



ENERGY CONSERVATION & DEMAND MANAGEMENT PLAN 2024

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1. Regulatory Update

O. Reg. 397/11: Conservation and Demand Management Plans was introduced in 2013. Under this regulation, public agencies were required to report on energy consumption and greenhouse gas (GHG) emissions and develop Conservation and Demand Management (CDM) plans the following year.

Until recently, O. Reg. 397/11 was housed under the Green Energy Act, 2009 (GEA). On December 7, 2018, the Ontario government passed Bill 34, Green Energy Repeal Act, 2018. The Bill repealed the GEA and all its underlying Regulations, including O. Reg. 397/11. However, it re-enacted various provisions of the GEA under the Electricity Act, 1998.

As a result, the conservation and energy efficiency initiatives, namely CDM plans and broader public sector energy reporting, were re-introduced as amendments to the Electricity Act. The regulation was called O. Reg. 507/18: Broader Public Sector: Energy Conservation and Demand Management Plans (ECDM).

As of January 1, 2019, O. Reg. 397/11 was replaced by O. Reg. 507/18, and BPS reporting and ECDM plans are under the Electricity Act, 1998 rather than the Green Energy Act, 2009.

As of February 23, 2023, O. Reg. 507/18 was replaced by **O. Reg. 25/23, and BPS Reporting and ECDM Plans** are under the Electricity Act, 1998.

2. Executive Summary

The purpose of this Energy Conservation and Demand Management (ECDM) Plan from St. Joseph's Care Group ("SJCG") is to outline specific actions and measures that will promote good stewardship of our environment and community resources in the years to come. The Plan will accomplish this, in part, by looking at future projections of energy consumption and reviewing past conservation measures.

In keeping with SJCG's core values of efficiency, concern for the environment and financial responsibility, this ECDM outlines how the organization will reduce overall energy consumption, operating costs and greenhouse gas emissions. By following the measures outlined in this document, we will improve efficiency allowing more resources to be directed to service delivery. This ECDM Plan is written in accordance with O. Reg. 25/23 of the recently amended Electricity Act, 1998.

Through past conservation and demand initiatives between 2019 and 2023, SJCG has achieved the following results:

- 713,086 m³ of reduction in natural gas use

Today, utility and energy related costs are a significant part of overall operating costs. In 2023:

- SJCG's Energy Use Index (EUI) was 28 ekWh/sq.ft (equivalent kilowatt hours per square feet)
- Energy-related emissions equaled 4,652 tCO₂e (equivalent tonnes of carbon dioxide)

To obtain full value from energy management activities, SJCG is committed to incorporating energy conservation and management into operations. In addition to undertaking energy reduction projects within capital planning, SJCG will explore opportunities to improve energy efficiency through our Green Team which is committed to reducing the impact that our organization has on the environment. This active management of energy-related costs and risks will provide a significant economic return and will support other key organizational objectives.

With this prominent focus on energy management, SJCG can expect to achieve the following targets by 2029:

- ~ 10% reduction in electricity consumption
- ~ 2% reduction in natural gas consumption
- ~ 9% reduction in carbon equivalent emissions

The results and the progress of the ECDM activities implemented in SJCG facilities over the past five years, and the projected impact of the new ECDM Plan is presented in the graph below.

Energy Trends and Projections

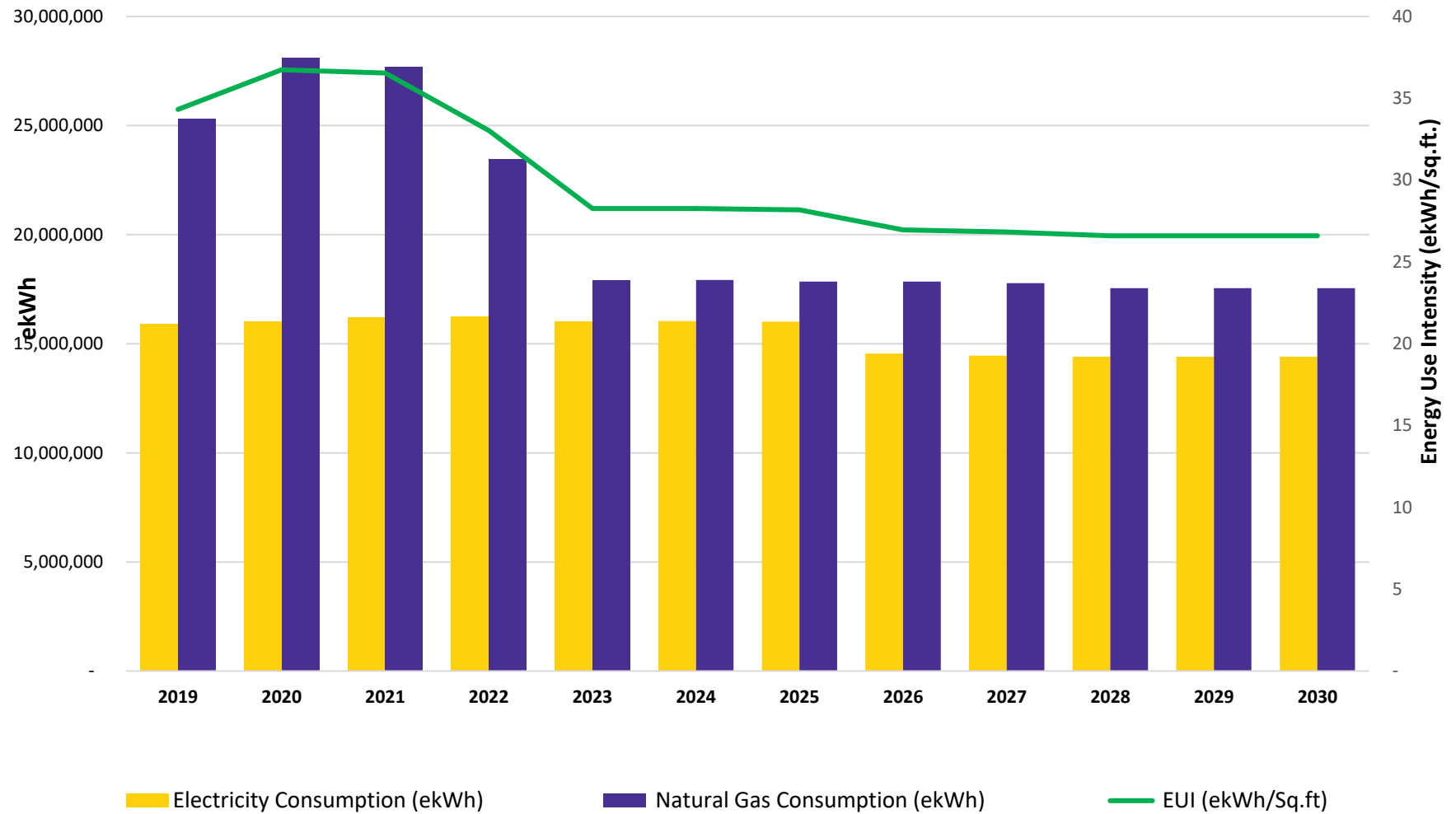


Figure 1. Site-Wide Energy Consumption Trends & Projections

3. About St. Joseph’s Care Group

St. Joseph’s Care Group serves the communities of Northwestern Ontario and offer a broad range of programs and services in Addictions & Mental Health, Rehabilitative Care, and Seniors’ Health across 8 sites in the City of Thunder Bay. St. Joseph’s Hospital first opened in 1884 and is continuing to grow with several expansions over the last ten years including the Sister Leila Greco Apartments, the Hogarth Riverview Manor Expansion, and the new East Wing of St. Joseph’s Hospital. We are focused on maintaining our excellent level of care and live our values of care, compassions and commitment.

Mission

Rooted in the healing ministry of Jesus, we meet the people of Northwestern Ontario where they are on their wellness journey and support them to achieve their highest quality of life.

Vision

Wholistic people-centred care. Creating healthier communities. Together.

Values

- **Care:** We will provide wholistic people-centred care in a safe and welcoming environment for all.
- **Compassion:** We will demonstrate dignity and respect for all, fostering healing and wholeness by addressing diverse needs.
- **Commitment:** We will strive for the best care experience for all, while actively addressing systemic racism and discrimination.



Figure 2. SJCG Logo

At St. Joseph’s Care Group, we are committed to advancing our practices and facilities to bring care closer to the people we serve, and we will continue to set the bar higher. Across our facilities, we have over 2,200 staff and growing, operate two long-term care homes totaling 656 beds, two supportive housing buildings with 253 apartments, 224 complex/rehabilitative care and hospice inpatient beds, 40 inpatient mental health rehabilitation beds, and 22 crisis and stabilization beds for withdrawal management. Our withdrawal management and SJCG provides outpatient services across many of the service areas and diverse culture population means we are constantly striving to find new and innovative ways to deliver excellent healthcare.

In order to obtain full value from energy management activities, and to strengthen our conservation initiatives, a strategic approach must be taken. Our organization will strive to fully integrate energy management into our practices by considering indoor environmental quality, operational efficiency and sustainably sourced resources when making financial decisions.

The results and the progress of the past five years, and the projected impact of the new ECDM Plan is presented in the table below.

ECDM Program Summary	2019	2020	2021	2022	2023	2024
Electricity Consumption (ekWh)	15,917,235	16,036,329	16,205,542	16,240,048	16,036,208	16,036,208
Natural Gas Consumption (ekWh)	25,312,389	28,112,445	27,708,432	23,452,147	17,924,824	17,924,824
Electricity Savings(ekWh)	0	-119,094	-169,213	-34,505	203,840	0
Natural Gas Savings (ekWh)	0	-2,800,056	404,013	4,256,285	5,527,323	0
Facility Size (Sq. ft.)	1,201,621	1,201,621	1,201,621	1,201,621	1,201,621	1,201,621
Energy Utilization Index - EUI (ekWh/sq.ft)	34	37	37	33	28	28
ECDM Program Projections	2025	2026	2027	2028	2029	2030
Electricity Consumption (ekWh)	16,010,095	14,547,976	14,459,634	14,409,998	14,409,998	14,409,998
Natural Gas Consumption (ekWh)	17,847,622	17,845,756	17,771,035	17,546,872	17,546,872	17,546,872
Electricity Savings(ekWh)	26,113	1,462,119	88,342	49,636	0	0
Natural Gas Savings (ekWh)	77,202	1,866	74,721	224,163	0	0
Facility Size (Sq. ft.)	1,201,621	1,201,621	1,201,621	1,201,621	1,201,621	1,201,621
Energy Utilization Index - EUI (ekWh/sq.ft)	28	27	27	27	27	27

Table 1. Site-Wide Energy Consumption Trends & Projection

4. Organization Historical Analysis

The data provided in the ECDM includes: St. Joseph's Hospital, Hogarth Riverview Manor, St. Joseph's Heritage (Bethammi Nursing Home and P.R. Cook Apartments), Sister Margaret Smith Centre, and the St. Joseph's Health Centre. Other facilities not included in this report include: Balmoral Centre, and Mental Health Medium and High Support Homes.

4.1. Organization Historical Energy Intensity

Energy Utilization Index is a measure of how much energy a facility uses per square foot. By breaking down a facility's energy consumption on a per-square-foot-basis, we can compare facilities of different sizes with ease. In this case, we are comparing our facility to the industry average for Ontario hospitals (derived from Energy Star Portfolio Manager – Canadian Energy Use Intensity by Property Type), which was found to be **56.77 ekWh/sq. ft.**

Site	2019	2020	2021	2022	2023
St. Joseph's Hospital	40	47	44	42	39
St. Joseph's Heritage	26	26	29	27	26
Hogarth Riverview Manor	46	48	48	39	28
Sister Leila Greco Apartments	19	19	18	18	18
Sister Margaret Smith Centre	21	21	21	20	16
St. Joseph's Health Centre	17	15	15	18	15

Table 2. Historic Energy Utilization Indices for all Sites

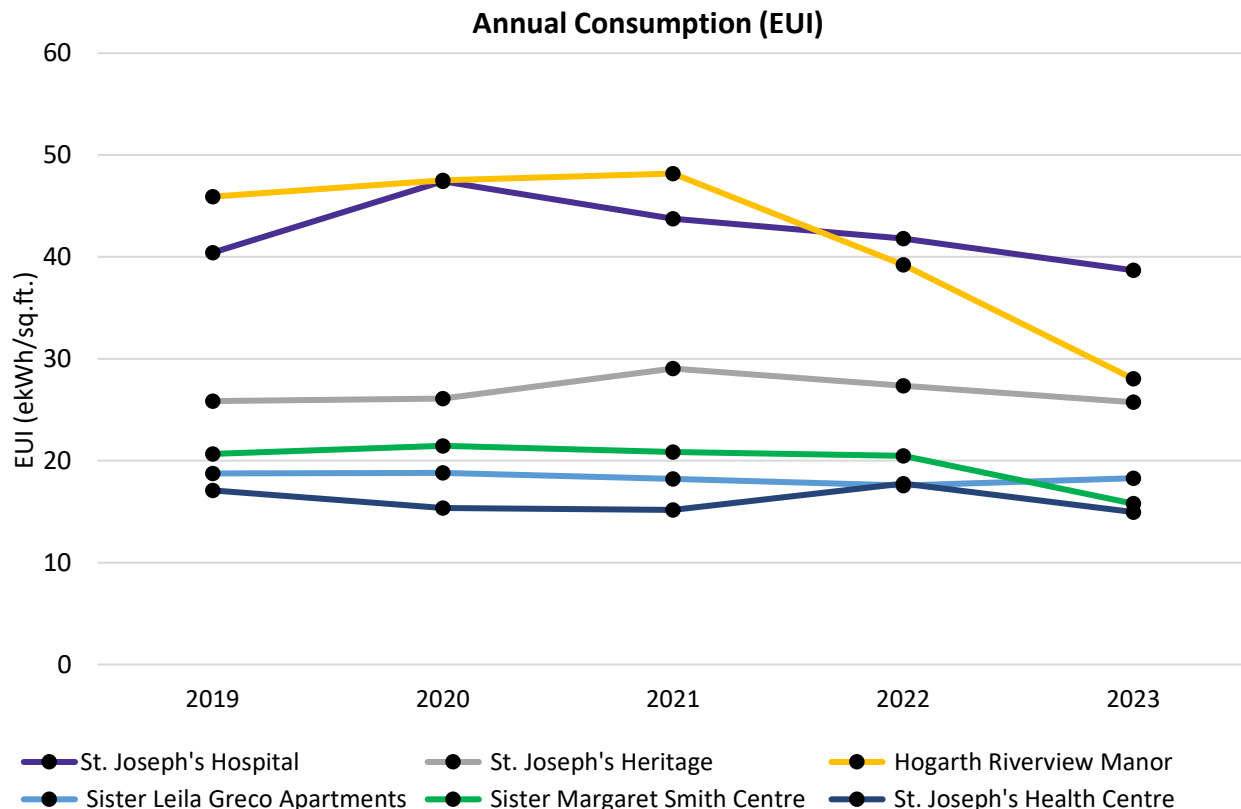


Figure 3. Historic Annual Energy Utilization Indices for all Sites

4.2. Organization Historical GHG Emissions

Greenhouse gas (GHG) emissions are expressed in terms of equivalent tonnes of Carbon Dioxide (tCO₂e). The GHG emissions associated with a facility are dependent on the fuel source — for example, hydroelectricity produces fewer greenhouse gases than coal-fired plants, and light fuel oil produces fewer GHGs than heavy oil.

Electricity from the grid in Ontario is relatively “clean”, as the majority is derived from low-GHG nuclear power and hydroelectricity, and coal-fired plants have been phased out. Scope 1 (natural gas) and Scope 2 (electricity) consumptions have been converted to their equivalent tonnes of greenhouse gas emissions in the table below. Scope 1 represents the direct emissions from sources owned or controlled by the institution, and Scope 2 consists of indirect emissions from the consumption of purchased energy generated upstream from the institution.

