

**Executive Summary****12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)**

*Enquiries: (Luke Ure: Infrastructure and Operations)*

Council Plan

Level 1:	3. Sustainable Environment
Level 2:	3.2 Lessen the severity of climate change through actions that enable Council and the community to reduce greenhouse gas emissions

**Purpose**

To brief Council on the organisation's annual greenhouse gas emissions, energy and water usage and costs for 2022/23.

**Recommendation (Director Infrastructure and Operations)**

That Council:

1. Receives and notes the organisation's annual greenhouse gas emissions, energy and water usage and costs for 2022/23;
2. Notes officers' key findings and the organisation's energy and water costs have increased during 2022/23 by \$54K, due to increased usage following the return to full operations following COVID-19 affected years, and the addition of new and major redeveloped sites; and
3. Notes the Capital Works projects outlined in the report to further reduce Council's greenhouse gas emissions, energy usage and costs.

**Key Points / Issues**

- Lessening the severity of climate change through actions that enable Council and the community to reduce greenhouse gas emissions (herein referred to as 'emissions'), is a four-year priority of the 2021-2025 Frankston City Council Plan and has been a strong focus of the organisation for over two decades.
- A summary of Council's six-monthly progress (July to December 2022) was provided to Councillors via memorandum on 31 May 2023, which included a focus on the top four Council sites that contributed the most to Council's electricity, gas and mains water usage for that period.
- For the 2022/23 annual results, the overall figures in comparison to the previous financial year indicate:
  - ▼ 1.9% decrease in Council's electricity usage largely attributable to the installation of rooftop solar PV systems at Peninsula Aquatic Recreation Centre (PARC) and Civic Centre, as well as the replacement of fluorescent streetlights with LEDs in Sandarra and Sandhurst estates. These significant improvements were somewhat overshadowed by increasing usage due to return to normal activity levels following COVID-19.
  - ▲ 1.6% increase in gas usage predominantly due to the continued return to normal activity levels following the COVID-19 pandemic.
  - ▼ 8.4% decrease in mains water usage due to increased building inspections and cleaning audits to avoid over-usage as a result of faults,

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)**

**Executive Summary**

more accurate usage data replacing previous estimates, and rectification of a number of leaks identified during 2021/22 and 2022/23.

- ▲ 1.3% increase in the cost of utilities (includes Council's costs for electricity, gas, mains water, recycled water and fuel usage).
- ▼ 7.2% decrease in emissions mainly due to:
  - Decarbonisation of the Victorian electricity grid due to increased renewable energy being generated and entering the grid; and,
  - A Power Purchase Agreement providing 100% renewable electricity for five major Council facilities, as well as the purchase of GreenPower® for street lighting where Council pays the electricity bills.
- The continued reduction in emissions despite increased usage following the gradual return to normal operations following COVID-19 demonstrates the positive impact of energy efficiency improvements and rooftop solar. It is expected that these and upcoming projects will continue to reduce Council's emissions.
- In 2022/23, Council's environmental performance and progress towards its emissions and water reduction targets are outlined below:

Target description	Target (by 2025)	Result (2022/23)	Result (2021/22)	Progress comment
Greenhouse gas emissions (net tCO <sub>2</sub> -e)* <i>Source: Towards Zero Emissions Plan</i>	Carbon neutral (net zero)	8,362 tonnes CO <sub>2</sub> -e	9,012 tonnes CO <sub>2</sub> -e	In progress. Council decreased its emissions in 2022/23 by 650 tonnes (7.2%).
Target description	Target (by 2026)	Result (2022/23)	Result (2021/22)	Progress comment
Mains water use – megalitres (ML) <i>Source: Integrated Water Action Plan</i> (New target adopted at 2019/OM14)	150ML or less	165 ML	180 ML	In progress. Council's mains water use decreased by 15 ML (8.4%) in 2022/23.
Percentage of water used from sustainable alternative water sources (i.e. recycled, rainwater, stormwater)** <i>Source: Integrated Water Action Plan</i>	60% or more	47%	49%	In progress. Council's percentage of recycled water usage (as a proportion of total water usage) decreased to 47% in 2022/23.

\* Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e)

\*\* Council is currently only able to report on the use of recycled water from the Eastern Treatment Plant.

- Each year Council delivers projects to reduce the emissions, energy and water usage and costs of its assets and operations. During delivery of the 2022/23 Capital Works Program, resource efficiency projects delivered included:
  - Installation of rooftop solar PV systems at PARC (523.5 kilowatts), Civic Centre (89 kilowatts), Overport Park (7 kilowatts), Orwil Street Community House (11.2 kilowatts) and Jubilee Park Stadium (99.84 kilowatts).
  - A solar feasibility and electrification study to investigate options for expanding Council's investment in solar technology and the electrification of Council's assets.

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)****Executive Summary**

- LED lighting efficiency upgrades at the Frankston Arts Centre and Library (FAC), Youth Central, Cube 37, Carrum Downs Library, Lyrebird Community Centre, Frankston South Recreation Centre, and Council's Operations Centre.
- An energy efficiency assessment and recommendations for the boiler and chiller at the FAC.
- An environmentally sustainable design feasibility study and geothermal assessment for Pines Forest Aquatic Centre (Pines).
- LED street lighting conversions at Sandhurst and Sandarra Estates where almost 500 streetlights were upgraded to more efficient LED technology.
- Some key projects in the 2023/24 Capital Works program to continue to reduce emissions, energy usage and costs include:
  - Energy LED lighting efficiency upgrades at PARC and the Civic Centre.
  - Implementation of the findings and recommendations from the solar feasibility and electrification study.
  - Further LED street lighting conversions for Council owned streetlights on arterial roads.
  - Council's building projects will continue to be implemented in accordance with Council's *Environmentally Sustainable Design (ESD) Standards for Council Buildings Policy*.
- Additionally, Officers continue to liaise with South East Water on future recycled water scheme projects to reduce Council's dependence on mains water.
- Overall, Council is progressing well towards its emissions and energy targets. Refer to the Officers' Assessment of this report for more detailed information, including a list of Council sites with the highest emissions, water usage and trends over time.

**Financial Impact**

Overall, there has been a 1.3% increase in the total cost of utilities (electricity, gas, water and fuel) in 2022/23 from the previous year, equating to \$54K. The majority of which can be attributed to:

- Increased use of facilities due to the return to business as usual since COVID-19 Closures also the addition of new facilities such as Healthy Futures Hub, Monterey Reserve Soccer Pavilion, Pat Rollo Public Amenities, Robinson Park Pavilion, and Carrum Downs Reserve Ovals (flood lighting);
- An increase in Council's gas usage corresponding with an increase in costs;
- Higher tariffs for Council's energy costs; and
- An increase in the price of fuel used in Council fleet vehicles.

