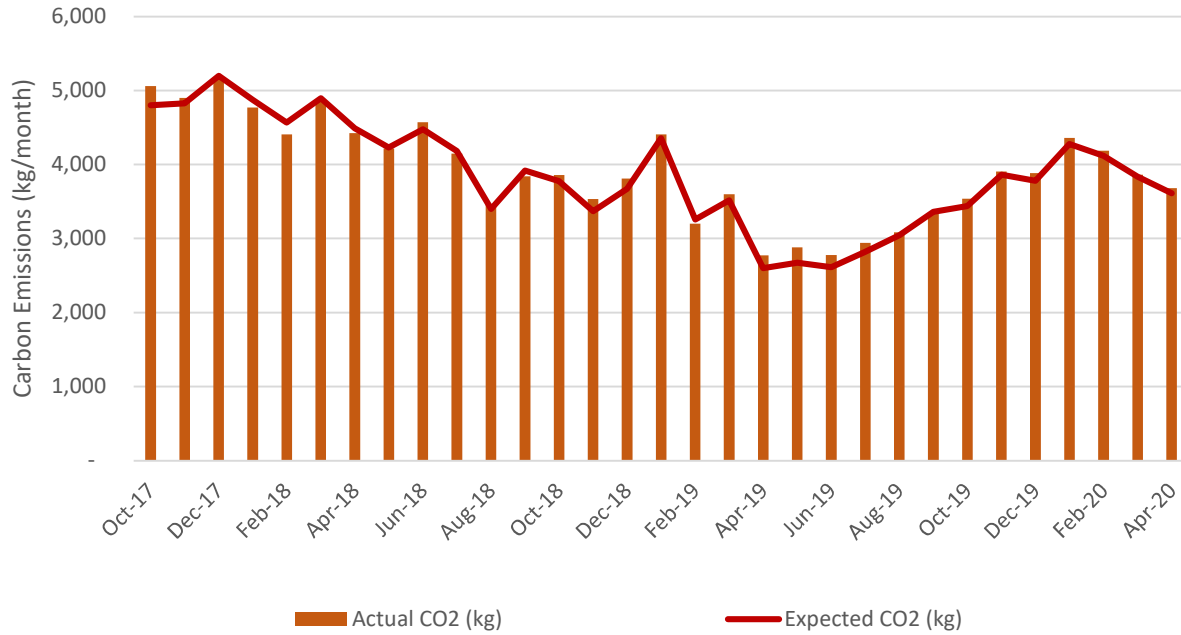
Comments

Electricity used by the Paul Rd pump station has increased from April 2020 compared to 2019 and decreased compared to April 2018. Both are due to changes in water demand, relative to a baseline that adjusts for supplied water, energy use at Paul Rd was similar to expected.

