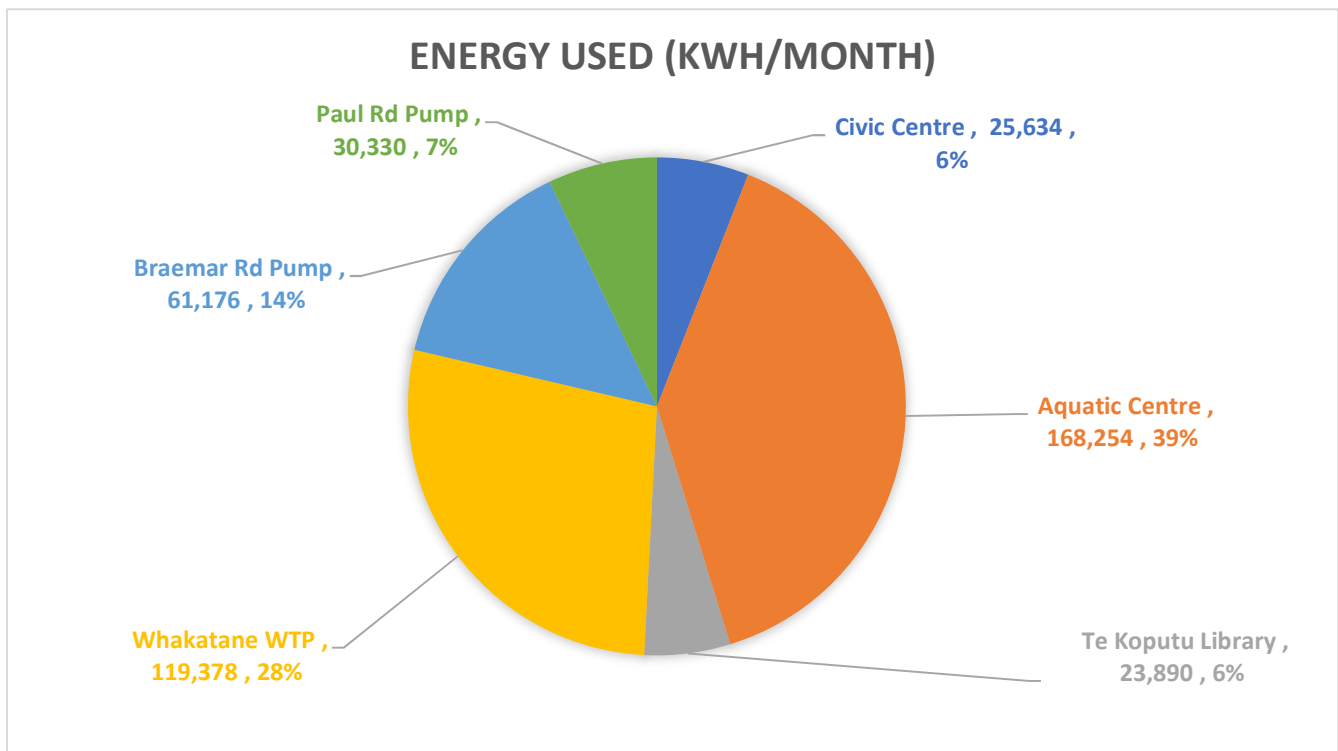


## Whakatāne District Council Energy Performance Report

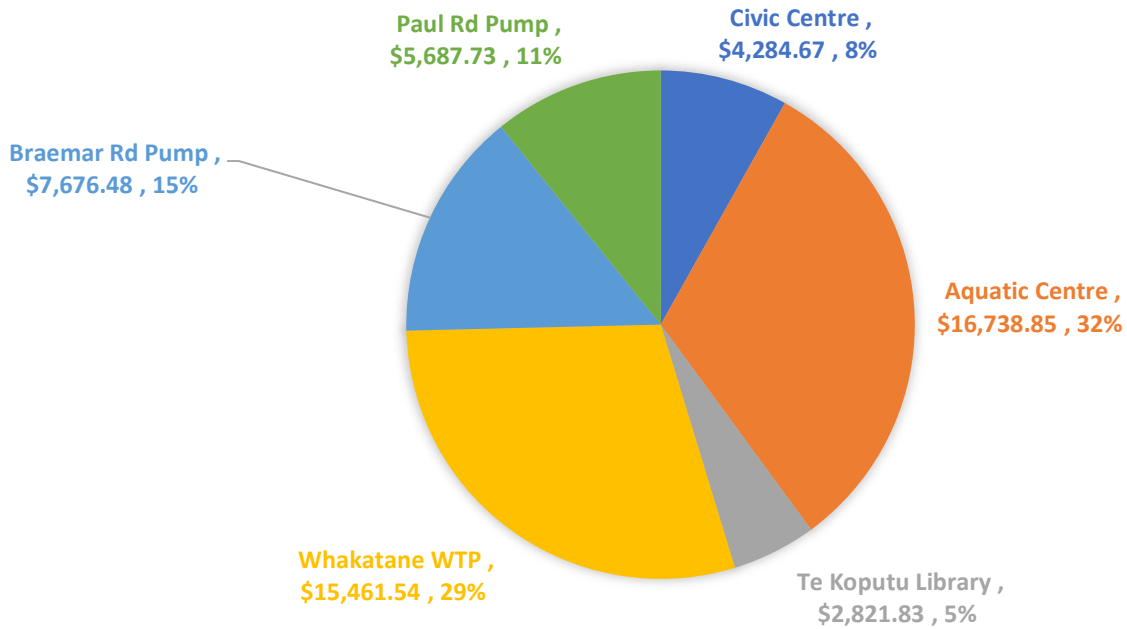
### Summary

For Whakatāne District Council's six largest energy using sites:

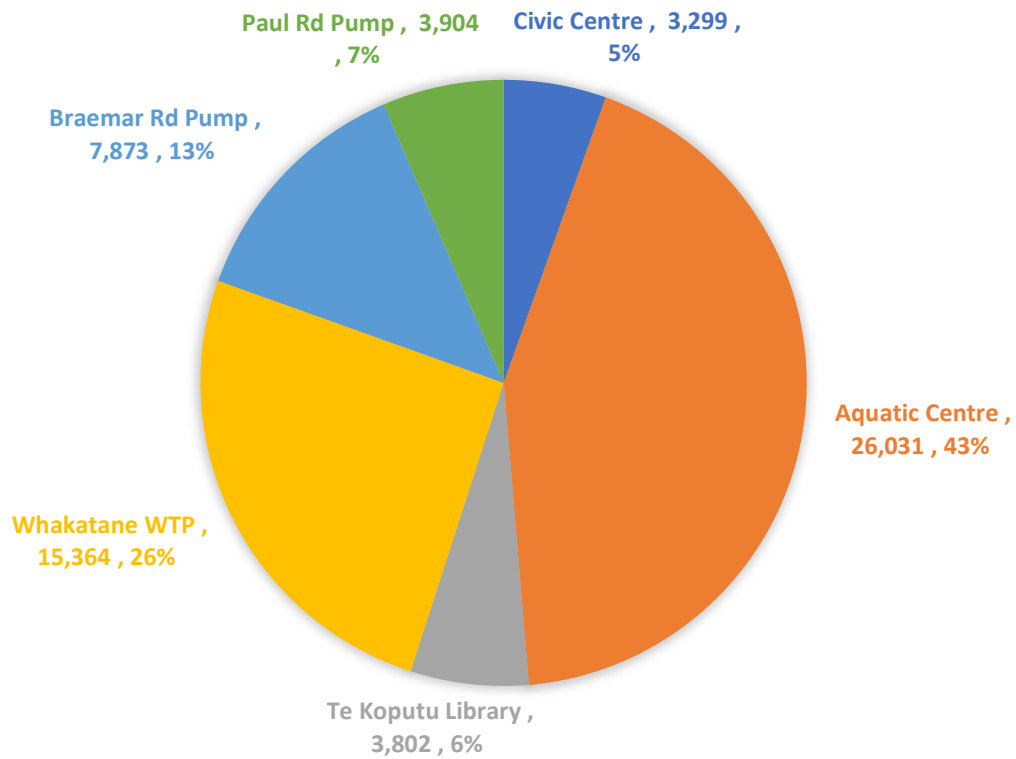
- Total energy used for the month was 428,663 kWh
- Total energy cost for the month was \$52,671
- Total carbon emissions for the month were 60,274 kgCO<sub>2</sub>e
- Rolling 12-month energy savings total 598,065 kWh
- Rolling 12-month energy cost savings total \$48,266
- Rolling 12-month carbon savings total 126,079 kgCO<sub>2</sub>e