Council's utility costs decreased for electricity (4.4% decrease, including an 8.4% decrease in the cost of electricity public lighting), mains water (7.0% decrease) and recycled water (5.6% decrease), concurrent with the decreased usage of these utilities in 2022/23 compared to 2021/22.

Gas costs increased from \$356K in 2021/22 to \$414K in 2022/23 (16.3% increase), corresponding to a modest 1.6% increase in usage. A changeover of gas retailers in

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)****Executive Summary**

2022/23 resulted in estimated bills and a period of being out of contract resulting in higher rates at FAC.

Overall utility cost increases were kept to a minimum through previous investment in energy and water efficiency measures and solar power, through the rectification of water leaks and faulty meters, as well as through the identification and resolution of billing errors and anomalies. Despite an increase in vehicle usage, fuel costs also decreased by 6.9% during 2022/23.

**Consultation****1. External Stakeholders**

Council officers consulted with utility retailers (electricity, gas, water) to renegotiate better tariffs, obtain data and to verify billing accuracy with Council's records.

Council's major contractors (waste, asphalt and facilities maintenance) provided fuel usage data for inclusion in Council's emissions report. Peninsula Leisure Pty. Ltd. were consulted for energy and water data for PARC and Pines.

**2. Other Stakeholders**

Council's Executive team and staff responsible for managing and operating Council assets, sites or associated budgets were consulted in the preparation of this report.

**Analysis (Environmental / Economic / Social Implications)**

Council is demonstrating leadership by avoiding and reducing its energy usage and emissions and lessening its contribution to climate change. The adoption of Council's Climate Change Strategy 2023-2030 in April 2023 and the move towards a Science-Based Target for emissions reduction further strengthens Council's position.

Reducing utility usage and associated costs eases financial pressures and enables Council to reinvest its savings into the delivery of services to the community. Completion of the Electrification and Solar Feasibility Study will identify further opportunities and initiatives to continue this important work.

Council is procuring environmentally sensitive utilities and services that are not able to be numerically accounted for but should nevertheless be celebrated. The waste collection service provider, Solo Resource Recovery (Solo), utilises AdBlue (a diesel exhaust fluid which limits air pollutant emissions) and DPFs (diesel particulate filters) in 100% of fleet servicing Council and plans to purchase 25,000 tonnes CO<sub>2</sub>e in offsets across its operations in calendar year 2023, equivalent to running seven wind turbines for a year. Furthermore, all of Council's procured gas in 2022/23 was certified carbon neutral.

By using recycled water, Council is conserving Melbourne's drinking water supplies and positively responding to the water security needs of Melbourne's growing population.

**Legal / Policy / Council Plan Impact**Charter of Human Rights and Responsibilities

The Charter of Human Rights and Responsibilities has been considered in the preparation of this report but is not relevant to the content of the report.

Legal

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)****Executive Summary**

Under the *Local Government Act 2020* section 9(2)(c), councils are required to promote the 'economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks.' Council is performing this function in accordance with the Act by reducing emissions and responsibly managing Council's use of limited natural resources.

**Policy Impacts**

Reducing Council's emissions is a four-year priority of the 2021-2025 *Frankston City Council Plan* and responds to Council's climate emergency declaration on 18 November 2019 (2019/OM14).

Council's *Environmental Sustainability Policy* and *Greening Our Future – Environment Strategy 2014-2024* are relevant to this report.

Council's energy and water usage informs the progress made against the organisation's carbon neutral target by 2025, as outlined in Council's *Towards Zero Emissions Plan 2019-2023* (now concluded), and water targets outlined in *Council's Integrated Water Action Plan 2016-2026*.

It should be noted that Council adopted *Climate Change Strategy 2023-2030* in April 2023 along with a Science-Based Target. The impact of this new target and Strategy will be accounted for in the 2023/24 annual report and all emissions reporting moving forward.

**Officer's Declaration of Interests**

Council officers involved in the preparation of this report have no Conflict of Interest in this matter.

**Risk Mitigation**

Council's continued focus on reducing energy use and emissions by investing in energy efficiency, solar power and by purchasing renewable energy, means that Council is playing its part in lessening the risks and severity of climate change.

The adoption of a Science-Based Target for emissions reduction during 2022/23 is a positive step for Council limiting reputational risk, and this will be further examined in the 2023/24 annual report.

The 10-year Power Purchase Agreement providing 100% renewable electricity for five major Council facilities protects Council from the volatility of the electricity market.

Council faces a reputational risk should it not achieve its adopted water reduction target. Council is actively managing the risks of potential energy or water overuse through regular monitoring and reporting across the organisation. Investigating sites with unusually high usage and costs assists in targeting these sites for future energy and water saving measures and renewable energy technology.

**Conclusion**

In 2022/23 Council decreased its emissions by 650 tonnes (down by 7.2%). This decrease was mainly due to the decarbonisation of the electricity grid and the continued purchase of 100% renewable energy for five of Council's major facilities and street lighting. The relative impact of solar and energy efficiency improvements against returning to pre-COVID-19 activity levels is improving, as demonstrated by utility usage and emissions reductions in 2022/23.

Electricity usage decreased between 2021/22 and 2022/23 (1.9% decrease), due to the opposing forces of continued solar PV implementation and street lighting upgrades

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water  
Usage and Costs (2022/23)****Executive Summary**

against increased activity following COVID-19. Gas usage increased by 1.6% predominantly due to the continual return to normal usage levels. Council's mains water usage decreased by 8.4% due to fixing of leaks, better monitoring and maintenance systems in place at problem sites, and more accurate usage data. Overall Council's utility costs increased by \$54K (1.3%) in 2022/23.

Opportunities for energy and water saving measures and renewable energy technology continue to be identified and implemented across Council assets to reduce usage, costs and emissions. These projects inform Council's *Long Term Infrastructure Plan* and play an important role in progressing towards Council's adopted environmental targets.

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**ATTACHMENTS**

Nil

## 12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

### Officers' Assessment

#### Background

Each year Council produces an annual public report outlining Council's energy and water usage, costs and emissions, to monitor progress towards Council's greenhouse and water targets, to improve Council's environmental performance and reduce costs.

A summary of Council's six-monthly progress (Jul to Dec 2022) was provided to Councillors via memo on 31 May 2023, which included a focus on the top four Council sites that contributed the most to Council's electricity, gas and mains water usage for the period.

Included in this annual report is Council's utility usage (electricity, gas, fuel and water) for which Council can clearly manage, measure and has full operational control. Also included are Council facilities managed by others on behalf of Council that we can seek to influence and readily measure (e.g. Peninsula Aquatic Recreation Centre (PARC) and Pines Forest Aquatic Centre (Pines)), as well as emissions associated with Council's major contracts.

These inclusions are in line with the Australian Government's Climate Active Carbon Neutral Standard for reporting on emissions and are considered best practice. With the adoption of the *Climate Change Strategy 2023-2030* in April 2023, Council moved to a Science Based Target to replace the previous carbon neutral target. As such, 2023/24 and ongoing reporting will follow a modified format and additional emission sources will be included over time.