Paul Rd Pump Station Actual versus Expected Electricity



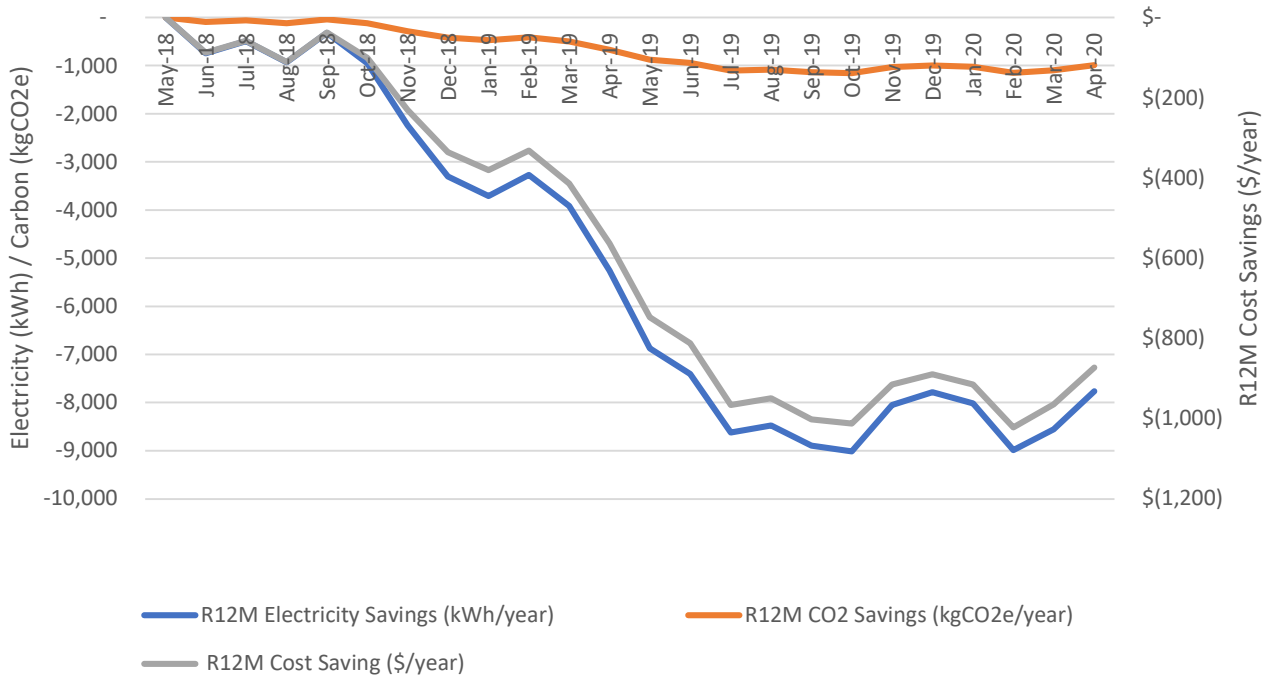
Paul Rd Pump Station Actual versus Expected CO2



Actual CO2 (kg)

Expected CO2 (kg)

Paul Rd Pumps Cumulative Rolling 12 Month Savings



R12M Electricity Savings (kWh/year)

R12M CO2 Savings (kgCO2e/year)

R12M Cost Saving (\$/year)



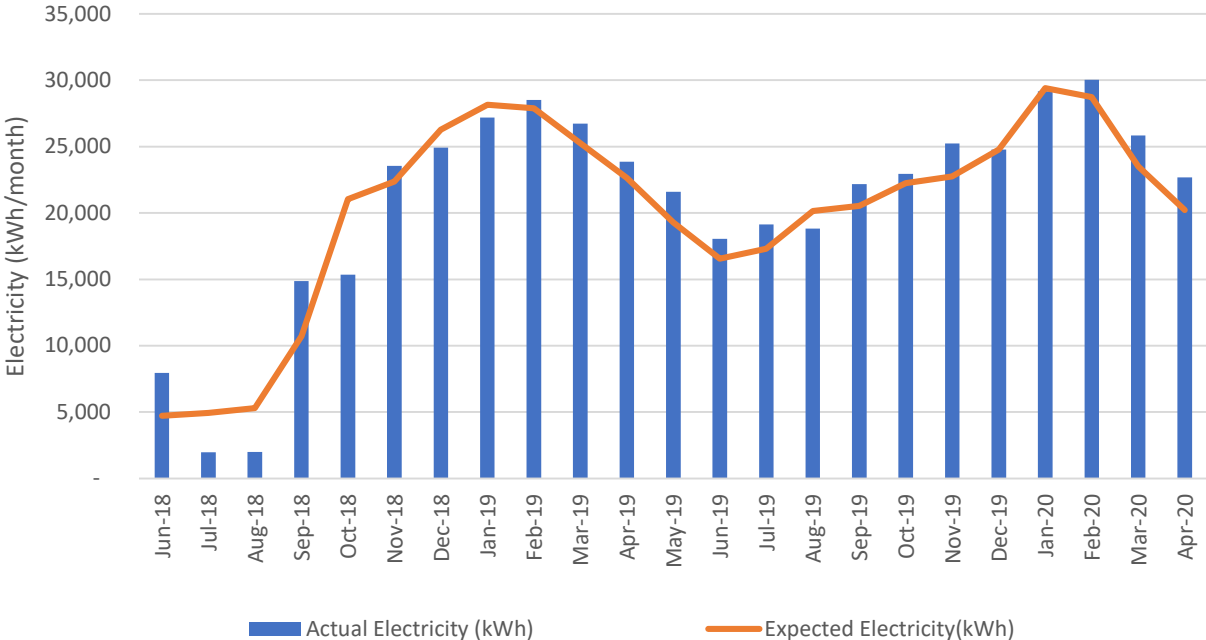
Johnson Rd Pump Station

- Electricity savings for the month were -2,446kWh, an extra 12.1%.
- Energy cost savings for the month were -\$635, which is an increase.
- Carbon savings for the month were -314 kgCO2e, an extra 12.1%.
- Rolling 12-month electricity savings are -14,994 kWh, an extra 5.6%.
- Rolling 12-month energy cost savings are -\$3,536, which is an increase.
- Rolling 12-month carbon savings are -1,916 kgCO2e, an extra 5.6%.

