



# **ENERGY CONSERVATION & DEMAND MANAGEMENT PLAN 2019**

**LAKE OF THE WOODS DISTRICT HOSPITAL**

# Executive Summary

The purpose of this Energy Conservation and Demand Management (ECDM) Plan from Lake of the Woods District Hospital (“LWDH”) 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 LWDH’s core values of efficiency, concern for the environment and financial responsibility, this ECDM outlines how the hospital will reduce overall energy consumption, operating costs and greenhouse gas emissions. By following the measures outlined in this document, we will be able to provide compassionate service to more people in the community. This ECDM Plan is written in accordance with sections 4, 5, and 6 of the recently amended Electricity Act, 1998, O. Reg. 507/18.

Through past conservation and demand initiatives, LWDH has achieved the following results:

- 74,586 kWh increase in electricity use
- 292,926 m3 increase in natural gas use

Today, utility and energy related costs are a significant part of overall operating costs. In 2018:

- LWDH’s Energy Use Index (EUI) was 70 ekWh/ft<sup>2</sup>
- Energy-related emissions equaled 2,625 tCO<sub>2</sub>e

To obtain full value from energy management activities, LWDH will take a strategic approach to fully integrate energy management into its business decision-making, policies and operating procedures. 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, LWDH can expect to achieve the following targets by 2024:

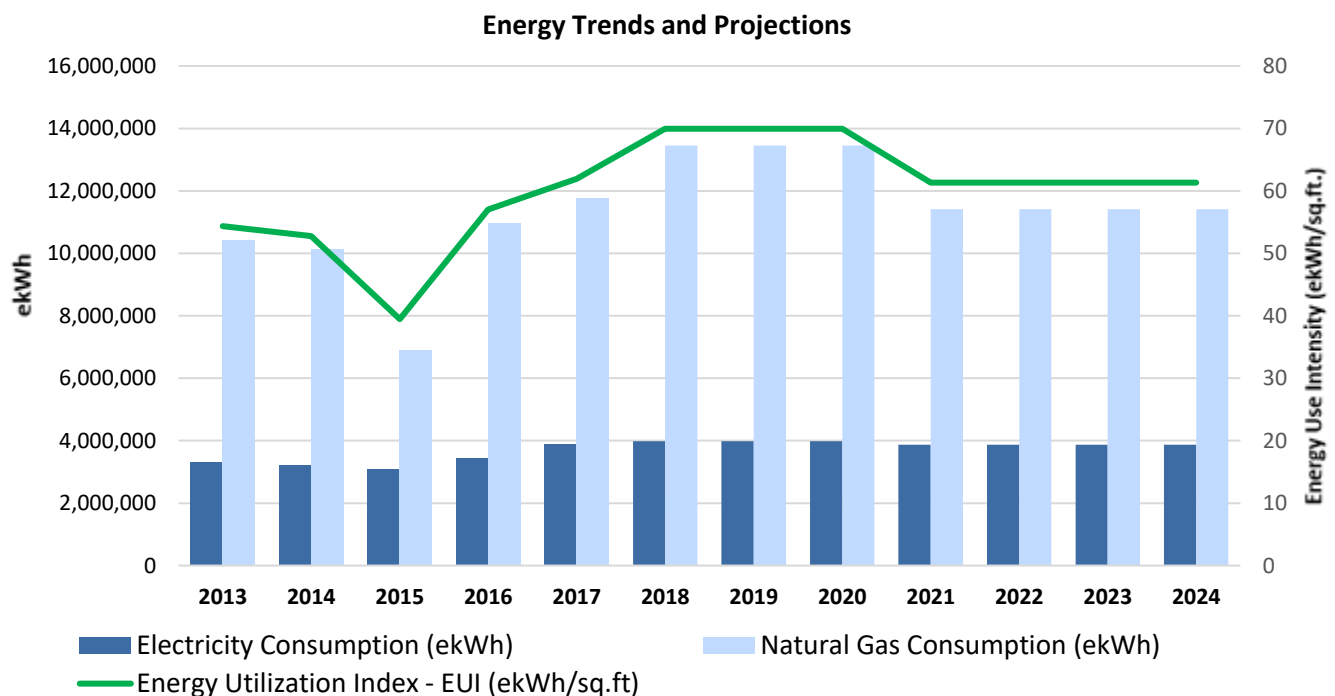
- ~ 3% reduction in electricity consumption
- ~ 15% reduction in natural gas consumption
- 377 tCO<sub>2</sub>e carbon equivalent emissions

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# 1. Introduction

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 chart & table below.



*Figure 1. Site-Wide Energy Consumption Trends & Projections*

ECDM Program Summary	2013	2014	2015	2016	2017	2018
Electricity Consumption (ekWh)	3,316,837	3,204,556	3,081,519	3,449,332	3,905,113	3,979,699
Natural Gas Consumption (ekWh)	10,429,685	10,140,909	6,899,448	10,969,820	11,757,462	13,455,610
Facility Size (Sq. ft.)	252,900	252,900	252,900	252,900	252,900	249,240
Energy Utilization Index - EUI (ekWh/sq.ft.)	54	53	39	57	62	70
ECDM Program Projections	2019	2020	2021	2022	2023	2024
Electricity Consumption (ekWh)	3,979,699	3,979,699	3,872,994	3,872,994	3,872,994	3,872,994
Natural Gas Consumption (ekWh)	13,455,610	13,455,610	11,416,581	11,416,581	11,416,581	11,416,581
Facility Size (Sq. ft.)	249,240	249,240	249,240	249,240	249,240	249,240
Energy Utilization Index - EUI (ekWh/sq.ft.)	70	70	61	61	61	61

### ***Our Mission***

Lake of the Woods District Hospital exists so that: The people we serve receive optimal health care for a justifiable use of public resources.

### ***Our Vision***

People we serve receive patient-centered care that incorporates the values and preferences of patients and their families and is based on evidence-based medicine. This is the highest priority.

- State of the art new facility.
- Effective E-Health system.
- Appropriate sufficient workforce.
- Well governed sustainable funding.
- Healthy lifestyle choices.
- Timely access to primary health care.
- Seamless continuum of collaborative services.
- Visible health care system inspiring confidence.

### ***Our Values***

- Publicly Funded - Publicly funded system.
- Sustainable - Sustainability with resources and people for the future.
- Accountable - Accountability to the public.
- Inclusive Care - A level of care that is inclusive.
- Shared Support - Health care is a shared responsibility of the individual, community and government.
- Personal Responsibility - People are responsible for their own health.
- Continuous quality improvement and innovation.

***Table 1.*** Site-Wide Energy Consumption Trends & Projections

## 2. 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 new regulation is now 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.