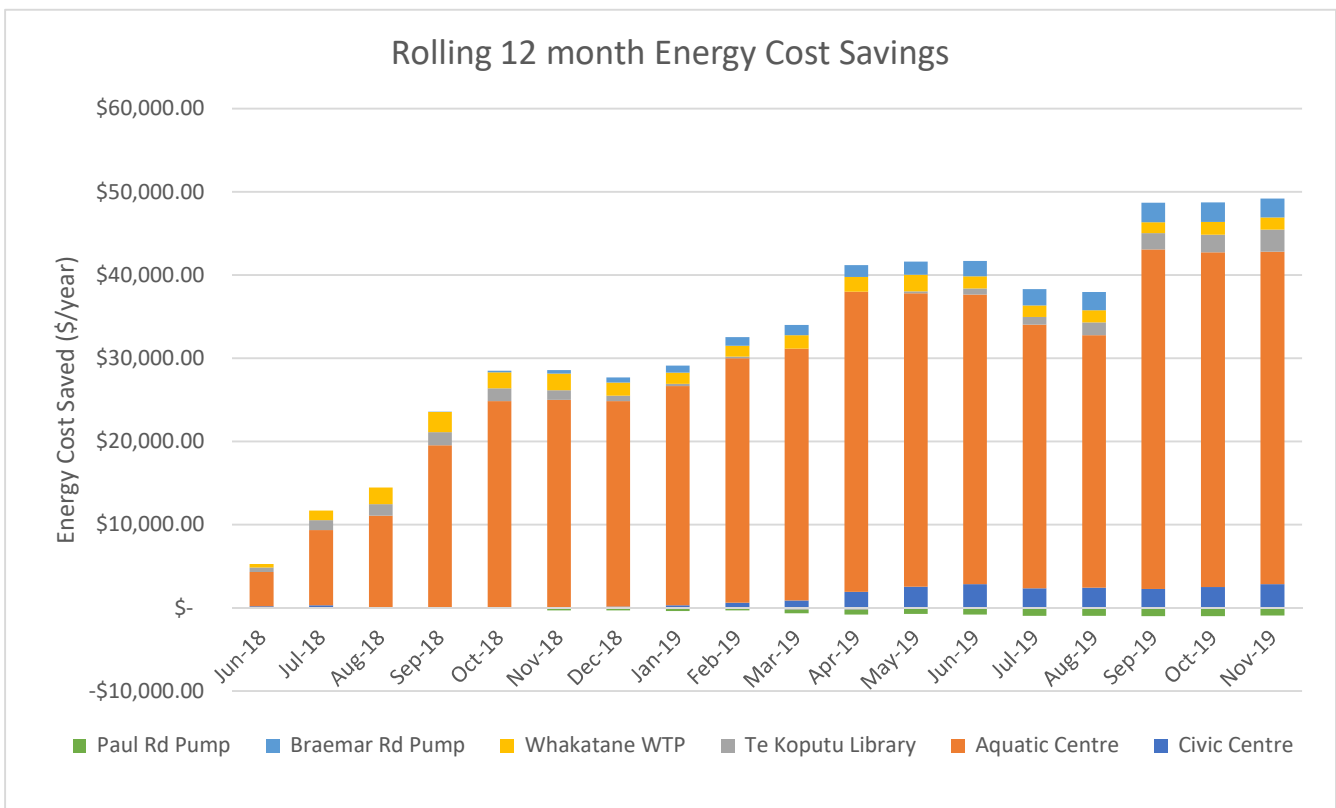
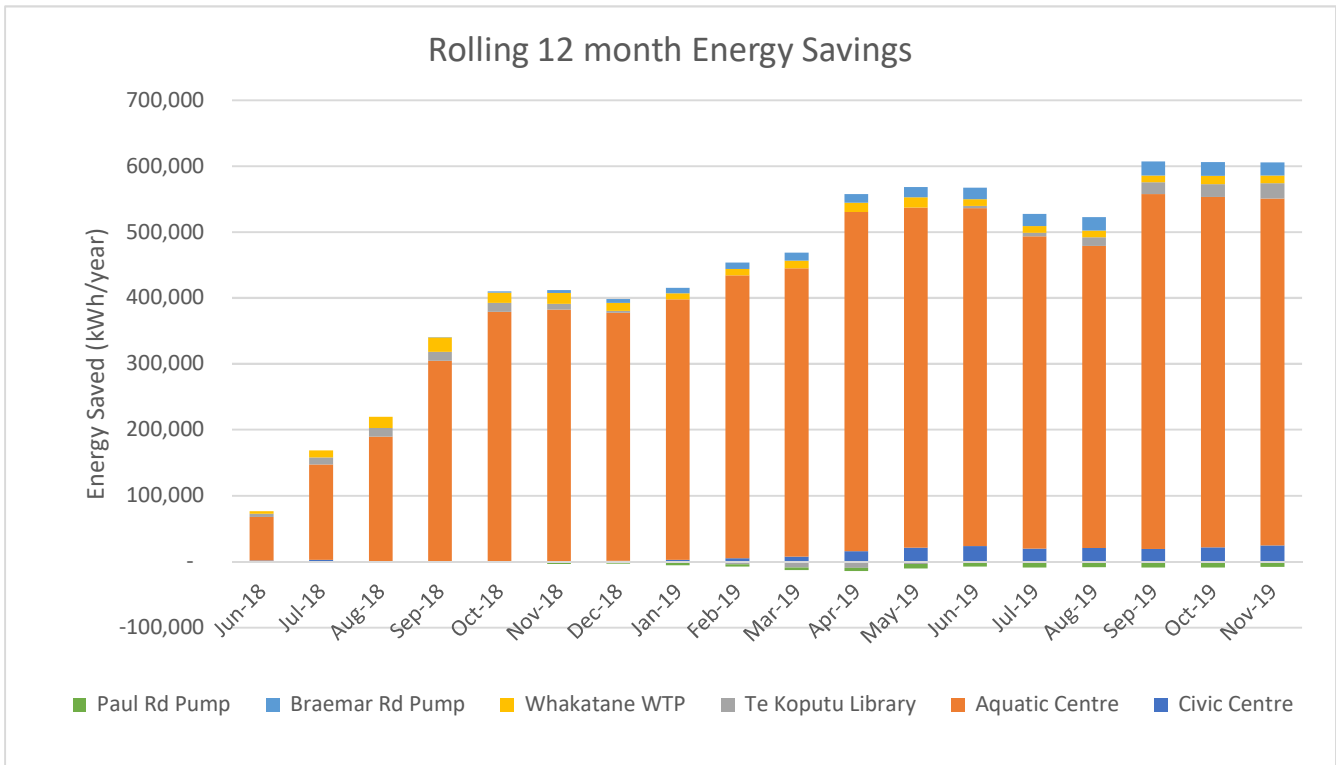


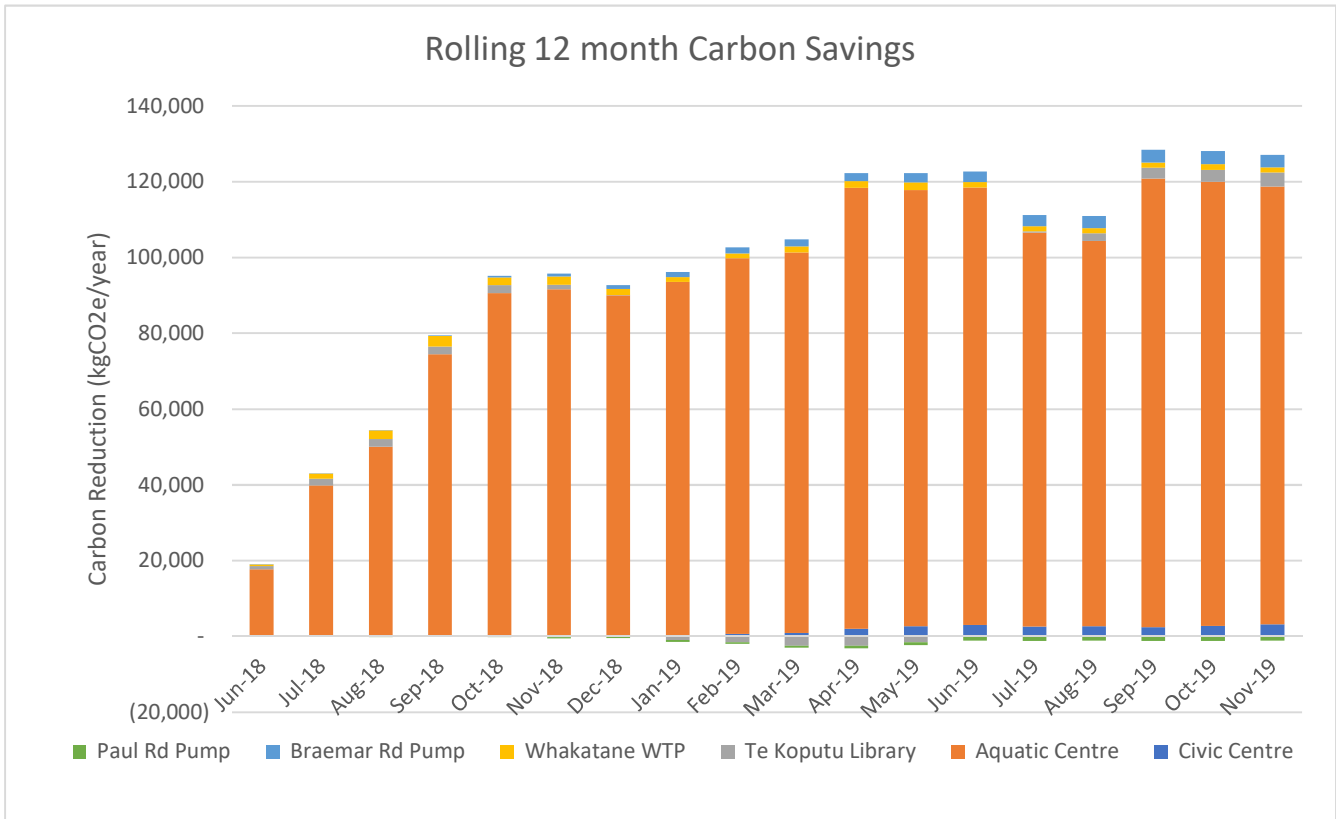
### ENERGY COST (\$/MONTH)