#### Issues and Discussion

The annual report for 2022/23 shows a small increase in gas and fuel usage. However, electricity, mains and recycled water usage, and overall emissions decreased in 2022/23 compared to the previous financial year.

The total cost of utilities has increased. As well as the gradual returning to pre-COVID-19 activity levels at key sites, this increase can be attributed to the addition of new developments and redeveloped Council sites such as Healthy Futures Hub (St Kilda Pavilion) and Robinson Park Pavilion. Some energy costs associated with the construction of Carrum Downs Reserve Football/Cricket Pavilion and Ballam Park South Pavilion will be transferred to the tenants upon occupancy. Increased gas tariffs have also contributed.

The table below shows a comparison of Council's total electricity, gas, fuel and water usage, emissions and costs for 2022/23 and 2021/22.

Total electricity, gas, fuel and water usage costs and emissions (2022/23 vs. 2021/22)

Utility	2022/23	2021/22	% Change	Unit Change
Electricity (MWh)	8,102	8,261	-1.9	-159
Gas (GJ)	32,896	32,387	+1.6	+510
Fuel (kL)	429	426	+0.7	+3
Mains water (ML)	165	180	-8.4	-15
Recycled water (ML)	146	171	-14.5	-25
<b>Total GHG emissions (tCO<sub>2</sub>-e)</b>	<b>8,363</b>	<b>9,012</b>	<b>-7.2</b>	<b>-650</b>
<b>Total cost (\$)</b>	<b>\$4,084,413</b>	<b>\$4,030,153</b>	<b>+1.3</b>	<b>+\$54,260</b>

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)**

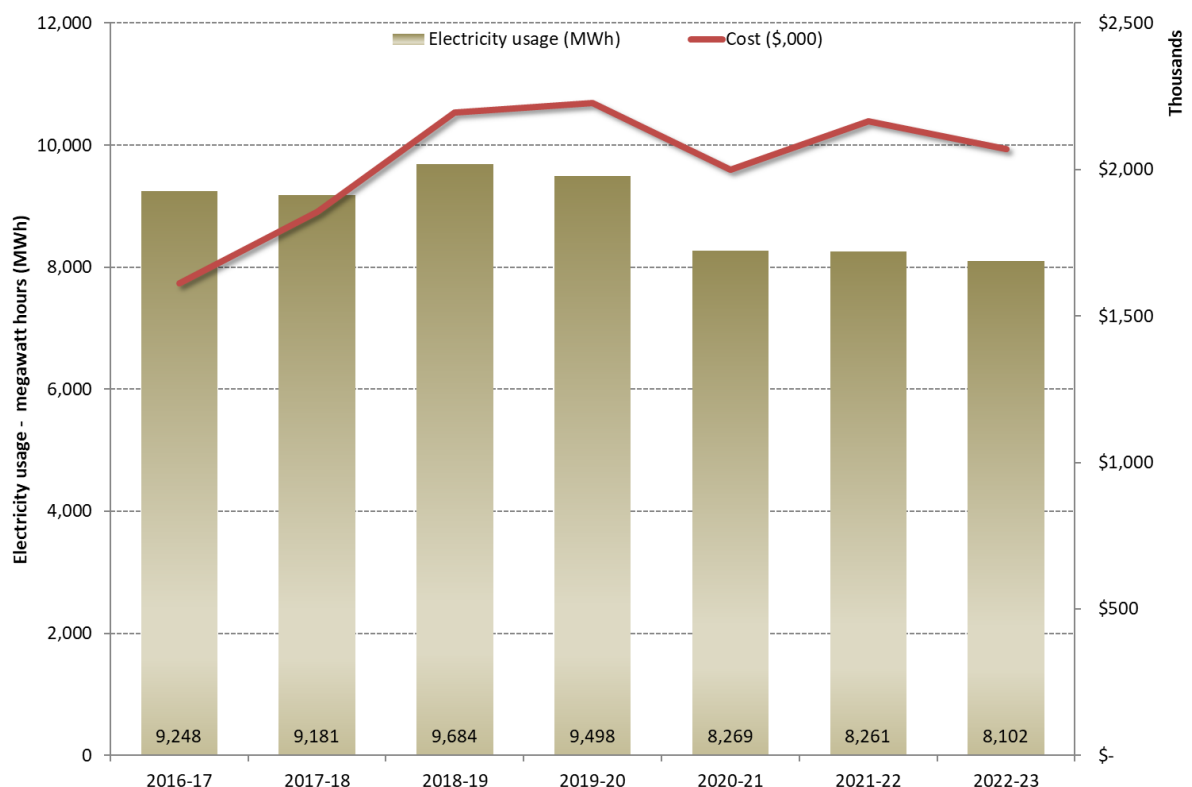
**Officers' Assessment**

**Electricity usage and cost trends**

The graph below shows that in 2022/23 Council's electricity usage was 8,102 megawatt hours (MWh), a slight decrease of 1.9% when compared to 8,261 MWh in 2021/22. This can be attributed to rooftop solar and energy efficiency improvements which have served to counteract the return to normal usage after the COVID-19 pandemic affected years.

PARC, FAC, Civic Centre and Pines made up 76% of Council's overall building electricity usage in 2022/23. Despite returning to normal usage levels following the reopening of PARC in 2021/22, electricity usage increased by only 1.1% due to the installation of a 523 kilowatt (kW) rooftop solar PV system. The delivery installation of an 89kW solar PV system at the Civic Centre in 2022/23 also reduced its electricity usage by 3.4%. The majority of sites (60.1%) decreased electricity usage in 2022/23 compared to 2021/22.

Council's electricity costs marginally decreased from \$2.2M in 2021/22 to \$2.1M in 2022/23 (4.4% decrease) due to decreased usage at a majority of sites. This includes significant reductions at Carrum Downs Library which had an LED lighting upgrade completed resulting in (39.2% cost reduction, and 43.0% usage reduction) and Council Offices – 43 Davey Street (23.7% cost reduction, 23.5% usage reduction).



**Gas usage and cost trends**

The graph below shows that in 2022/23 Council's gas usage increased slightly to 32,896 gigajoules (GJ) which is a 1.6% increase, when compared to 32,387 GJ in 2021/22. This can be attributed to the continued return to normal usage after the COVID-19 affected years.