### 3. About Lake of the Woods District Hospital

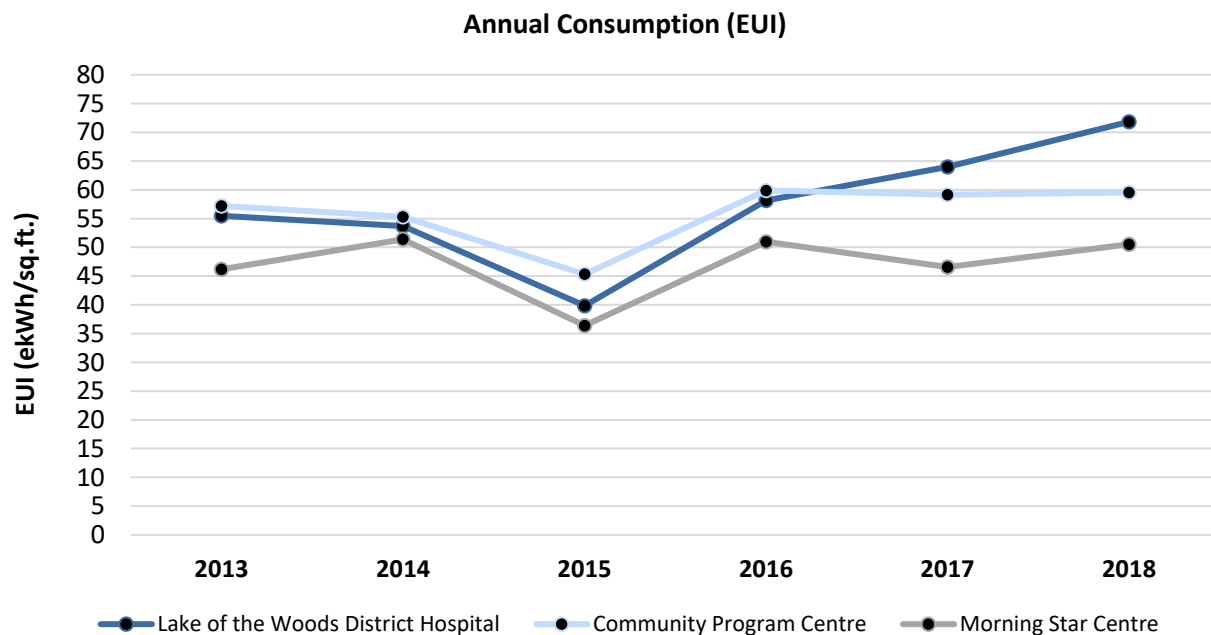
The Lake of the Woods District Hospital was built in 1897 and serves the residents of the City of Kenora, as well as a large surrounding area, including several First Nations Communities. Treating over 30,000 people per year, we are Northwestern Ontario's largest hospital outside of Thunder Bay. The Hospital's core programs include emergency and ambulatory care, chronic care, mental health, maternal and child health, and acute care services which include general medicine, intensive care and surgical services.

#### 3.1. Site-Wide 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 Natural Resources Canada's Commercial and Institutional Consumption of Energy Survey), which was found to be **63.23 ekWh/sq. ft.**

Annual Consumption (EUI)						
Site	2013	2014	2015	2016	2017	2018
Lake of the Woods District Hospital	56	54	40	58	64	72
Community Program Centre	57	55	45	60	59	60
Morning Star Centre	46	51	36	51	47	51

*Table 2. Historic Energy Utilization Indices for all Sites*



*Figure 2. Historic Annual Energy Utilization Indices for all Sites*

### 3.2. Site-Wide Historical GHG Emissions

Greenhouse gas (GHG) emissions are expressed in terms of equivalent tonnes of Carbon Dioxide (tCO<sub>2</sub>e). 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 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.

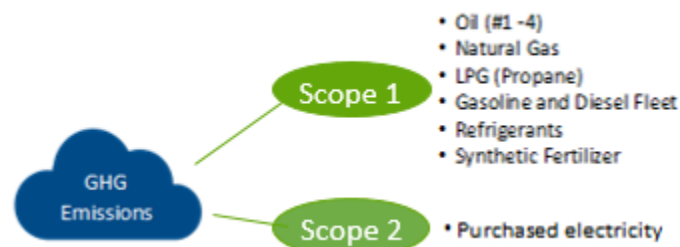


Figure 3. Examples of Scope 1 and 2

GHG Emissions	2013	2014	2015	2016	2017	2018
Electricity	136	131	126	141	160	163
Natural Gas	1,908	1,855	1,262	2,007	2,151	2,462
<b>Total Scope 1 &amp; 2 Emissions</b>	<b>2,044</b>	<b>1,987</b>	<b>1,389</b>	<b>2,148</b>	<b>2,311</b>	<b>2,625</b>

Table 3. Historic Greenhouse Gas Emissions for all Sites

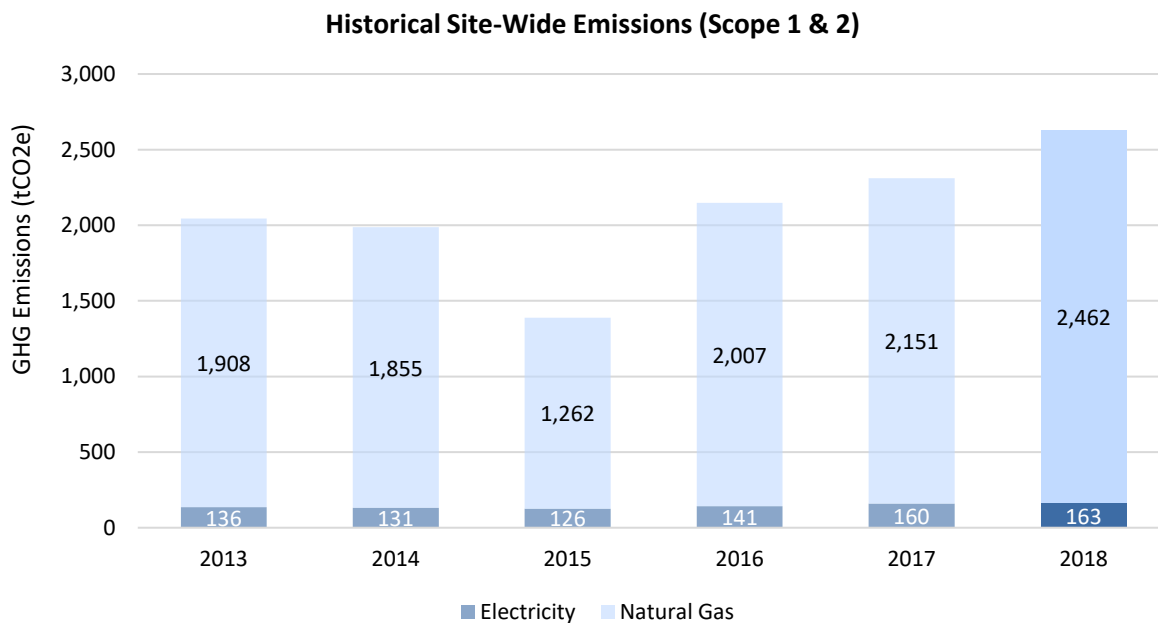


Figure 4. Historic Greenhouse Gas Emissions for all Sites



## 4. 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.

### 4.1. Lake of the Woods District Hospital



*Picture 1. Lake of the Woods District Hospital*

Facility Information	
Facility Name	Lake of the Woods District Hospital
Facility Type	Healthcare Services
Address	21 Sylvan Street W, Kenora, ON
Gross Area (Sq. Ft)	221,000
Average of Operational Hours in a Week	168
Number of Floors	4

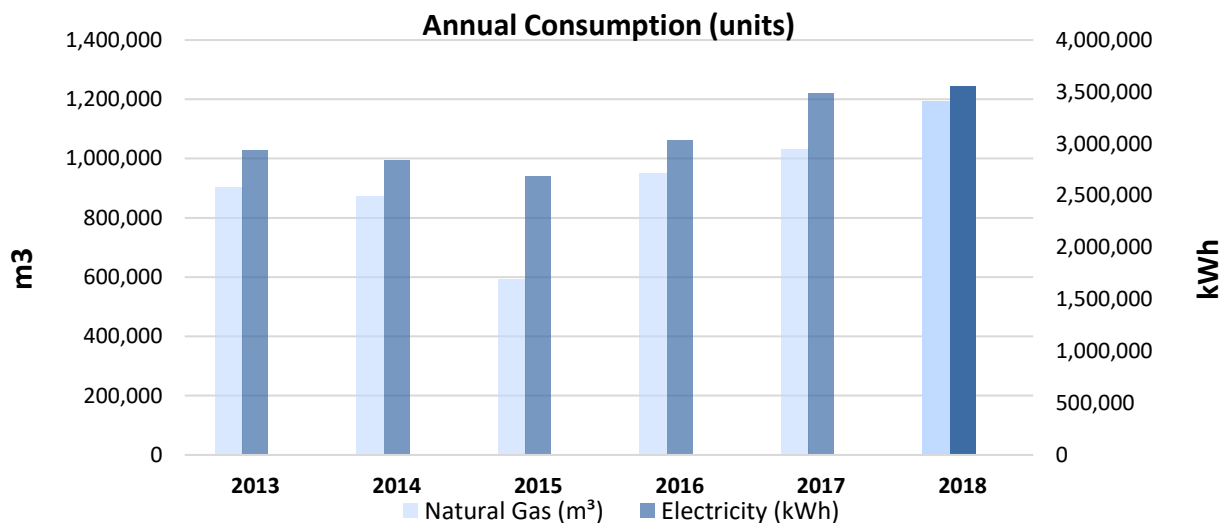
*Table 4. Lake of the Woods District Hospital Facility Information*