### CARBON EMISSIONS (KGCO2E/MONTH)







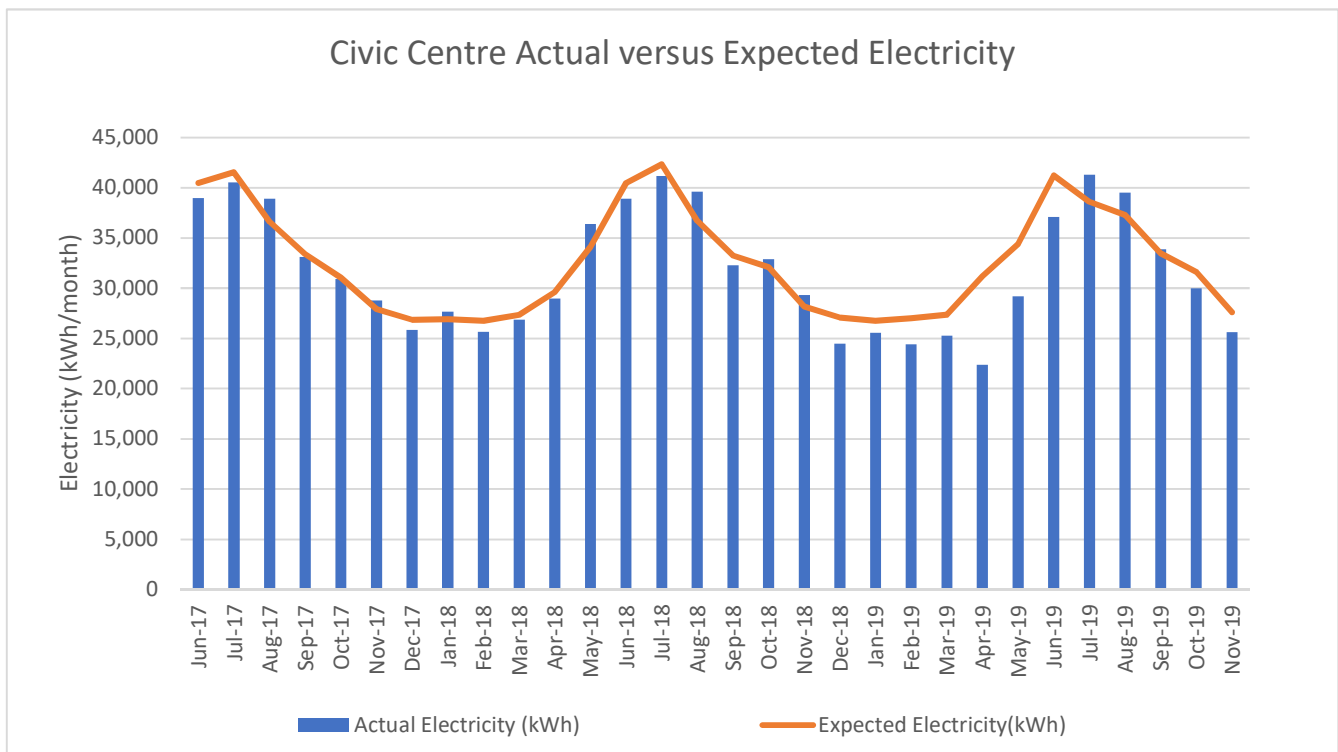
## Civic Centre

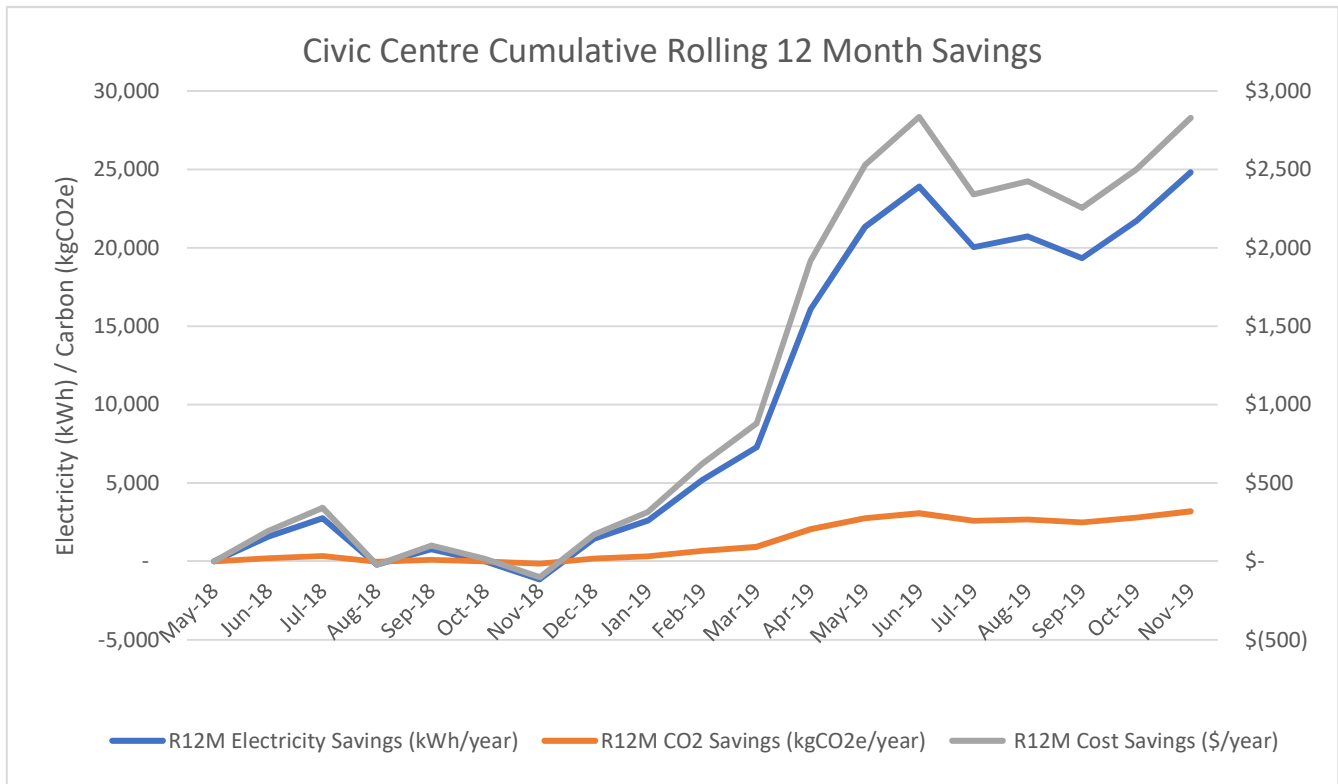
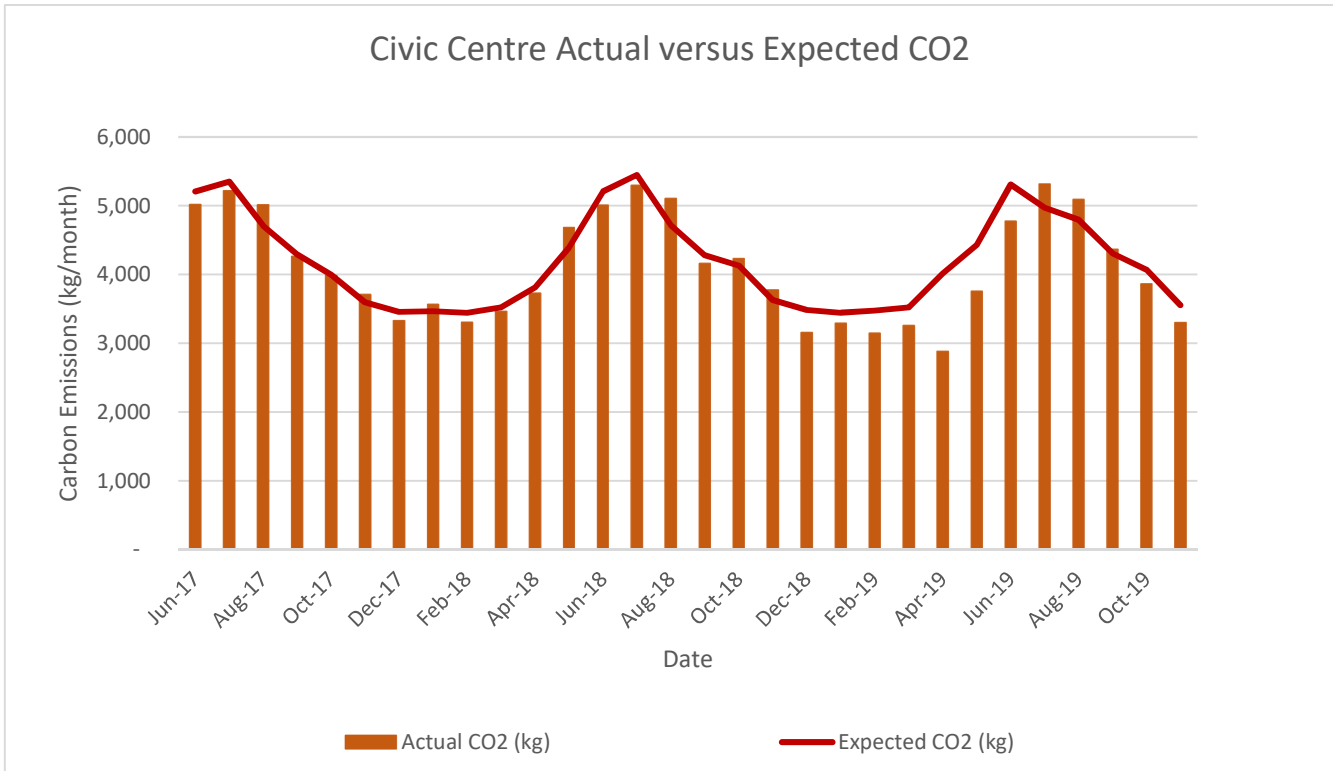
### Summary

- Electricity savings for the month were 1,960kWh, a saving of 7.1%.
- Energy cost savings for the month were \$210.
- Carbon savings for the month were 252 kgCO<sub>2</sub>e, a saving of 7.1%.
- Rolling 12-month electricity savings are 24,826 kWh, a saving of 6.5%.
- Rolling 12-month energy cost savings are \$2,830.
- Rolling 12-month carbon savings are 3,195 kgCO<sub>2</sub>e, a saving of 6.5%.

### Comments

Electricity use at the Civic Centre was lower than the baseline, which adjusts for ambient temperature. Monthly electricity use has been lower than expected for 12 months now, with the exception of July and August 2019. Time of Use (TOU) data, appended to the back of this report, compares Nov 2019 half hour TOU with Nov 2018. Ambient temperature was similar for these months, however electricity use was 12.5% less in Nov 2019. The TOU plots show in Nov 2018 that electricity was increasing sharply in the morning and then decreasing again by midday. This was most likely due to central heating. The same morning increases were not observed in Nov 2019 which suggests the central heating was not used.





## Aquatic Centre

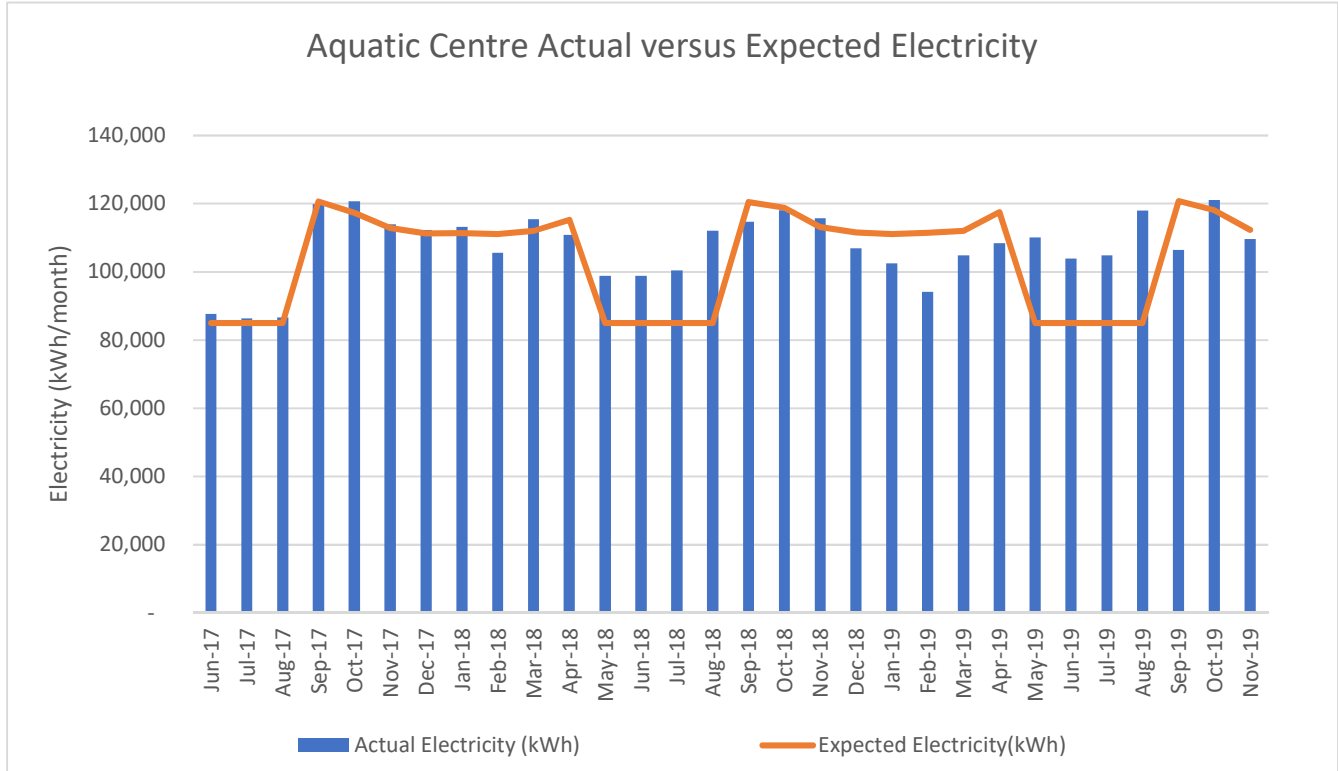
### Summary

- Electricity savings for the month were 2,761kWh, a saving of 2.5%.
- Natural gas savings for the month were -4,797 kWh, an extra 9.6%
- Energy cost savings for the month were \$268.
- Carbon savings for the month were -651 kgCO<sub>2</sub>e, an extra 2.6%.
- Rolling 12-month electricity savings are -35,854 kWh, an extra 2.9%.
- Rolling 12-month natural gas savings are 562,005 kWh, a saving of 54.5%
- Rolling 12-month energy cost savings are \$39,998.
- Rolling 12-month carbon savings are 115,525 kgCO<sub>2</sub>e, a saving of 30.1%.