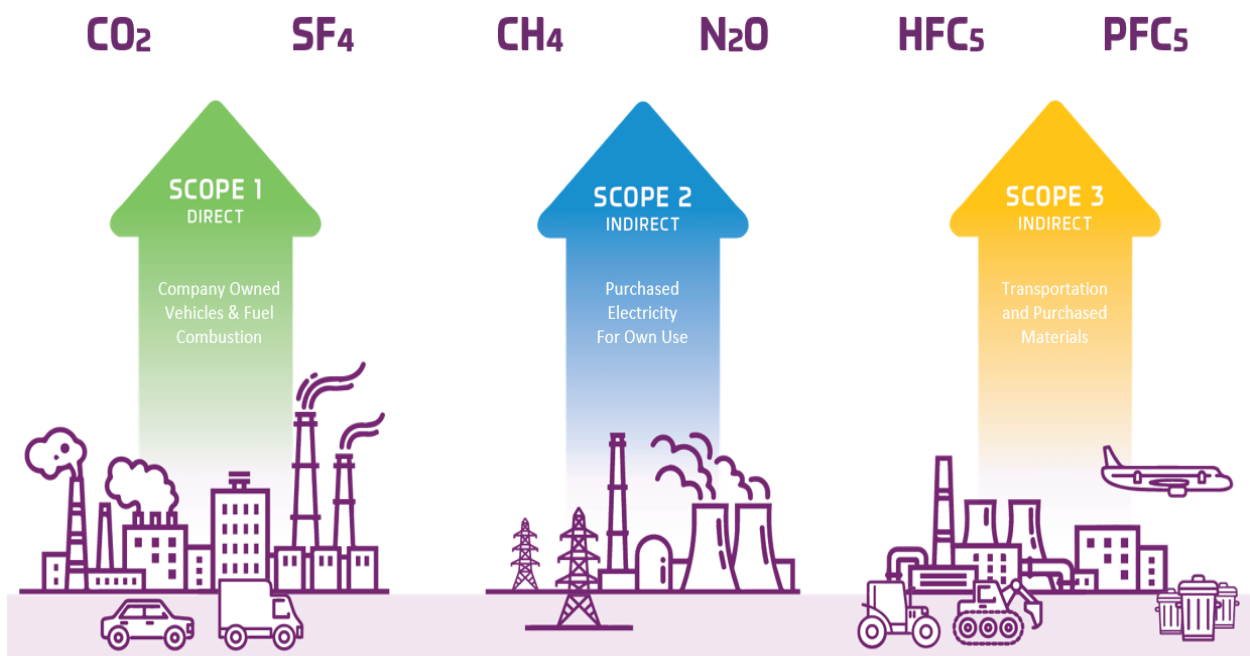


Figure 4. Examples of Scope 1 and 2

The greenhouse gas emissions for SJCG have been tabulated and are represented in the table and graph below.

GHG Emissions (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	398	414	425	1,147	1,328
Natural Gas (scope 1)	4,694	5,213	5,138	4,349	3,324
Total Scope 1 & 2 Emissions	5,091	5,626	5,562	5,495	4,652

Table 3. Historic Greenhouse Gas Emissions for all Sites

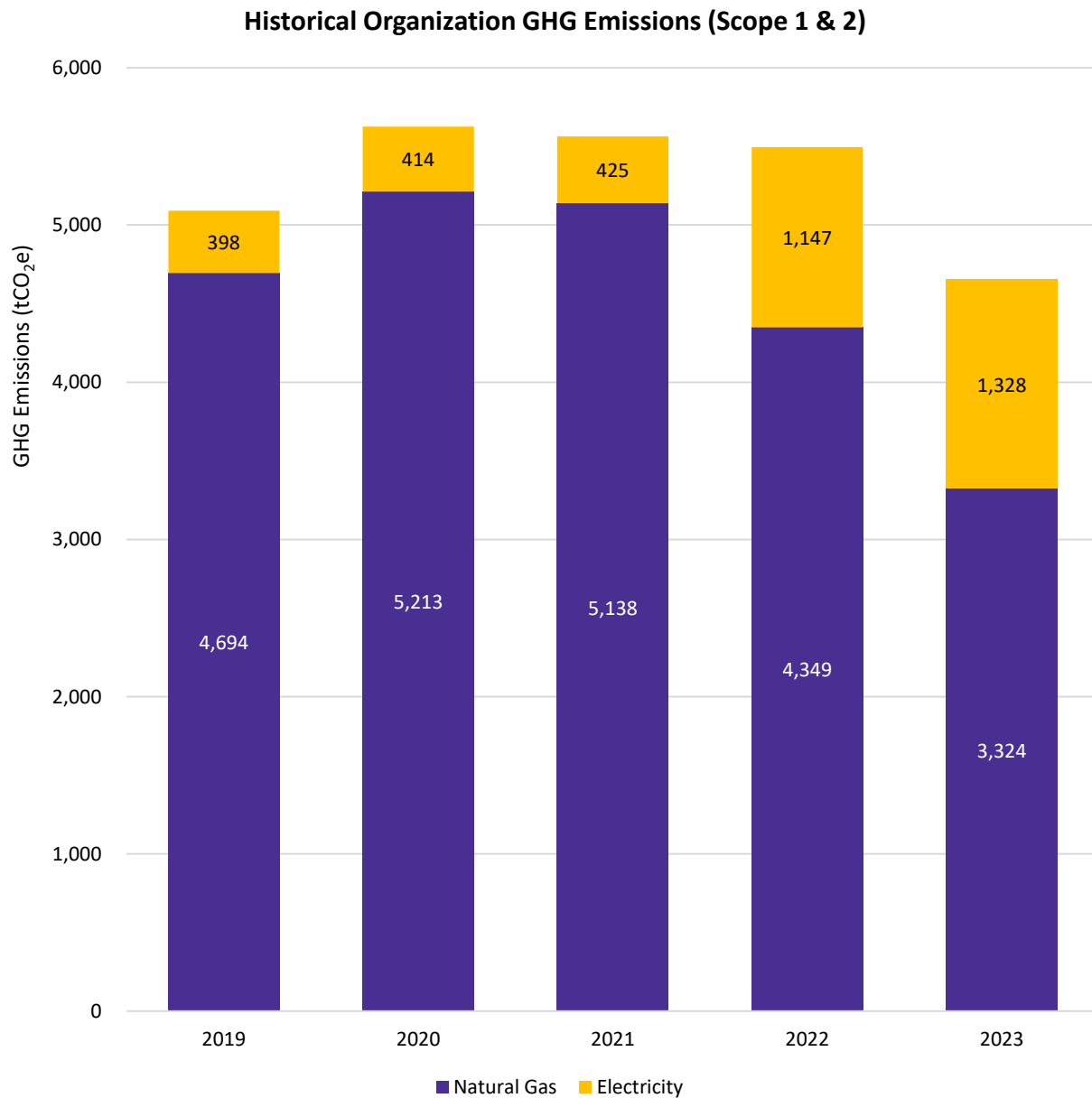


Figure 5. Historic Greenhouse Gas Emissions for all Sites

5. Site Analysis

The following section will introduce each of our sites and provide a brief description about the building and its operations, energy & greenhouse gas (GHG) emissions trends, and specific conservation measures.

5.1. St. Joseph's Hospital



Picture 1. St. Joseph's Hospital

St. Joseph's Hospital Facility Information	
Facility Name	St. Joseph's Hospital
Type of Facility	Healthcare Services
Address	35 N. Algoma Street, Thunder Bay, ON
Gross Area (Sq. Ft)	332,052
Average Operational Hours in a Week	168
Number of Floors	5
Number of Beds	264

Table 4. St. Joseph's Hospital Facility Information

5.1.1. Utility Consumption Analysis

Utilities to the site are electricity, natural gas and water. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	4,587,452	4,772,523	4,816,062	4,680,765	4,786,440
Natural Gas (m ³)	852,923	1,059,291	937,794	887,739	777,967

Table 5. Historic Annual Utility Consumption for St. Joseph's Hospital

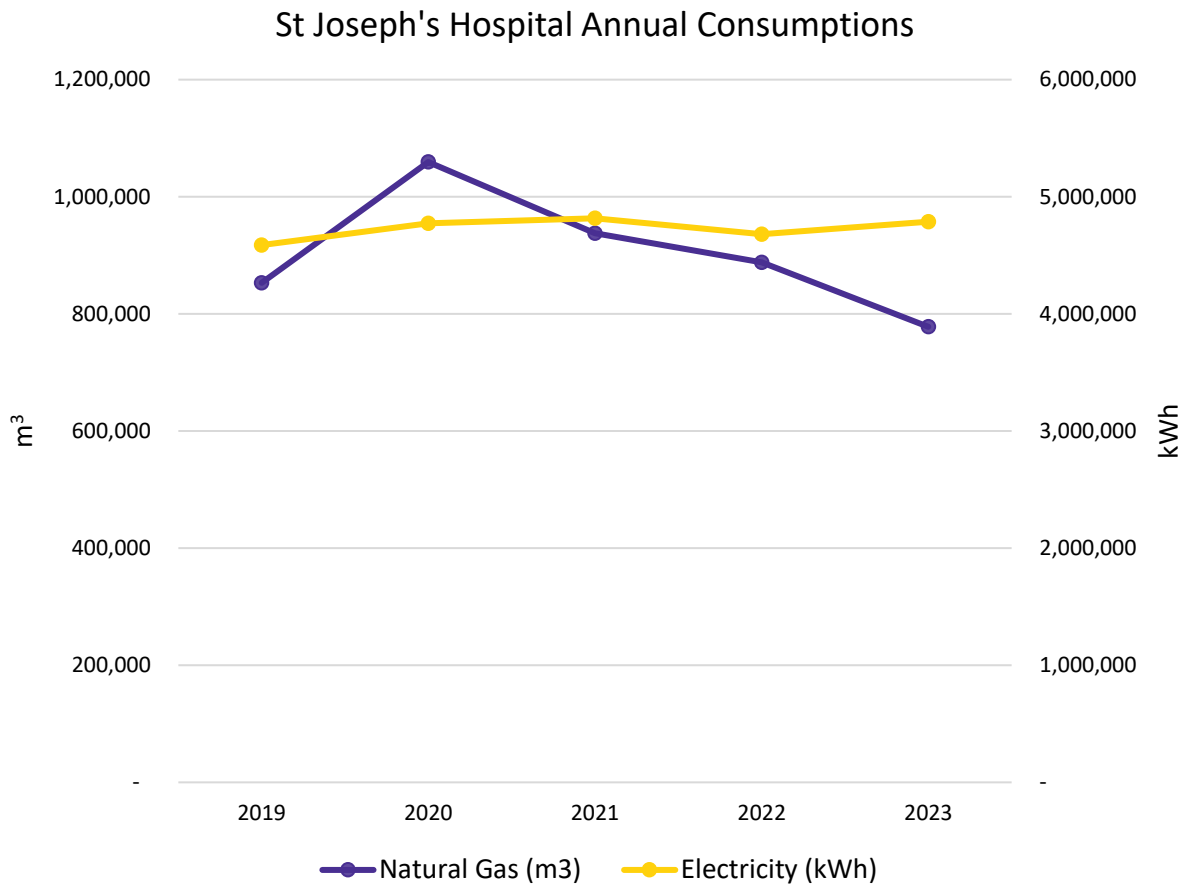


Figure 6. Historic Annual Utility Consumption for St. Joseph's Hospital

5.1.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table.

Utility Source (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	115	123	126	330	396
Natural Gas (scope 1)	1,638	2,035	1,802	1,705	1,494
Totals	1,753	2,158	1,928	2,036	1,891

Table 6. Historic GHG Emissions for St. Joseph's Hospital

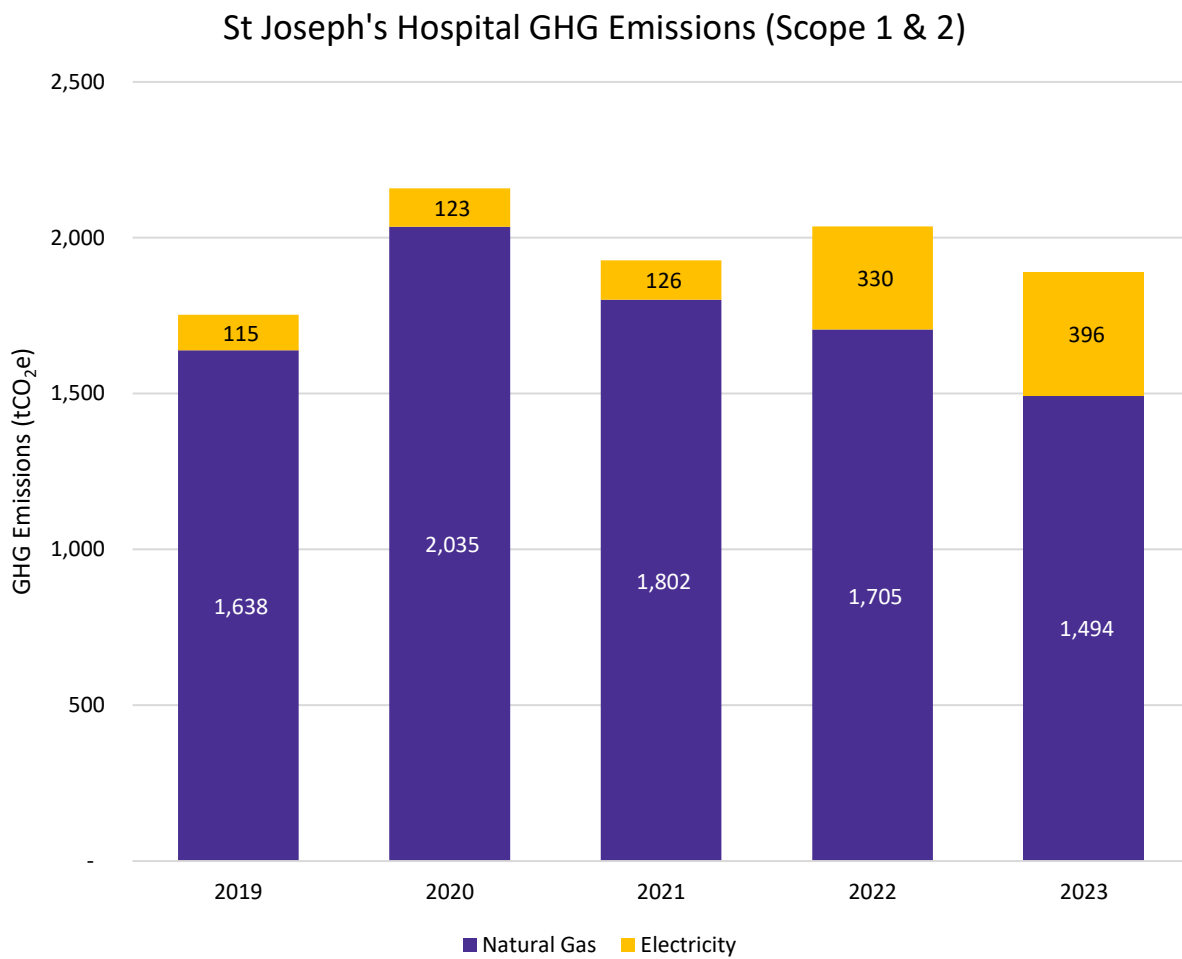


Figure 7. Historic Annual Greenhouse Gas Emissions for St. Joseph's Hospital

5.1.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. St. Joseph’s Hospitals’ proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. The implementation of these measures depends on a variety of variables such as funding availability, operational factors and incentive support.