#### 4.1.1. 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).

Annual Consumption (units)						
Utility	2013	2014	2015	2016	2017	2018
<b>Electricity (kWh)</b>	2,939,515	2,841,248	2,683,237	3,027,914	3,488,838	3,547,670
<b>Natural Gas (m<sup>3</sup>)</b>	902,858	873,139	592,660	950,526	1,031,049	1,193,197

*Table 5. Historic Annual Utility Consumption for the Hospital*



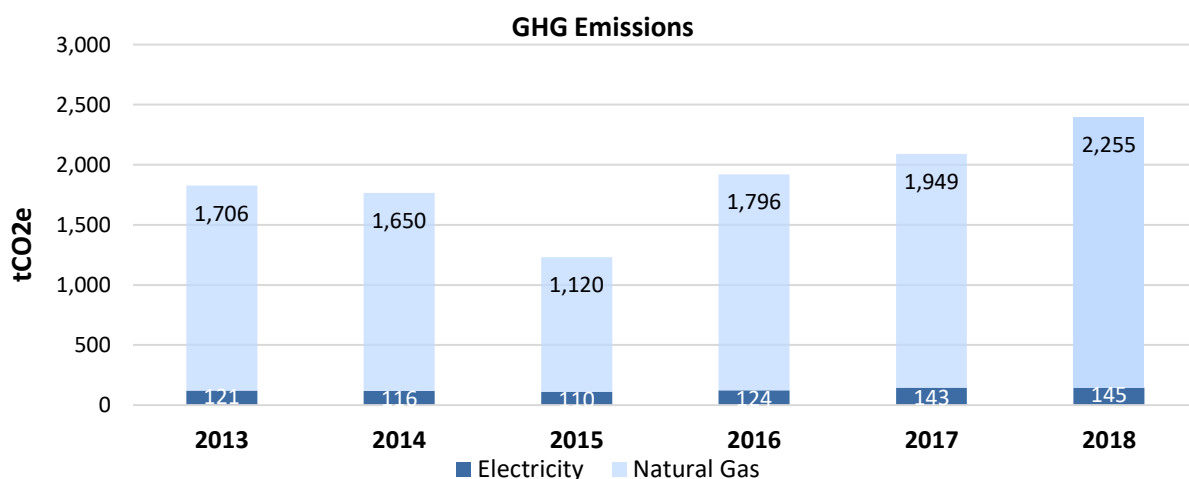
*Figure 5. Historic Annual Utility Consumption for the Hospital*

#### 4.1.2. GHG Emissions Analysis

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

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2013	2014	2015	2016	2017	2018
<b>Electricity</b>	121	116	110	124	143	145
<b>Natural Gas</b>	1,706	1,650	1,120	1,796	1,949	2,255
<b>Totals</b>	<b>1,827</b>	<b>1,767</b>	<b>1,230</b>	<b>1,921</b>	<b>2,092</b>	<b>2,401</b>

*Table 6. Historic Annual Greenhouse Gas Emissions for the Hospital*



*Figure 6. Historic Annual Greenhouse Gas Emissions for the Hospital*

#### 4.1.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. LWDH's proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. These measures will remain in place until a more efficient and cost-effective technology is found.

Measure	Impacted Utility	Estimated Annual Savings		Simple Payback (years)	Year of Implementation
		kWh	m3		
Window Upgrade	Natural Gas	34,220	65,240	50.00	2020
Caulking & Weather Stripping	Natural Gas & Electricity	68,425	130,450	5.00	2020
Total		102,645	195,690		

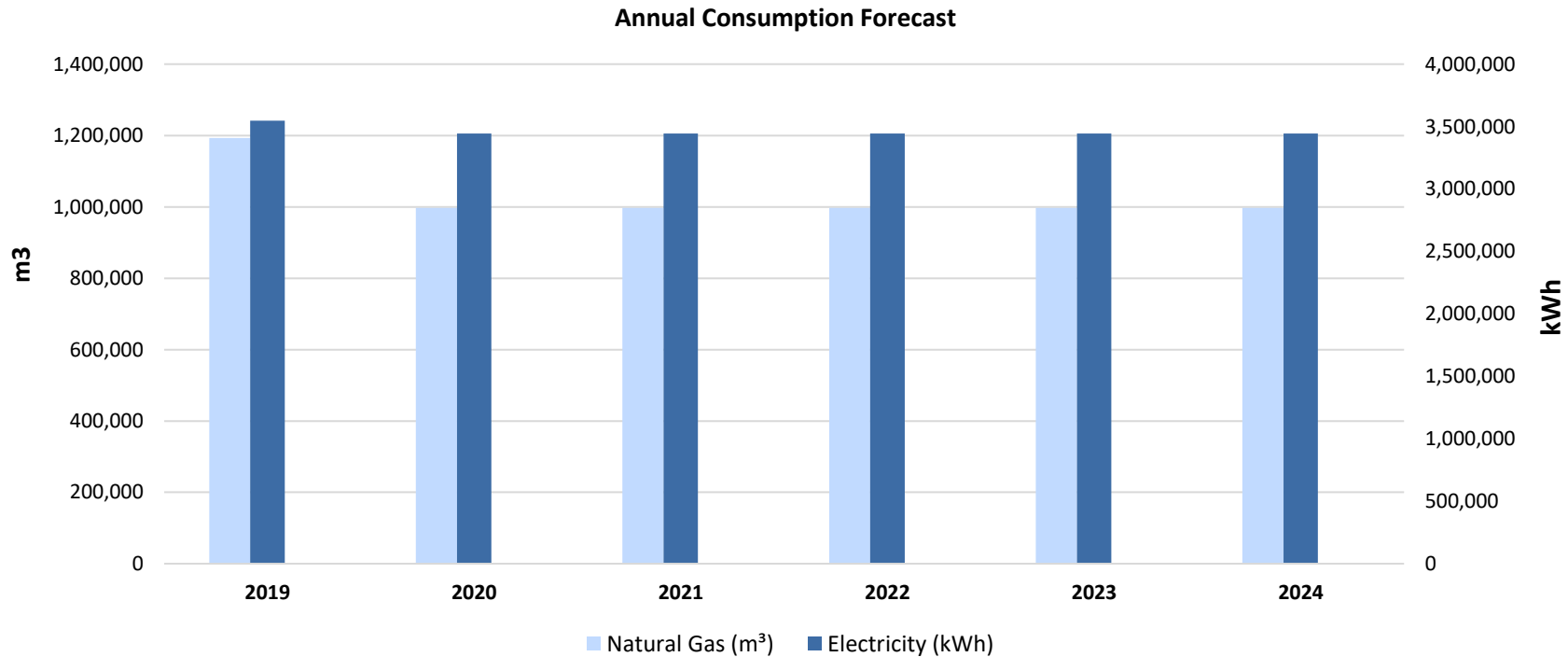
*Table 7. Proposed Conservation Measures for the Hospital*

