# Emissions and Energy Data Analysis Report

2024/2025

*Prepared: January 2026 by Shire of Mundaring Sustainability Officer*

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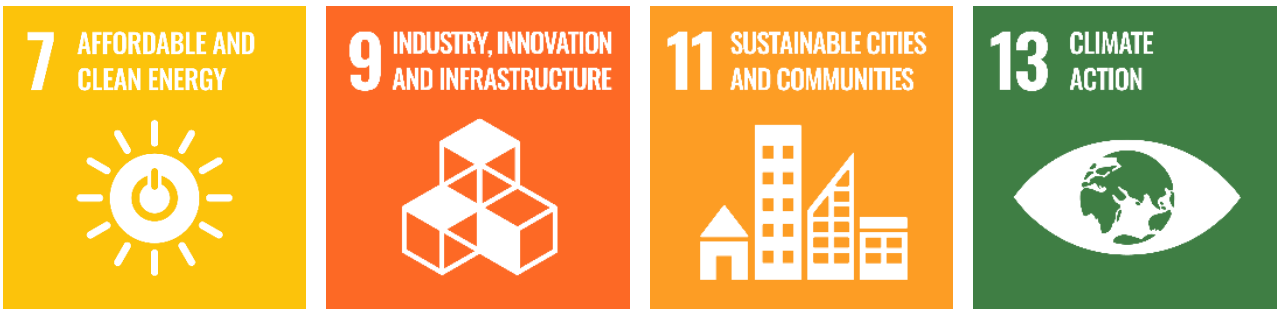
## UN Sustainable Development Goals

The Shire of Mundaring as 'A Place for Sustainable Living' embraces the United Nations Sustainable Development Goals (SDG). This report contributes towards the following goals.



# 1. Introduction

## Target

The Shire of Mundaring has made a commitment to reduce greenhouse gas emissions resulting from Shire activities.

The Shire endorsed its first Energy and Emissions Reduction Strategy in 2018, which provided direction for the Shire to reduce corporate carbon emissions and implement renewable energy when possible. The Strategy also set the Shire's emissions reduction target to reduce greenhouse gas emissions by 30% by 2030 (from the 2016/2017 baseline). The Shire revised its strategy and target in the Emissions Reduction Strategy 2024.

The Shire's current emissions reduction target is:

- *To reduce corporate emissions by 70% by 2030, from 2016/2017 levels.*

The Shire is not obliged to report emissions under the National Greenhouse and Energy Reporting Scheme (NGERS) or any other legislative framework. The Shire has chosen to monitor and report emissions annually to track progress towards the emissions reduction target.

Corporate emissions are monitored and analysed using the Azility Platform. Previously, reporting was undertaken by the Eastern Metropolitan Regional Council (EMRC) through the regional Achieving Carbon Emissions Reduction (ACER) program. EMRC ceased providing this service in 2024, and subsequent monitoring and analysis is now the responsibility of the Shire of Mundaring Sustainability Officer.

The following report examines the Shire's corporate emissions for financial year 2024/2025 compared to the Shire's target with a baseline year of 2016/2017.

## Data disclaimer

The data within this report is correct at the time extracted from the Shire's Azility platform and contains actual data for all major accounts. Where billing data has not yet been received for minor accounts, Azility uses estimates based on previous years' data.

Data completeness at the time of reporting is as follows:

- Mains Electricity: 100%
- Mains Gas: 100%
- Bottled Gas: 100%
- Fuel: 100%

# 2. Emission Reduction Target

Azility calculates gross emissions using the location-based accounting method, which applies the average emission intensity of the electricity grid the Shire is connected to. This approach does not consider specific electricity contracts and therefore represents the Shire's total greenhouse gas footprint before any offsets or renewable energy purchases.