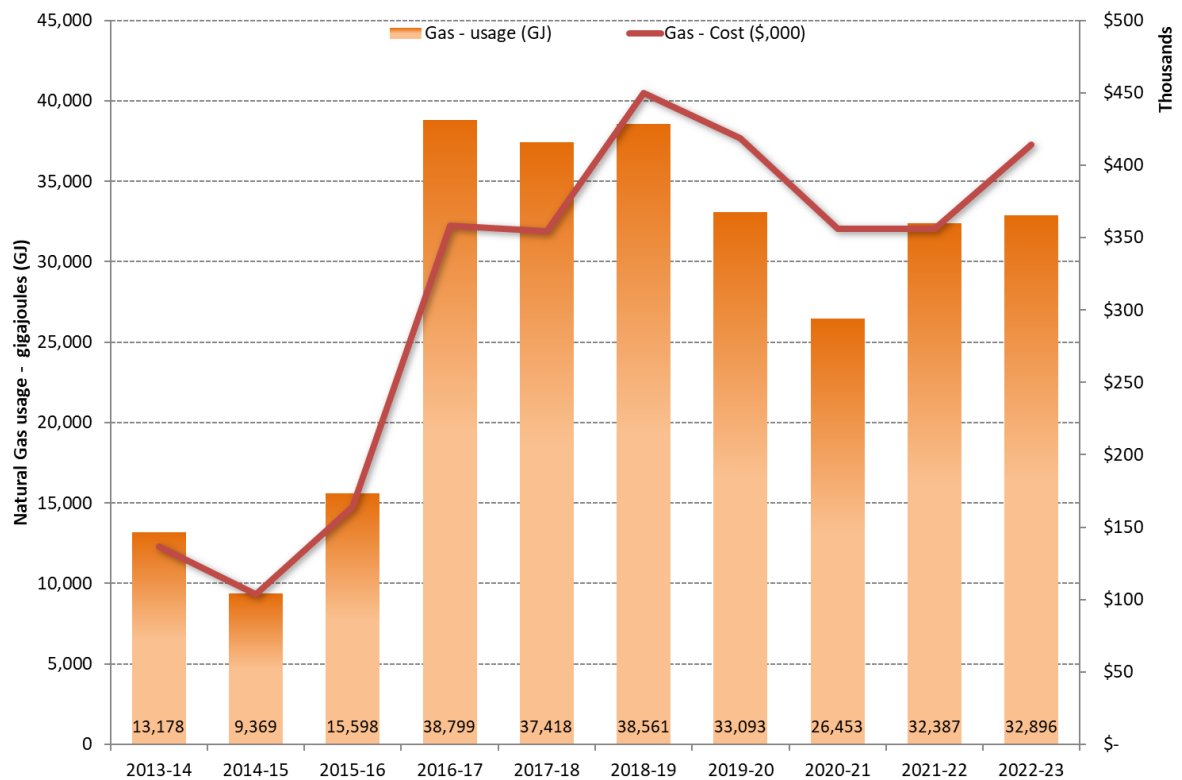
**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)**

**Officers' Assessment**

The costs of gas also increased to \$414K in 2022/23 compared to \$356K in 2021/22, largely driven by increased gas prices but also concurrent with increase in gas usage at individual sites.

PARC, Frankston Arts Centre and Library (FAC) and Pines made up 92% of Council's total gas usage in 2022/23. Costs have increased by 73.4% at FAC despite only a 27.7% increase in usage. Costs have also increased at PARC in 2022/23 by 10.1% despite a 1.9% reduction in gas usage. This is a result of the changeover of gas retailers and a short period of being out of contract resulting in higher tariffs.

As shown in the graph below, Council's gas usage and costs have increased significantly from 2016/17 mainly due to Council including PARC in its annual reporting.



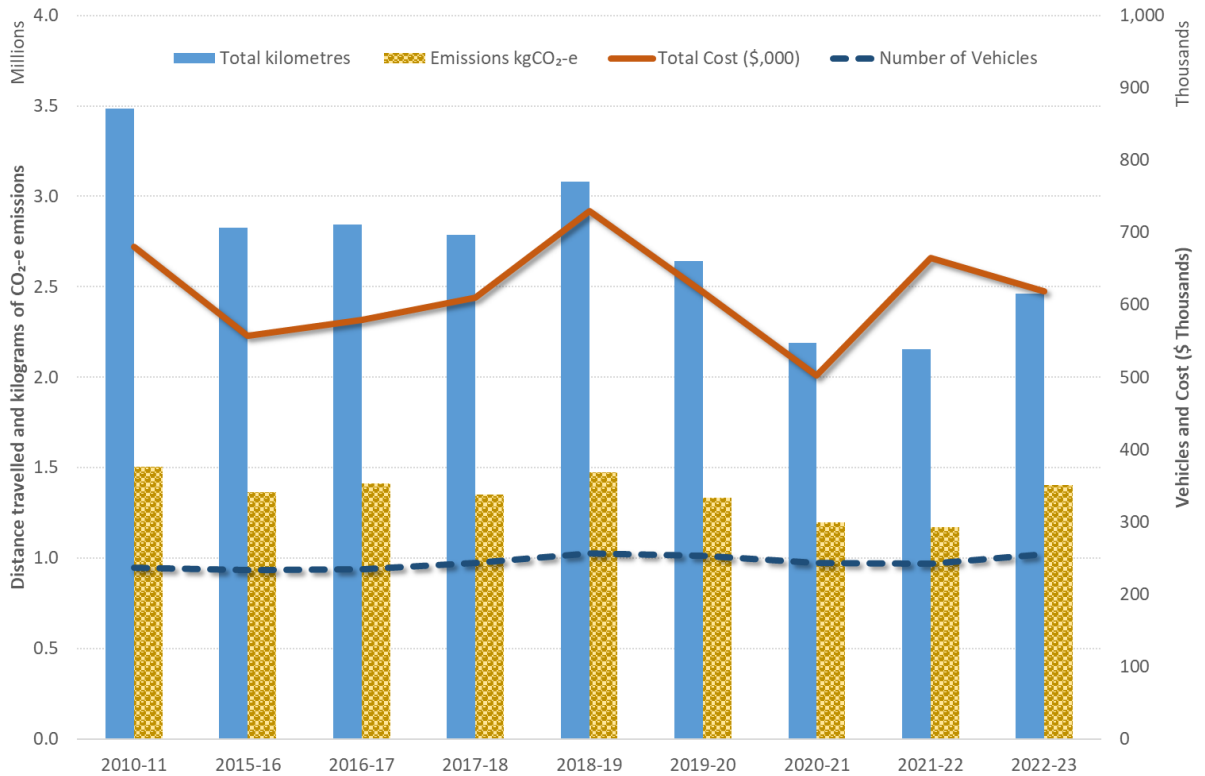
**Fleet fuel usage and costs (excluding contractor fuel)**

The graph below shows that in 2022/23, Council's fleet generated emissions (not including major contractor fuel) increased to 1,405 tonnes (234 tonnes or 20.0% increase), when compared to 1,171 tonnes in 2021/22. This increase in emissions corresponds with the slight increase in the number of fleet vehicles and the increase in the total number of kilometres travelled in 2022/23.

Council's fuel costs decreased from \$665k in 2021/22 down to \$619K (6.1% decrease), which can be attributed to decreased fuel costs.