#### 4.1.4. 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 2018.

	Annual Consumption											
	2019		2020		2021		2022		2023		2024	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	3,547,670	0%	3,445,025	3%	3,445,025	3%	3,445,025	3%	3,445,025	3%	3,445,025	3%
Natural Gas (m <sup>3</sup> )	1,193,197	0%	997,507	16%	997,507	16%	997,507	16%	997,507	16%	997,507	16%

*Table 8. Forecast of Annual Utility Consumption for the Hospital*



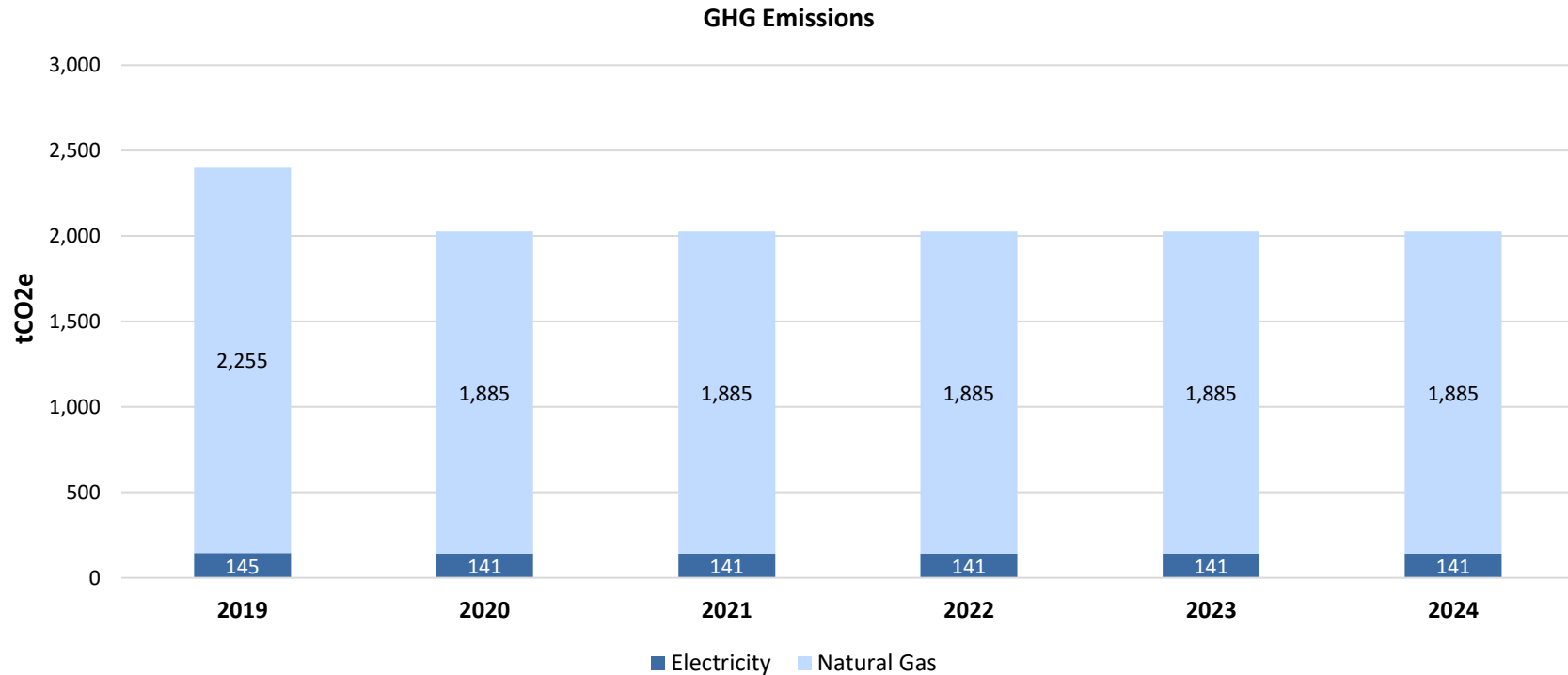
*Figure 7. Forecast of Annual Utility Consumption for the Hospital*

#### 4.1.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for LWDH 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 2018.

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2019	2020	2021	2022	2023	2024
<b>Electricity</b>	145	141	141	141	141	141
<b>Natural Gas</b>	2,255	1,885	1,885	1,885	1,885	1,885
<b>Totals</b>	<b>2,401</b>	<b>2,027</b>	<b>2,027</b>	<b>2,027</b>	<b>2,027</b>	<b>2,027</b>
Reduction from Baseline Year (2018)	0.00%	15.58%	15.58%	15.58%	15.58%	15.58%

*Table 9. Forecast of Annual Greenhouse Gas Emissions for the Hospital*



*Figure 8. Forecast of Annual Greenhouse Gas Emissions for the Hospital*

## 4.2. Community Program Centre



*Picture 2. Community Program Centre*

Facility Information	
Facility Name	Community Program Centre
Facility Type	Community Healthcare Centre
Address	21 Wolsley Avenue, Kenora, ON
Gross Area (Sq. Ft)	20,000
Average of Operational Hours in a Week	40
Number of Floors	2

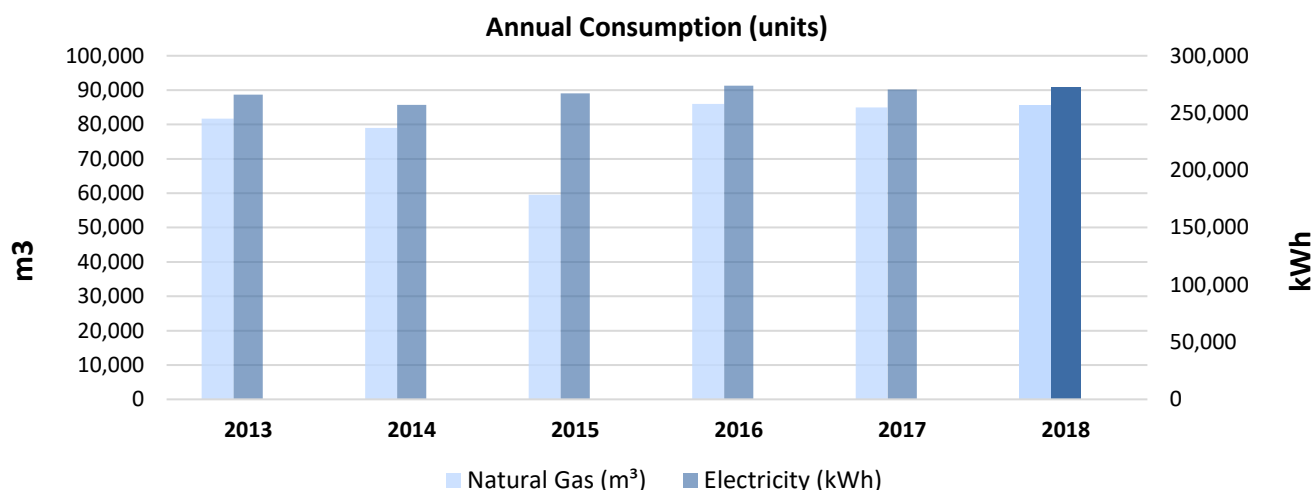
*Table 10. Community Program Centre Facility Information*

#### 4.2.1. 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).

Annual Consumption (units)						
Utility	2013	2014	2015	2016	2017	2018
<b>Electricity (kWh)</b>	266,019	257,126	267,324	274,019	270,672	272,346
<b>Natural Gas (m<sup>3</sup>)</b>	81,707	79,017	59,512	86,020	84,970	85,495