Measure	Estimated Annual Savings			Project Cost	Simple Payback (years)	Implementation Year
	kWh	m ³	\$			
Rooftop AHU Replacement	71,797	-	\$8,616	\$6,500,000	754	2027
Total	71,797	-	\$8,616	\$6,500,000	754	-

Table 7. Proposed Conservation Measures for the St. Joseph’s Hospital

5.1.4. Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous section, the forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	4,786,440	0%	4,786,440	0%	4,786,440	0%	4,714,644	2%	4,714,644	2%	4,714,644	2%
Natural Gas (m ³)	777,967	0%	777,967	0%	777,967	0%	777,967	0%	777,967	0%	777,967	0%

Table 8. Forecast of Annual Utility Consumption for St. Joseph's Hospital

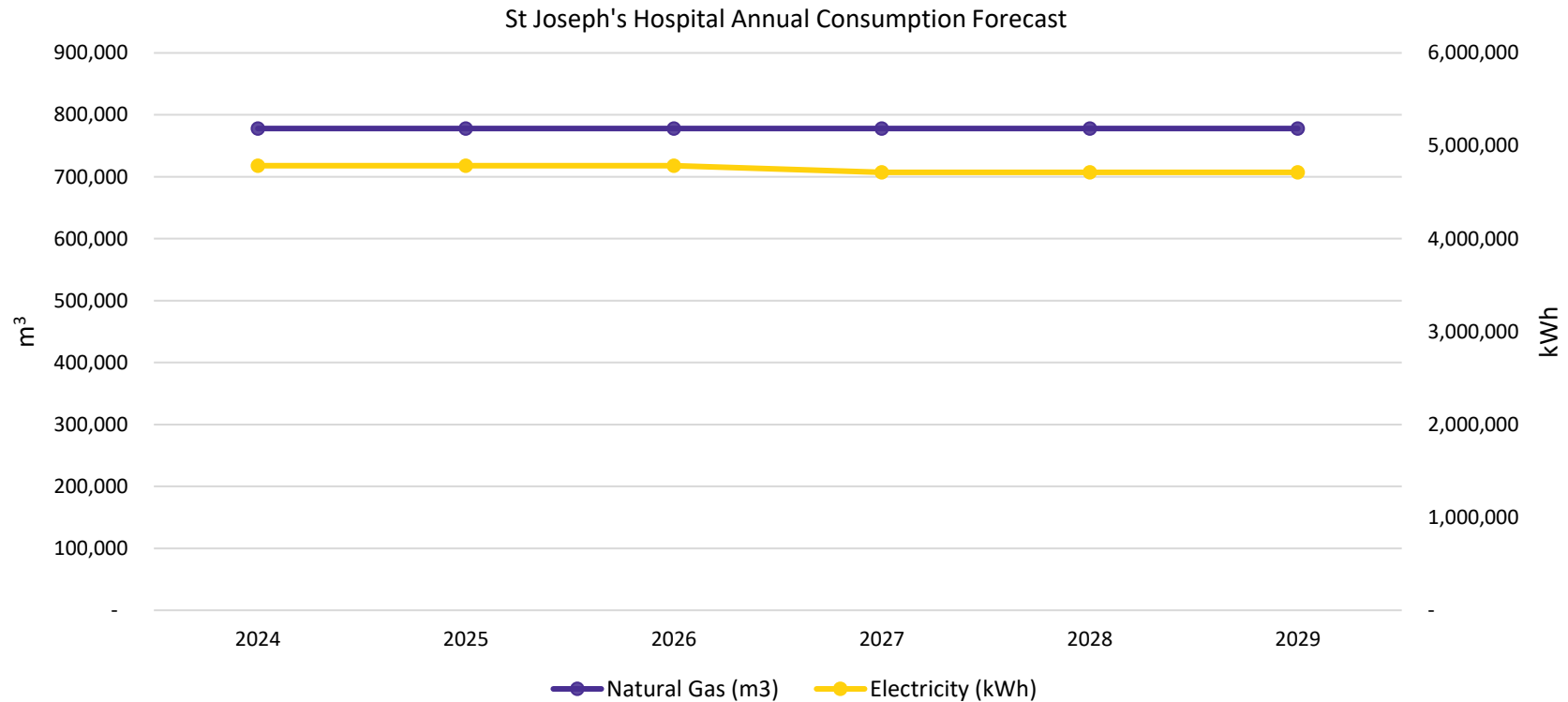


Figure 8. Forecast of Annual Utility Consumption for St. Joseph's Hospital

5.1.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for St. Joseph’s Hospital are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	314	420	367	411	355	327
Natural Gas (scope 1)	1,494	1,494	1,494	1,494	1,494	1,494
Totals	1,808	1,915	1,862	1,905	1,850	1,821
Reduction from Baseline Year (2023)	4.4%	-1.3%	1.5%	-0.8%	2.2%	3.7%

Table 9. Forecast of Annual Greenhouse Gas Emissions for St. Joseph’s Hospital

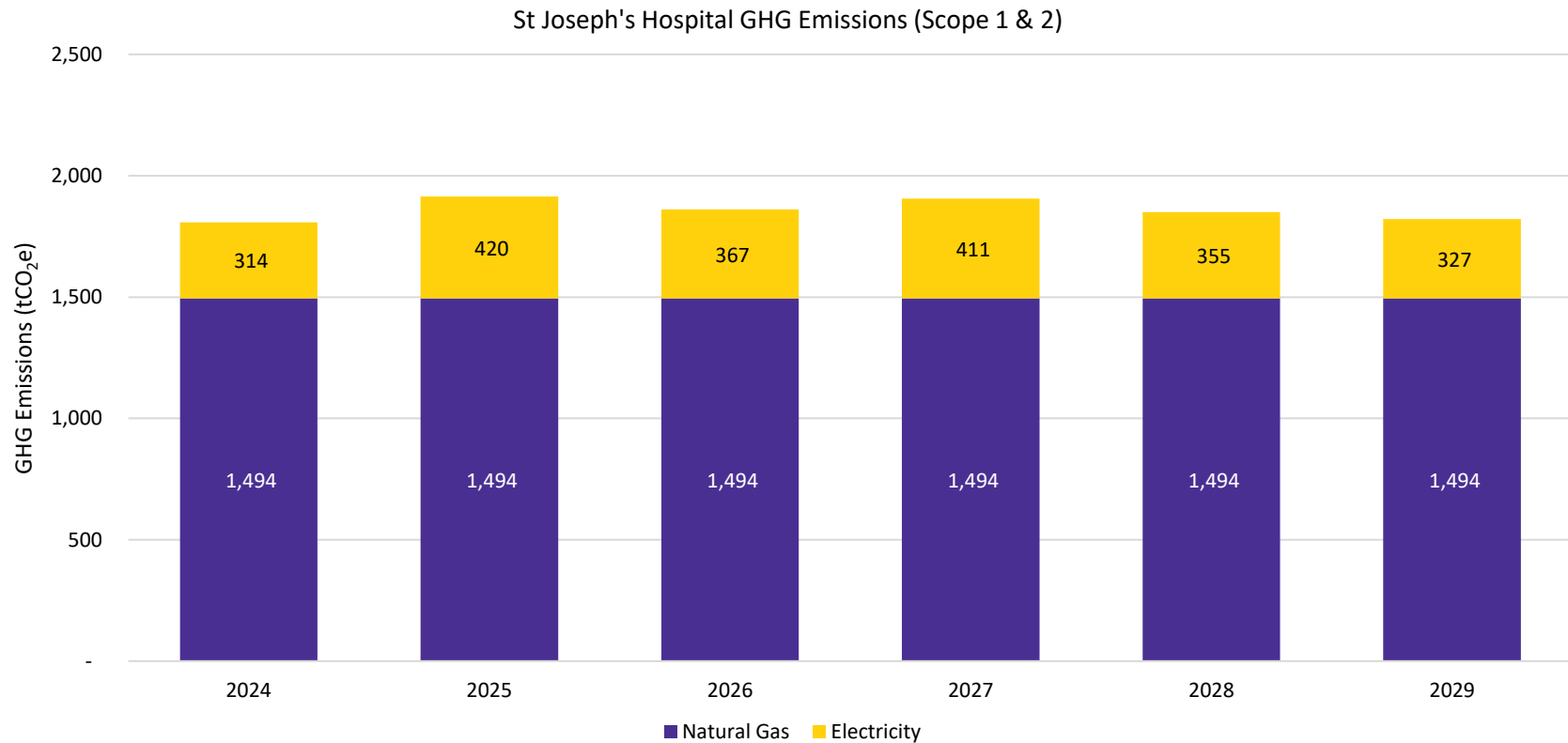


Figure 9. Forecast of Annual Greenhouse Gas Emissions for St. Joseph’s Hospital

5.2. St. Joseph's Heritage (Bethammi Nursing Home & P.R. Cook Apartments)



Picture 2. St. Joseph's Heritage

St. Joseph's Heritage Facility Information	
Facility Name	St. Joseph's Heritage
Type of Facility	Healthcare Services
Address	63 Carrie Street, Thunder Bay, ON
Gross Area (Sq. Ft)	294,405
Average Operational Hours in a Week	168
Number of Floors	3
Number of Beds	112 long-term care beds / 180 apartments

Table 10. St. Joseph's Heritage Facility Information

5.2.1. Utility Consumption Analysis

Utilities to the site are electricity, natural gas and water. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	3,248,204	3,075,032	3,080,707	3,416,150	3,309,084
Natural Gas (m ³)	421,490	444,662	528,115	447,410	412,140

Table 11. Historic Annual Utility Consumption for St. Joseph's Heritage

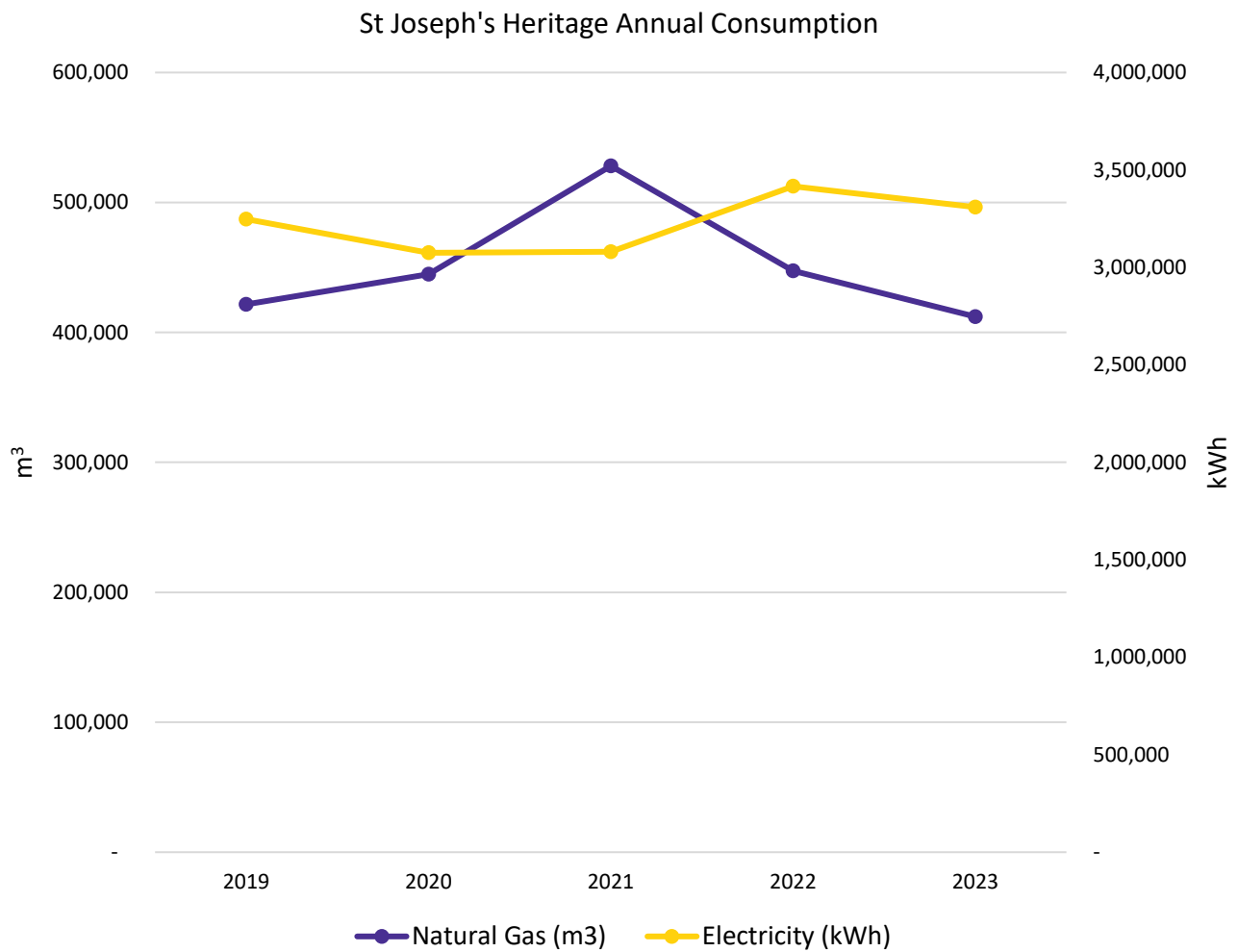


Figure 10. Historic Annual Utility Consumption for St. Joseph's Heritage

5.2.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table:

Utility Source (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	81	79	81	241	274
Natural Gas (scope 1)	810	854	1,015	859	792
Totals	891	934	1,095	1,101	1,066

Table 12. Historic Annual Greenhouse Gas Emissions for St. Joseph's Heritage

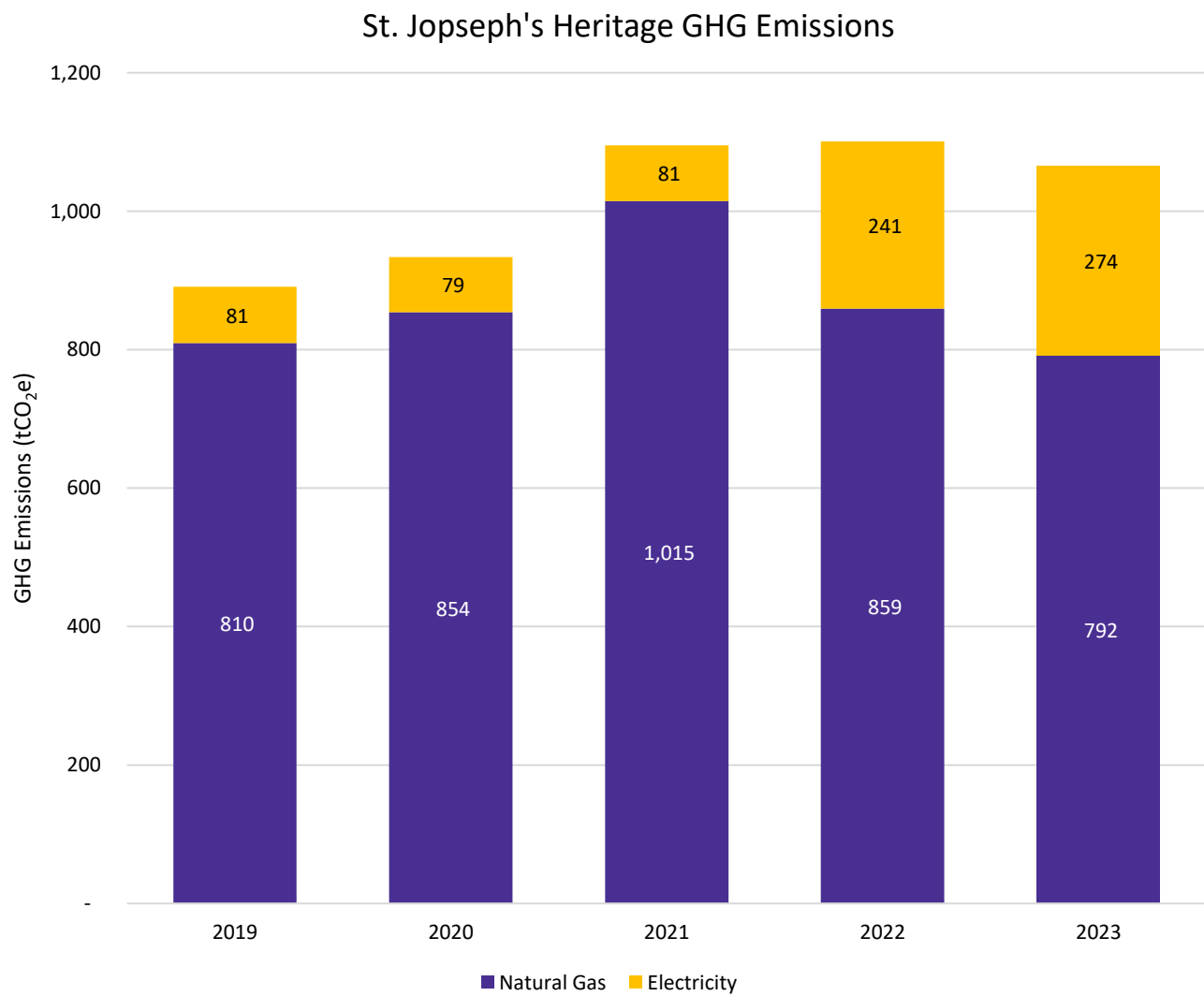


Figure 11. Historic Annual Greenhouse Gas Emissions for St. Joseph's Heritage

5.2.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. St. Joseph’s Heritage’s proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. The implementation of these measures depends on a variety of variables such as funding availability, operational factors, and incentive support.