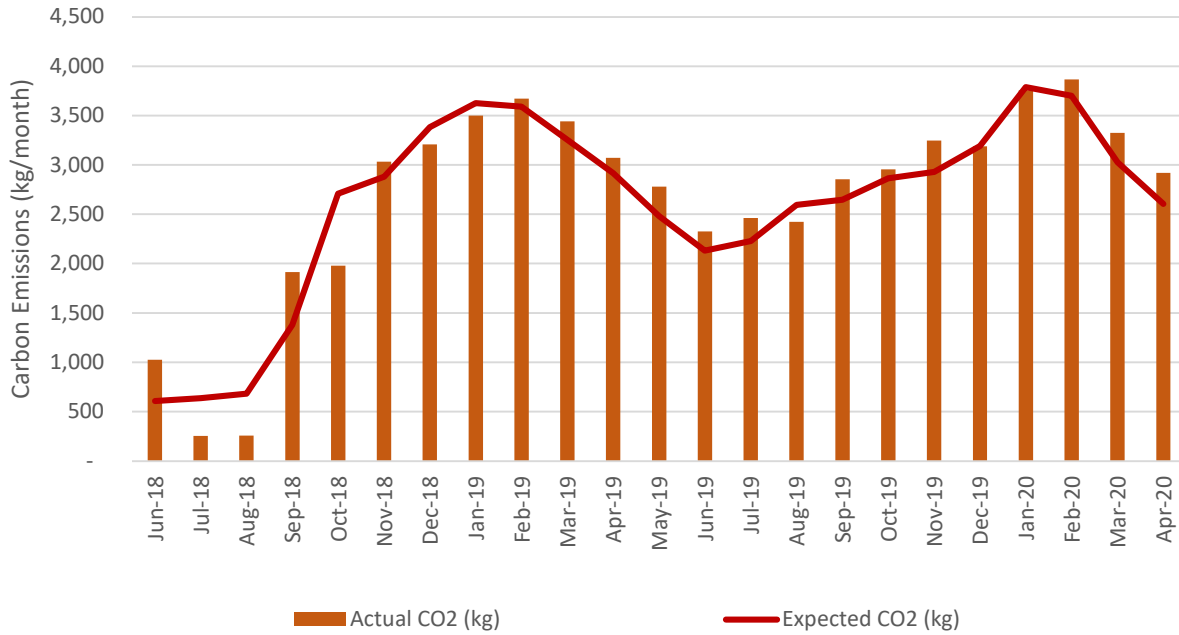
Comments

Electricity used by the Johnson Rd pump station in April 2020 was approx. 12% higher than expected for the month. This is the third month in a row that electricity use has been above baseline. Electricity usage is consistent with the previous trend of above baseline use since Feb 2019 for most months. The increased usage is also consistent with a saving at Braemar Rd; the two are part of a common system and seem to affect the relative efficiency of each other. Braemar Rd has been operating on only one of its two pumps for most of 2020.