**Table 11.** Historic Annual Utility Consumption for the Community Program Centre



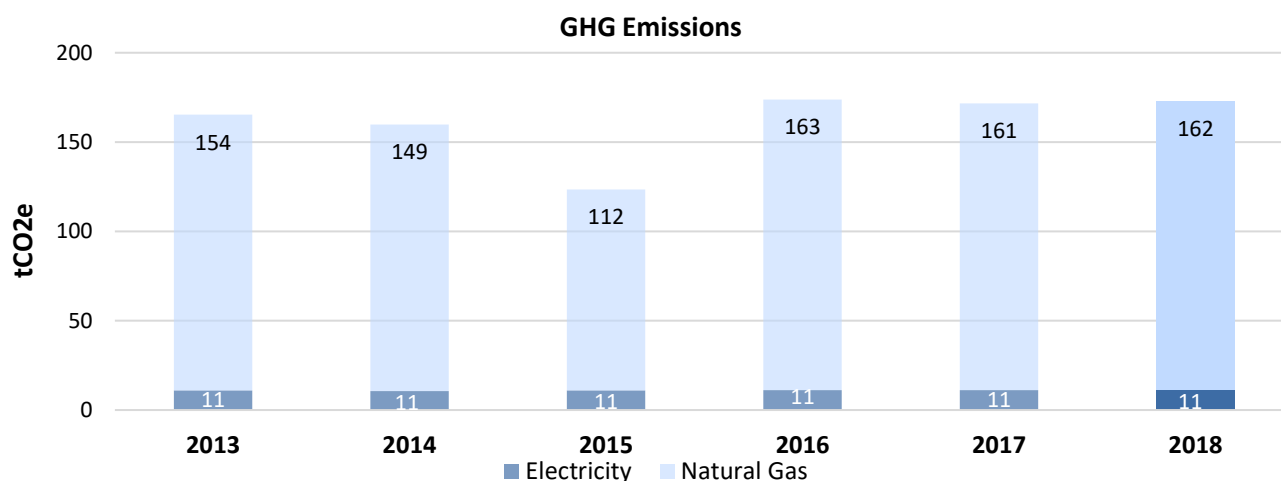
**Figure 9.** Historic Annual Utility Consumption for the Community Program Centre

#### 4.2.2. GHG Emissions Analysis

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

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2013	2014	2015	2016	2017	2018
<b>Electricity</b>	11	11	11	11	11	11
<b>Natural Gas</b>	154	149	112	163	161	162
<b>Totals</b>	<b>165</b>	<b>160</b>	<b>123</b>	<b>174</b>	<b>172</b>	<b>173</b>

**Table 12.** Historic Annual Greenhouse Gas Emissions for the Community Program Centre



**Figure 10.** Historic Annual Greenhouse Gas Emissions for the Community Program Centre

#### 4.2.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. The Community Program Centre's proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. These measures will remain in place until a more efficient and cost-effective technology is found.

Measure	Impacted Utility	Estimated Annual Savings		Simple Payback (years)	Year of Implementation
		kWh	m3		
AHU Replacement	Natural Gas & Electricity	4,060	1.699	133.73	2020
<b>Total</b>		<b>4,060</b>	<b>1.699</b>		

*Table 13. Proposed Conservation Measures for the Community Program Centre*

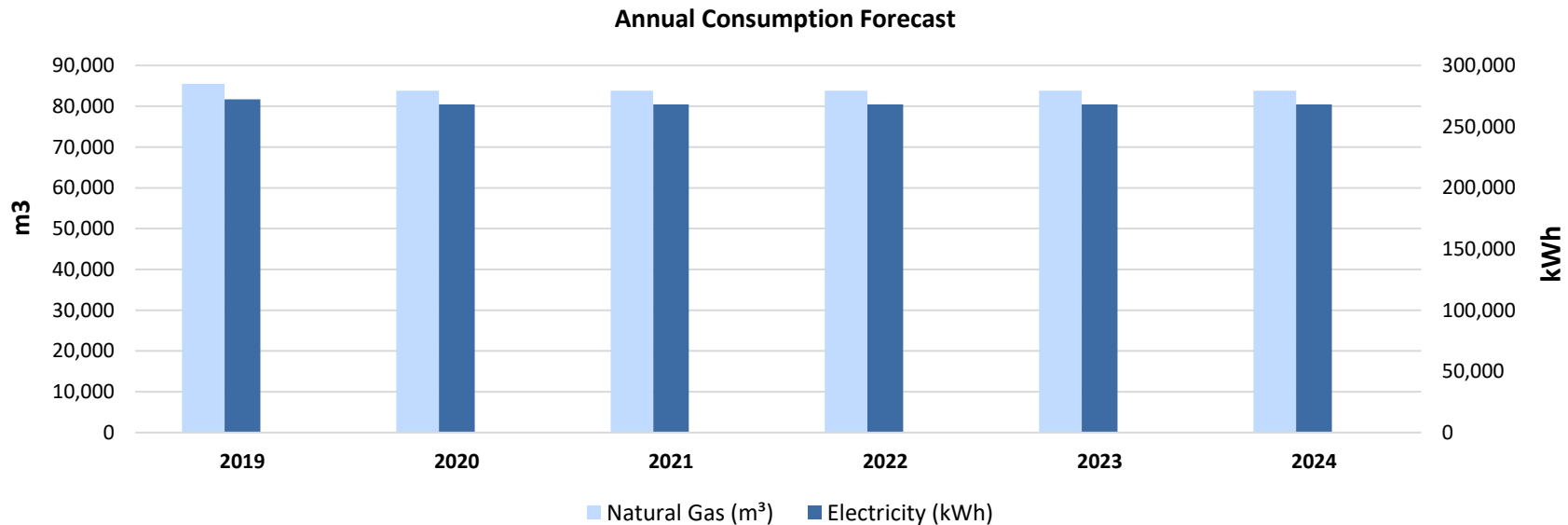


#### 4.2.4. Utility Consumption Forecast

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 2018.

Annual Consumption												
	2019		2020		2021		2022		2023		2024	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	272,346	0%	268,285	1%	268,285	1%	268,285	1%	268,285	1%	268,285	1%
Natural Gas (m <sup>3</sup> )	85,495	0%	83,796	2%	83,796	2%	83,796	2%	83,796	2%	83,796	2%

*Table 14. Forecast of Annual Utility Consumption for the Community Program Centre*