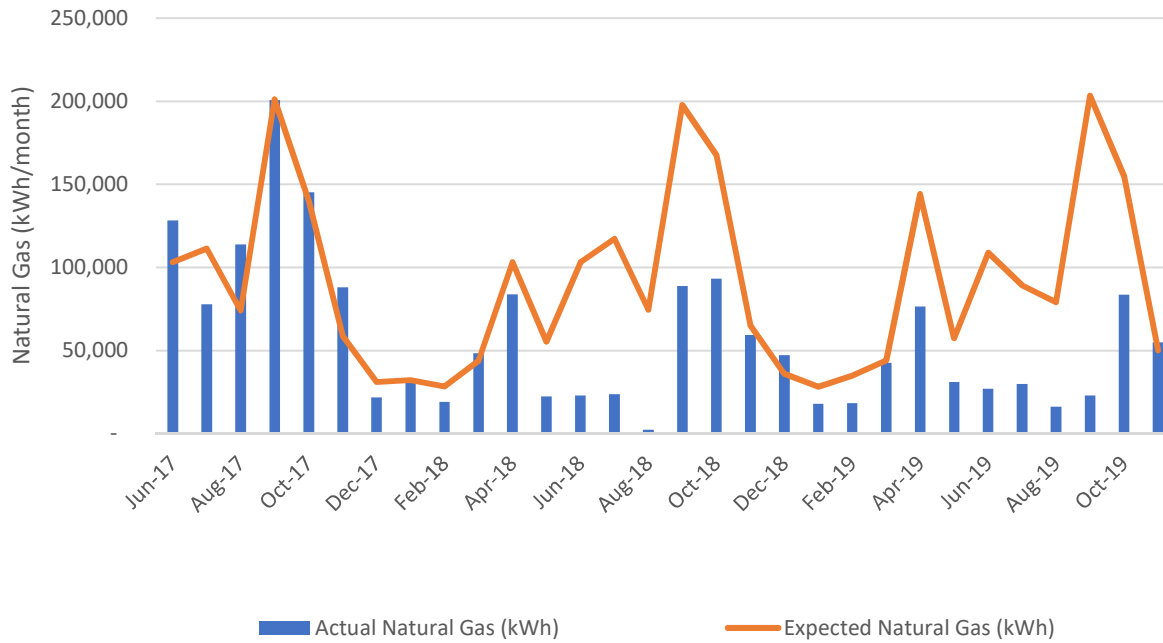
### Comments

Electricity use at the Aquatic Centre was slightly lower than expected in Nov 2019, when adjusted for ambient temperature. Electricity use in November also decreased by 9% compared to October.

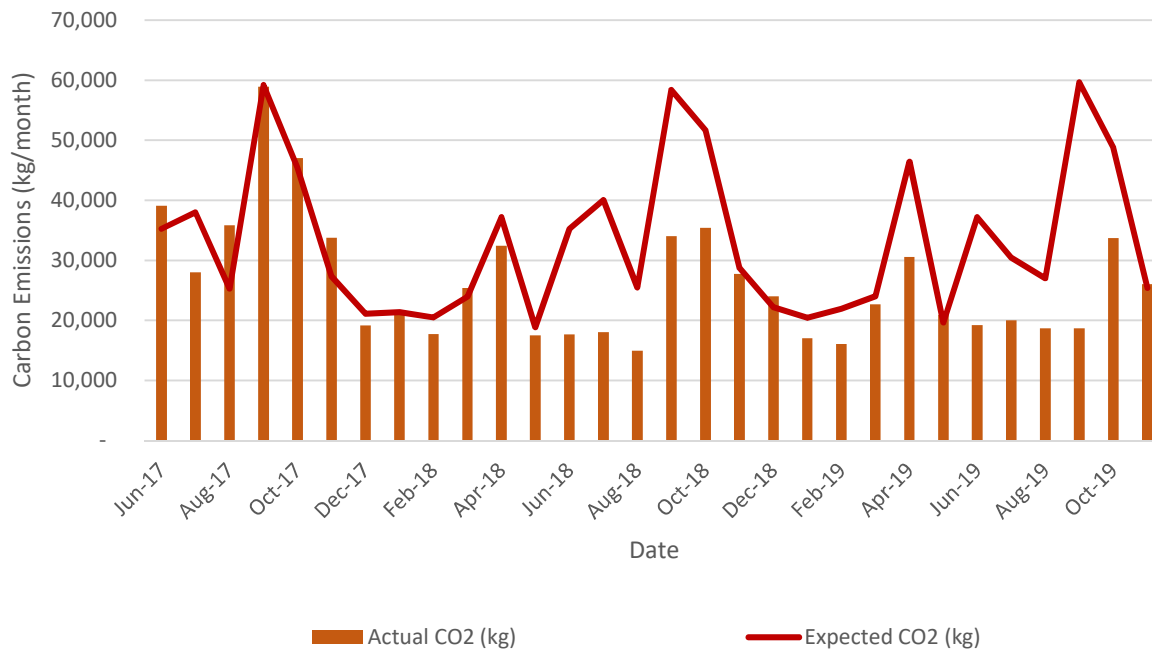
Natural gas use at the Aquatic Centre was above expected for the month. A plot of daily gas use is appended to the back of this report. This shows that gas use was at its highest from Nov 10 to Nov 20, and had reduced substantially by the end of the month.



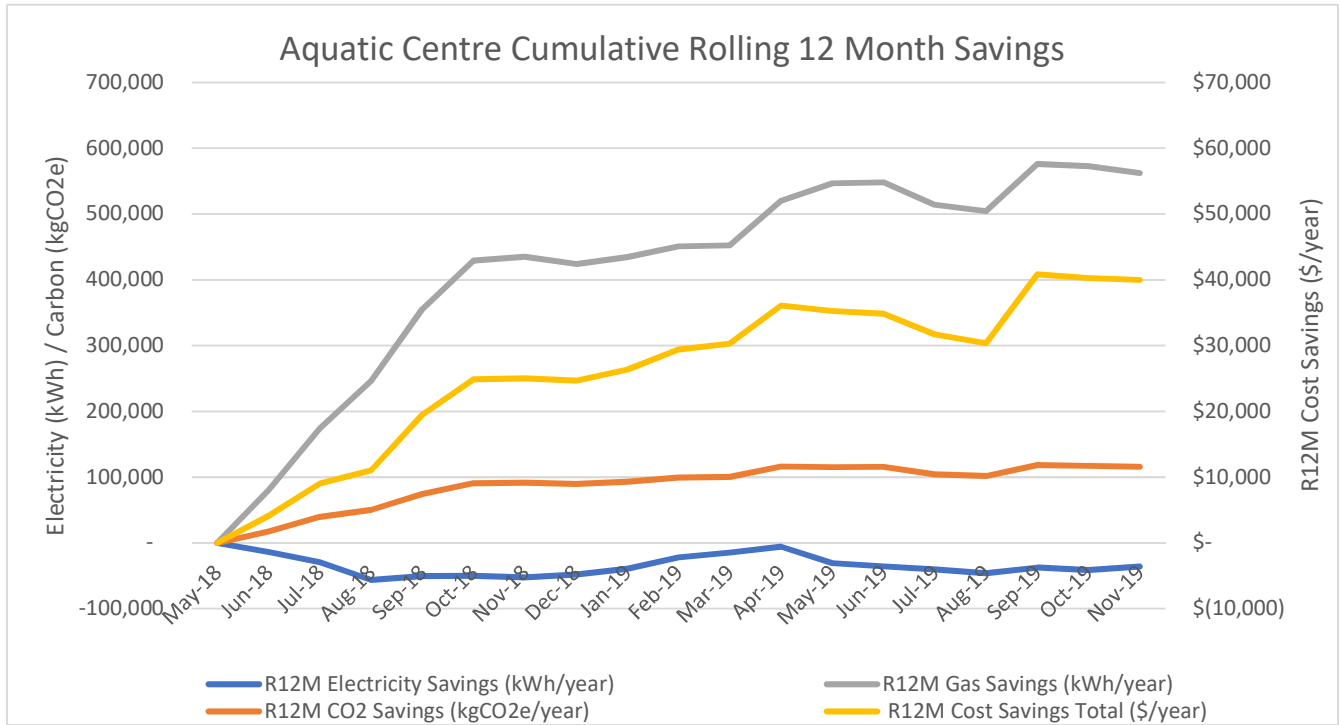
### Aquatic Centre Actual versus Expected Natural Gas