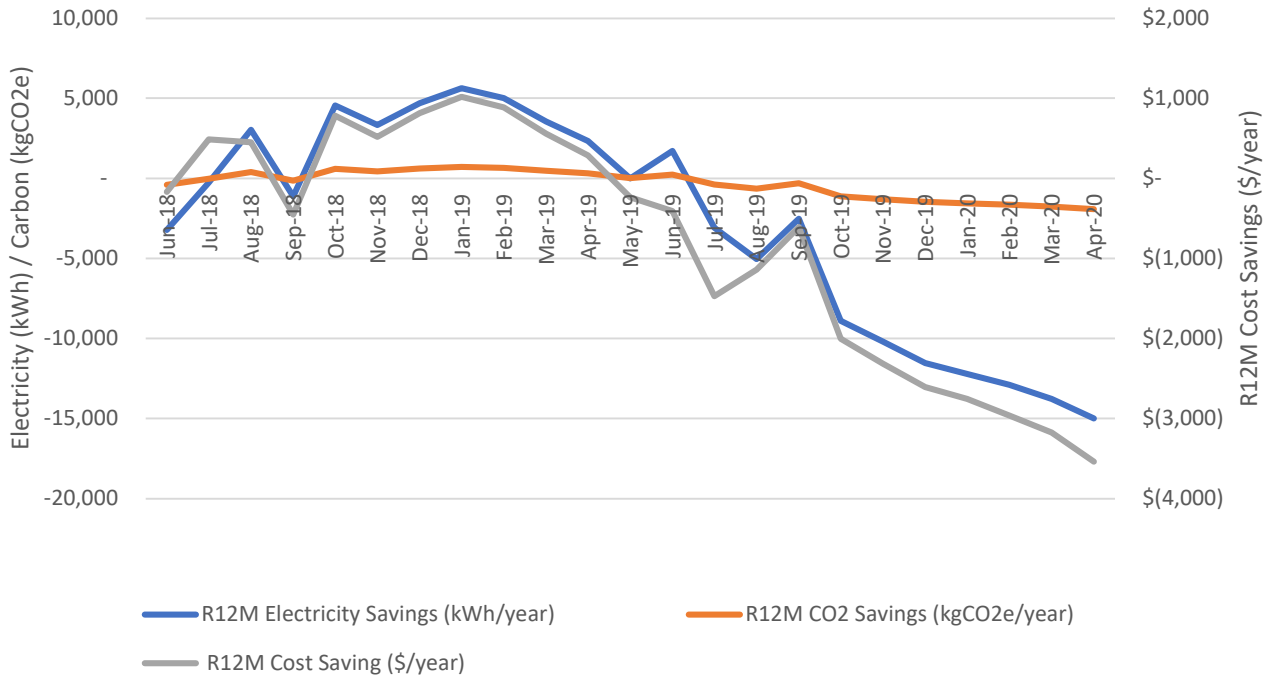
Johnson Rd Pump Station Actual versus Expected Electricity