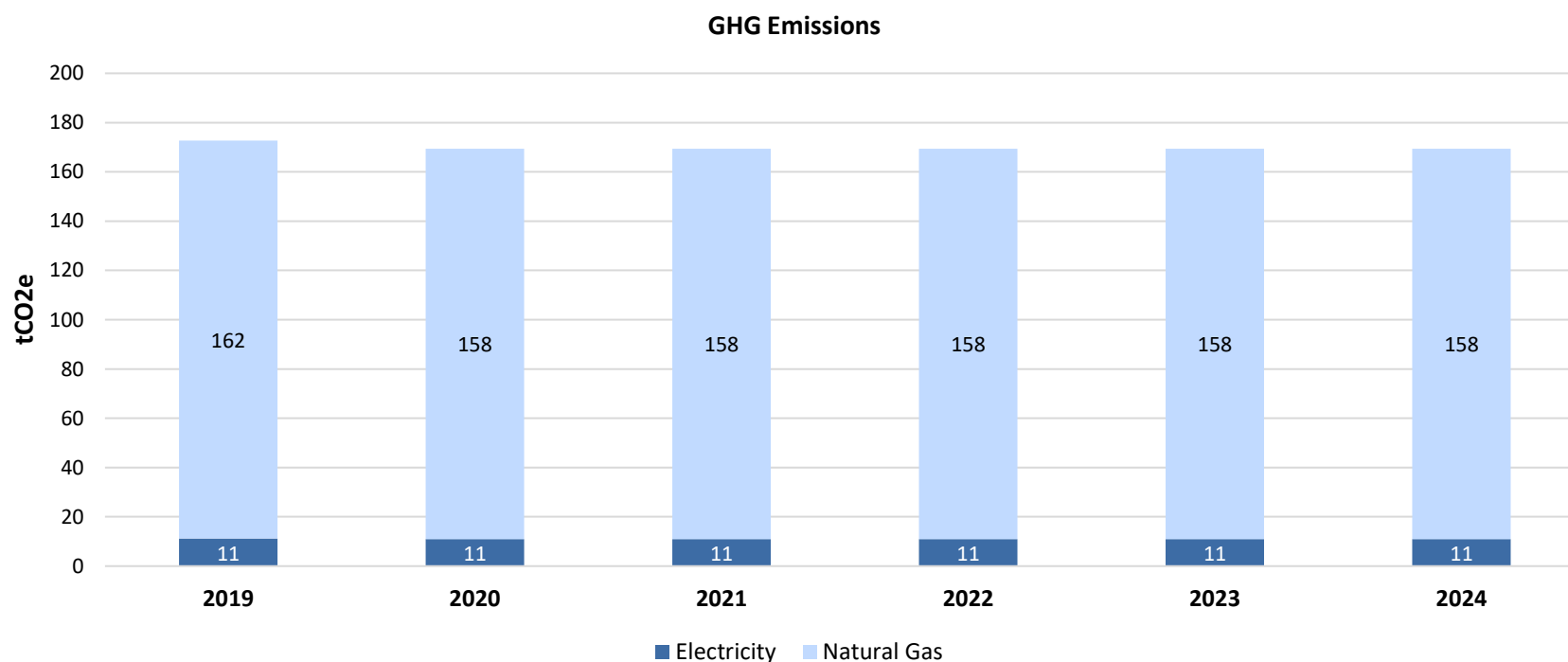
*Figure 11. Forecast of Annual Utility Consumption for the Community Program Centre*

#### 4.2.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for the Community Program 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 2018.

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2019	2020	2021	2022	2023	2024
Electricity	11	11	11	11	11	11
Natural Gas	162	158	158	158	158	158
<b>Totals</b>	<b>173</b>	<b>169</b>	<b>169</b>	<b>169</b>	<b>169</b>	<b>169</b>
Reduction from Baseline Year (2018)	0.00%	1.96%	1.96%	1.96%	1.96%	1.96%

*Table 15. Forecast of Annual Greenhouse Gas Emissions for the Community Program Centre*



*Figure 12. Forecast of Annual Greenhouse Gas Emissions for the Community Program Centre*

### 4.3. Morning Star Centre



*Picture 3. Morning Star Centre*

Facility Information	
Facility Name	<b>Morning Star Centre</b>
Facility Type	Healthcare Services
Address	6 Matheson Street South, Kenora, ON
Gross Area (Sq. Ft)	8,240
Average of Operational Hours in a Week	168
Number of Floors	1

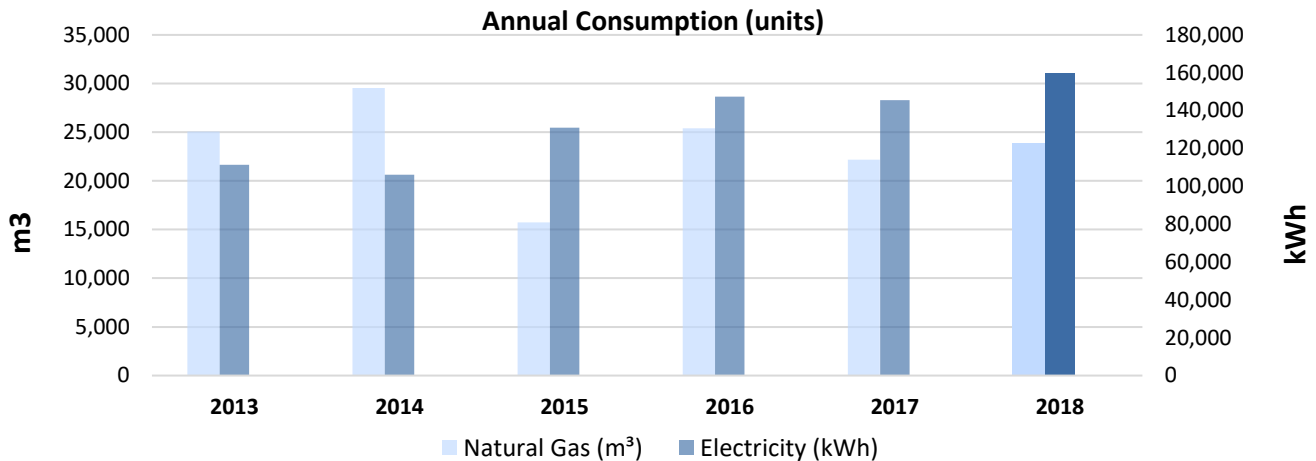
*Table 16. Morning Star Centre Facility Information*

#### 4.3.1. 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).

Annual Consumption (units)						
Utility	2013	2014	2015	2016	2017	2018
<b>Electricity (kWh)</b>	111,303	106,182	130,958	147,399	145,603	159,683
<b>Natural Gas (m<sup>3</sup>)</b>	25,085	29,538	15,732	25,392	22,167	23,884

*Table 17. Historic Annual Utility Consumption for the Morning Star Centre*



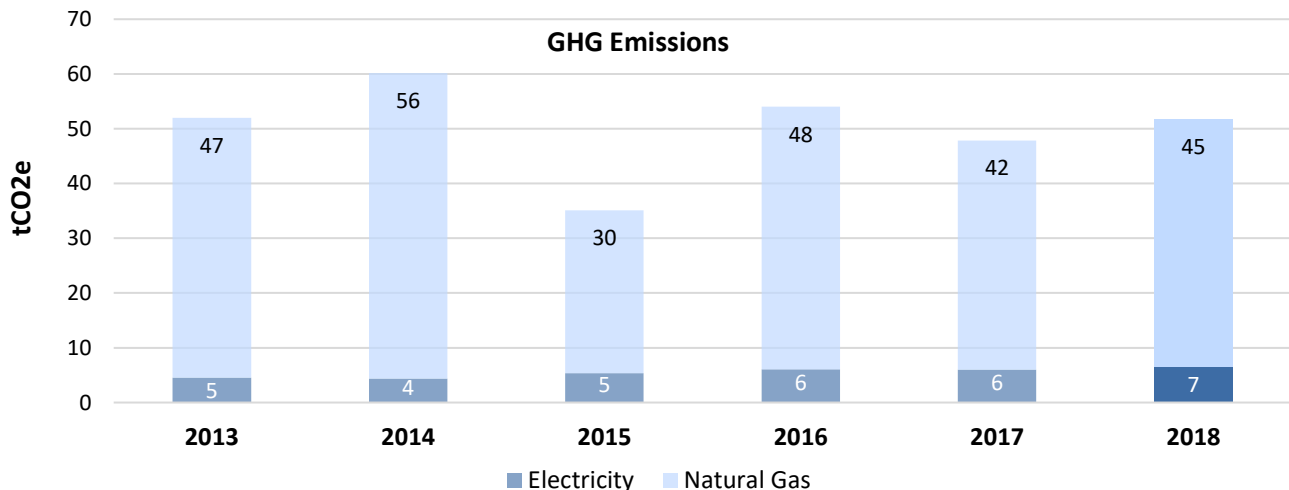
*Figure 13. Historic Annual Utility Consumption for the Morning Star Centre*

#### 4.3.2. GHG Emissions Analysis

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

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2013	2014	2015	2016	2017	2018
<b>Electricity</b>	5	4	5	6	6	7
<b>Natural Gas</b>	47	56	30	48	42	45
<b>Totals</b>	<b>52</b>	<b>60</b>	<b>35</b>	<b>54</b>	<b>48</b>	<b>52</b>

*Table 18. Historic Annual Greenhouse Gas Emissions for the Morning Star Centre*



*Figure 14. Historic Annual Greenhouse Gas Emissions for the Morning Star Centre*

### 4.3.3. Proposed Conservation Measures

Our energy analysis has revealed several conservation strategies for the facility. The Morning Star Centre's proposed energy and water saving initiatives are summarized in the table below outlining the targeted utilities. These measures will remain in place until a more efficient and cost-effective technology is found.