### Aquatic Centre Actual versus Expected CO2







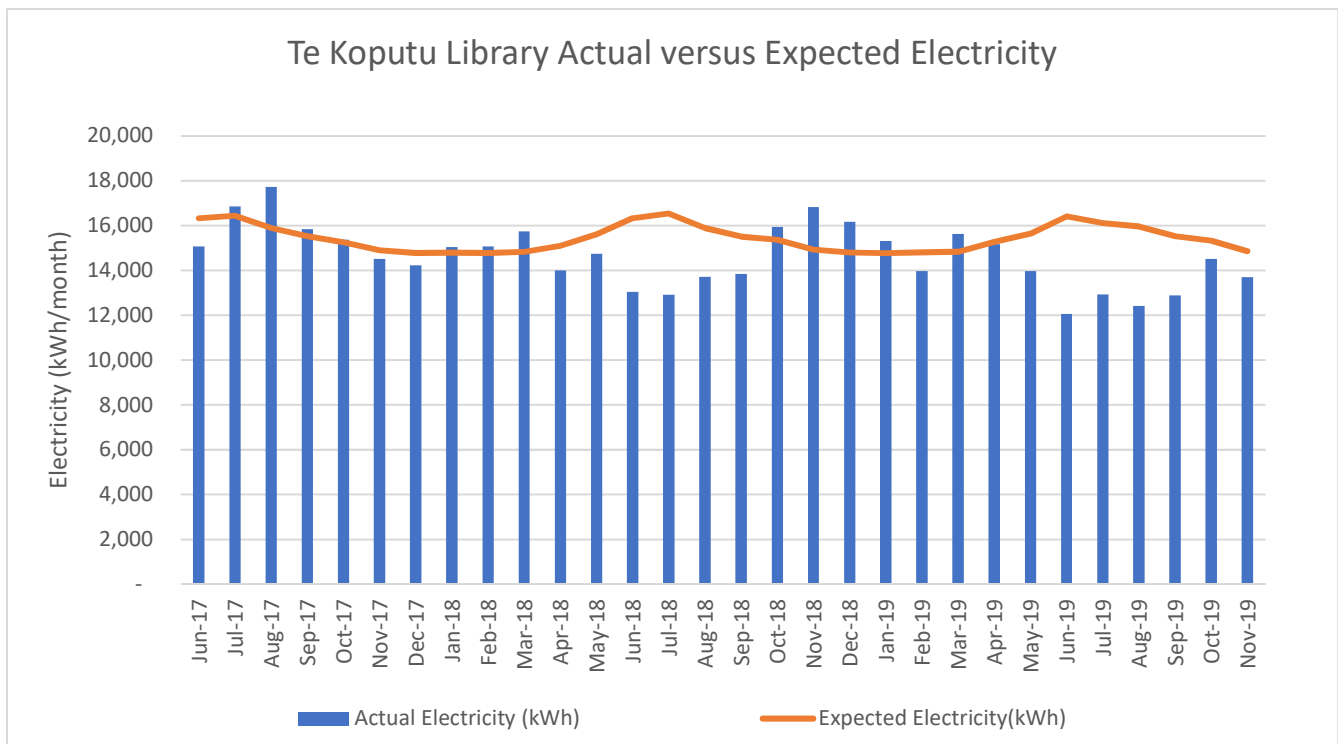
## Te Koputu Library

### Summary

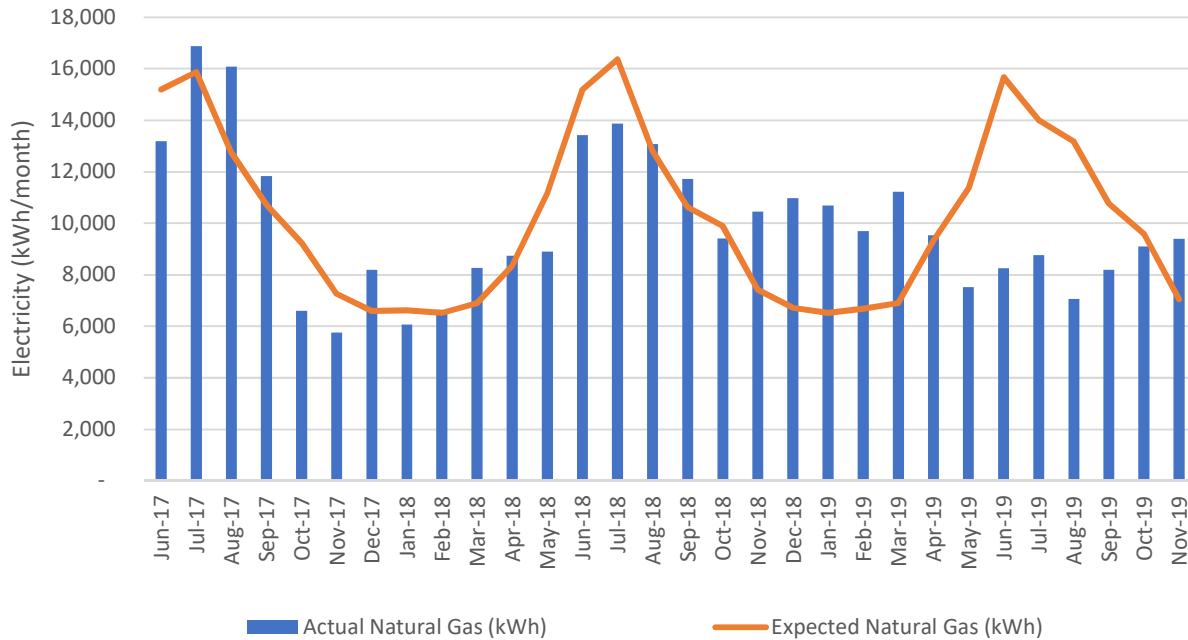
- Electricity savings for the month were 1,160kWh, a saving of 7.8%.
- Natural gas savings for the month were -2,349 kWh, an extra 33.3%
- Energy cost savings for the month were \$125.
- Carbon savings for the month were -356 kgCO<sub>2</sub>e, an extra 10.3%.
- Rolling 12-month electricity savings are 15,645 kWh, a saving of 8.5%
- Rolling 12-month natural gas savings are 7,372 kWh, a saving of 6.3%
- Rolling 12-month energy cost savings are \$2,626.
- Rolling 12-month carbon savings are 3,665 kgCO<sub>2</sub>e, a saving of 7.4%.

### Comments

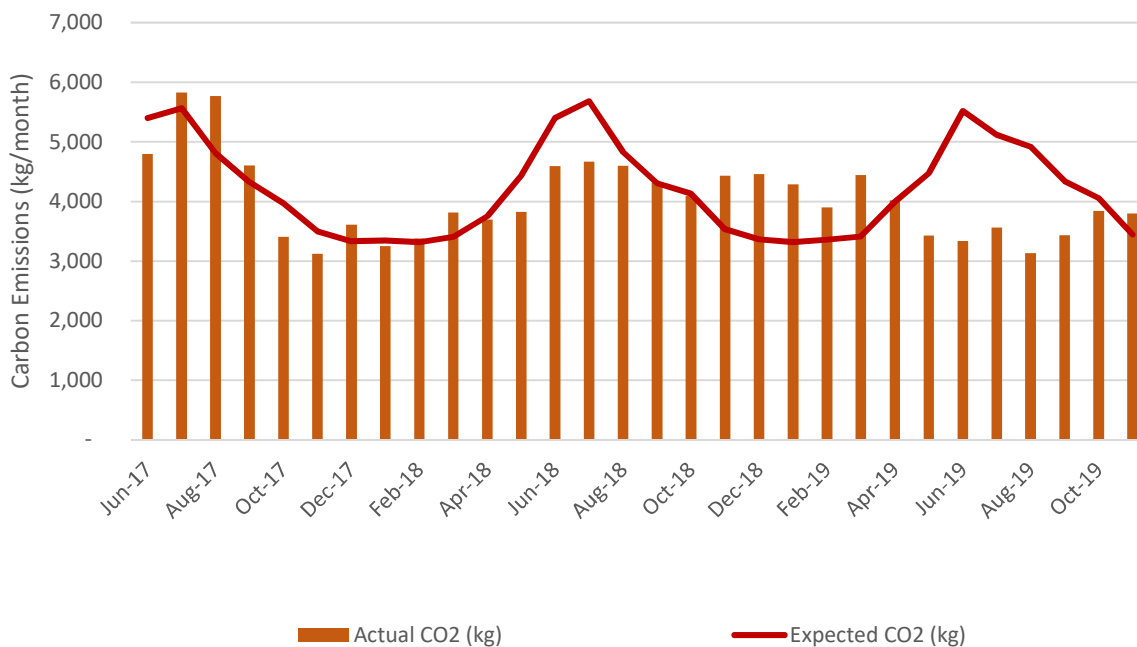
Electricity savings at the Library in Nov 2019 were 7.8%, however gas use was 33.3% above expected when adjusted for ambient temperature. The Library's pattern of energy use over the past 12-18 months has been unusual, particularly with gas use in warmer months increasing to above that of colder months. This is largely due to a poorly performing BMS system. It was noted in November that this was trying to achieve a target relative humidity setpoint by cooling to remove moisture, and then re-heating. It was not cooling sufficiently to remove any moisture, and was then re-heating air without achieving anything.