12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

Officers' Assessment



The table below shows that for Council’s major fleet classes (excluding minor plant and equipment) between 2015/16 and 2022/23, there has been an increase in Council’s emissions and number of vehicles, and a decrease in distance travelled.

Class		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Light Commercial	Emissions (tCO <sub>2</sub> -e)	354	396	423	441	412	366	364	448
Passenger		261	265	249	297	233	163	173	254
Sweeper		229	240	209	244	232	232	202	233
Truck		206	208	204	204	192	200	171	220
<b>Total</b>		<b>1,050</b>	<b>1,109</b>	<b>1,085</b>	<b>1,187</b>	<b>1,069</b>	<b>961</b>	<b>910</b>	<b>1,155</b>
Light Commercial	Vehicles	85	90	93	91	96	89	93	98
Passenger		67	66	62	69	63	68	60	69
Sweeper		8	7	6	7	7	6	8	6
Truck		27	29	28	35	32	28	30	30
<b>Total</b>		<b>187</b>	<b>192</b>	<b>189</b>	<b>202</b>	<b>198</b>	<b>191</b>	<b>191</b>	<b>203</b>
Light Commercial	Distance (km)	1,142,098	1,223,469	1,286,772	1,302,928	1,178,671	1,064,346	1,034,095	1,094,624
Passenger		1,140,548	1,158,150	1,073,772	1,335,663	1,062,954	728,035	771,055	1,004,604
Sweeper		98,260	109,394	72,536	102,421	98,796	106,799	138,321	101,587
Truck		349,976	282,280	288,704	275,434	254,488	278,860	212,793	228,784
<b>Total</b>		<b>2,730,882</b>	<b>2,773,293</b>	<b>2,721,784</b>	<b>3,016,446</b>	<b>2,594,909</b>	<b>2,178,040</b>	<b>2,156,264</b>	<b>2,429,599</b>

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)**

**Officers' Assessment**

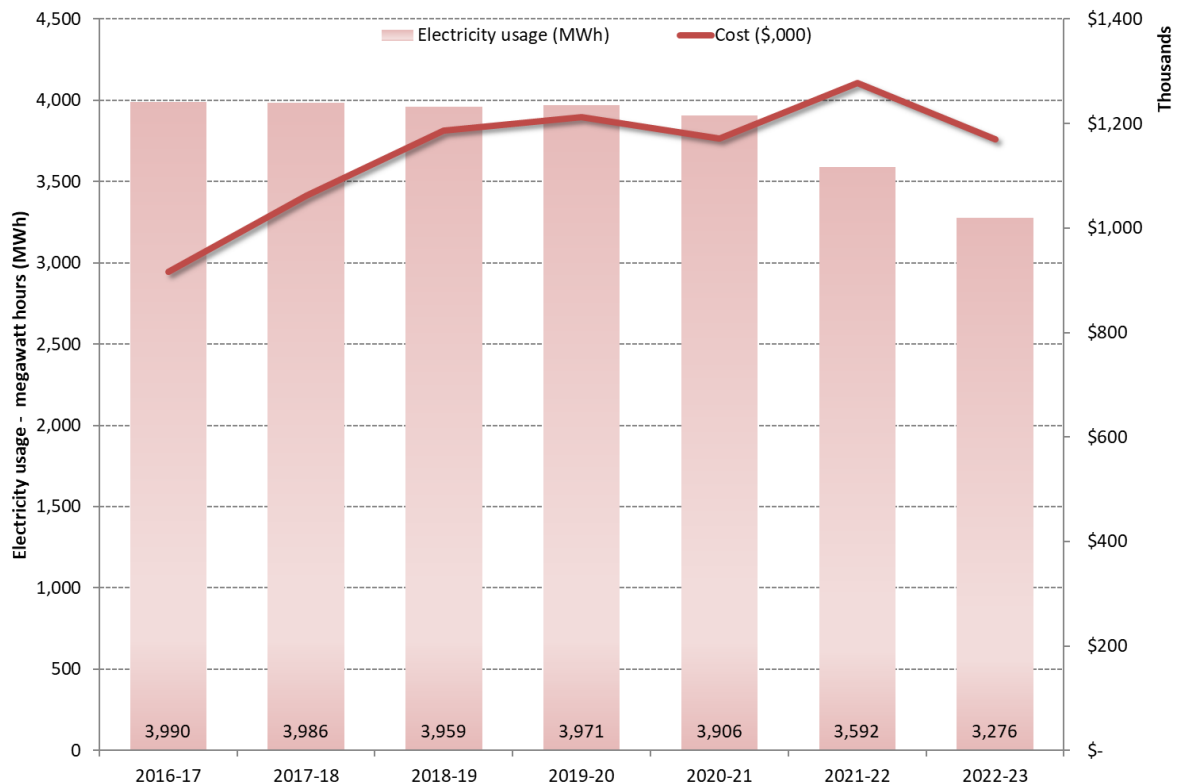
**Public lighting electricity usage and costs**

The graph below shows that in 2022/23, Council's electricity usage for public lighting (including street lighting) decreased to 3,276 (8.8% decrease), when compared to 3,592 MWh in 2021/22. This is mainly as a result of the completion of the street light upgrade in Sandarra and Sandhurst estates replacing approximately 490 T5 fluorescent street lights to energy efficient LEDs.

Council's electricity costs for public lighting decreased from \$1.28M in 2021/22 to \$1.17M (8.4% decrease) in 2022/23. This is mainly due to United Energy processing of cost savings from the 2021/22 bulk LED street light upgrade.

The graph below shows that electricity usage associated with public lighting has historically been stable over time. The benefit of street light upgrade projects since 2020/21 can be seen in the reduced usage since.

In future years as part of Council's Capital Works program, remaining inefficient mercury vapour and fluorescent street lights on both minor (residential) and major (shared) roads will be replaced with similar LED technology. This will assist in further reducing electricity usage and costs from public lighting.



**Water usage and cost trends**

The graph below shows that in 2022/23, Council's mains water usage decreased to 165 megalitres (ML) (8.4% decrease), when compared to 180 ML in 2021/22. Correspondingly, Council's mains water cost also decreased from \$744k in 2021/22 to \$692K in 2022/23 (7.0% decrease).

The decrease in mains water usage was mainly due to a wet year and short summer reducing irrigation needs at reserves, as well as a number of issues identified in

**12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)****Officers' Assessment**

2021/22 having been rectified (more accurate usage data, increased building inspections to avoid faults leading to over-usage, and leaks being fixed).