Measure	Impacted Utility	Estimated Annual Savings		Simple Payback (years)	Year of Implementation
		kWh	m3		
Exterior Lighting Retrofit	Electricity	645	0	5.00	2020
<b>Total</b>		<b>645</b>	<b>0</b>		

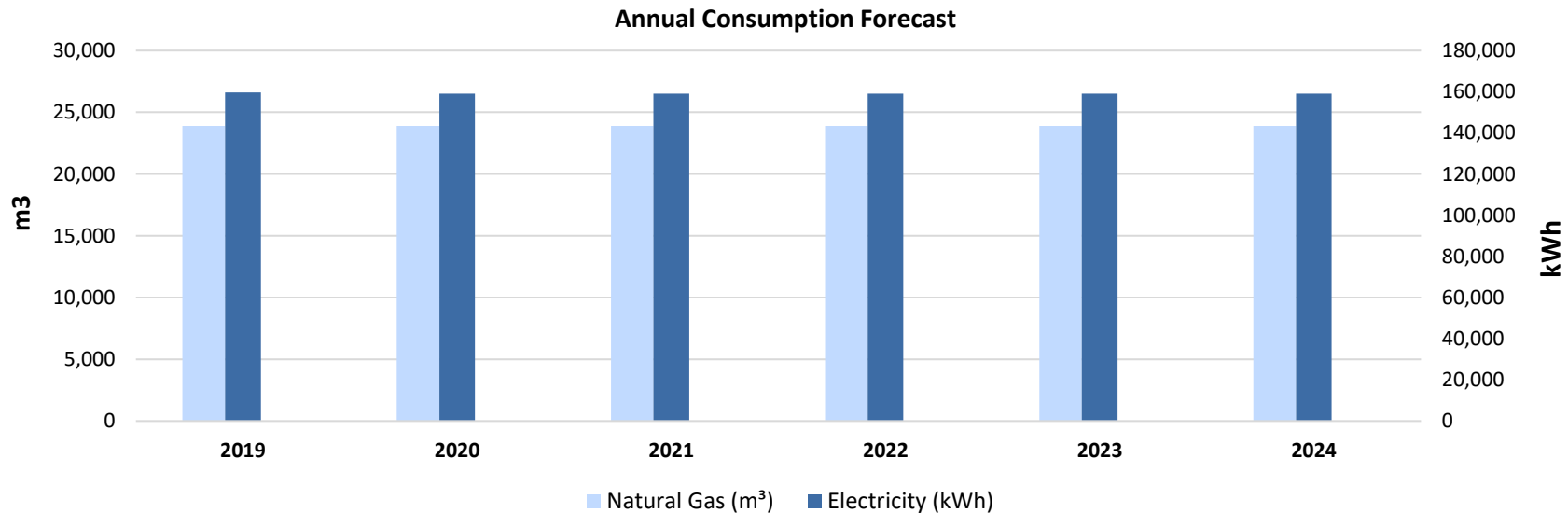
*Table 19. Proposed Conservation Measures for the Morning Star Centre*

#### 4.3.4. 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 2018.

Annual Consumption												
	2019		2020		2021		2022		2023		2024	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	159,683	0%	159,038	0%	159,038	0%	159,038	0%	159,038	0%	159,038	0%
Natural Gas (m <sup>3</sup> )	23,884	0%	23,884	0%	23,884	0%	23,884	0%	23,884	0%	23,884	0%

*Table 20. Forecast of Annual Utility Consumption for the Morning Star Centre*



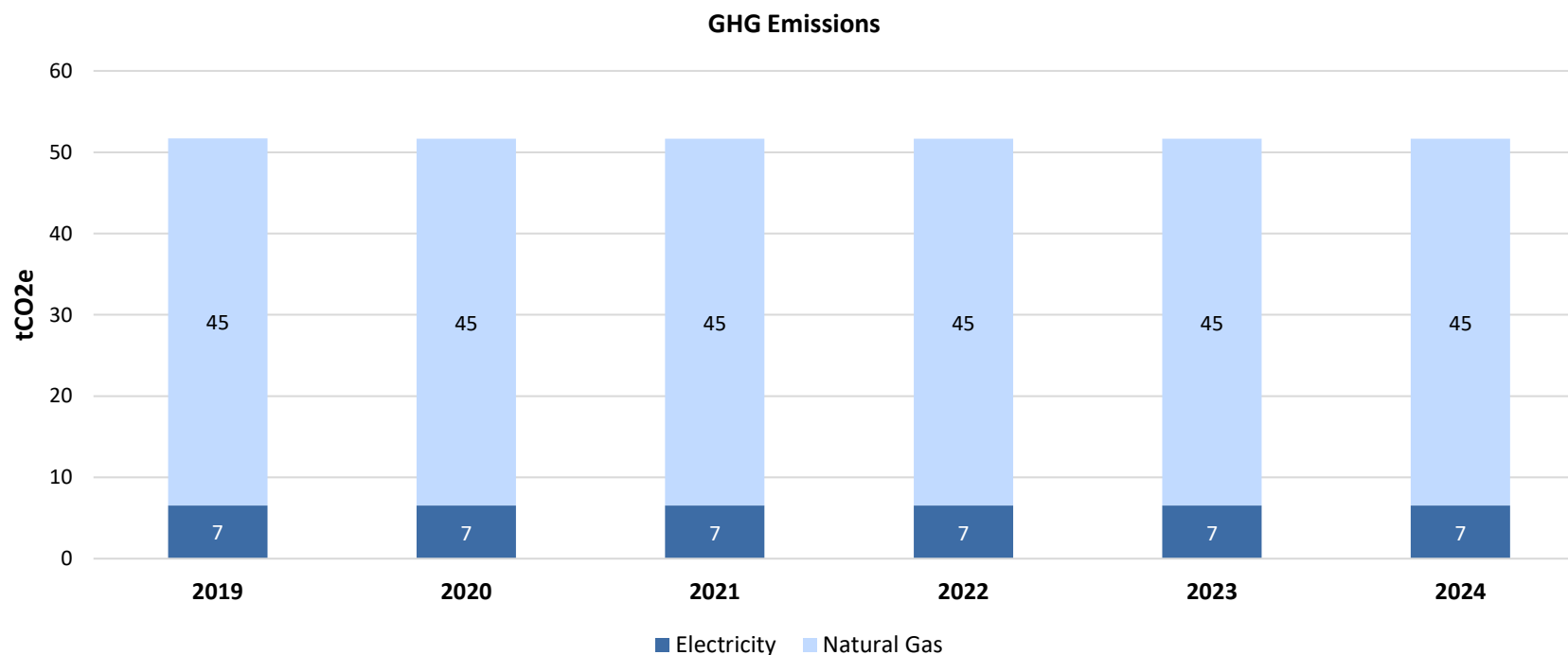
*Figure 15. Forecast of Annual Utility Consumption for the Morning Star Centre*

#### 4.3.5. GHG Emissions Forecast

The forecasted greenhouse gas emissions for the Morning Star 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 2018.

