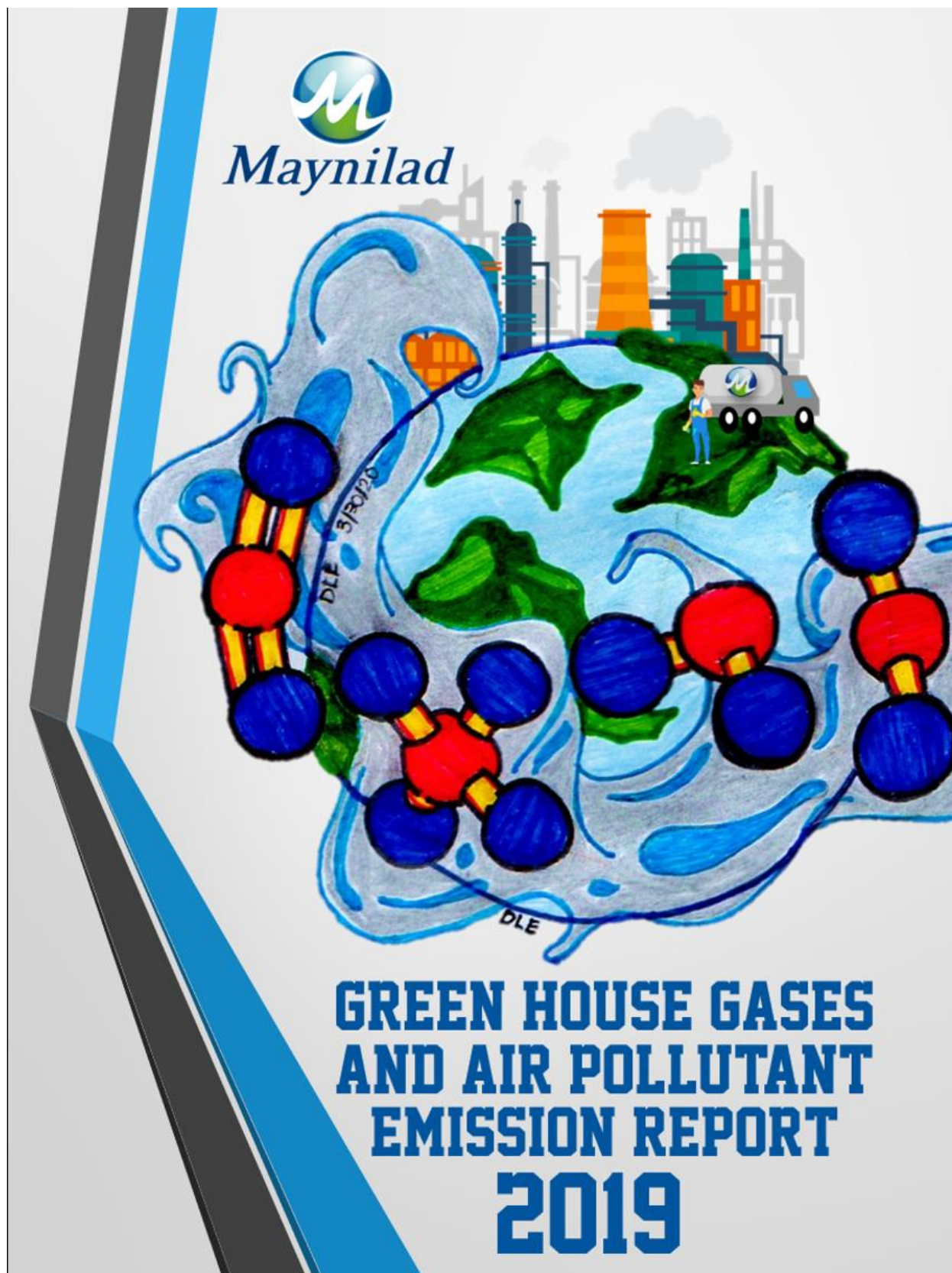


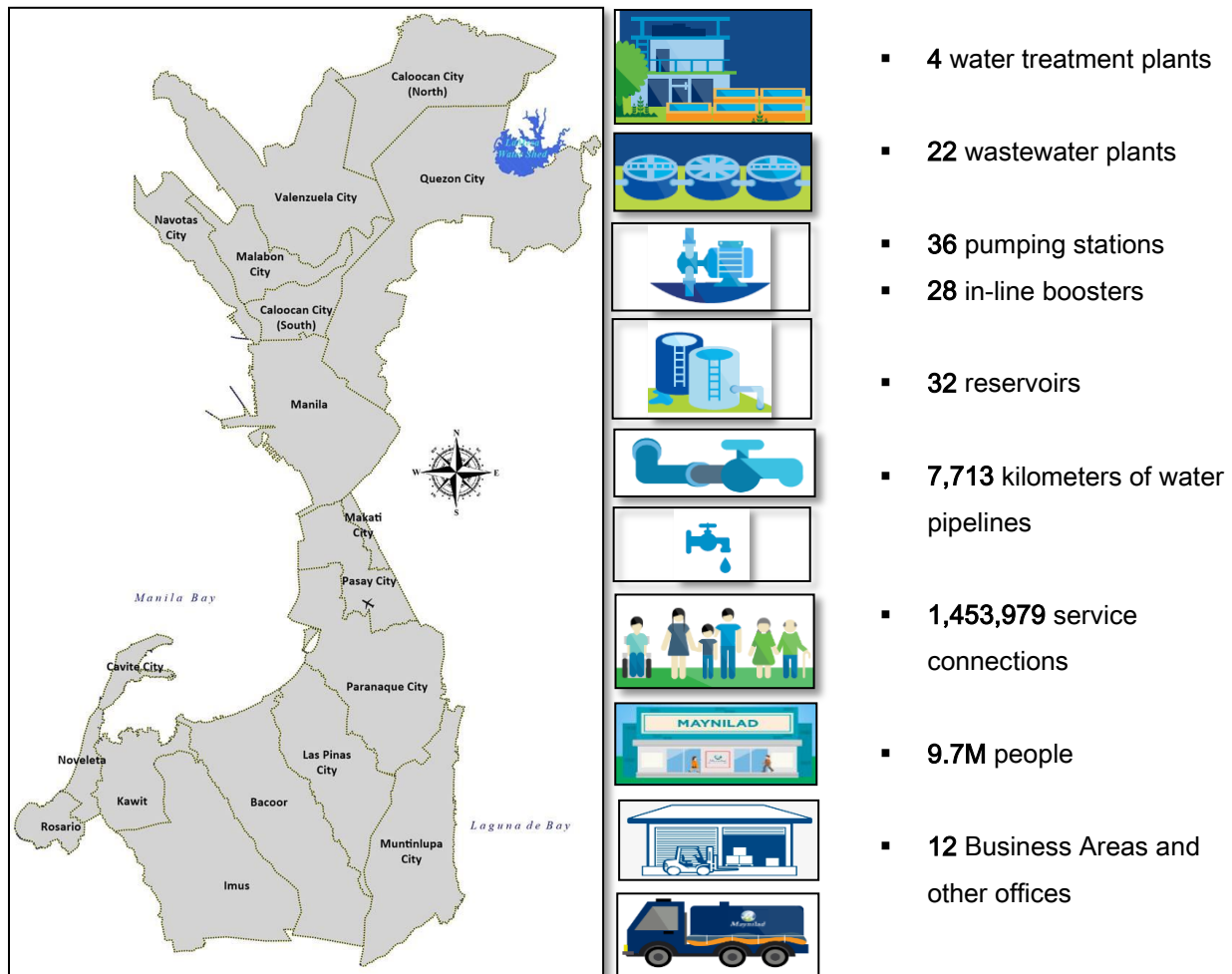
Maynilad GHG Emissions Report 2019



Maynilad GHG Emissions Report 2019

To help in mitigating our impacts on climate change we are increasing our understanding of our carbon footprint, investing in energy efficient technologies and promoting process efficiency. This greenhouse gases inventory serves as a guide for future reduction strategies as the company moves toward the long-term goal of carbon neutrality.

The map shows the supply and service coverage of Maynilad Service, the West Zone of Greater Metro Manila and the list of facilities:



Maynilad GHG Emissions Report 2019

Our Approach

Maynilad's GHG report was prepared in accordance with the content requirements of the ISO 14064-1:2006. The Inventory Management Plan, however, was based on the standard format that the World Resources Institute is promoting.