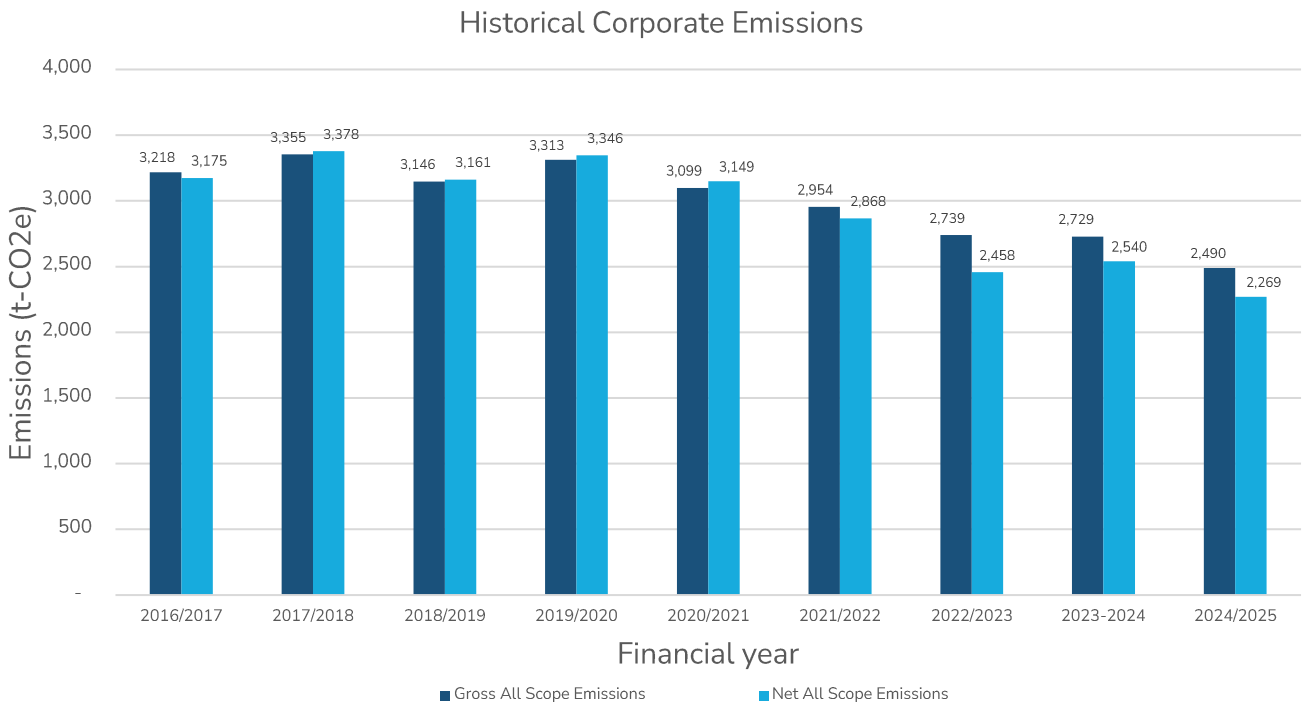
Azility calculates net emissions using the market-based accounting method, which reflects emissions from the specific electricity the Shire purchases. This method incorporates Renewable Energy Certificates, Renewable Electricity Guarantee of Origin schemes, and other energy contracts, showing the impact after carbon neutrality efforts like renewable energy procurement and carbon offsets.

The Shire has committed to a 70% reduction in 2016/2017 emissions by 2030. This has been taken seriously by the Shire, and to date reductions in net emissions have been achieved in part due to the introduction of the WALGA Sustainable Energy Supply Project. This allowed the Shire to purchase 100% NaturalPower (produced by renewable energy projects) from Synergy. Phase One occurred from 1st April 2022 to 31st March 2025 including seven contestable electricity accounts. The Shire has signed a contract for Phase Two commencing from 1st April 2025 to end 31st March 2028 for eight contestable electricity accounts.

The impact of this project on emissions is visible in the diversion between gross emissions (before the inclusion NaturalPower) and net emission (post inclusion of NaturalPower) from 2021/2022 onwards in Figure 1.

Figure 1 displays the historical gross and net emission for the Shire of Mundaring since baseline year 2016/2017. It also demonstrates that even without the impact of NaturalPower on the Council's emission profile, the Shire is making progress in achieving emissions reductions.