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2019	2020	2021	2022	2023	2024
Electricity	7	7	7	7	7	7
Natural Gas	45	45	45	45	45	45
<b>Totals</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>
Reduction from Baseline Year (2018)	0%	0%	0%	0%	0%	0%

*Table 21. Forecast of Annual Greenhouse Gas Emissions for the Morning Star Centre*



*Figure 16. Forecast of Annual Greenhouse Gas Emissions for the Morning Star Centre*

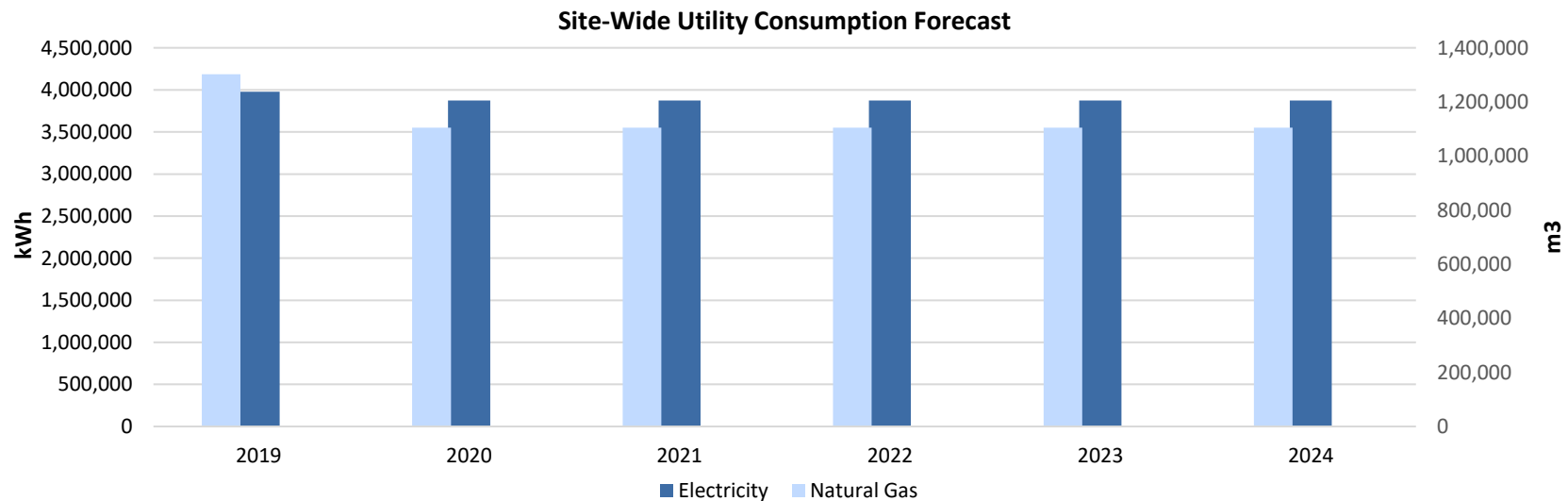
## 5. Site Outlook

### 5.1. Site-Wide Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous sections, in each respective site, Lake of the Woods District Hospital's site-wide projected electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The site-wide forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2018.

	Annual Consumption											
	2019		2020		2021		2022		2023		2024	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	3,979,699	0%	3,872,994	3%	3,872,994	3%	3,872,994	3%	3,872,994	3%	3,872,994	3%
Natural Gas (m <sup>3</sup> )	1,302,576	0%	1,105,187	15%	1,105,187	15%	1,105,187	15%	1,105,187	15%	1,105,187	15%

*Table 22. Forecast of Annual Utility Consumption for all Sites*



*Figure 17. Forecast of Annual Utility Consumption for all Sites*

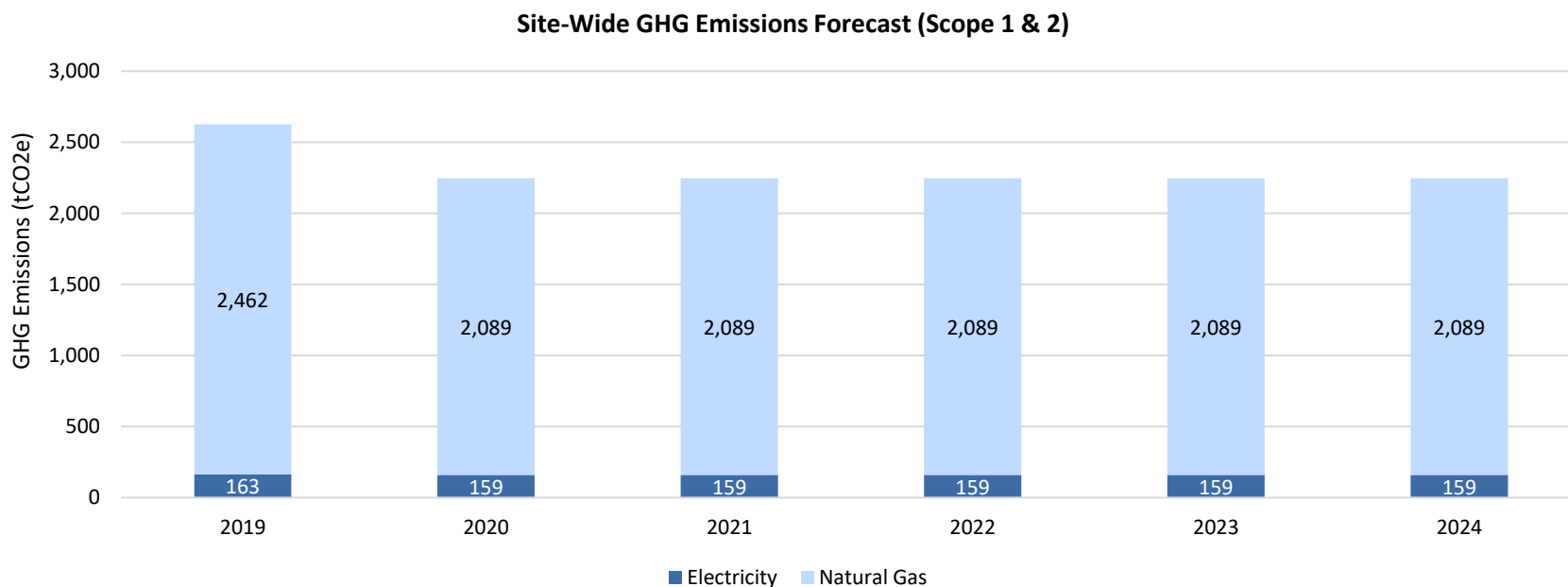


## 5.2. Site-Wide GHG Emissions Forecast

The site-wide forecasted greenhouse gas emissions for Lake of the Woods District Hospital are calculated based on the site-wide 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 2018.

GHG Emissions (tCO <sub>2</sub> e)						
Utility Source	2019	2020	2021	2022	2023	2024
<b>Electricity</b>	163	159	159	159	159	159
<b>Natural Gas</b>	2,462	2,089	2,089	2,089	2,089	2,089
<b>Totals</b>	<b>2,625</b>	<b>2,248</b>	<b>2,248</b>	<b>2,248</b>	<b>2,248</b>	<b>2,248</b>
Reduction from Baseline Year (2018)	0.00%	14.38%	14.38%	14.38%	14.38%	14.38%

*Table 23. Forecast of Annual Greenhouse Gas Emissions for all Sites*



*Figure 18. Forecast of Annual Greenhouse Gas Emissions for all Sites*

## 6. Closing Comments

Thank you to all who contributed to Lake of the Woods District Hospital'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 Lake of the Woods District Hospital, we approve this Energy Conservation & Demand Management Plan.

This ECDM plan was created through a collaborative effort between Lake of the Woods District Hospital and Blackstone Energy Services.

## 7. Appendix

### 7.1. 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	CO <sub>2</sub>	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	CO <sub>2</sub> e	CO <sub>2</sub> e 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 <a href="#">building</a> with zero net <a href="#">energy consumption</a> , meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of <a href="#">renewable energy</a> 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.

## 7.2. List of Pictures, Tables and Figures

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