Measure	Estimated Annual Savings			Project Cost	Simple Payback (years)	Implementation Year
	kWh	m ³	\$			
Window Replacement (Bethammi)	49,636	21,637	\$15,693	\$1,500,000	96	2028
Roof Replacement (Bethammi)	16,545	7,212	\$5,231	\$1,100,000	210	2027
10 kW Rooftop PV (photovoltaics)	13,987	-	\$1,678	\$28,875	17	2026
110 kW Carport PV (photovoltaics)	149,462	-	\$17,935	\$561,000	31	2026
Total	229,630	28,850	\$40,538	\$3,189,875	79	-

Table 13. Proposed Conservation Measures for St. Joseph’s Heritage

5.2.4. Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous section, the forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	3,309,084	0%	3,309,084	0%	3,145,635	5%	3,129,090	5%	3,079,453	7%	3,079,453	7%
Natural Gas (m ³)	412,140	0%	412,140	0%	412,140	0%	404,928	2%	383,290	7%	383,290	7%

Table 14. Forecast of Annual Utility Consumption for St. Joseph's Heritage

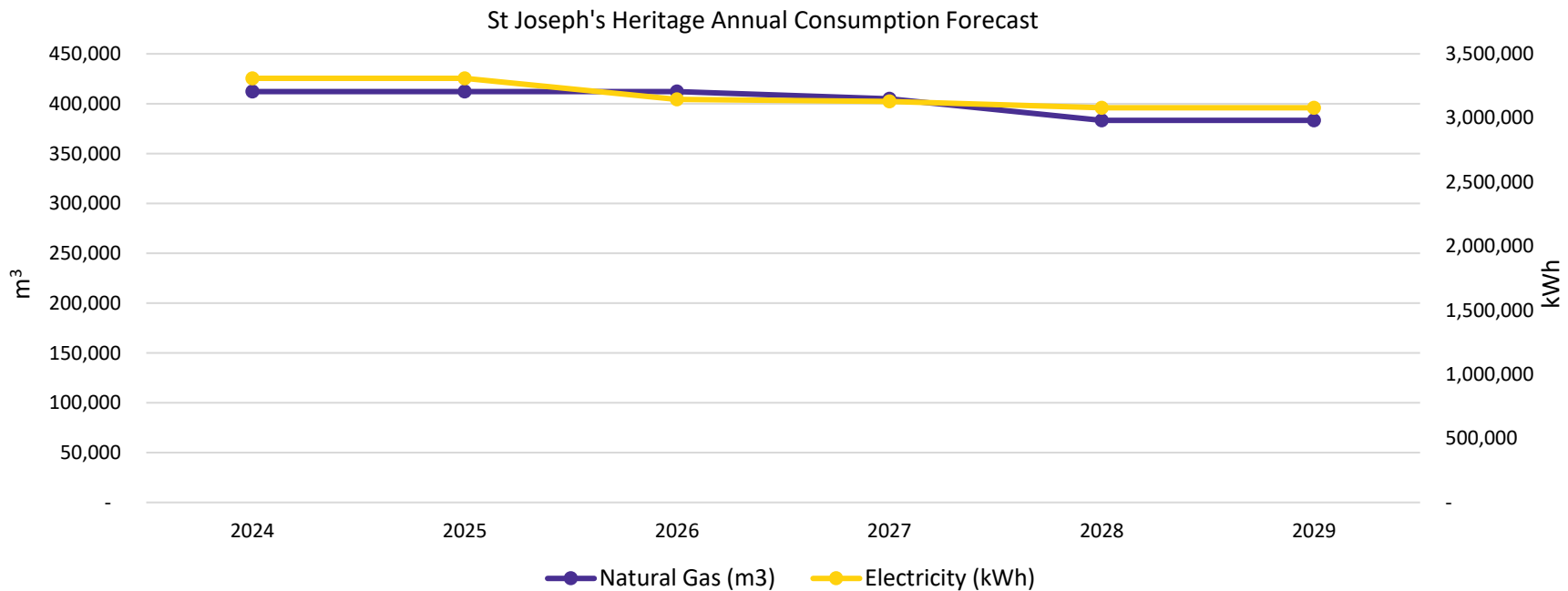


Figure 12. Forecast of Annual Utility Consumption for St. Joseph's Heritage

5.2.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for St. Joseph’s Heritage are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	217	291	241	273	232	213
Natural Gas (scope 1)	792	792	792	778	736	736
Totals	1,008	1,082	1,033	1,050	968	950
Reduction from Baseline Year (2023)	5.4%	-1.6%	3.1%	1.4%	9.1%	10.9%

Table 15. Forecast of Annual Greenhouse Gas Emissions for the St. Joseph’s Heritage

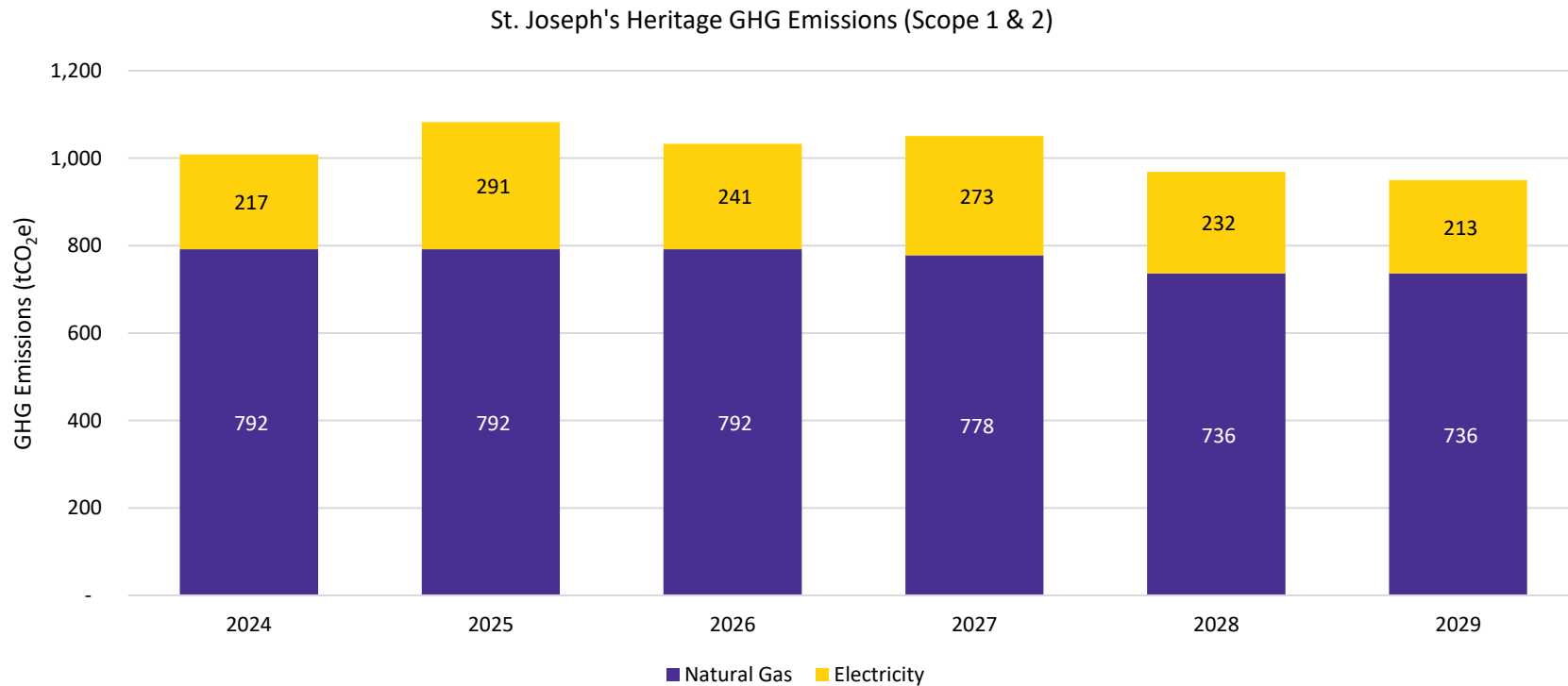


Figure 13. Forecast of Annual Greenhouse Gas Emissions for the St. Joseph’s Heritage

5.3. Hogarth Riverview Manor



Picture 3. Hogarth Riverview Manor

Hogarth Riverview Manor Facility Information	
Facility Name	Hogarth Riverview Manor
Type of Facility	Healthcare Services
Address	300 N. Lillie Street
Gross Area (Sq. Ft)	343,664
Average Operational Hours in a Week	168
Number of Floors	7
Number of Beds	544

Table 16. Hogarth Riverview Manor Facility Information

5.3.1. Utility Consumption Analysis

Utilities to the site are electricity, natural gas and water. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	5,222,570	5,327,095	5,615,913	5,384,023	5,222,517
Natural Gas (m ³)	1,019,352	1,061,967	1,056,176	781,159	425,825

Table 17. Historic Annual Utility Consumption for the Hogarth Riverview Manor

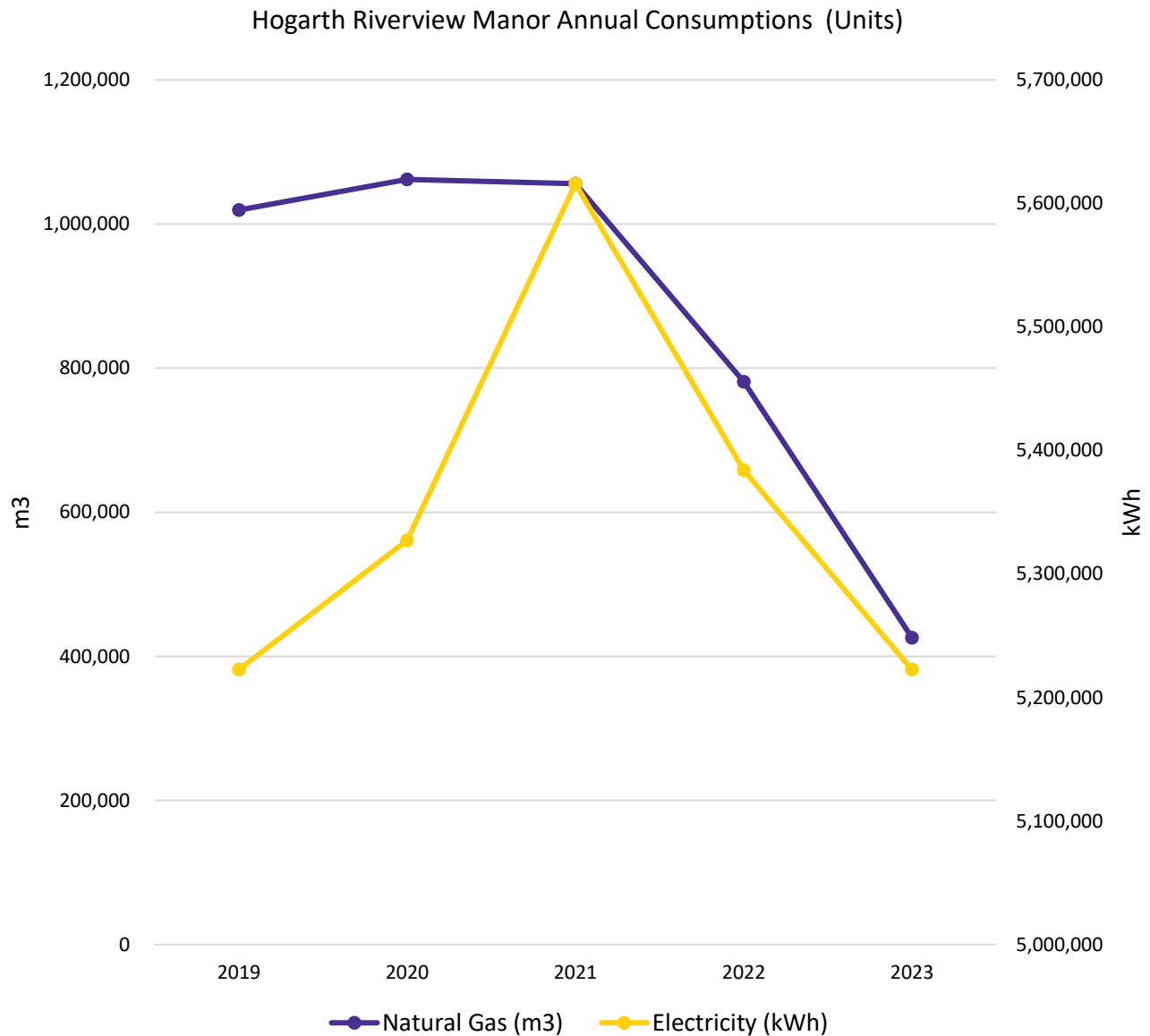


Figure 14. Historic Annual Utility Consumption for the Hogarth Riverview Manor

5.3.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table:

Utility Source (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	131	137	147	380	432
Natural Gas (scope 1)	1,958	2,040	2,029	1,501	818
Totals	2,089	2,177	2,176	1,881	1,250

Table 18. Historic Annual Greenhouse Gas Emissions for the Hogarth Riverview Manor

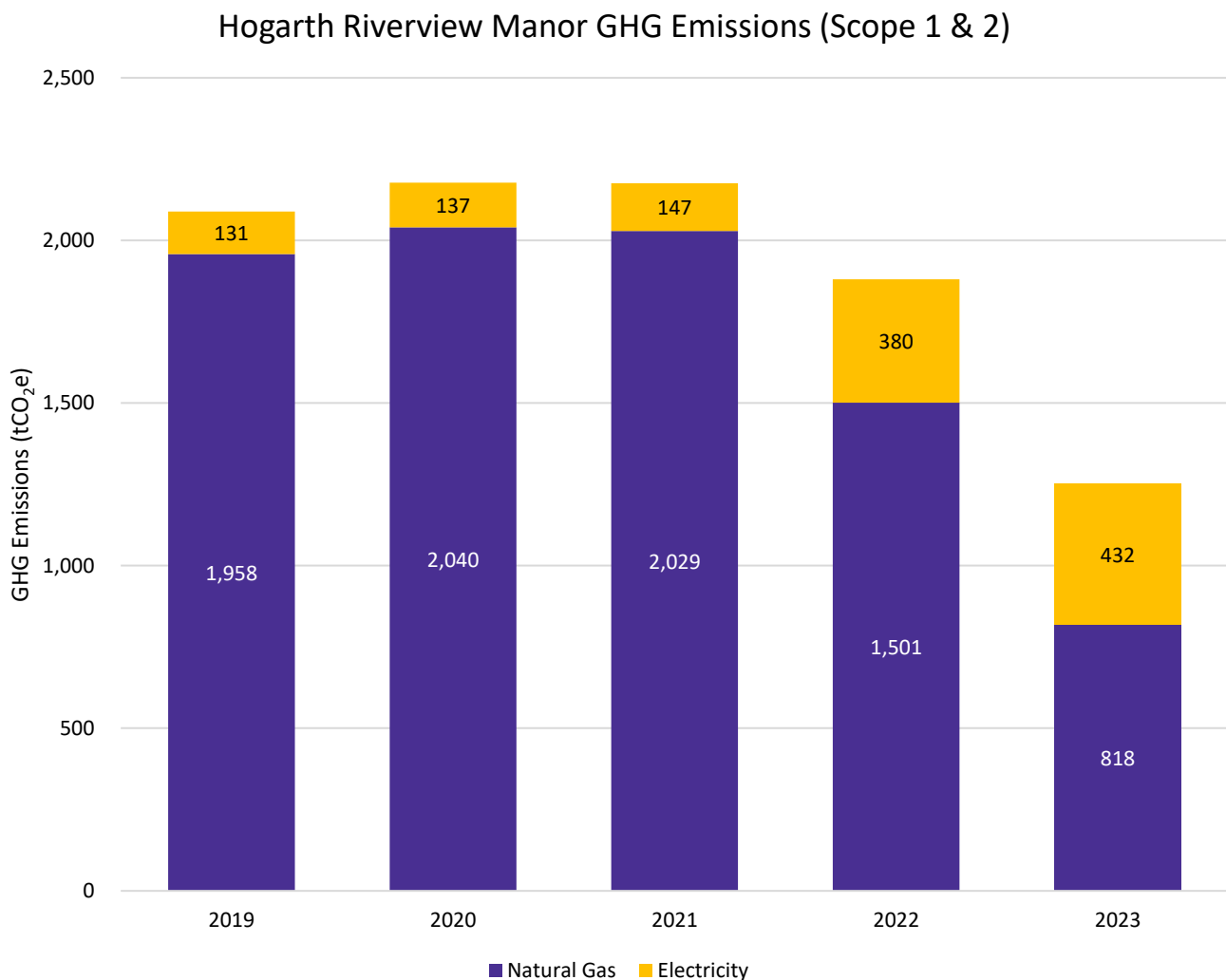


Figure 15. Historic Annual Greenhouse Gas Emissions for the Hogarth Riverview Manor

5.3.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. The Hogarth Riverview Manor’s proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. The implementation of these measures depends on a variety of variables such as funding availability, operational factors and incentive support.