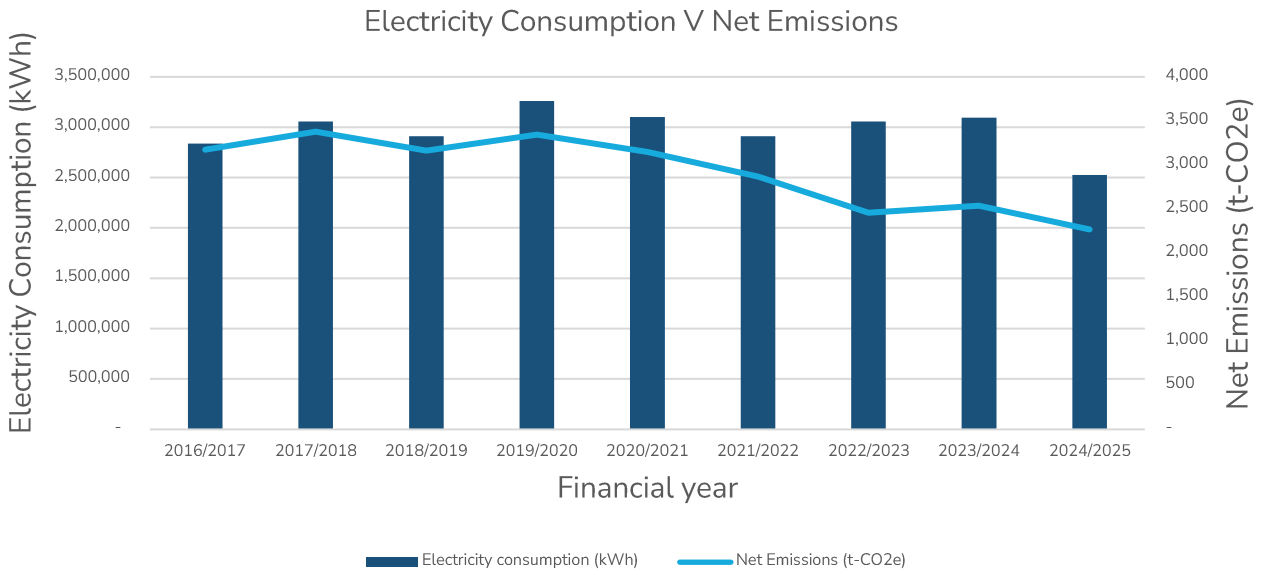
***Figure 1: Historic Corporate Emissions***




*Shire of Mundaring's historic gross and net emissions* ($tCO_2$-e) from baseline year of 2016/2017 to 2024/2025. *Extracted from Azility Emissions Overview Report on 23/01/2026.*

Figure 2 shows that there has been an 18% decrease in electricity consumption from 2023/2024 to 2024/2025 while only a 11% decrease in net emissions in the same period. This indicates that there is not a one-to-one relationship in relation to electricity consumption and emissions for the Shire of Mundaring. This demonstrates why it is important to continue to monitor all utilities consumption as well as emissions to be able to obtain a clear picture of the council's assets and emissions profile.