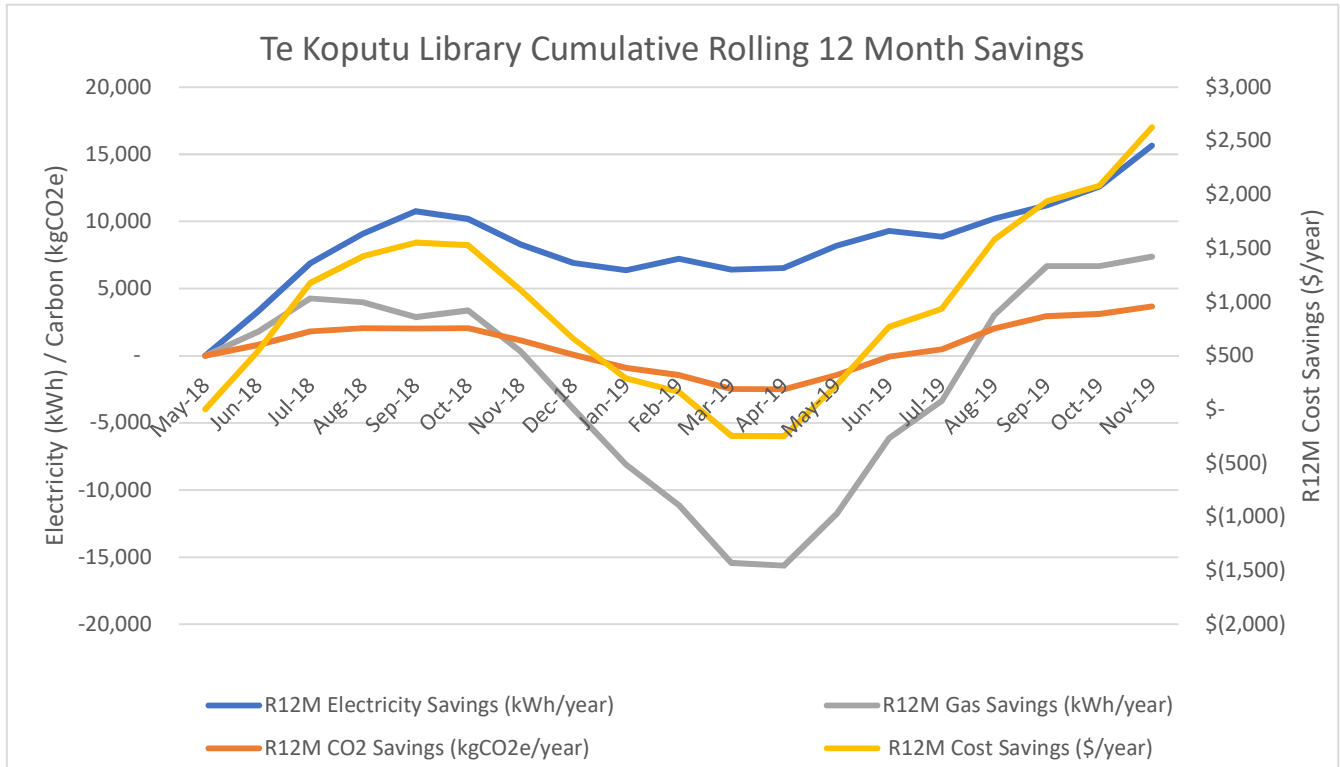


Te Koputu Library Actual versus Expected Natural Gas



Te Koputu Library Actual versus Expected CO2





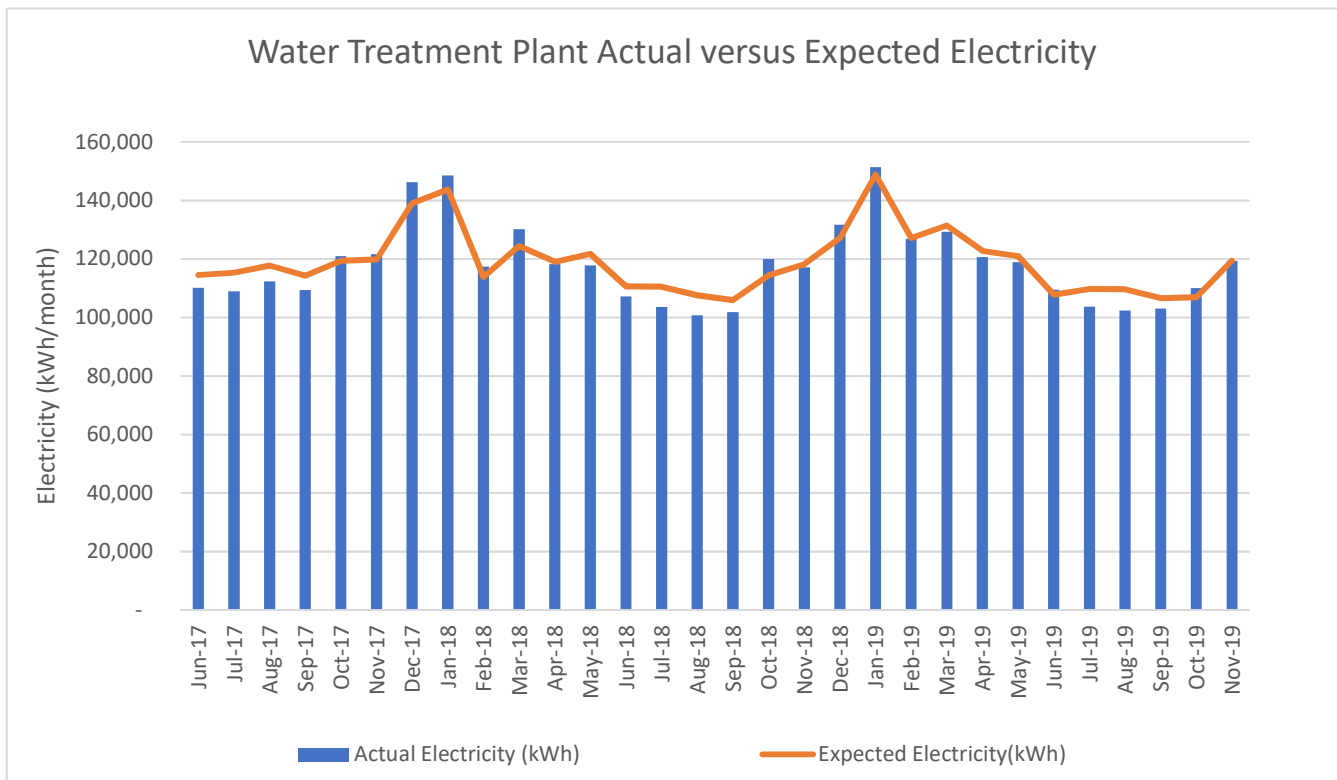
## Whakatāne Water Treatment Plant

### Summary

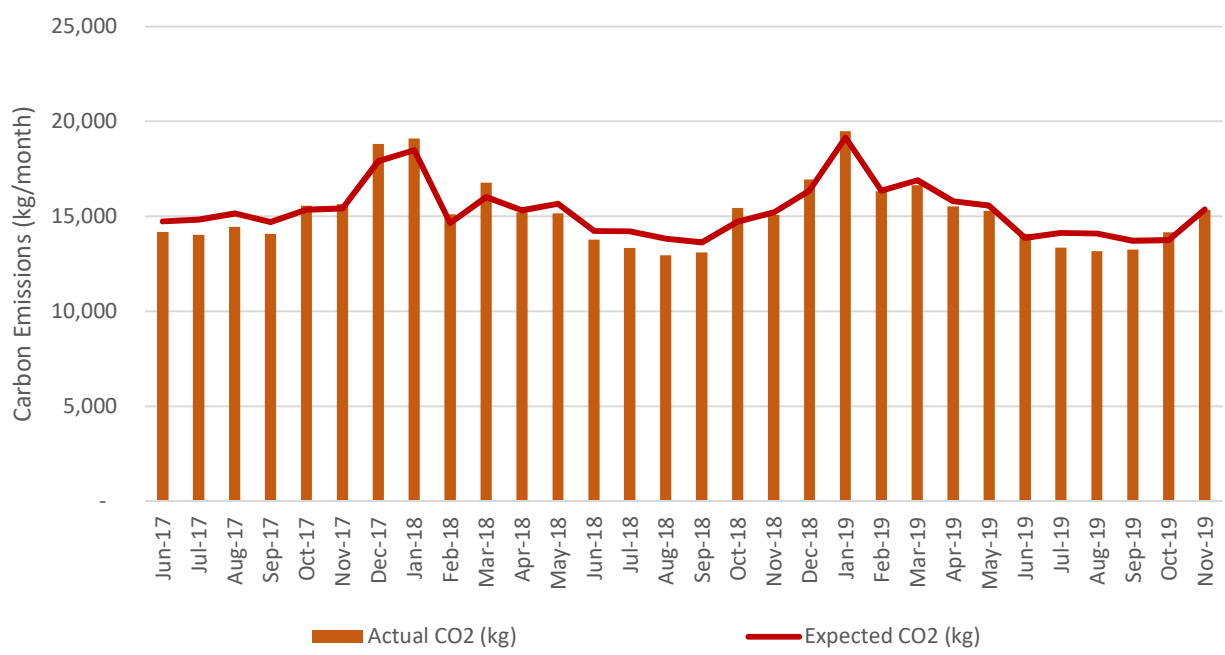
- Electricity savings for the month were 57kWh, a saving of 0%.
- Energy cost savings for the month were \$5.
- Carbon savings for the month were 7 kgCO<sub>2</sub>e, a saving of 0%.
- Rolling 12-month electricity savings are 11,541 kWh, a saving of 0.8%.
- Rolling 12-month energy cost savings are \$1,476.
- Rolling 12-month carbon savings are 1,485 kgCO<sub>2</sub>e, a saving of 0.8%.

### Comments

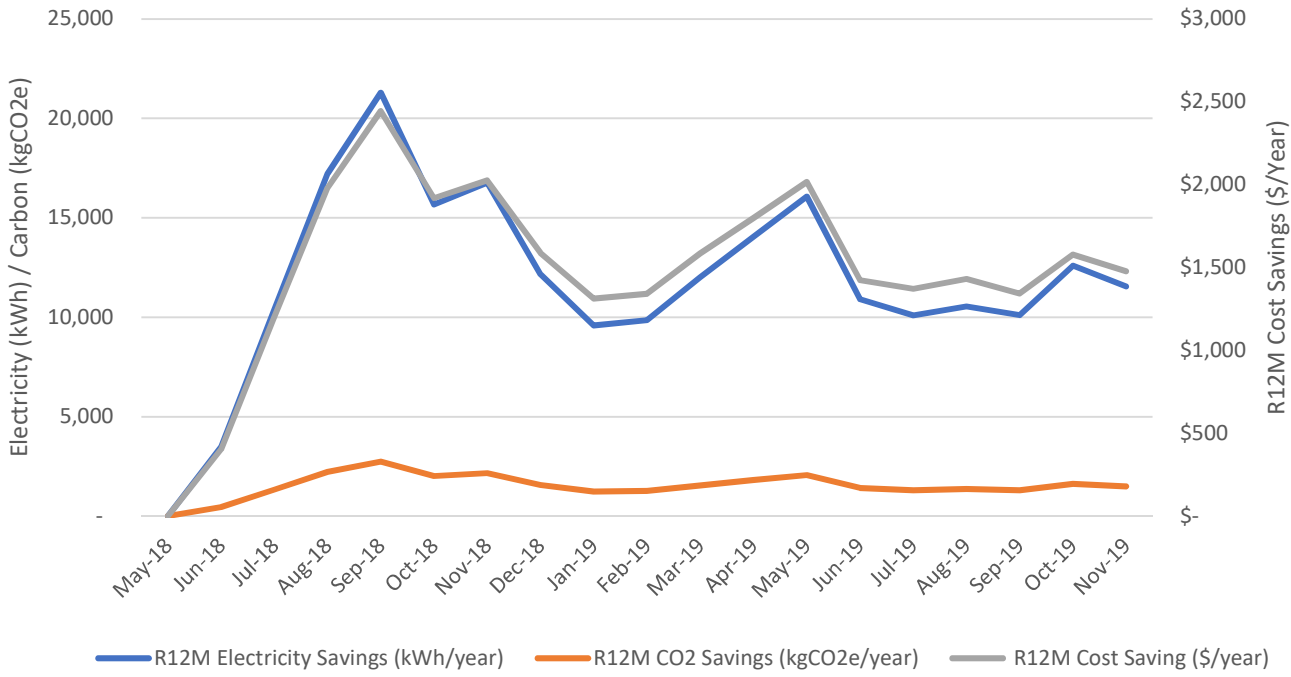
Electricity use at the Water Treatment Plant was as expected in Nov 2019, varying from the baseline by just 57kWh. The Water Treatment Plant is now moving in to its highest demand period of the year in December and January. Historically these months have used higher electricity than expected (adjusted for volumes of water supplied), likely due to the use of a second high lift pump.