Measure	Estimated Annual Savings			Project Cost	Simple Payback (years)	Implementation Year
	kWh	m ³	\$			
Flat Roof Replacement	26,113	7,452	\$6,487	\$1,000,000	154	2025
25 kW Rooftop PV (photovoltaics)	31,783	-	\$3,814	\$66,000	17	2026
180 kW Carport PV (photovoltaics)	238,242	0	\$28,589	\$899,500	31	2026
Total	296,137	7,452	\$38,890	\$1,965,500	51	-

Table 19. Proposed Conservation Measures for the Hogarth Riverview Manor

5.3.4. Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous section, the forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	5,222,517	0%	5,196,404	1%	4,926,380	6%	4,926,380	6%	4,926,380	6%	4,926,380	6%
Natural Gas (m ³)	425,825	0%	418,373	2%	418,373	2%	418,373	2%	418,373	2%	418,373	2%

Table 20. Forecast of Annual Utility Consumption for the Hogarth Riverview Manor

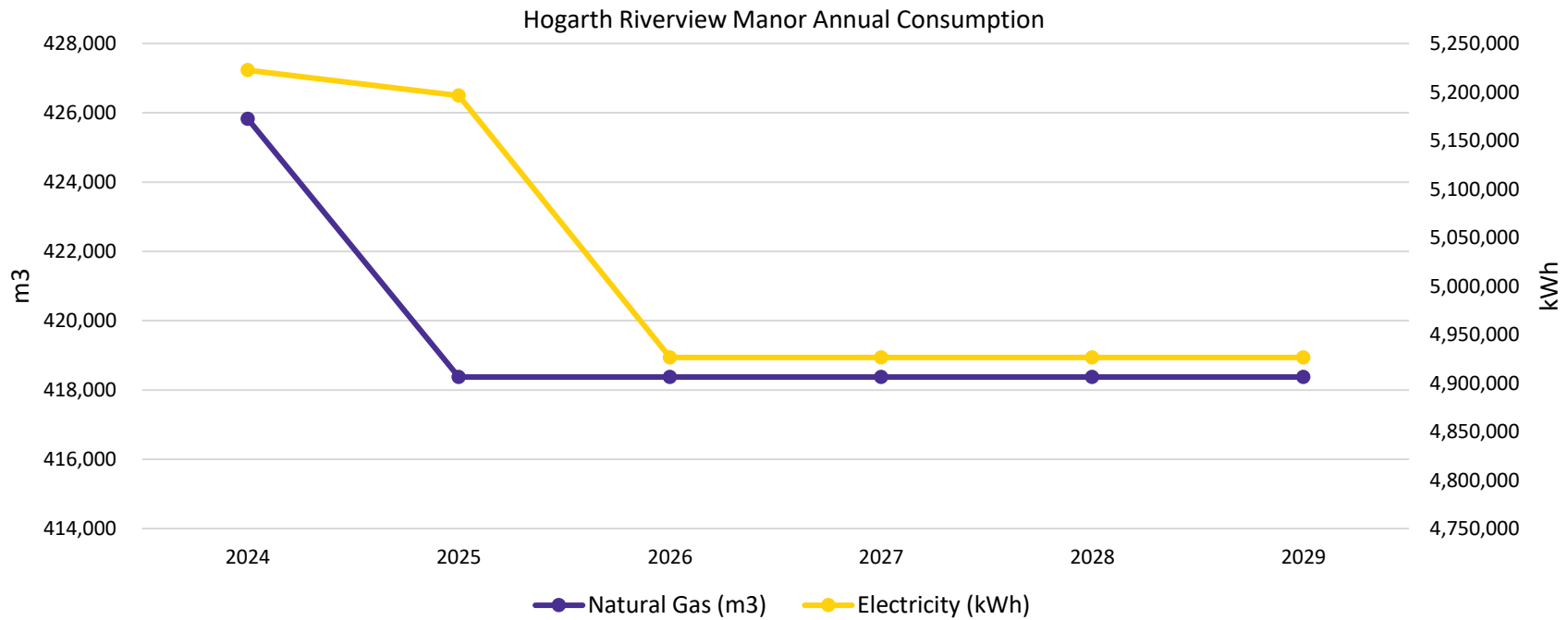


Figure 16. Forecast of Annual Utility Consumption for the Hogarth Riverview Manor

5.3.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for The Hogarth Riverview Manor are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	342	456	378	429	371	341
Natural Gas (scope 1)	818	804	804	804	804	804
Totals	1,160	1,260	1,182	1,233	1,175	1,145
Reduction from Baseline Year (2023)	7.2%	-0.8%	5.5%	1.4%	6.0%	8.4%

Table 21. Forecast of Annual Greenhouse Gas Emissions for the Hogarth Riverview Manor

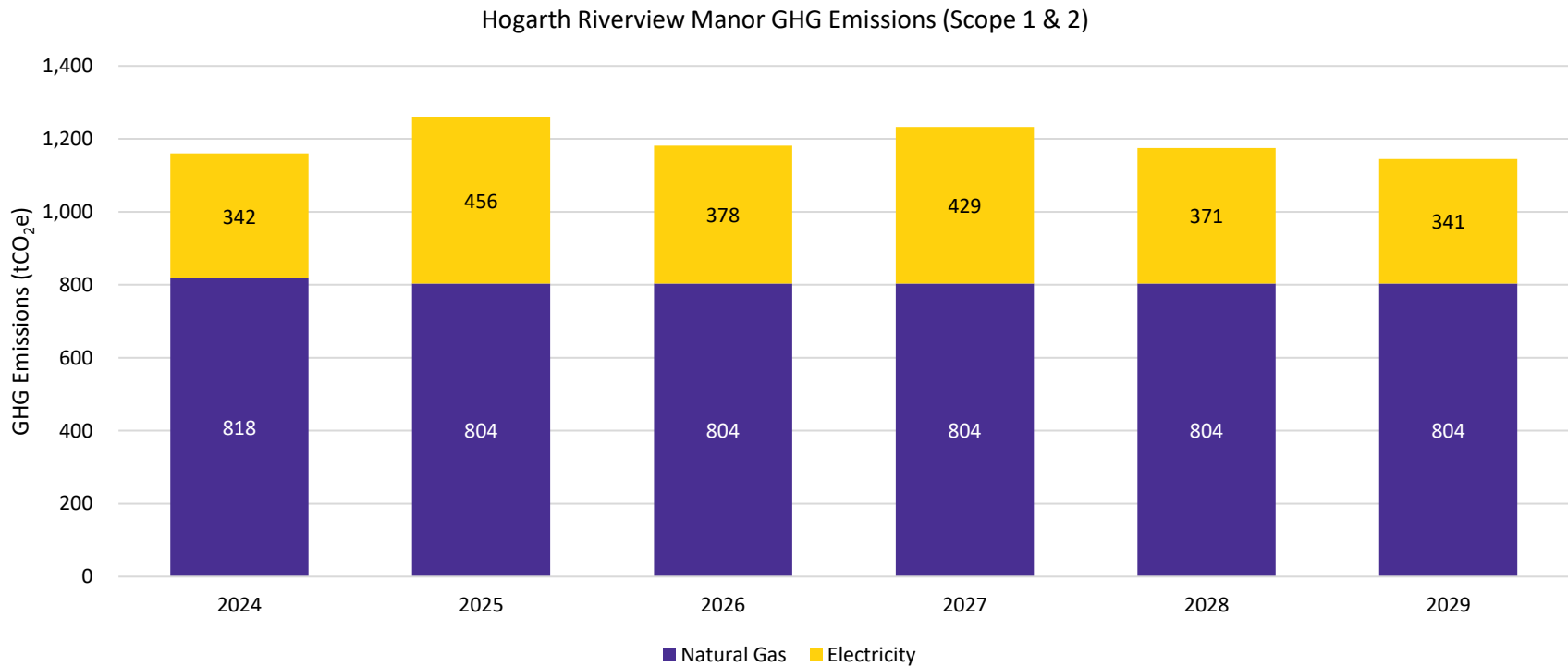


Figure 17. Forecast of Annual Greenhouse Gas Emissions for the Hogarth Riverview Manor

5.4. Sister Leila Greco Apartments



Picture 4. Sister Leila Greco Apartments

Sister Leila Greco Apartments Facility Information	
Facility Name	Sister Leila Greco Apartments
Type of Facility	Healthcare Services
Address	330 N. Lillie Street, Thunder Bay, ON
Gross Area (Sq. Ft)	114,000
Average Operational Hours in a Week	168
Number of Floors	8
Number of Beds	132

Table 22. Sister Leila Greco Apartments Facility Information

5.4.1. Utility Consumption Analysis

Utilities to the site are electricity, natural gas and water. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	1,675,497	1,712,794	1,551,723	1,535,590	1,596,545
Natural Gas (m ³)	44,793	41,619	50,790	45,149	47,036

Table 23. Historic Annual Utility Consumption for the Sister Leila Greco Apartments

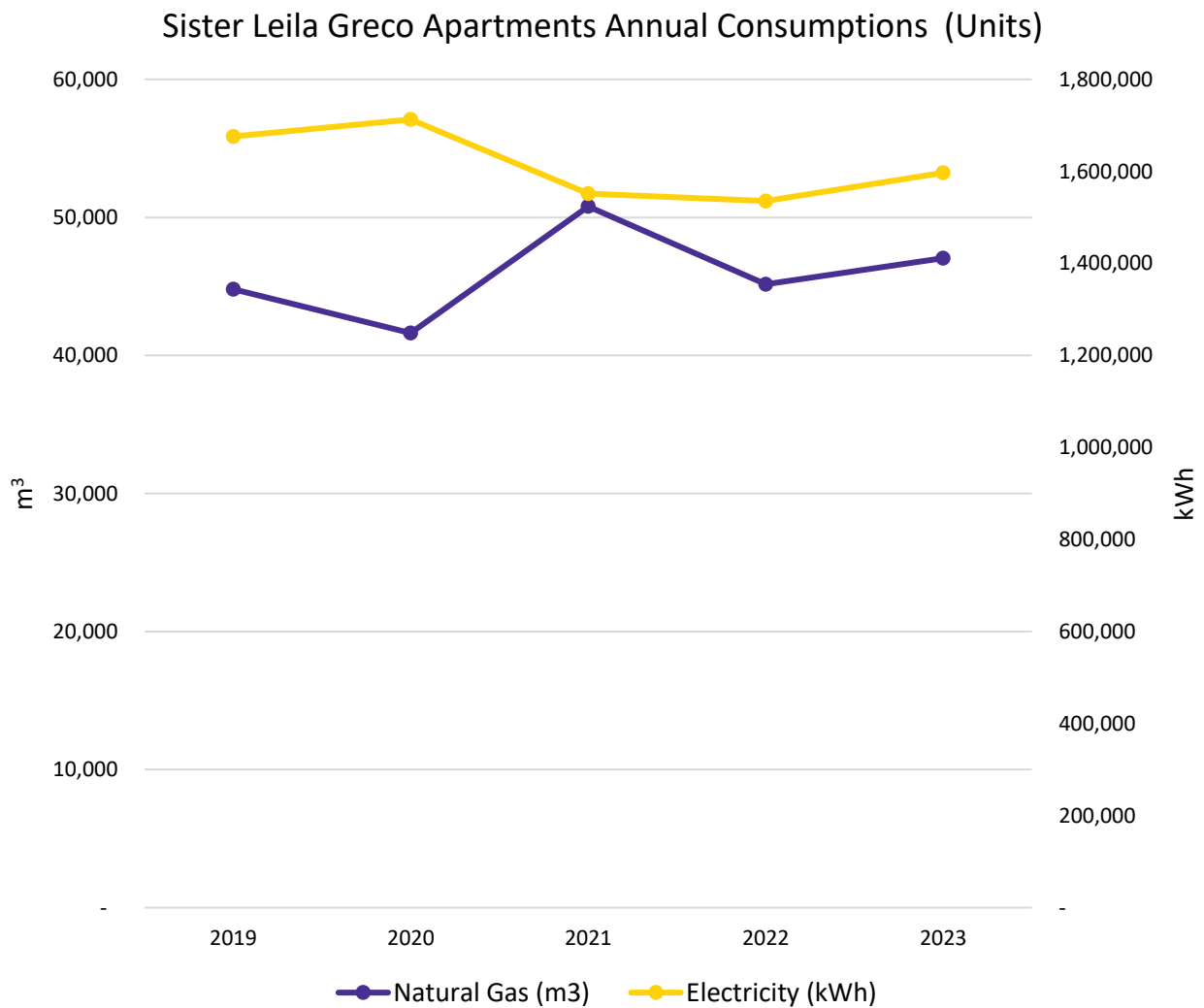


Figure 18. Historic Annual Utility Consumption for the Sister Leila Greco

5.4.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table:

Utility Source (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	42	44	41	108	132
Natural Gas (scope 1)	86	80	98	87	90
Totals	128	124	138	195	223

Table 24. Historic Annual Greenhouse Gas Emissions for the Sister Leila Greco Apartments

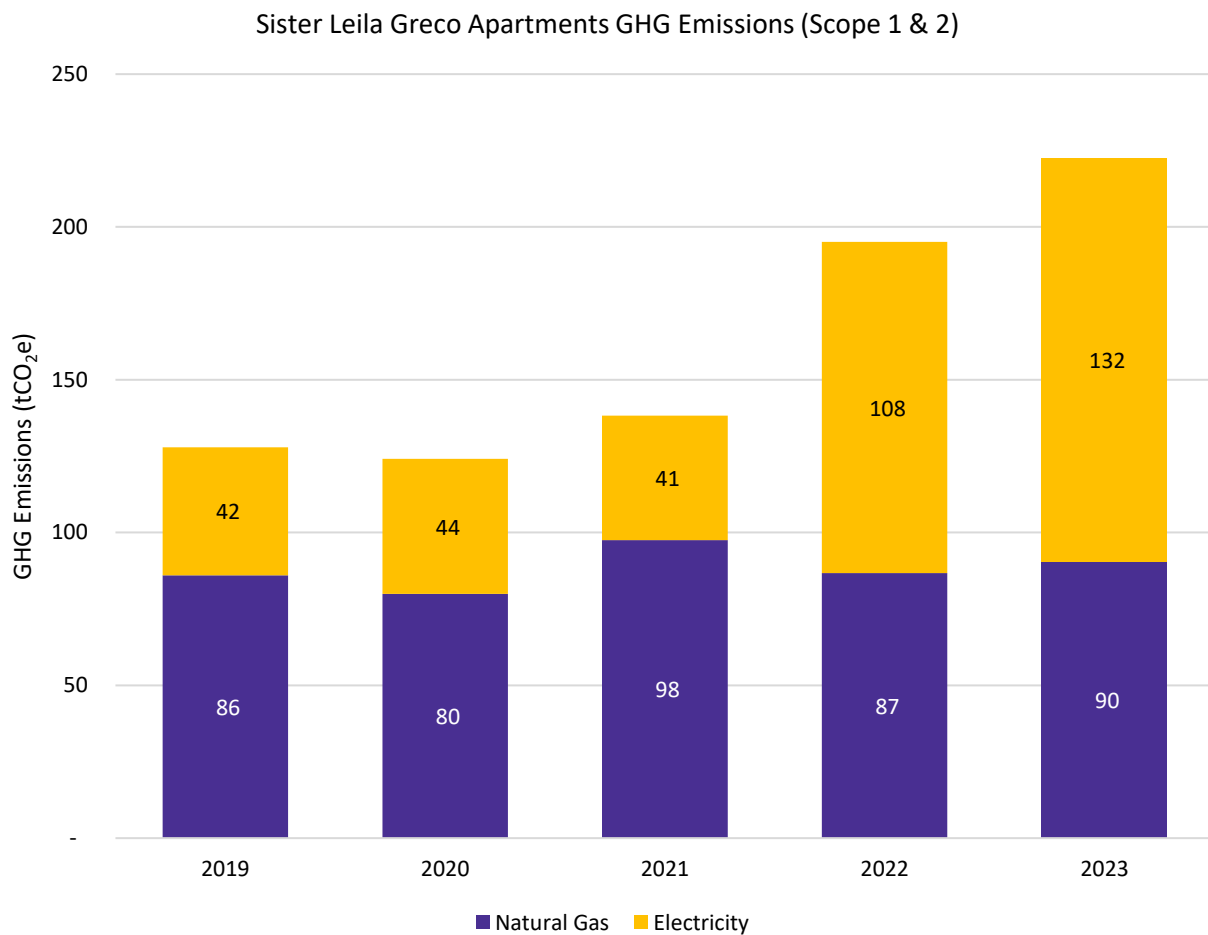


Figure 19. Historic Annual Greenhouse Gas Emissions for the Sister Leila Greco Apartments

5.4.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. The Sister Leila Greco Apartments’ proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. The implementation of these measures depends on a variety of variables such as funding availability, operational factors, and incentive support.