***Figure 2: Electricity Consumption V Net Emissions***



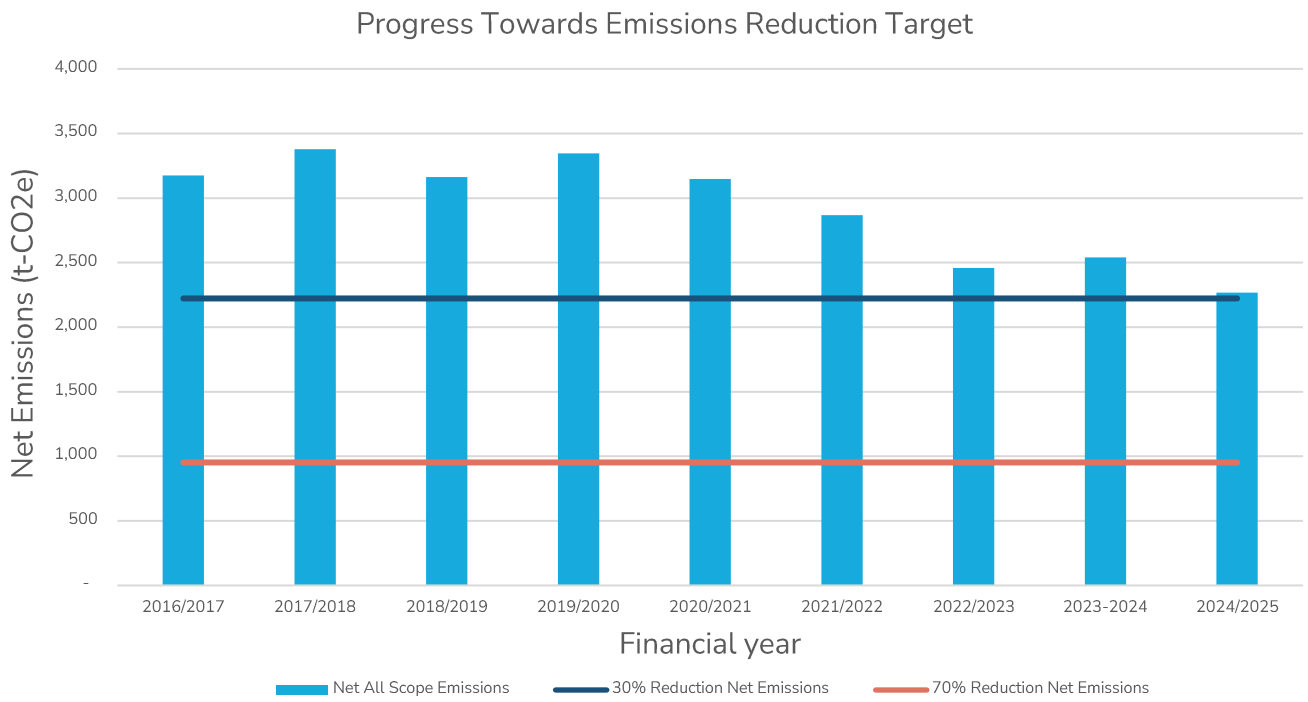

*Shire of Mundaring's electricity consumption v net emissions from baseline 2016/2017 to 2024/2025. Extracted from Azility Annual Electricity Usage and Cost Report and Emissions Overview Report on 23/01/2026.*

***Table 1: Total Net Emissions Data***

| Financial Year | Net emissions total ($tCO_2$-e) | Difference in net emissions since previous year ($tCO_2$-e) | Difference in net emissions since baseline year 2016/2017 | Percentage difference in net emissions since baseline year 2016/2017 |
|---|---|---|---|---|
| 2016/2017 | 3,175 | | | |
| 2017/2018 | 3,378 | 203 | 203 | 6% |
| 2018/2019 | 3,161 | -217 | -14 | 0% |
| 2019/2020 | 3,346 | 185 | 171 | 5% |
| 2020/2021 | 3,149 | -197 | -26 | -1% |
| 2021/2022 | 2,868 | -281 | -307 | -10% |
| 2022/2023 | 2,458 | -410 | -283 | -23% |
| 2023/2024 | 2,540 | -82 | -635 | -20% |
| 2024/2025 | 2,269 | -271 | -906 | -29% |

*Shire of Mundaring's total net emissions data ($tCO_2$-e) with differences from baseline 2016/2017 to 2024/2025 and progress towards target. Extracted from Azility Emissions Overview Report on 23/01/2026.*

***Figure 3: Progress Towards Emissions Reduction Target***




*Shire of Mundaring's net emissions reduction path to Shire target of 70% reduction for the year 2029/2030. Extracted from Azility Emissions Overview Report on 23/01/2026.*

Table 1 highlights the Shire's progress towards the target of a 70% reduction on 2016/2017 levels. Figure 3 shows the net emissions reduction for the Shire since adopting the 30% reduction target in 2018 and revising the target to 70% reduction based on 2016/2017 baseline net emissions.

A previous emission and energy data analysis report indicated the Shire reached its 30% reduction goal in 2022/2023. Over time, data completeness and data analysis refinement demonstrates that the Shire achieved a 23% reduction in net emissions from baseline in 2022/2023. For the year 2024/2025 the Shire has achieved a 29% reduction in net emissions from baseline 2026/20117 as seen in Table 1.

# 3. Total Emissions and Activity Breakdown

The Shire has recorded an overall decrease in emissions. Table 2 demonstrates the volume and percentage change of emissions for each scope, and total change in comparison to the previous reporting year of 2023/2024.

***Table 2: Net Emissions Scope***

| Emissions | Total net emissions ($tCO_2$-e) | | Volume change ($tCO_2$-e) | Percentage change (%) |
|---|---|---|---|---|
| **Scope 1** | 2023/2024 | 2024/2025 | | |
| Emissions from fuel combustion for transport and stationary energy | 771 | 840 | 69 | 9% |
| **Scope 2** | | | | |
| Emissions from purchase of electricity and gas | 371 | 346 | -25 | -7% |
| **Scope 3** | | | | |
| Emissions from purchase of electricity for streetlighting and provision of water and wastewater services. | 1,397 | 1,082 | -315 | -22% |
| **Total** | **2,539** | **2,268** | **-271** | |

*Shire of Mundaring's net emissions* ($tCO_2$-e) *by scope for 2023/2024 and 2024/2025. Extracted from Azility Emissions Overview Report on 23/01/2025.*