Water Treatment Plant Actual versus Expected CO2



Whakatane Water Treatment Plant Cumulative Rolling 12 Month Savings



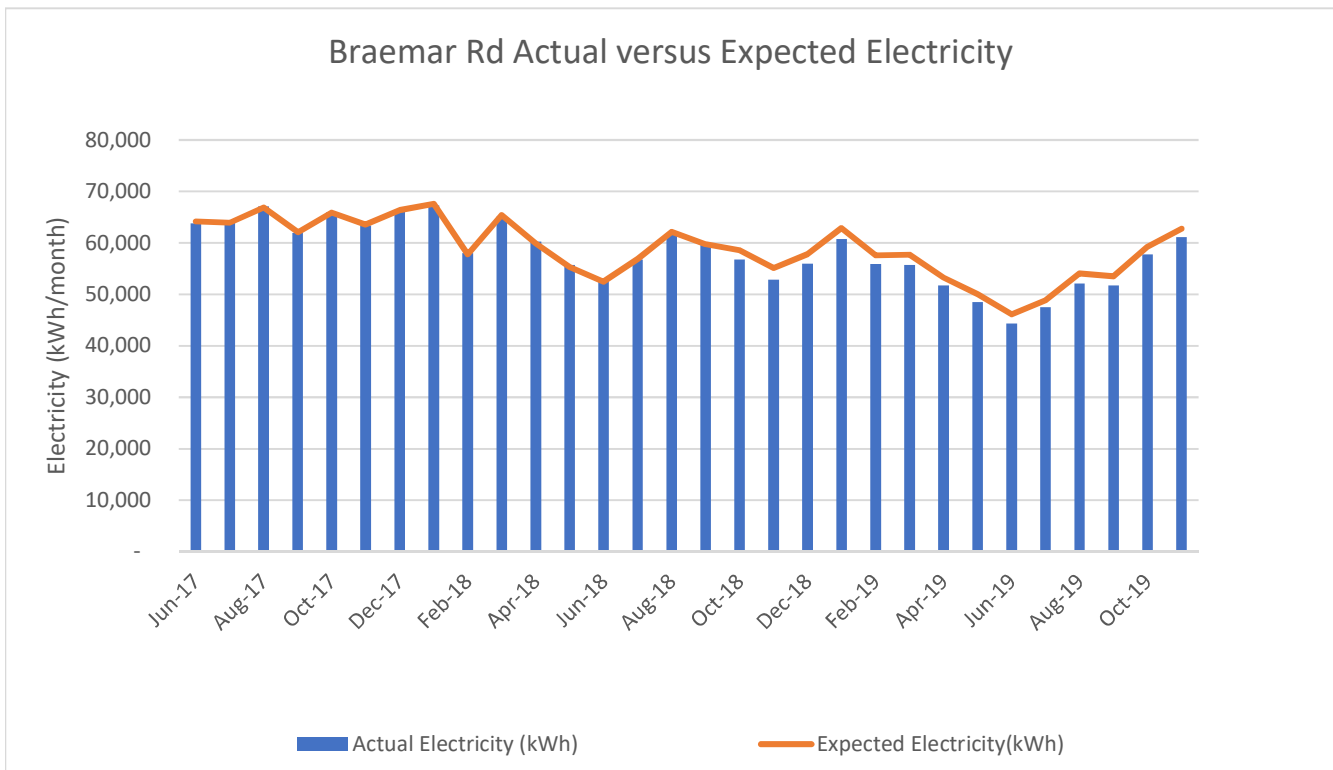
## Braemar Rd Pump Station

### Summary

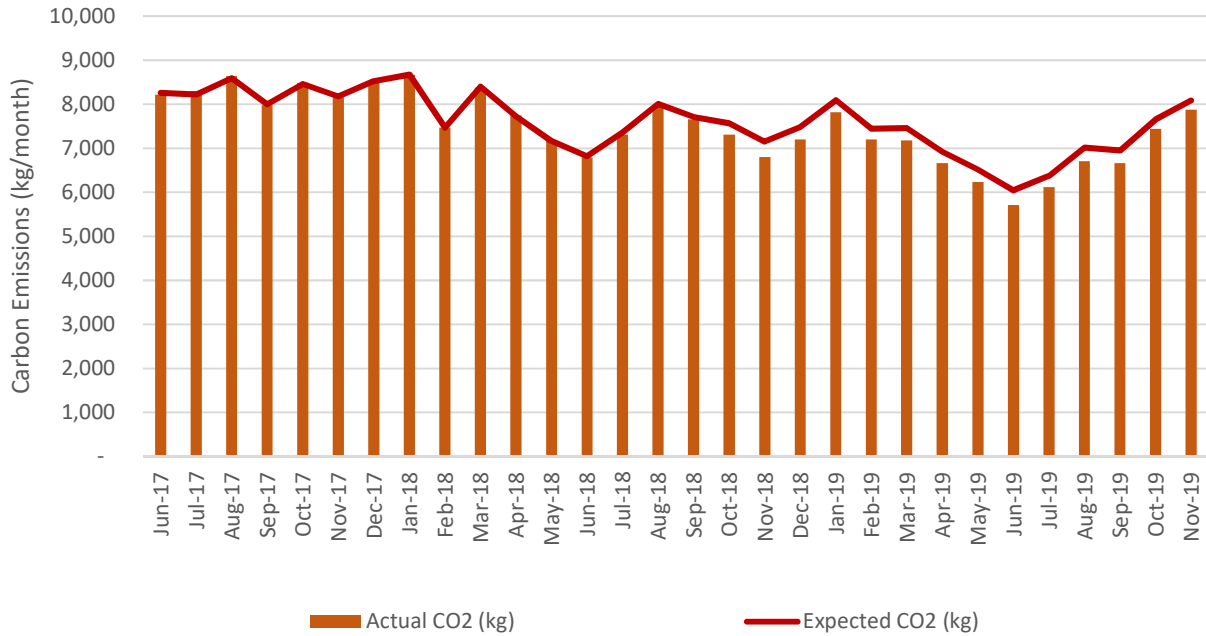
- Electricity savings for the month were 1,603kWh, a saving of 2.6%.
- Energy cost savings for the month were \$160.
- Carbon savings for the month were 209 kgCO<sub>2</sub>e, a saving of 2.6%.
- Rolling 12-month electricity savings are 20,577 kWh, a saving of 3.1%.
- Rolling 12-month energy cost savings are \$2,251.
- Rolling 12-month carbon savings are 3,238 kgCO<sub>2</sub>e, a saving of 3.1%.

### Comments

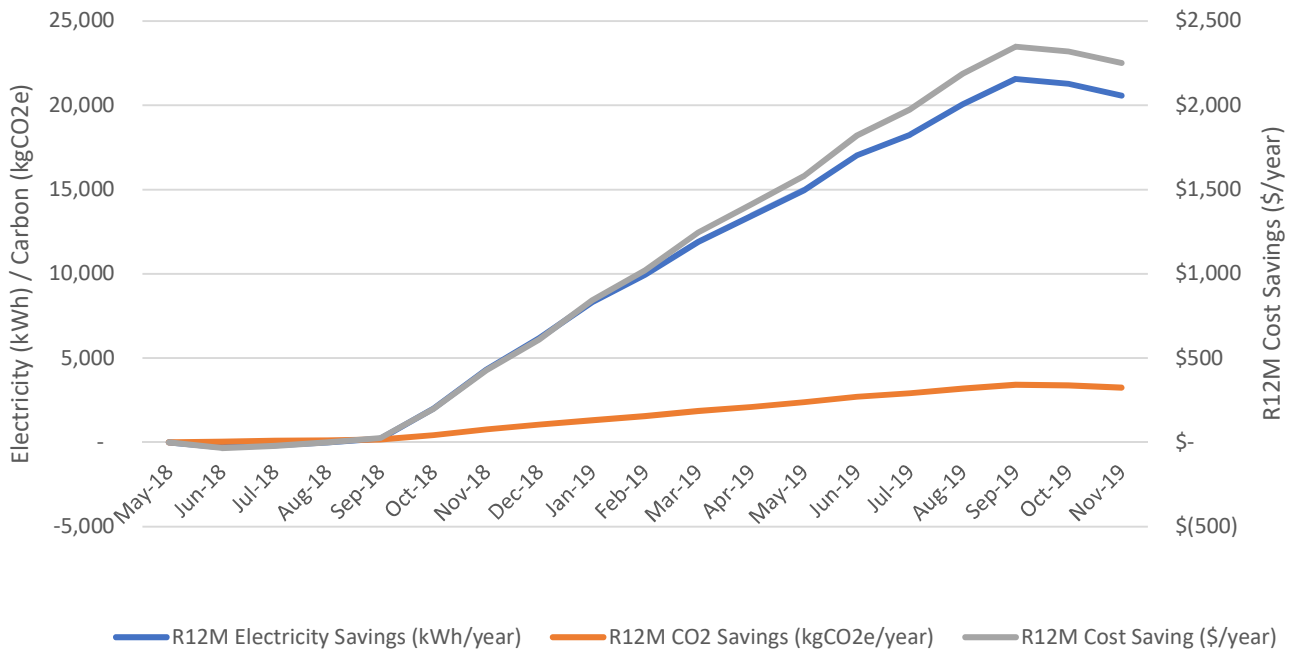
Braemar Rd continues to make electricity savings of 2-3% each month when adjusted for the amount of water produced. This seems to be related to a change in how pumps are used, with only one pump being used most of the time now and rarely two. Previously two pumps would frequently run concurrently. There is a suggestion this has been due to more utilisation of Johnson Rd Pumps. A request has been made to Genesis to provide historic electricity data for Johnson Rd to include in energy monitoring. Johnson Rd has a non half hour meter which will make analysis more difficult.