Measure	Estimated Annual Savings			Project Cost	Simple Payback (years)	Implementation Year
	kWh	m ³	\$			
25 kW Rooftop PV (photovoltaics)	30,450	-	\$3,654	\$63,525	17	2026
530 kW Carport PV (photovoltaics)	699,964	-	\$83,996	\$2,655,000	32	2026
Total	730,415	-	\$87,650	\$2,718,525	31	-

Table 25. Proposed Conservation Measures for the Sister Leila Greco Apartments

5.4.4. Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous section, the forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	1,596,545	0%	1,596,545	0%	866,130	46%	866,130	46%	866,130	46%	866,130	46%
Natural Gas (m ³)	47,036	0%	47,036	0%	47,036	0%	47,036	0%	47,036	0%	47,036	0%

Table 26. Forecast of Annual Utility Consumption for the Sister Leila Greco Apartments

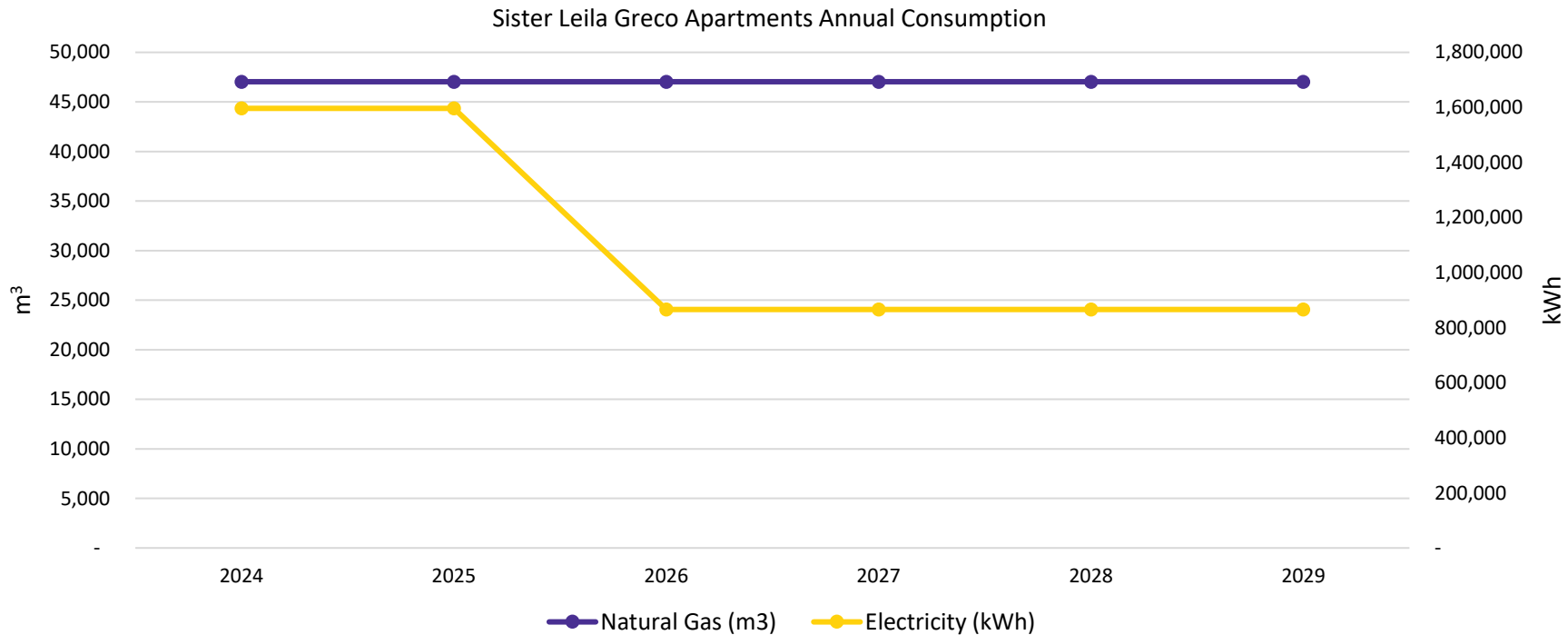


Figure 20. Forecast of Annual Utility Consumption for the Sister Leila Greco Apartments

5.4.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for the Sister Leila Greco Apartments are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	105	140	66	75	65	60
Natural Gas (scope 1)	90	90	90	90	90	90
Totals	195	231	157	166	156	150
Reduction from Baseline Year (2023)	12.4%	-3.6%	29.5%	25.5%	30.1%	32.4%

Table 27. Forecast of Annual Greenhouse Gas Emissions for the Sister Leila Greco Apartments

Sister Leila Greco Apartments GHG Emissions (Scope 1 & 2)

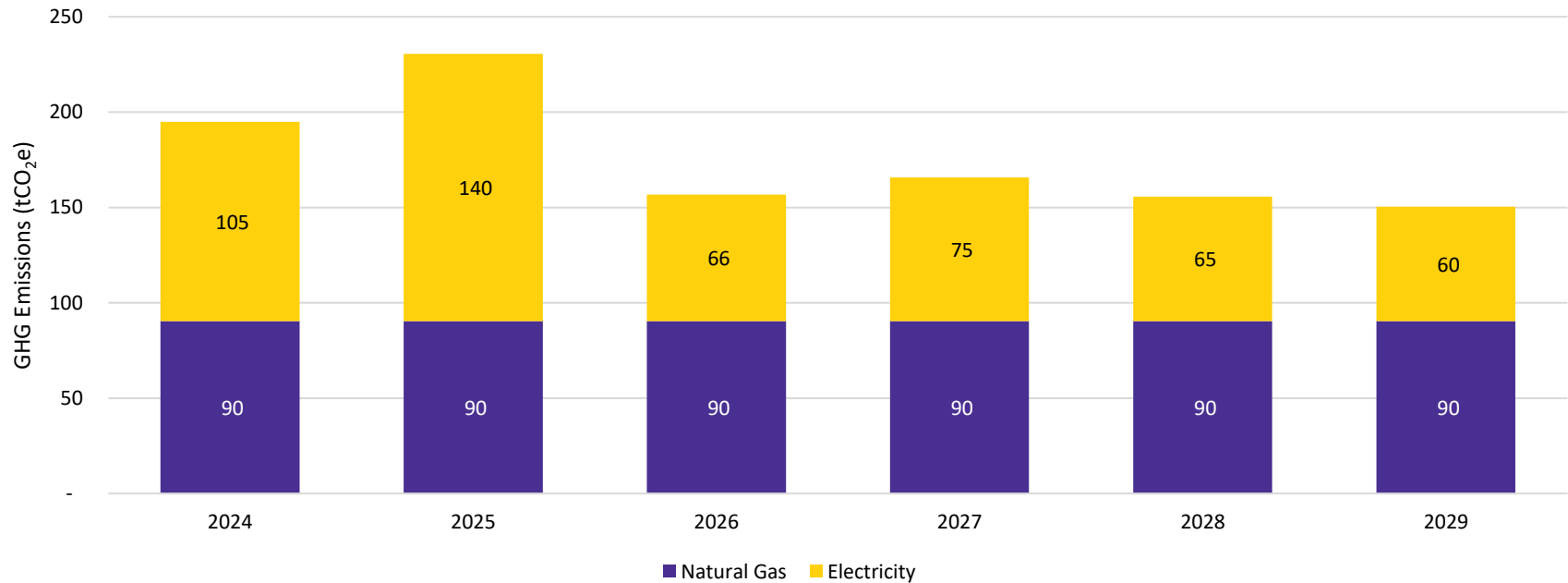


Figure 21. Forecast of Annual Greenhouse Gas Emissions for the Sister Leila Greco Apartments

5.5. Sister Margaret Smith Centre



Picture 5. Sister Margaret Smith Centre

Sister Margaret Smith Centre Facility Information	
Facility Name	Sister Margaret Smith Centre
Type of Facility	Residential Rehab Centre
Address	301 N. Lillie Street, Thunder Bay, ON
Gross Area (Sq. Ft)	72,500
Average Operational Hours in a Week	168
Number of Floors	3
Number of Beds	40

Table 28. Sister Margaret Smith Centre Facility Information

5.5.1. Utility Consumption Analysis

Utilities to the site are electricity, natural gas and water. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	541,824	559,525	573,353	602,786	554,821
Natural Gas (m ³)	92,422	96,204	90,637	85,054	56,937

Table 29. Historic Annual Utility Consumption for the Sister Margaret Smith Centre

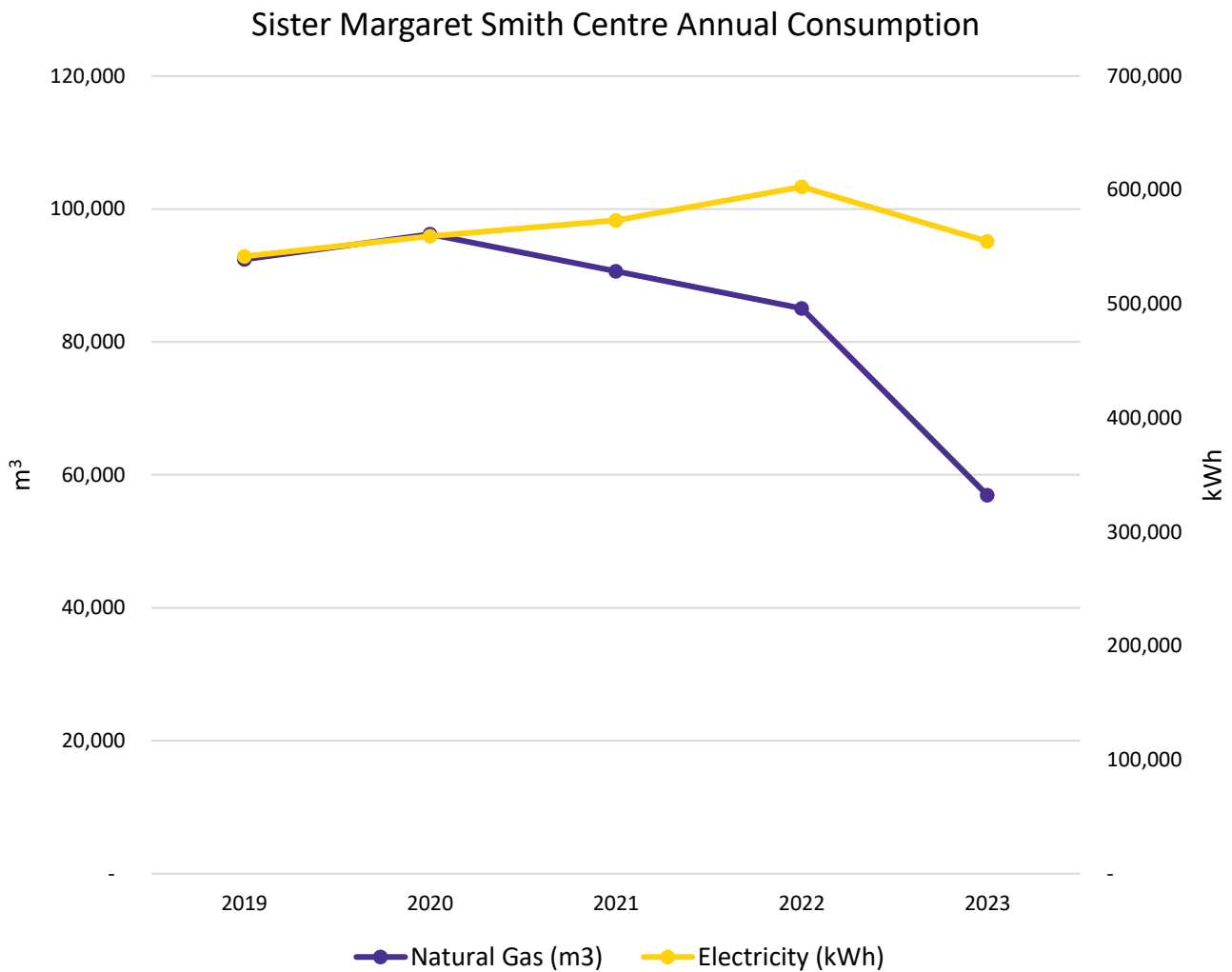


Figure 22. Historic Annual Utility Consumption for the Sister Margaret Smith Centre

5.5.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table:

Utility Source (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	14	14	15	43	46
Natural Gas (scope 1)	178	185	174	163	109
Totals	191	199	189	206	155

Table 30. Historic Annual Greenhouse Gas Emissions for the Sister Margaret Smith Centre

Sister Margaret Smith Centre GHG Emissions (Scope 1 & 2)

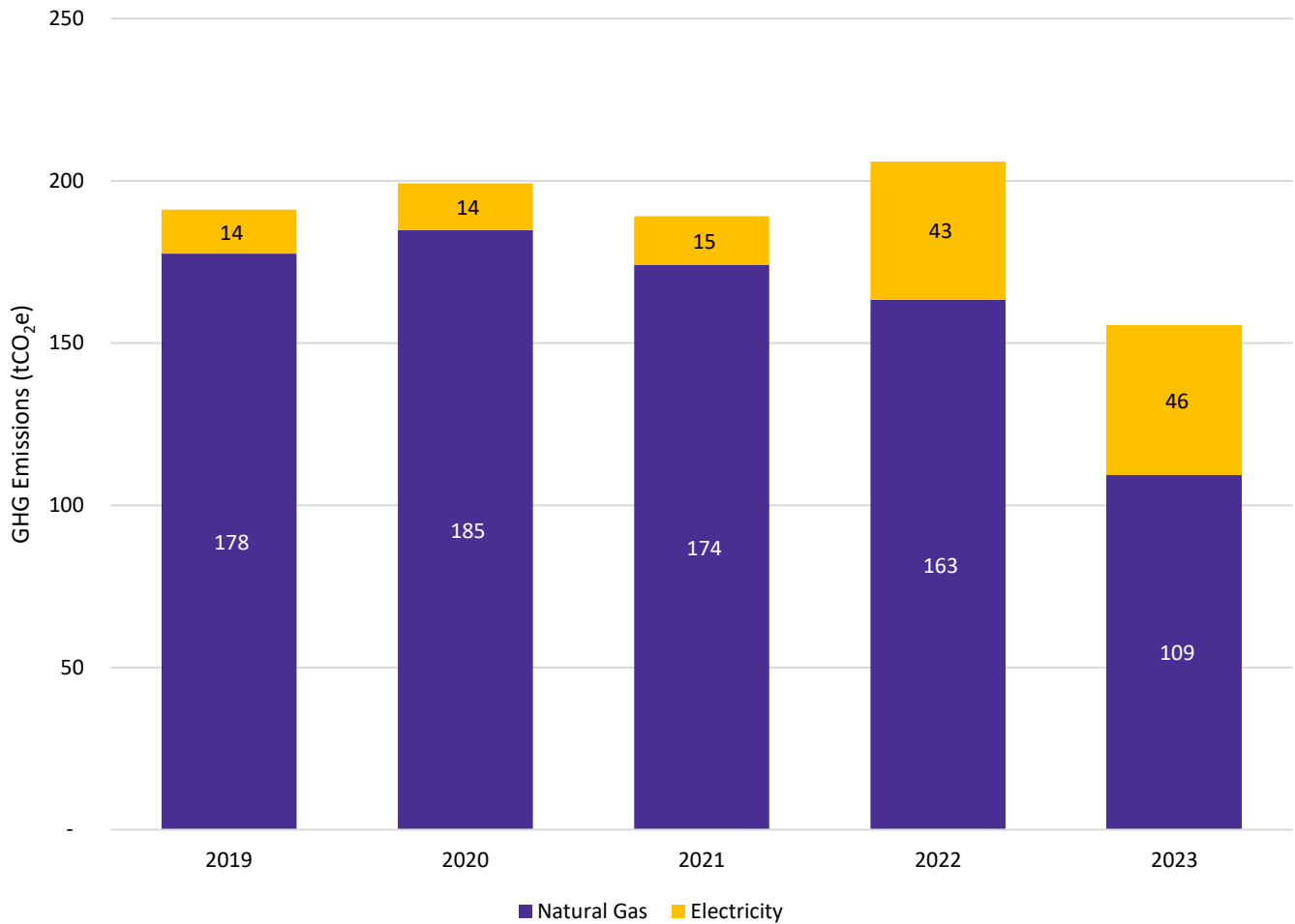


Figure 23. Historic Annual Greenhouse Gas Emissions for the Sister Margaret Smith Centre

5.5.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. Sister Margaret Smith Centre proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. The implementation of these measures depends on a variety of variables such as funding availability, operational factors and incentive support.