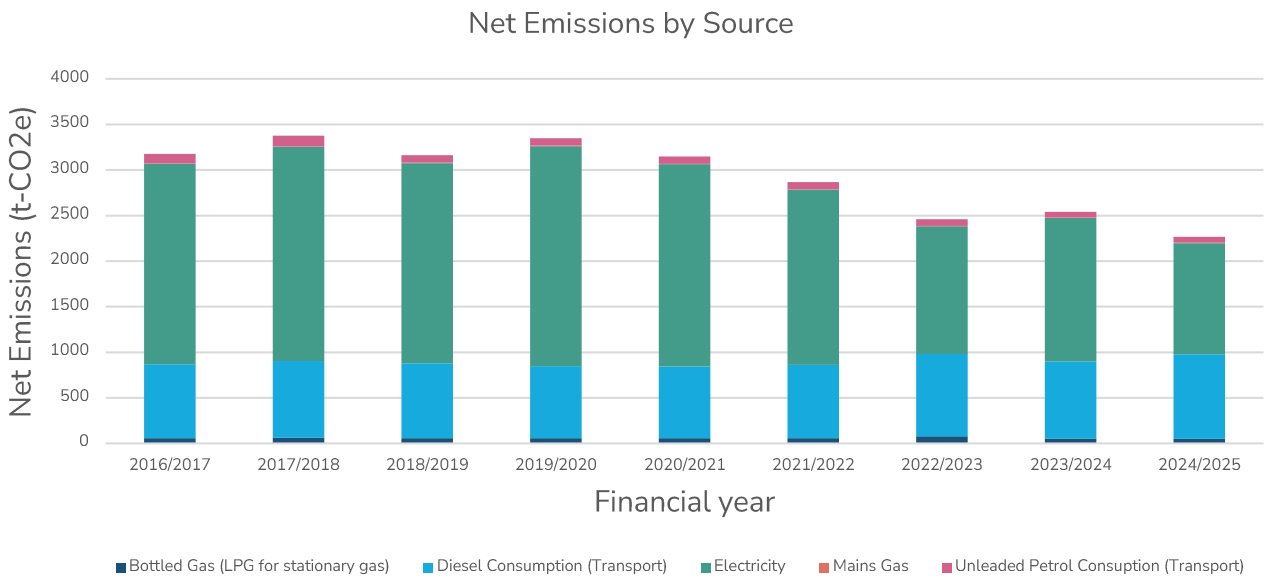
Scope 1 are the Shire's direct emissions from the combustion of fossil fuels such as diesel and unleaded petrol in vehicles and stationary energy such as natural gas. Scope 1 emissions have increased 9% since the previous financial year which is attributed to the continued reliance on diesel for fleet & machinery and gas boilers at Bilgoman Aquatic Centre.

Scope 2 are the indirect emissions produced through the electricity used by buildings owned and occupied by the Shire. Scope 2 emissions have decreased by 7% since the previous financial year which is attributed to the purchase of NaturalPower from Synergy and continued implementation of minor energy efficiency improvement works.

Scope 3 are all other indirect emissions such as emissions produced through the electricity used by streetlighting that the Shire pays the bill for, emissions produced through the processes associated with the delivery of water to Shire facilities, and disposal of wastewater. Scope 3 emissions have reduced by 22% which is attributed to the LED streetlight rollout which commenced in late 2023 and further demonstrated by Figure 7.

The Shire currently has a limited emission boundary. There is potential for resetting the emission boundaries and expanding emission sources, especially Source 3 to provide a more comprehensive profile of the Shire's emissions. It is recommended to plan for the re-evaluation of the emission boundary and to commence gathering data as soon as practicably possible to develop robust baseline data before its reporting implementation following the current target cycle end date 2029/2030.