### Braemar Rd Actual versus Expected CO2



### Braemar Rd Pumps Cumulative Rolling 12 Month Savings



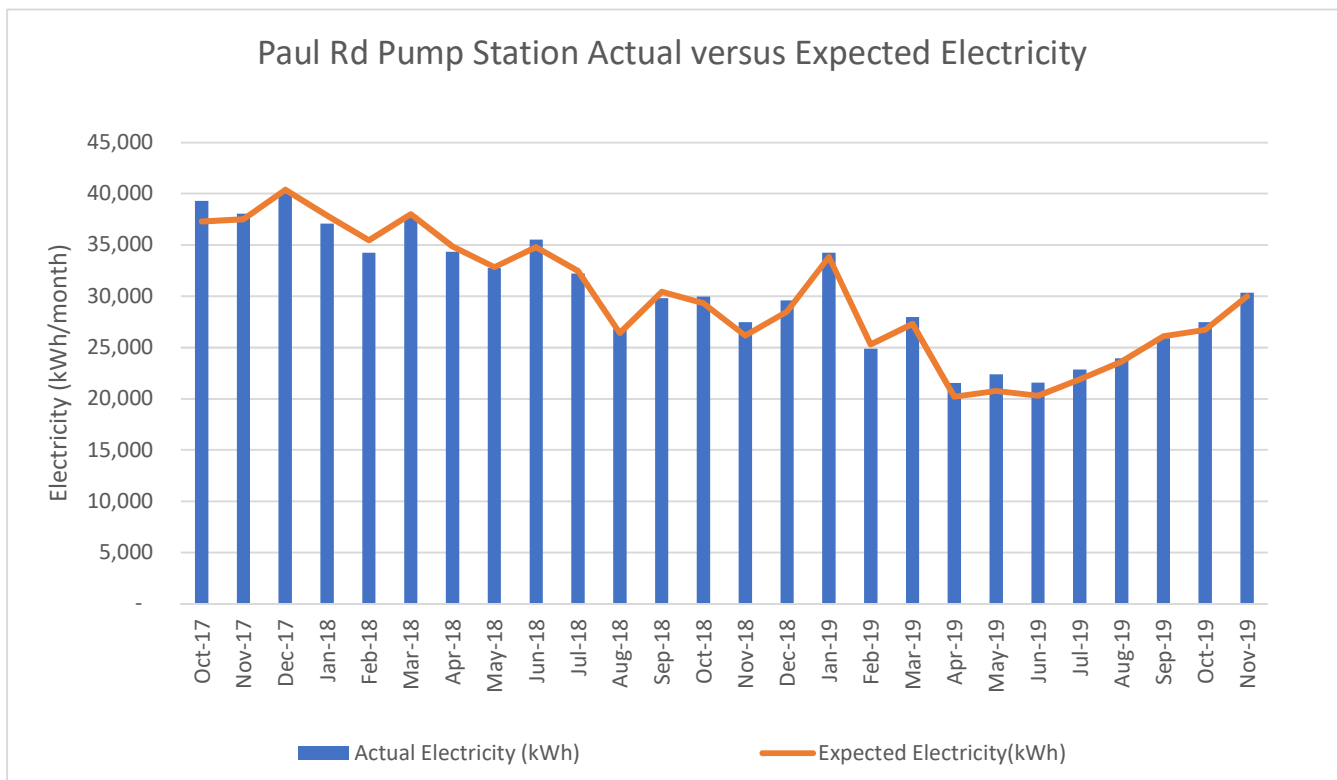


## Paul Rd Pump Station

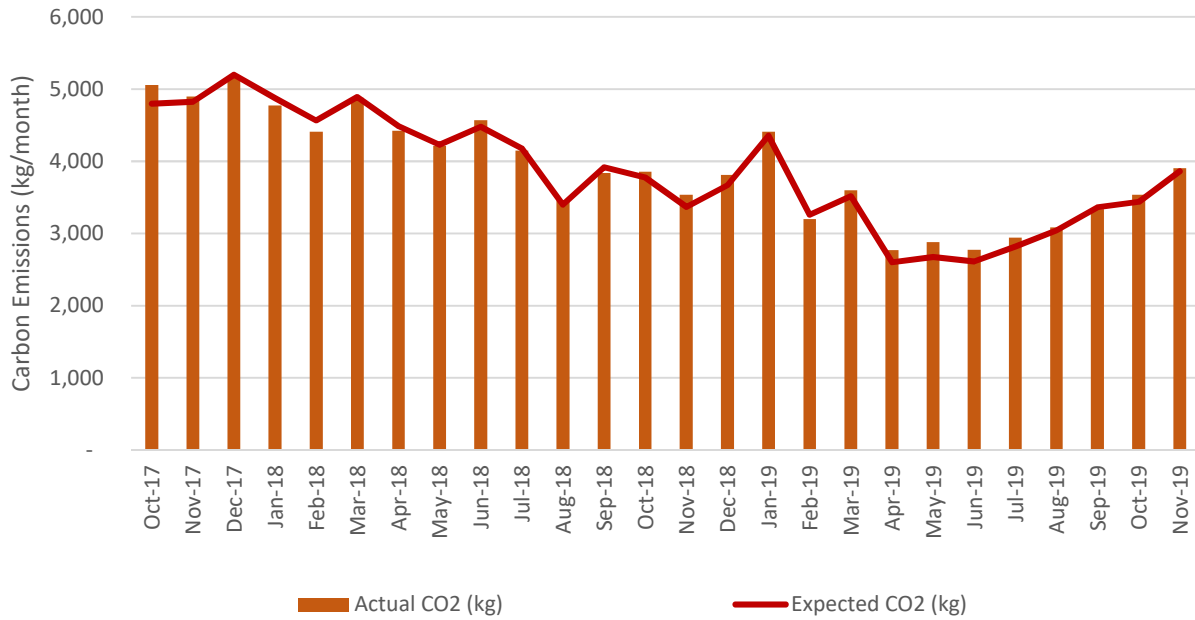
- Electricity savings for the month were -322kWh, an extra 1.1%.
- Energy cost savings for the month were -\$33, which is an increase.
- Carbon savings for the month were -41 kgCO<sub>2</sub>e, an extra 1.1%.
- Rolling 12-month electricity savings are -8,048 kWh, an extra 2.6%.
- Rolling 12-month energy cost savings are -\$915, which is an increase.
- Rolling 12-month carbon savings are -1,029 kgCO<sub>2</sub>e, an extra 2.6%.

### Comments

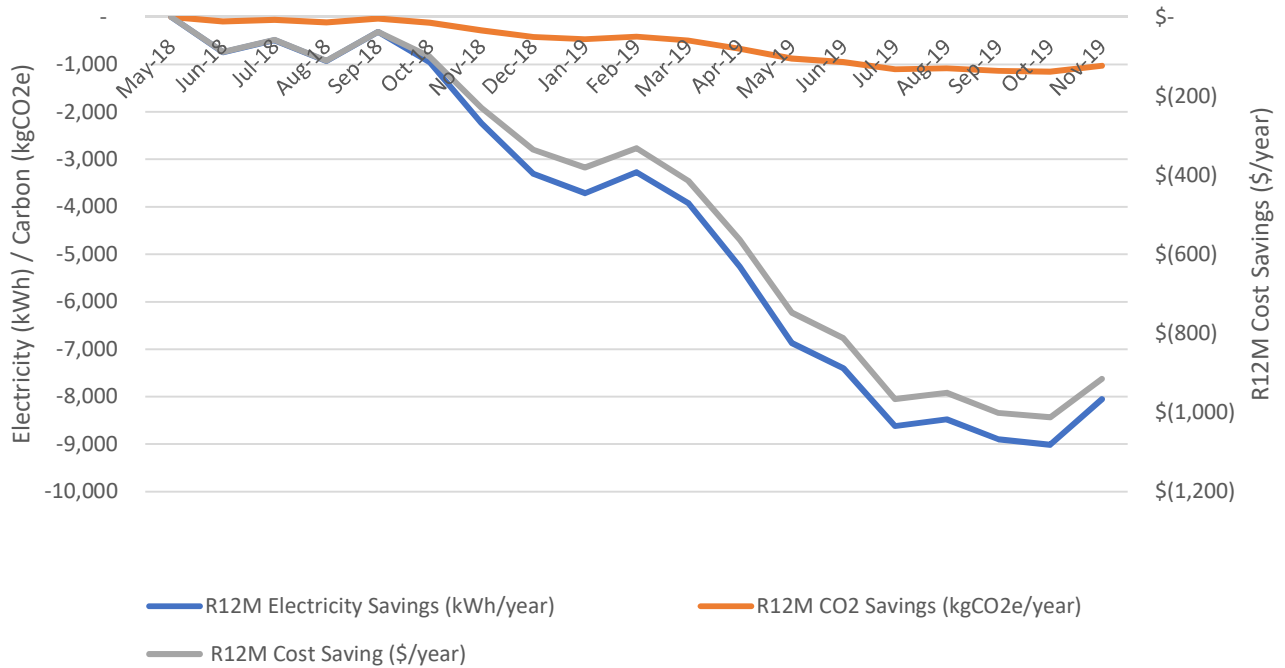
Paul Rd electricity use was 1.1% more than expected in November, which is adjusted for the volume of water supplied. Paul Rd has seen a small increase in electricity over the last 12 months compared to expected. This increase has been 2.6% in the last 12 months.



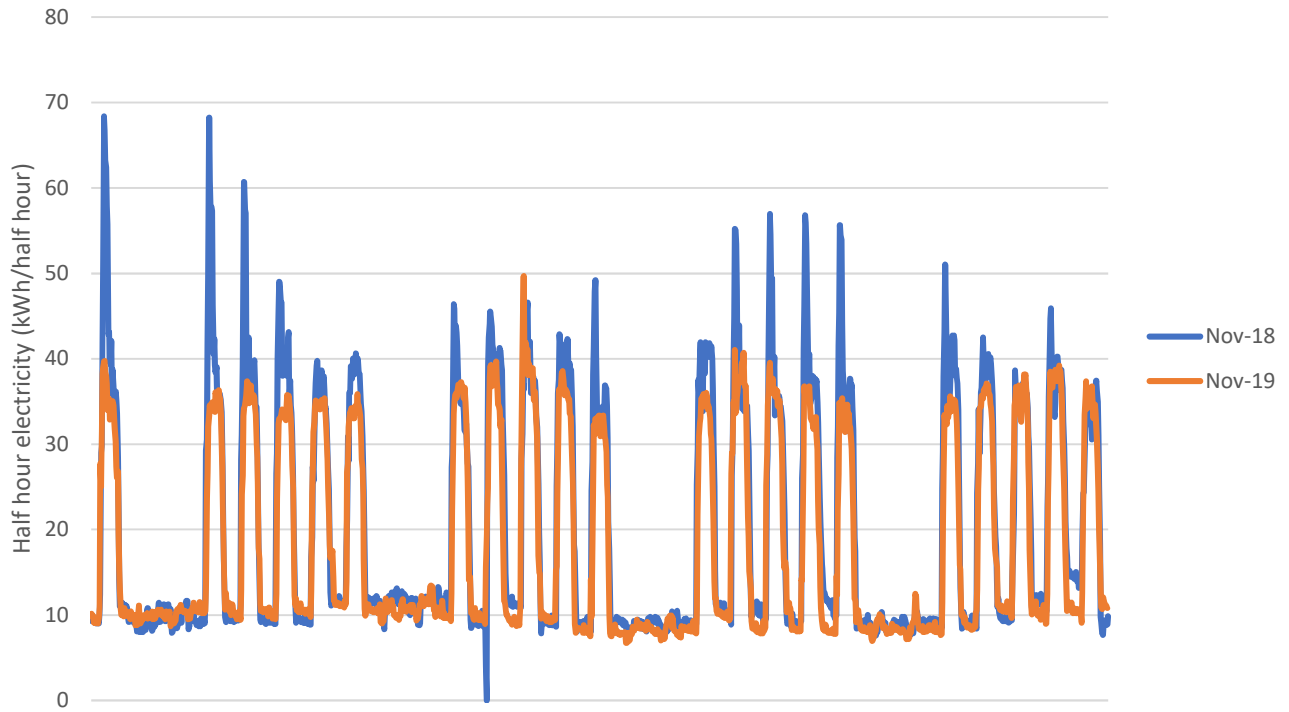
Paul Rd Pump Station Actual versus Expected CO2



Paul Rd Pumps Cumulative Rolling 12 Month Savings



Civic Centre Electricity TOU Comparison - month



Civic Centre Electricity TOU Comparison - week