Measure	Estimated Annual Savings			Project Cost	Simple Payback (years)	Implementation Year
	kWh	m ³	\$			
50 kW Rooftop PV (photovoltaics)	70,853	-	\$8,502	\$148,363	17	2026
80 kW Carport PV (photovoltaics)	100,467	-	\$12,056	\$382,500	32	2026
Total	171,320	-	\$20,558	\$530,863	26	-

Table 31. Proposed Conservation Measures for the Sister Margaret Smith Centre

5.5.4. Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous section, the forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	554,821	0%	554,821	0%	383,501	31%	383,501	31%	383,501	31%	383,501	31%
Natural Gas (m ³)	56,937	0%	56,937	0%	56,937	0%	56,937	0%	56,937	0%	56,937	0%

Table 32. Forecast of Annual Utility Consumption for the Sister Margaret Smith Centre

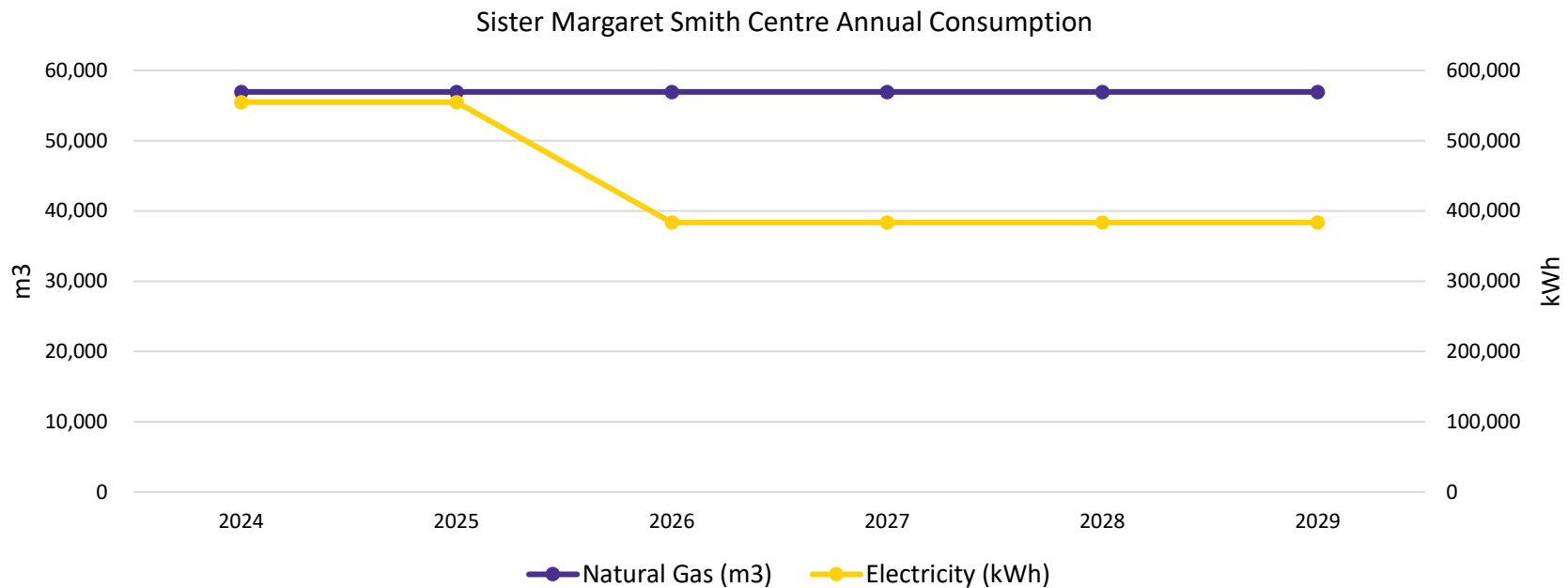


Figure 24. Forecast of Annual Utility Consumption for the Sister Margaret Smith Centre

5.5.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for the Sister Margaret Smith Centre are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	36	49	29	33	29	27
Natural Gas (scope 1)	109	109	109	109	109	109
Totals	141	153	134	137	133	131
Reduction from Baseline Year (2023)	6.2%	-1.8%	10.6%	8.1%	11.0%	12.5%

Table 33. Forecast of Annual Greenhouse Gas Emissions for the Sister Margaret Smith Centre

Sister Margaret Smith Centre GHG Emissions (Scope 1 & 2)

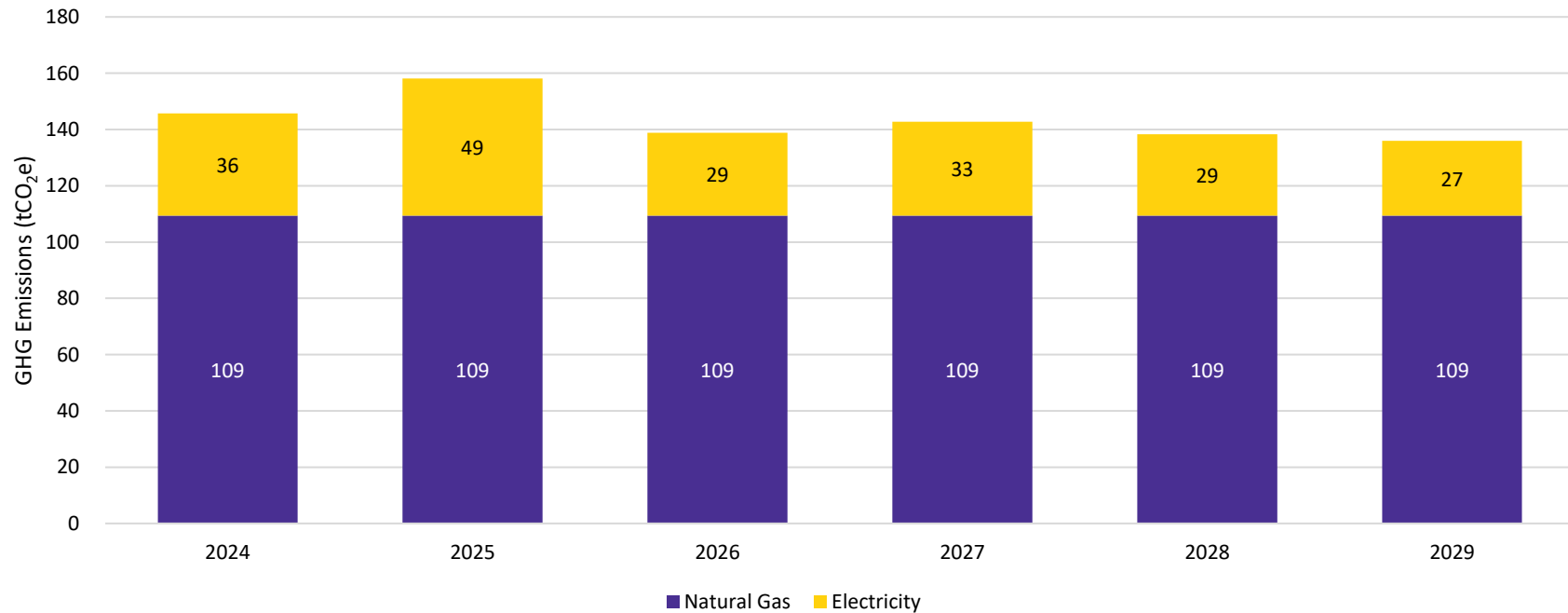


Figure 27. Forecast of Annual Greenhouse Gas Emissions for the Sister Margaret Smith Centre

5.6. St. Joseph's Health Centre



Picture 6. St. Joseph's Health Centre

St. Joseph's Health Centre Facility Information	
Facility Name	St. Joseph's Health Centre
Type of Facility	Outpatient Treatment/Medical Offices
Address	700 E. Victoria Avenue, Thunder Bay, ON
Gross Area (Sq. Ft)	45,000
Average Operational Hours in a Week	40
Number of Floors	3
Number of Beds	0

Table 34. St. Joseph's Health Centre Facility Information

5.6.1. Utility Consumption Analysis

Utilities to the site are electricity, natural gas and water. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Annual Consumption (units)					
Utility	2019	2020	2021	2022	2023
Electricity (kWh)	641,688	589,360	567,784	620,733	566,801
Natural Gas (m ³)	12,300	9,813	11,047	17,210	10,290

Table 35. Historic Annual Utility Consumption for the St. Joseph's Health Centre

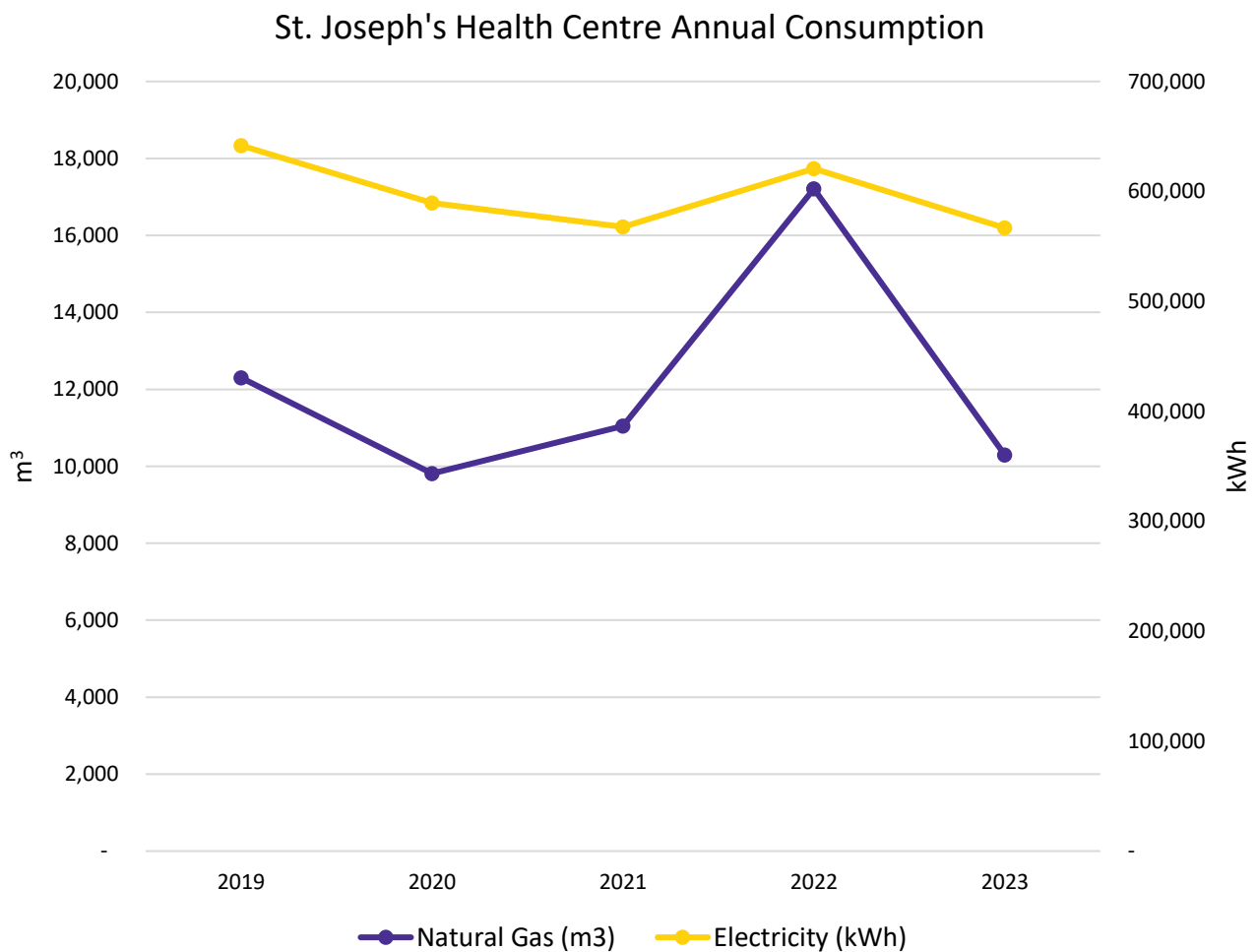


Figure 28. Historic Annual Utility Consumption for the St. Joseph's Health Centre

5.6.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table:

Utility Source (tCO ₂ e)	2019	2020	2021	2022	2023
Electricity (scope 2)	16	15	15	44	47
Natural Gas (scope 1)	24	19	21	33	20
Totals	40	34	36	77	67

Table 36. Historic Annual Greenhouse Gas Emissions for the St. Joseph's Health Centre

St. Joseph's Health Centre GHG Emissions (Scope 1 & 2)

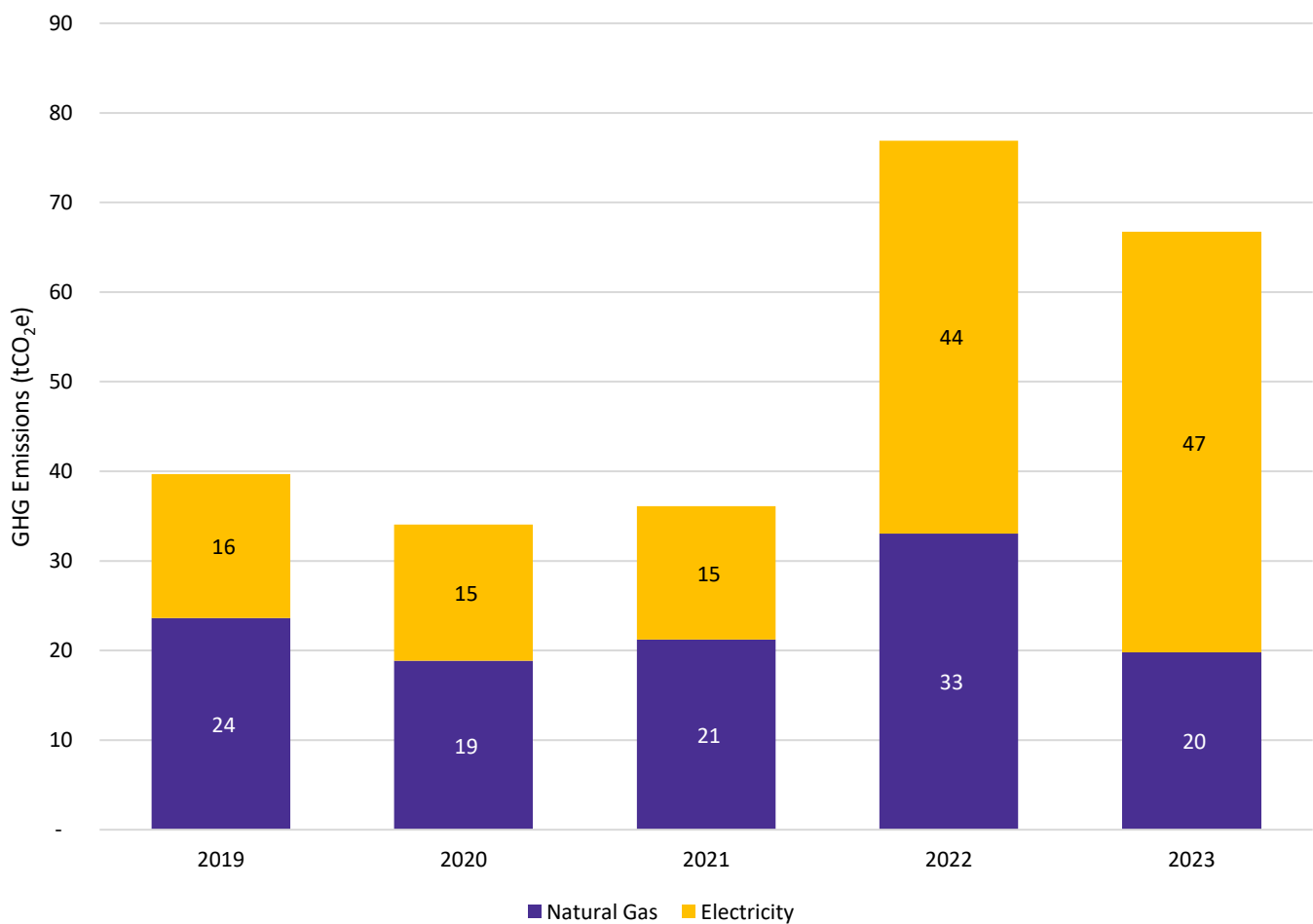


Figure 29. Historic Annual Greenhouse Gas Emissions for the St. Joseph's Health Centre

5.6.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. St. Joseph’s Health Centre’s proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. The implementation of these measures depends on a variety of variables such as funding availability, operational factors, and incentive support.