***Figure 4: Net Emissions by Source***

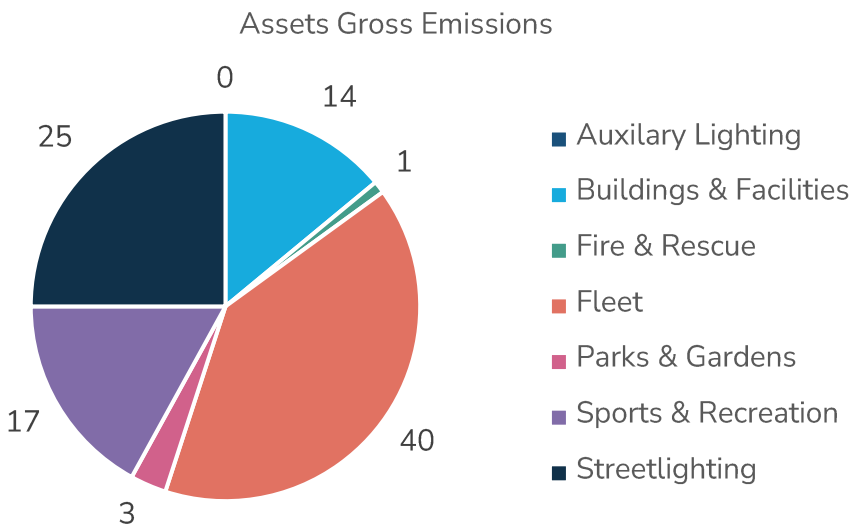



*Shire of Mundaring's net emissions* ($tCO_2$-e) *by source for 2016/2017 and 2024/2025. Extracted from Azility Emissions Overview Report on 23/01/2026.*

Figure 4 demonstrates electricity and unleaded petrol emissions have decreased by approximately half from 2017/2018. There has been no reduction in emissions from diesel.

Figure 5 shows the percentage of gross emissions by each asset group in the 2024/2025 reporting period. Fleet is the largest contributor (40%), followed by streetlighting (25%), Sport & Recreation (17%) and Buildings & Facilities (14%).

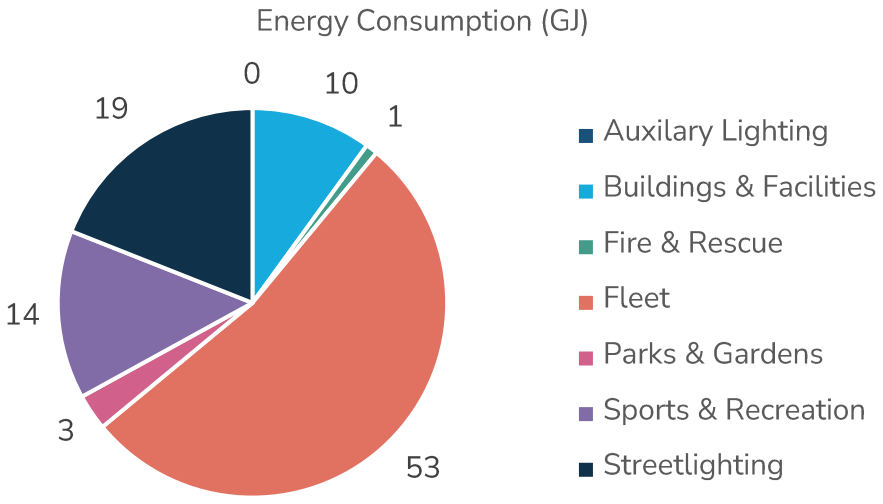
***Figure 5: Assets Gross Emissions***




*Shire of Mundaring's gross emissions ($tCO_2$-e) by organisational unit for 2024/2025. Extracted from Azility Organisation Performance Summary Report on 23/01/2026.*