The three largest consuming sites in 2022/23 responsible for 21.4% (35 ML) of Council's mains water use and \$130k (9.4%) of the cost were:

- PARC – used 13.1 ML (8.0%) and was Council's highest mains water user with \$52K in water costs. Mains water usage and cost decreased at this site compared to 2021/22 by 15.9% and 15%, respectively.
- George Pentland Botanic Gardens – used 11.8 ML (7.2%) and was the second highest mains water user with \$43K in water costs. This site increased in usage and costs by 7.4% and 7.7%, respectively, compared to 2021/22. This is most likely due to increased water use in the 'fern gully' to compensate for tree loss/shade from the October 2021 storms.
- Lawton Reserve – used 10.3 ML (6.2%) with \$35K in water costs. This is a decrease of 17.3% in mains usage and 17.4% in water costs since 2021/22, a result of the wet year and short summer, as well as less irrigation required compared to turf establishment during 2021/22.

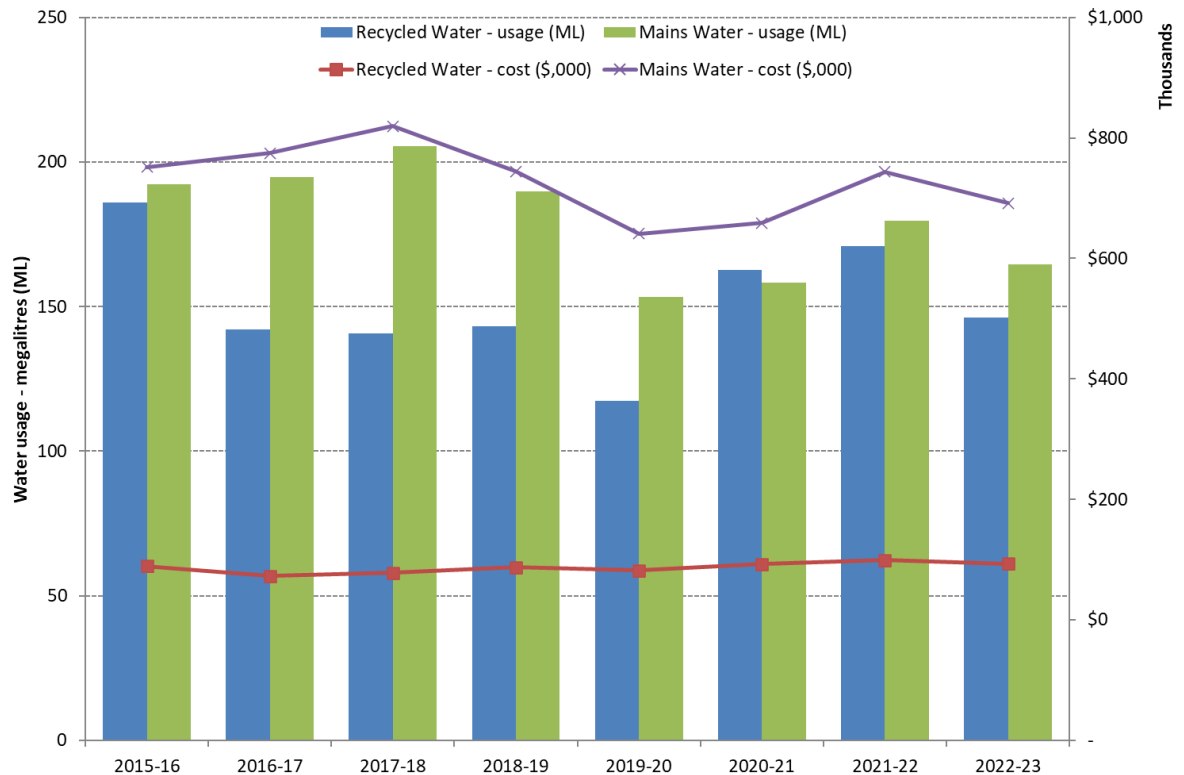
Council's recycled water usage from the Eastern Treatment Plant in Bangholme decreased to 146 ML in 2022/23, when compared to 171 ML in 2021/22 (14.5% decrease). Council's recycled water cost decreased to \$94K in 2022/23 from \$99K in 2021/22 (5.6% decrease), corresponding with the decrease in recycled water usage. These reductions can be attributed to the wet year experienced in 2022/23 and shorter summer, therefore requiring less irrigation.

Council's percentage of recycled water usage, as a proportion of Council's total water usage, decreased slightly to 47.0% in 2022/23, when compared to 48.7% in 2021/22.

Recycled water usage at Centenary Park Golf Course has slightly increased to 65 ML in 2022/23, when compared to 62 ML in 2021/22 (4.2% increase). Finally, a faulty meter at McClelland Reserve has now been fixed, leading to a 133% increase in recorded recycled water usage compared to reported figures in 2021/22.

12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

Officers' Assessment



**Greenhouse gas emissions by sector**

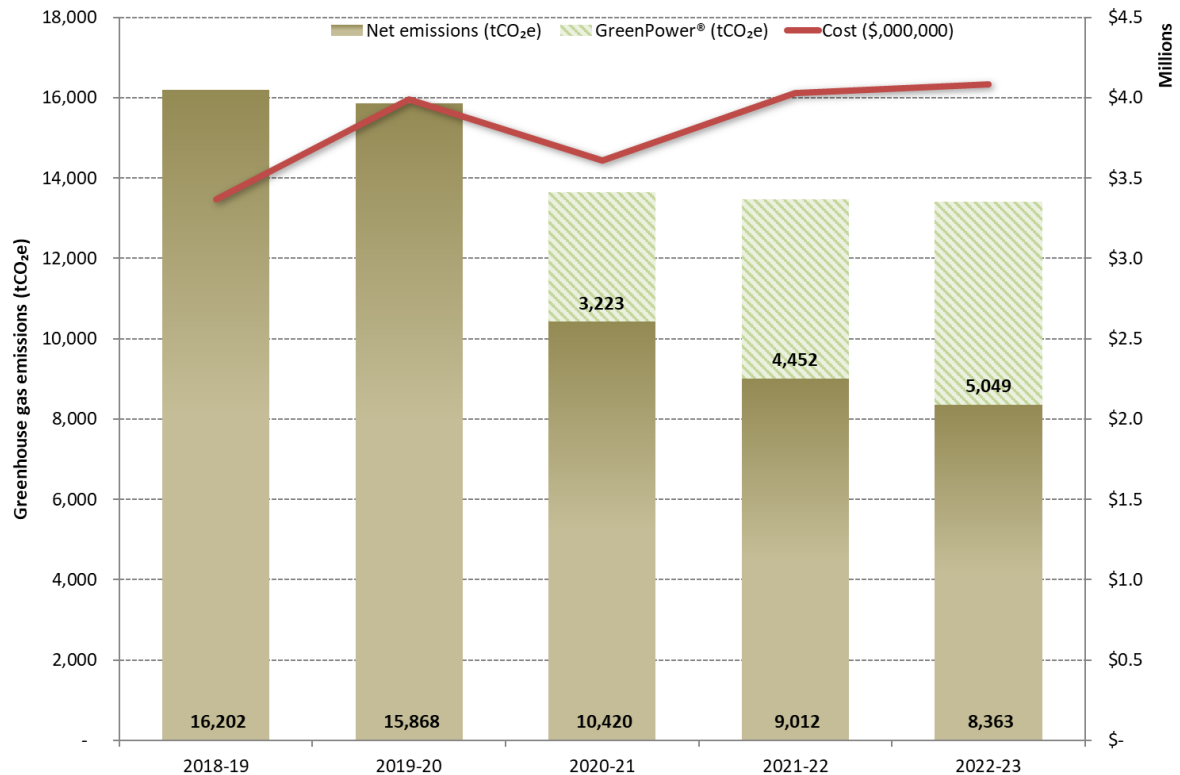
Council's net emissions decreased to 8,362 tonnes CO2-e in 2022/23, down from 9,012 tonnes in 2021/22 (a decrease of 650 tonnes or 7.2%) (see graph below).