Measure	Estimated Annual Savings			Project Cost	Simple Payback (years)	Implementation Year
	kWh	m ³	\$			
Roof Replacement	2,834	180	\$421	\$1,000,000	2,375	2026
100 kW Rooftop PV (photovoltaics)	124,077	-	\$14,889	\$272,250	18	2026
Total	126,911	180	\$15,310	\$1,272,250	83	-

Table 37. Proposed Conservation Measures for St. Joseph’s Health Centre

5.6.4. Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous section, the forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	566,801	0%	566,801	0%	439,890	22%	439,890	22%	439,890	22%	439,890	22%
Natural Gas (m ³)	10,290	0%	10,290	0%	10,110	2%	10,110	2%	10,110	2%	10,110	2%

Table 38. Forecast of Annual Utility Consumption for St. Joseph’s Health Centre

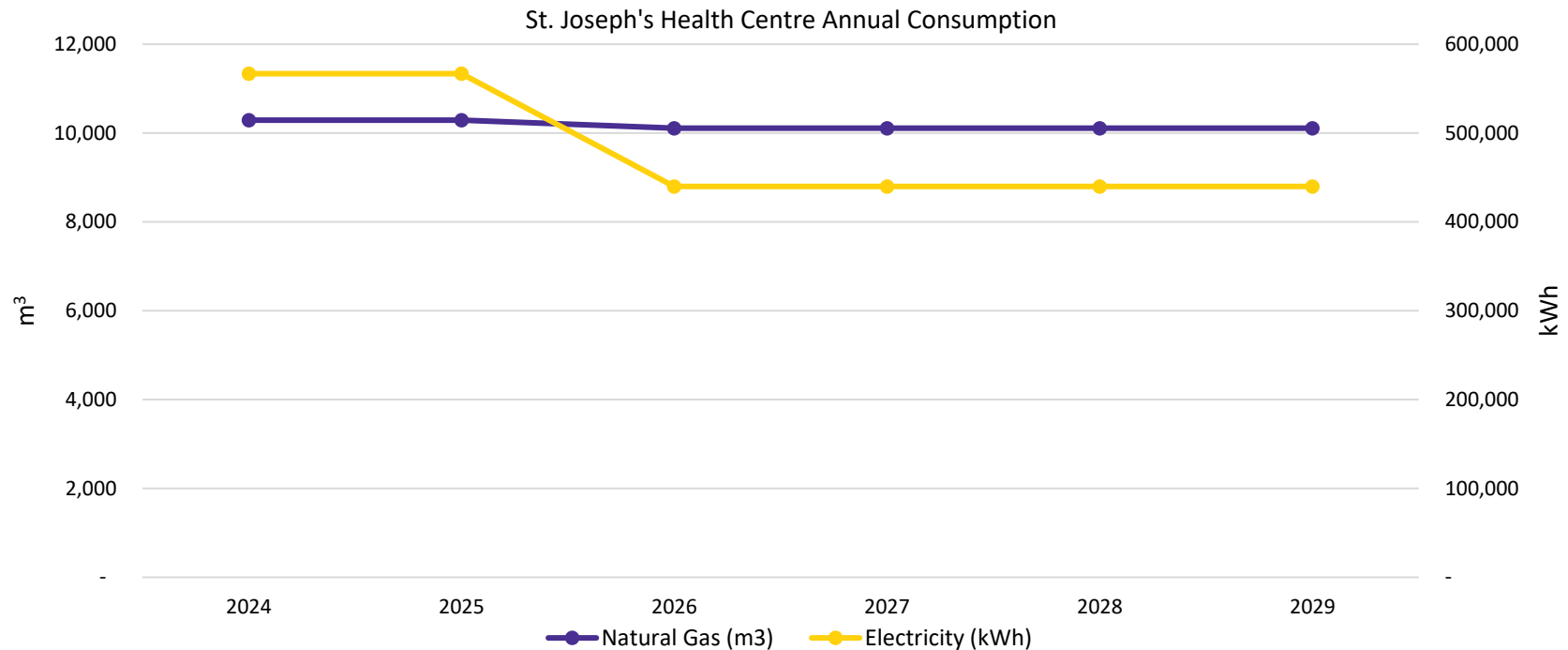


Figure 30. Forecast of Annual Utility Consumption for St. Joseph’s Health Centre

5.6.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for St. Joseph’s Health Centre are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	37	50	34	38	33	30
Natural Gas (scope 1)	20	20	19	19	19	19
Totals	57	70	53	58	53	50
Reduction from Baseline Year (2023)	14.7%	-4.2%	20.3%	13.4%	21.2%	25.2%

Table 39. Forecast of Annual Greenhouse Gas Emissions for St. Joseph’s Health Centre

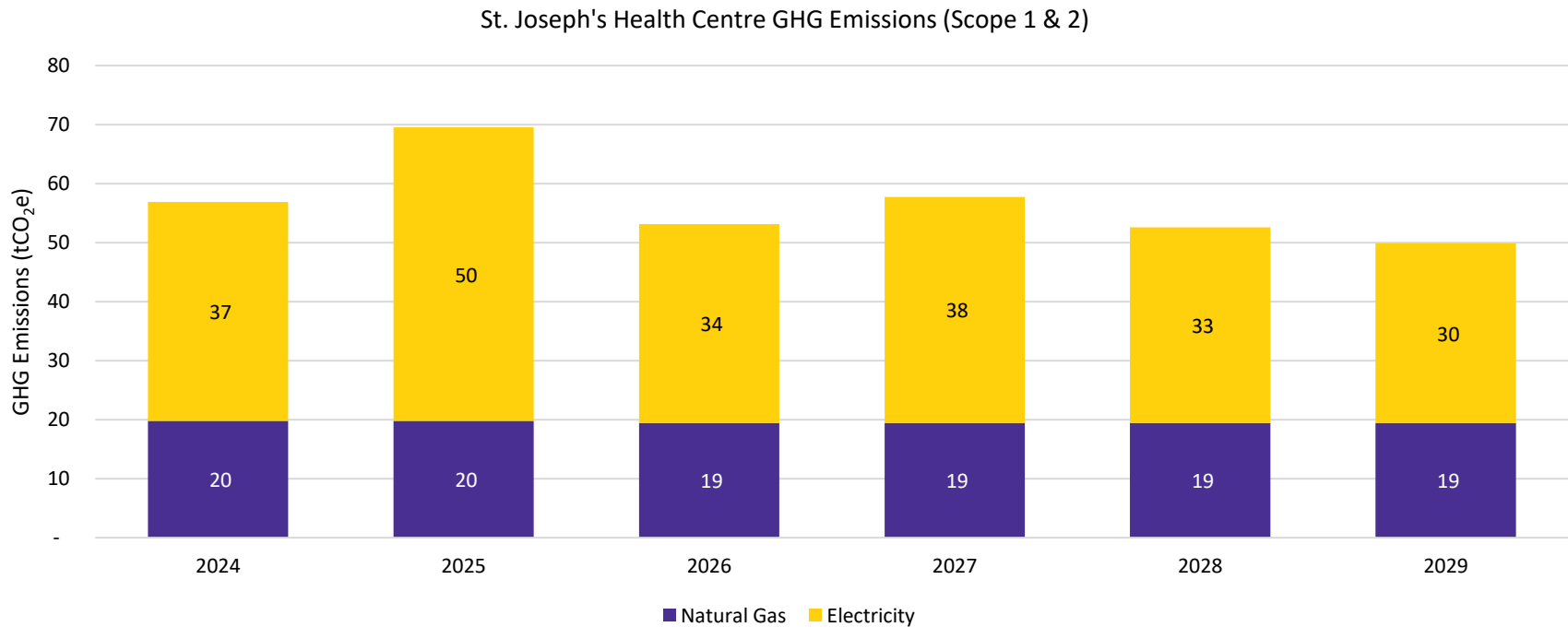


Figure 31. Forecast of Annual Greenhouse Gas Emissions for St. Joseph’s Health Centre

6. Organization Outlook

6.1. Organization Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous sections, in each respective site, SJCG’s site-wide forecasted electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	16,036,208	0%	16,010,095	0%	14,547,976	9%	14,459,634	10%	14,409,998	10%	14,409,998	10%
Natural Gas (m ³)	1,730,195	0%	1,722,743	0%	1,722,563	0%	1,715,351	1%	1,693,714	2%	1,693,714	2%

Table 40. Forecast of Annual Utility Consumption for all Sites

Site-Wide Utility Consumption Forecast

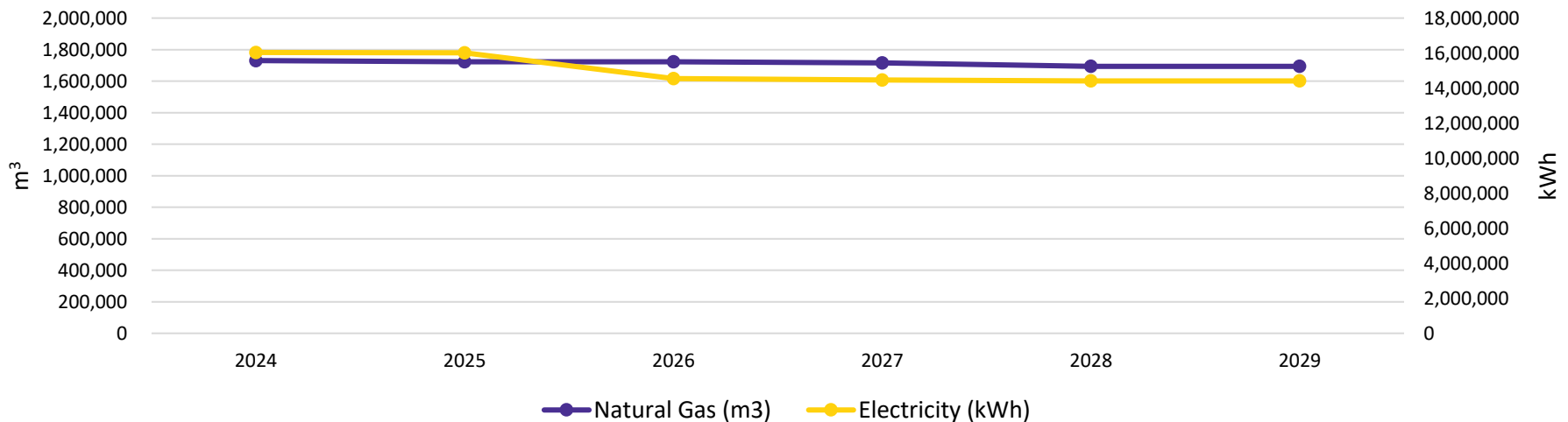


Figure 32. Forecast of Annual Utility Consumption for all Sites

6.2. Organization GHG Emissions Forecast

The site-wide forecasted greenhouse gas emissions for SJCG are calculated based on the forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO ₂ e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	1,050	1,406	1,116	1,259	1,087	999
Natural Gas (scope 1)	3,324	3,309	3,309	3,295	3,254	3,254
Totals	4,374	4,715	4,425	4,555	4,340	4,252
Reduction from Baseline Year (2023)	6%	-1%	5%	2%	7%	9%

Table 41. Forecast of Annual Greenhouse Gas Emissions for all Sites

Site-wide Emissions Forecast (Scope 1 & 2)

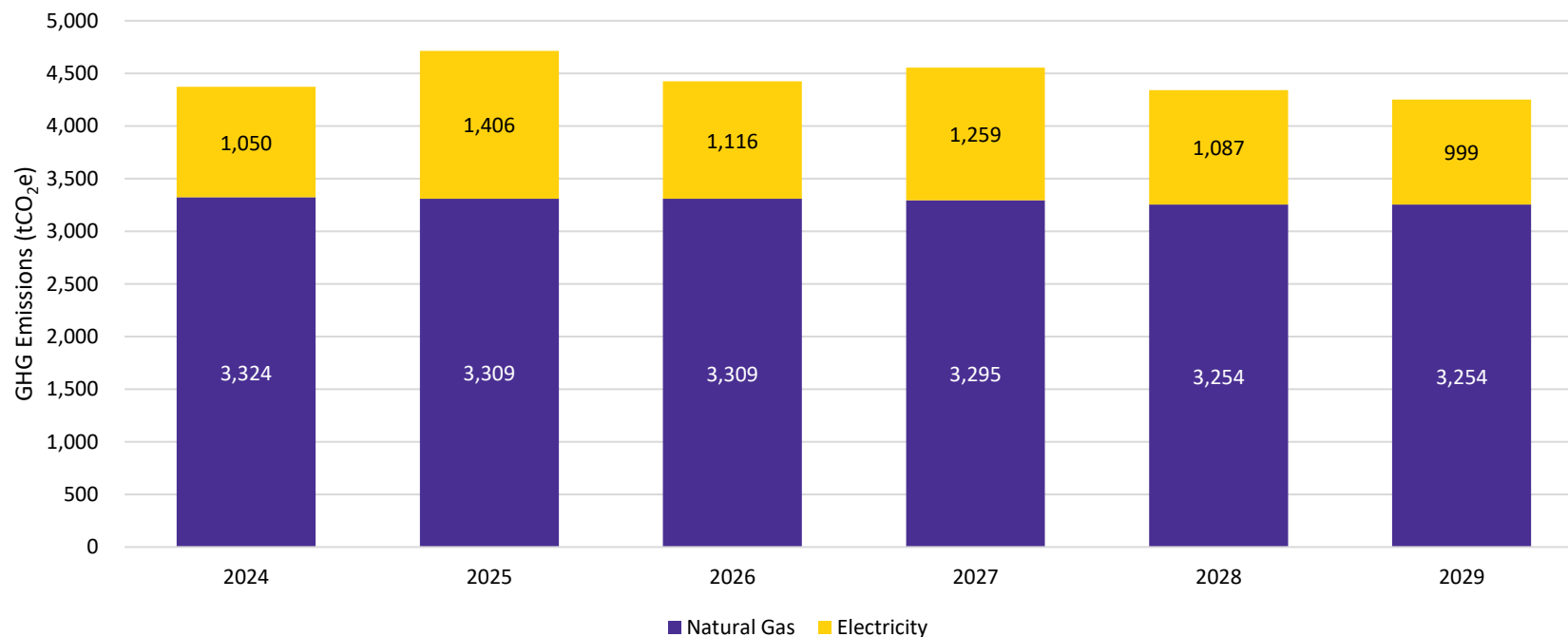


Figure 331. Forecast of Annual Greenhouse Gas Emissions for all Sites

7. Closing Comments

Thank you to all who contributed to St. Joseph's Care Group's Energy Conservation & Demand Management Plan. We consider our facility a primary source of care, and an integral part of the local community. The key to this relationship is being able to use our facilities efficiently and effectively to maximize our ability to provide the highest quality of healthcare services while integrating environmental stewardship into all aspects of facility operations.

On behalf of the senior management team here at St. Joseph's Care Group, we approve this Energy Conservation & Demand Management Plan.

A handwritten signature in black ink, appearing to read "J. Black". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Janine Black, President and Chief Executive Officer

This ECDM plan was created through a collaborative effort between St. Joseph's Care Group Building Services Team and Blackstone Energy Services.

8. Appendix

8.1. Glossary of terms

Word	Abbreviation	Meaning
Baseline Year		A baseline is a benchmark that is used as a foundation for measuring or comparing current and past values.
Building Automation System	BAS	Building automation is the automatic centralized control of a building's heating, ventilation and air conditioning, lighting and other systems through a building management system or building automation system (BAS)
Carbon Dioxide	CO2	Carbon dioxide is a commonly referred to greenhouse gas that results, in part, from the combustion of fossil fuels.
Energy Usage Intensity	EUI	Energy usage intensity means the amount of energy relative to relative to a buildings physical size typically measured in square feet.
Equivalent Carbon Dioxide	CO2e	CO2e provides a common means of measurement when comparing different greenhouse gases.
GHG Protocol		GHG Protocol refers to the recognized international standards used in the measurement and quantification of greenhouse gases.
Greenhouse Gas	GHG	Greenhouse gas means a gas that contributes to the greenhouse effect by absorbing infrared radiation, e.g., carbon dioxide and chlorofluorocarbons.
Metric Tonnes	t	Metric tonnes are a unit of measurement. 1 metric tonne = 1000 kilograms
Net Zero		A net-zero energy building, is a building with zero net energy consumption , meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of renewable energy created on the site,
Variable Frequency Drive	VFD	A variable frequency drive is a device that allows for the modulation of an electrical or mechanical piece of equipment.

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