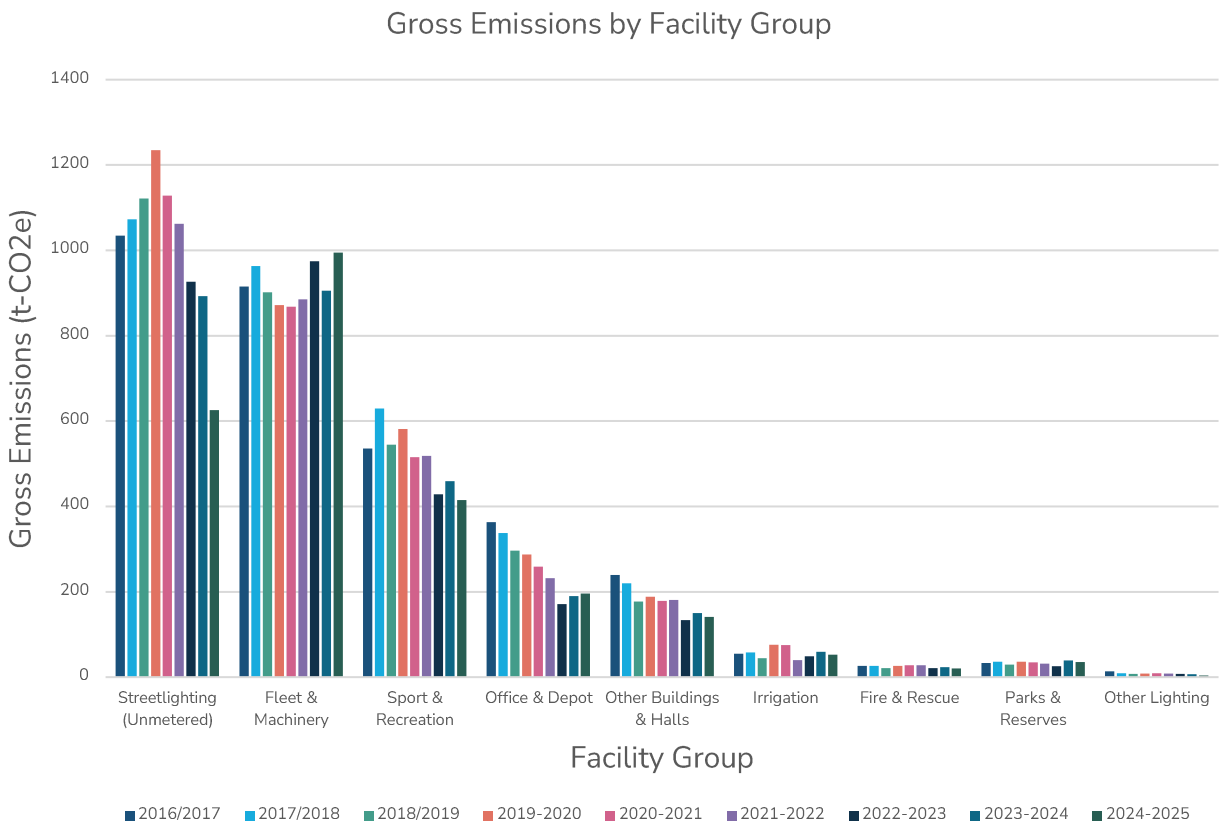
Figure 6 demonstrates the percentage of consumption by each asset group in the 2024/2025 reporting period, and we can see that there is not a one-to-one ratio for energy consumption when compared back to emissions. In this case, Fleet consumption significantly outweighs all other groups making up 53% energy consumption.

**Figure 6: Energy Consumption**




*Shire of Mundaring's energy consumption (GJ) by organisational unit for 2024/2025. Extracted from Azility Organisation Performance Summary Report on 23/01/2026.*

***Figure 7: Gross Emissions by Facility Group***




*Shire of Mundaring's all scopes gross emissions ($tCO_2$-e) by facility group from baseline 2016/2017 to 2024/2025. Extracted from Azility Organisation Performance Summary Report on 23/01/2026.*

Figure 7 displays historical emissions for each facility group, providing insight into the reductions that the Shire has achieved over time. Unmetered streetlighting which was previously the biggest contributor to emissions has experienced a significant decrease in emissions due to the LED streetlight rollout which commenced in late 2023 with installations completed September 2025.

Fleet & Machinery are now the highest contributing facility group of emissions for the Shire. The Emissions Reduction Strategy 2024 action item 2.5 to "*Develop a low-emissions fleet transition plan to provide for staged replacement of vehicles and machinery.*" has been completed. It is anticipated that emissions reduction would progress in the coming years with the implementation of low emission fleet.

Sports & Recreation along with Office & Depot and Other Buildings & Halls has experienced a gradual reduction in gross emissions due to install of rooftop solar and energy efficient LED lighting, air conditioners, appliances and equipment for Shire facilities over time.

# 4. Highest Emissions Assets

Table 3 reveals the performance of the Shire's top emitting assets. Other than Fleet and Streetlighting, the other assets are relatively small contributors to Shire's total net emissions.

***Table 3: Highest Net Emissions Assets***

| Asset Name | Net emissions ($tCO_2$-e) 2023/2024 | Net emissions ($tCO_2$-e) 2024/2025 | Volume change ($tCO_2$-e) | % change |
|---|---|---|---|---|
| **Fleet** | 905 | 995 | 90 | 10% |
| **Unmetered Streetlighting** | 1,159 | 826 | -333 | -29% |
| **Bilgoman Pool** | 49 | 47 | -2 | 4% |
| **Elsie Austin Reserve** | 37 | 33 | -4 | 11% |
| **Midvale Early Childhood & Parenting Centre** | 26 | 28 | 2 | 8% |
| **Harry Riseborough Oval** | 20 | 19 | -1 | -5% |
| **Tank & Retic Pumps** | 14 | 17 | 3 | 21% |
| **Mundaring Library** | 16 | 17 | 1 | 6% |
| **Broz Park** | 16 | 17 | 1 | 6% |
| **Hub of the Hills** | 14 | 16 | 2 | 14% |