The decrease is mainly due to:

- Decarbonisation of the Victorian electricity grid due to increased renewable energy being generated and entering the grid. For example, electricity generated via solar and wind power have much less carbon emissions per unit of electricity generated when compared to burning brown coal.
- A 10-year Power Purchase Agreement (PPA) with the Bald Hills Wind Farm for five major Council facilities resulting in these sites being powered by 100% renewable energy through GreenPower® (for the Civic Centre, FAC and Library, Operations Centre, Ebdale Community Hub and Learning Centre and Karingal PLACE Neighbourhood Centre), reducing emissions by 2,157 tonnes in 2022/23.
- A 4-year GreenPower® purchase for street lighting that Council pays the electricity for, reducing emissions by 2,892 tonnes in 2022/23.
- Despite the continued gradual return to normal activity levels following the COVID-19 pandemic, the overall reduction in emissions demonstrates the positive impact of energy efficiency improvements and solar on Council assets.

12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

Officers' Assessment



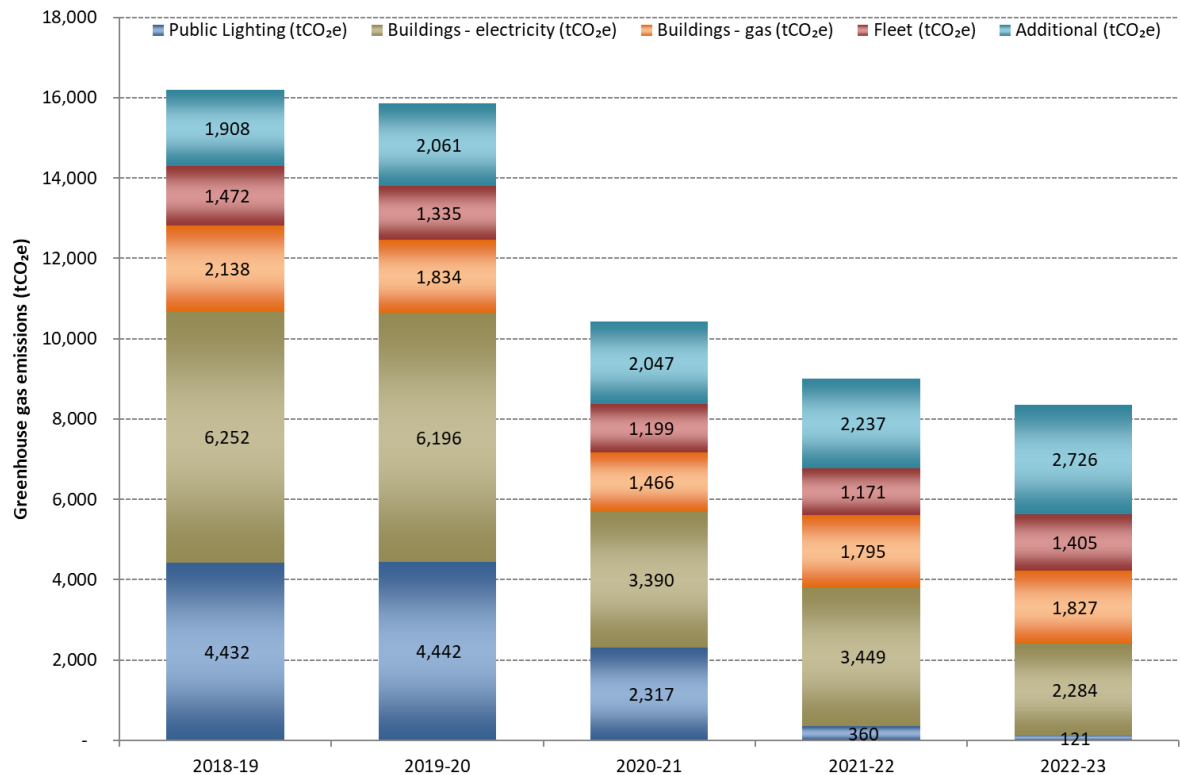
The second graph below shows that in 2022/23, Council's highest emission sources in descending order were:

- **Additional sources** (major contractor fuel, emissions from Council's corporate waste stream, staff air travel, landfill gas flaring and reticulated water supply)  
2,726 tonnes (32.6%)
- **Council's buildings and sites** (electricity usage)  
2,284 tonnes (or 27.3% of total emissions)
- **Council's buildings and sites** (gas usage)  
1,827 tonnes (21.8%)
- **Council's fleet**  
1,405 tonnes (16.8%)
- **Public lighting** (electricity usage)  
121 tonnes (1.4% of total emissions)

Between 2021/22 and 2022/23, emissions from Council's total building gas usage increased by 1.8% (32 tonnes), emissions from Council's fleet increased by 20.0% (234 tonnes), and emissions from additional sources increased by 21.9% (489 tonnes). Emissions from public lighting (including street lighting) decreased by 33.6% (239 tonnes) due to LED street lighting conversions at Sandhurst and Sandarra Estates. Emissions from total building electricity usage decreased by 33.8% (1,165 tonnes) due to LED lighting efficiency upgrades at sites including Carrum Downs Library and Council's Operations Centre, as well as rooftop solar installations at PARC, Civic Centre, Orwil Street Community House and Overport Park Pavilion.

12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

Officers' Assessment



Note: The 'Additional' source in the graph above includes emissions generated from Council's major contractor fuel usage from kerbside waste and hard waste collections, asphaltting works, facilities maintenance and estimated emissions from corporate waste since 2016/17, plus emissions from staff air travel from 2018/19 onwards. Since 2021/22 emissions from landfill gas flaring (221 tCO<sub>2</sub>-e in 2022/23) and reticulated water pumping (14 tCO<sub>2</sub>-e) have also been included.









Council's emissions are expected to decrease by a further 1,000+ tonnes annually in future years due to the following works planned in 2023/24:

- Energy LED lighting efficiency upgrades at PARC and the Civic Centre.
- Implementation of the findings and recommendations from the solar feasibility and electrification study.
- Further LED street lighting conversions for both Council owned and shared streetlights on arterial roads.
- Council's building projects will continue to be implemented in accordance with Council's *Environmentally Sustainable Design (ESD) Standards for Council Buildings Policy*.