Johnson Rd Pump Station Actual versus Expected CO2



Johnson Rd Pumps Cumulative Rolling 12 Month Savings





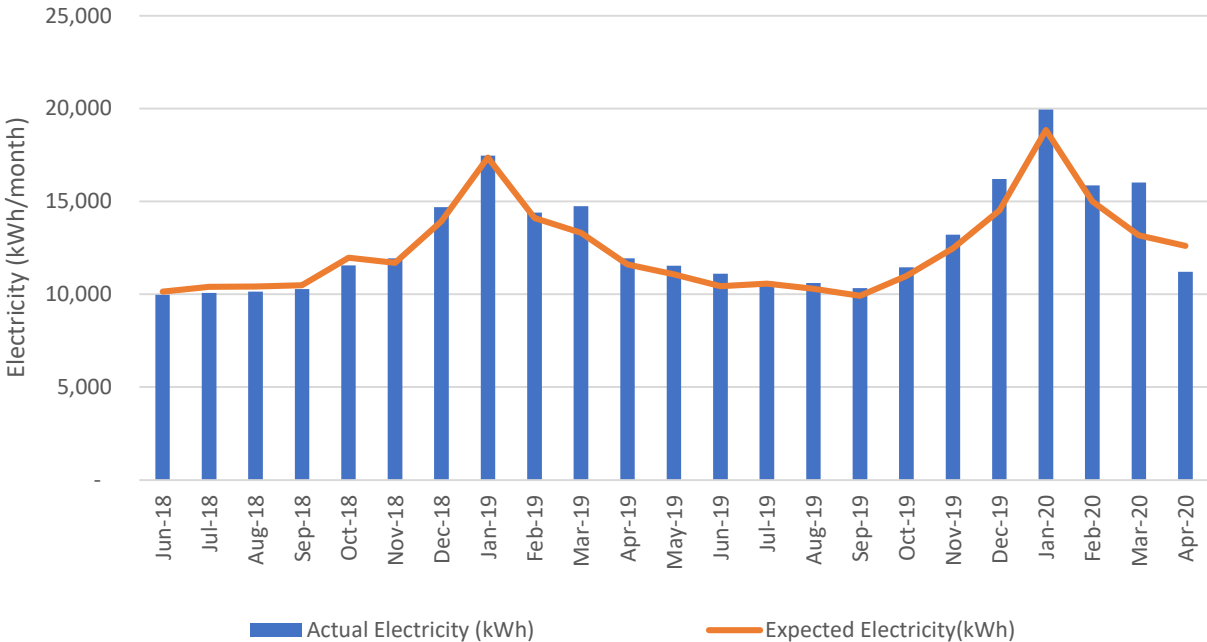
Bridger Glade Pump Station

- Electricity savings for the month were 1,398kWh, a saving of 11.1%.
- Energy cost savings for the month were \$254.
- Carbon savings for the month were 180 kgCO2e, a saving of 11.1%.
- Rolling 12-month electricity savings are -8,190 kWh, an extra 5.5%.
- Rolling 12-month energy cost savings are -\$1,586, which is an increase.
- Rolling 12-month carbon savings are -1,054 kgCO2e, an extra 5.5%.

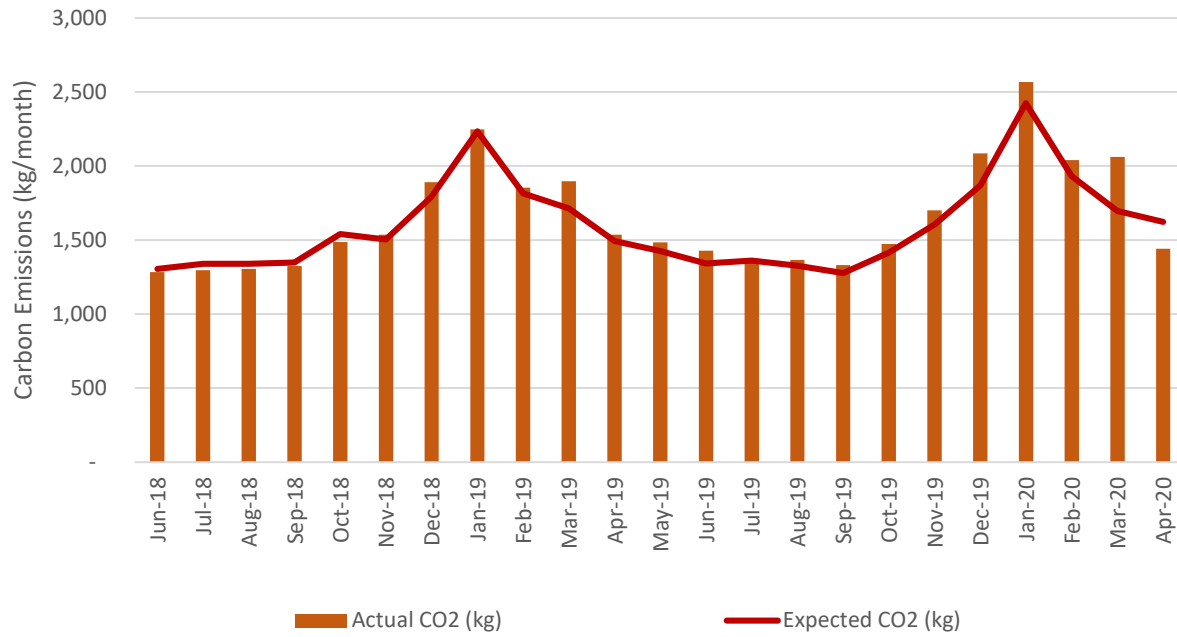
Comments

Electricity use at Bridger Glade has been at or above baseline since Dec-18. April 2020 is the first month to break that trend. Electricity use has decreased by approximately 30% over Mar-20, while the volume of water pumped has only decreased by approx 4%. Compared to April 2019, electricity use has decreased marginally. Note, Bridgerglade is a non half hour meter and is read manually which can result in unders and overs each month.

Bridger Glade Pump Station Actual versus Expected Electricity



Bridger Glade Pump Station Actual versus Expected CO2



Bridger Glade Pumps Cumulative Rolling 12 Month Savings