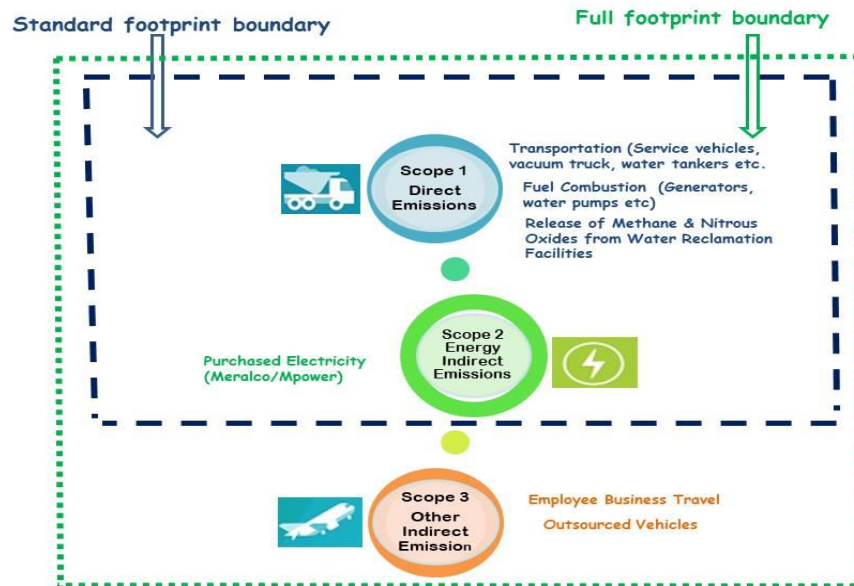


Figure 1: GHG Protocol classification of emissions

Organizational boundary

We have included emissions within the regulated activity of Maynilad Water Services Inc., where we have operational control.

Reporting period

Maynilad established the 2009 data as its base year

Intensity measurement

We have chosen 'Tonnes of CO₂e per mega litre' for water supply and waste water treated as our metrics for the GHG accounting starting 2009.

Data assurance

The carbon data has been externally verified and since 2009 inventory report we have met the requirements of the TUV Rheiland, having measured the greenhouse gas emissions in compliance with ISO 14064-1:2006.

Maynilad GHG Emissions Report 2019

PERFORMANCE

Operational Scopes

We have measured our Scope 1, Scope 2 and significant Scope 3 for business travel and outsourced transport.

Greenhouse gas emissions data and in a 3 year trend

Tonnes of CO _{2e}			
	2017	2018	2019
Scope 1	4,278.94	4,768.86	5,414.27
Scope 2	71,487.03	75,417.03	77,316.80
Total Annual Gross Emissions	75,765.97	80,185.89	82,731.07
Water Produced+ Treated Wastewater*	910,961.11	936,075.84	955,854.09
Tonnes CO_{2e} per MI water produced + water treated	0.0832	0.0857	0.0866

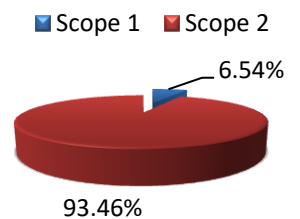
*It's only in 2018 and 2019 we included the volume of Wastewater treated in the calculation of GHG intensity

Tonnes of CO _{2e}			
	2017	2018	2019
Scope 1			
Vehicles	3,067.30	2,923.22	2,723.31
Engines	439.60	732.22	1,809.48
Process and Fugitive emissions	772.03	1,113.42	881.48
Total Scope 1	4,278.94	4,768.86	5,414.27
Scope 2			
Purchased Electricity	71,487.03	75,417.03	77,316.80
Total Scope 2	71,487.03	75,417.03	77,316.80
Significant Scope 3			
Business Travel	33.69	158.90	135.59
Vehicles contracted out	-	15.56	23.22
Total Significant Scope 3	33.69	174.45	162.82

82,731.07
TONNES (of CO_{2e})

Measurement of greenhouse gas emissions in compliance with ISO 14064.