12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

**Officers' Assessment**

**Top 8 energy users in Council's building sector**

			
<b>Peninsula Aquatic Recreation Centre</b> 33,282 GJ in 2022-23 66.3% of buildings' energy ↓ 387 GJ (-1.2%) since 2021-22	<b>Frankston Arts Centre and Library</b> 5,550 GJ in 2022-23 11.1% of buildings' energy ↑ 721 GJ (14.9%) since 2021-22	<b>Civic Centre</b> 2,984 GJ in 2022-23 5.9% of buildings' energy ↑ 178 GJ (6.3%) since 2021-22	<b>Pines Forest Aquatic Centre</b> 2,494 GJ in 2022-23 5.0% of buildings' energy ↓ 475 GJ (-16.0%) since 2021-22
			
<b>Ebdale Community Hub and Learning Centre</b> 423 GJ in 2022-23 0.8% of buildings' energy ↑ 110 GJ (35.3%) since 2021-22	<b>Karingal PLACE</b> 400 GJ in 2022-23 0.8% of buildings' energy ↓ 36 GJ (-8.3%) since 2021-22	<b>Healthy Futures Hub</b> 383 GJ in 2022-23 0.8% of buildings' energy ↑ 383 GJ (100.0%) since 2021-22	<b>Operations Centre</b> 334 GJ in 2022-23 0.7% of buildings' energy ↑ 51 GJ (17.9%) since 2021-22

The image above shows the top eight Council facilities that used the most energy (gas and electricity usage combined) in 2022/23 from the buildings sector.

In decreasing order of energy usage the top eight facilities were: PARC, FAC, Civic Centre, Pines, Ebdale Community Hub and Learning Centre, Karingal PLACE, Healthy Futures Hub and Operations Centre.

Energy use at FAC, Civic Centre, Ebdale Community Hub and Learning Centre, Healthy Futures Hub and Operations Centre increased in 2022/23 when compared to the previous year predominantly due to continued return to business as usual after COVID-19 pandemic closures.
















Energy usage at the PARC, Pines and Karingal PLACE decreased when compared to the previous year.



12.7 Annual Report on Council's Greenhouse Gas Emissions, Energy and Water Usage and Costs (2022/23)

Officers' Assessment

Top 10 highest mains water users and top 5 highest recycled water users

				
<b>Mains Water No 1</b> <b>Peninsula Aquatic Recreation Centre</b> 13.1 ML (\$51,657) in 2022-23 8.0% of Mains Water ↓ 2.5 ML (-15.9%) since 2021-22	<b>Mains Water No 2</b> <b>George Pentland Botanic Gardens</b> 11.8 ML (\$42,968) in 2022-23 7.2% of Mains Water ↑ 0.8 ML (7.4%) since 2021-22	<b>Mains Water No 3</b> <b>Lawton Park Reserve</b> 10.3 ML (\$35,278) in 2022-23 6.2% of Mains Water ↓ 2.2 ML (-17.3%) since 2021-22	<b>Mains Water No 4</b> <b>Frankston Park</b> 9.6 ML (\$37,590) in 2022-23 5.8% of Mains Water ↑ 2.5 ML (35.7%) since 2021-22	<b>Mains Water No 5</b> <b>Ballam Park</b> 8.5 ML (\$31,469) in 2022-23 5.2% of Mains Water ↑ 7.7 ML (943.1%) since 2021-22
				
<b>Mains Water No 6</b> <b>Riviera Reserve</b> 8.4 ML (\$31,126) in 2022-23 5.1% of Mains Water ↓ 4.0 ML (-32.0%) since 2021-22	<b>Mains Water No 7</b> <b>Seaford North Reserve</b> 6.8 ML (\$25,314) in 2022-23 4.1% of Mains Water ↓ 3.9 ML (-36.5%) since 2021-22	<b>Mains Water No 8</b> <b>Delacombe Reserve</b> 6.8 ML (\$24,761) in 2022-23 4.1% of Mains Water ↓ 0.7 ML (11.5%) since 2021-22	<b>Mains Water No 9</b> <b>Operations Centre</b> 5.8 ML (\$23,534) in 2022-23 3.5% of Mains Water ↓ 0.9 ML (-14.1%) since 2021-22	<b>Mains Water No 10</b> <b>Carrum Downs Reserve</b> 4.6 ML (\$16,854) in 2022-23 2.8% of Mains Water ↑ 4.0 ML (672.8%) since 2021-22
				
<b>Recycled Water No 1</b> <b>Centenary Park Golf Course</b> 64.9 ML (\$11,743) in 2022-23 44.4% of Recycled Water ↑ 2.6 ML (4.2%) since 2021-22	<b>Recycled Water No 2</b> <b>Belvedere Reserve</b> 17.1 ML (\$3,311) in 2022-23 11.7% of Recycled Water ↑ 3.8 ML (29.0%) since 2021-22	<b>Recycled Water No 3</b> <b>Ballam Park</b> 15.0 ML (\$22,485) in 2022-23 10.3% of Recycled Water ↓ 9.1 ML (-37.6%) since 2021-22	<b>Recycled Water No 4</b> <b>Lloyd Park</b> 12.3 ML (\$22,484) in 2022-23 8.4% of Recycled Water ↓ 6.2 ML (-33.5%) since 2021-22	<b>Recycled Water No 5</b> <b>Robinsons Park</b> 10.1 ML (\$2,173) in 2022-23 6.9% of Recycled Water ↑ 4.1 ML (67.5%) since 2021-22

The image above shows the top ten Council sites that contributed to Council's mains water usage, as well as the top five sites that used recycled water, in decreasing order of usage.

In decreasing order of mains water usage, the top ten sites for 2022/23 were: PARC, George Pentland Botanic Gardens, Lawton Park Reserve, Frankston Park, Ballam Park, Riviera Reserve, Seaford North Reserve, Delacombe Reserve, Operations Centre and Carrum Downs Reserve.

While PARC remains the most significant mains water user, 2022/23 usage decreased by 15.9% compared to 2021/22 following its reopening. Increased mains water usage at Ballam Park (943.1%) and Carrum Downs Reserve (672.8%) is associated with the construction phase of the pavilions in these locations.

The top five sites with the highest recycled water usage for 2022/23 were: Centenary Park Golf Course, Belvedere Reserve, Ballam Park, Lloyd Park, and Robinsons Park. In 2022/23, recycled water usage slightly increased at Centenary Park Golf Course following the resolution of issues with the irrigation system in 2021/22.

Council officers continue to keep abreast of the opportunities to progress recycled water schemes in the Frankston municipality, which have the potential to significantly reduce Council's mains water usage and provide greater water security for Council assets.