*Shire of Mundaring's highest net emissions assets for 2023/2024 and 2024/2025. Extracted from Azility Emission Overview Report on 23/01/2026.*

Eight of the Shire's assets which were previously significant contributors now consume renewable energy from NaturalPower by Synergy. As a result, most of these sites produce significantly fewer net emissions, not making it to the highest net emissions asset list. Although consuming NaturalPower by Synergy Bilgoman Pool has remained among the highest net emitting assets due to its gas usage. The eight contestable electricity accounts included in the WALGA Sustainable Energy Supply Project Phase Two purchasing NaturalPower from Synergy are:

1. Bilgoman Pool
2. Boya Community Hub and Oval
3. Mundaring Arena
4. Salisbury Road Bore
5. Shire Of Mundaring Administration & Civic Complex
6. Shire Depot
7. Mundaring Recreation Ground
8. Lake Leschenaultia

# 5. Assets with the Largest Electricity Consumption Change

As demonstrated in Figure 2, net emissions reduced (-11%) and electricity consumption decreased notably (-18%) from 2023/2024 to 2024/2025. Whilst the have been 18% decrease in electricity consumption, there was only a 9% decrease in electricity cost, indicating the increasing cost of electricity. Table 4 shows the assets that have had a significant consumption increase compared to the same time last year.

**Table 4: Largest Electricity Consumption Increase**

| Asset name | Usage (kWh) 2023/2024 | Usage (kWh) 2024/2025 | Volume change (kWh) | % change |
|---|---|---|---|---|
| **Lake Leschenaultia** | 50,257 | 62,897 | 12,640 | 25 |
| **Shire Depot** | 70,790 | 76,827 | 6,037 | 9 |
| **Shire Of Mundaring Administration & Civic Complex** | 262,812 | 267,472 | 4,660 | 2 |
| **Tank & Retic Pumps** | 19,146 | 22,733 | 3,587 | 19 |
| **Midvale Early Childhood & Parenting Centre** | 30,067 | 32,399 | 2,332 | 8 |
| **Hub of the Hills** | 18,802 | 19,638 | 836 | 4 |
| **Sundry Bookings** | 17,972 | 18,557 | 585 | 3 |
| **Mundaring Adult Creative & Learning Centre** | 20,109 | 20,664 | 555 | 3 |
| **Mundaring Library** | 21,749 | 22,251 | 502 | 2 |
| **Brown Park** | 15,709 | 16,139 | 430 | 3 |

*Shire of Mundaring assets with the largest electricity consumption increase in 2024/2025 compared to last year. Extracted from Azility Annual Electricity Usage and Cost Report on 23/01/2026.*

Table 5 shows the assets that have had the largest reduction in electricity consumption compared to the same time last year.

**Table 5: Largest Electricity Consumption Decrease**

| Asset name | Usage (kWh) 2023/2024 | Usage (kWh) 2024/2025 | Volume change (kWh) | % change |
|---|---|---|---|---|
| **Unmetered Streetlighting** | 1,566,748 | 1,097,506 | -469,242 | -30 |
| **Bilgoman Pool** | 185,173 | 145,818 | -39,355 | -21 |
| **Mundaring Recreation Ground (Arena)** | 210,013 | 192,934 | -17,079 | -8 |
| **Salisbury Road Bore** | 66,130 | 53,229 | -12,901 | -20 |
| **Elsie Austin Reserve** | 49,416 | 43,505 | -5,911 | -12 |
| **Glen Forrest Oval Change Room** | 15,162 | 9,564 | -5,598 | -37 |
| **Mundaring Firefighting School** | 6,823 | 2,166 | -4,657 | -68 |
| **Sawyers Valley Oval** | 15,508 | 11,112 | -4,396 | -28 |
| **Parkerville Volunteer Bushfire** | 14,172 | 10,038 | -4,134 | -29 |
| **Chidlow Oval** | 8,620 | 4,813 | -3,807 | -44 |

*Shire of Mundaring assets with the largest electricity consumption decrease in 2024/2025 compared to last year. Extracted from Azility Annual Electricity Usage and Cost Report on 23/01/2026.*