% Distribution

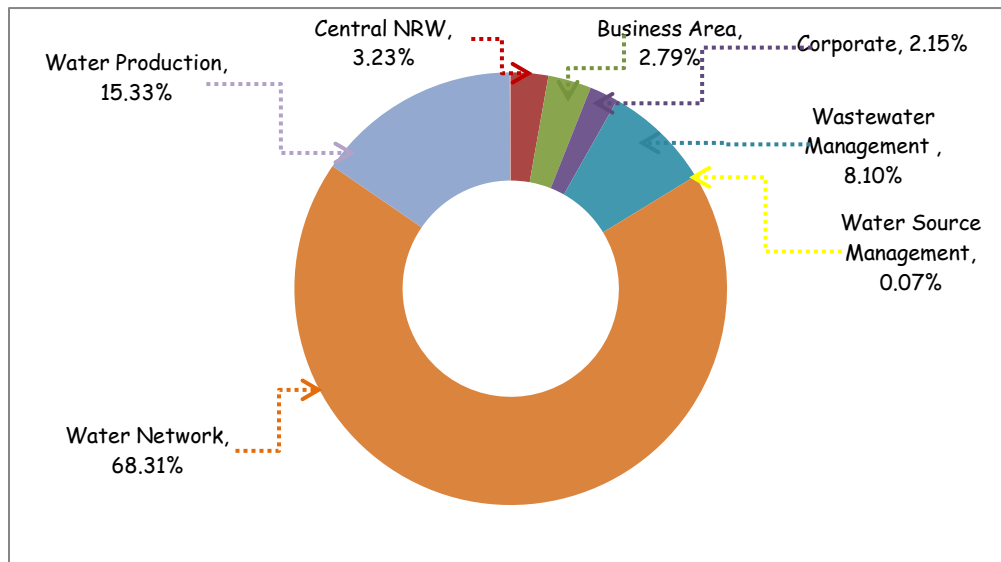


Maynilad GHG Emissions Report 2019

Changes in the Emission

Our gross annual carbon emissions have increased by 3.17% compared last year. The main influencing factor is the 13.97 % increase in the fuel consumption of vehicles and engines.

Operational Foot print per Business Unit



We recognize that a significant proportion of our carbon emissions (91.82%) are result of the provision of water and wastewater services to our customers. Only 8.18% of emissions are attributed to administration and support services.

Maynilad GHG Emissions Report 2019

Scope 1 Emission per Business Unit

	Fuel Vehicle	Fuel Engines	Emissions
Business Unit	Liters	Liters	Tonnes CO _{2e}
Business Area	567,182.74	30,292.35	1,564.89
Central NRW	158,262.78	5,711.07	703.31
Corporate	233,573.48	10,461.57	640.06
Wastewater	114,898.58	2,634.94	319.42
Water Network	88,078.27	138,647.37	248.16
Water Production	10,975.83	397,487.67	1,046.72
Water Source Management	1,507.00	2,545.34	10.24
Total	1,174,478.69	587,780.32	4,532.80

A total of 1,762,259.00 liters of fuel consumed for 2019 equivalent to 13.97% increase from 2018 fuel consumption of 1,546,189.13 liters. The main influencing factors include a 29.35% increase in consumption of fuel for internal combustion engines. These are the following:

- Recovery pumps used by La Mesa Treatment Plant 1 & 2 to maximize raw water intake
- Generators of Putatan Water Treatment Plant 1
- 10,000 liters accounted by the Administration for stationary engines
- 30,000 liters consumed by submersible pumps of Business Areas which was not accounted in 2018
- There is also an 8% increase in the use of fuel per vehicles due to water tankering and water rationing

Maynilad GHG Emissions Report 2019

Scope 2 Emissions per Business Unit

2019		
Business Unit	Power Consumption (KwH)	Emissions Tonnes CO ₂ e
Business Area	1,277,942.00	744.89
Central NRW	164,882.00	1,971.46
Corporate	1,957,359.99	1,140.91
Wastewater	9,437,245.00	5,500.80
Water Network	96,535,675.50	56,268.90
Water Production	20,083,984.81	11,638.24
Water Source Management	91,606.62	51.61
Total	129,548,695.92	77,316.80

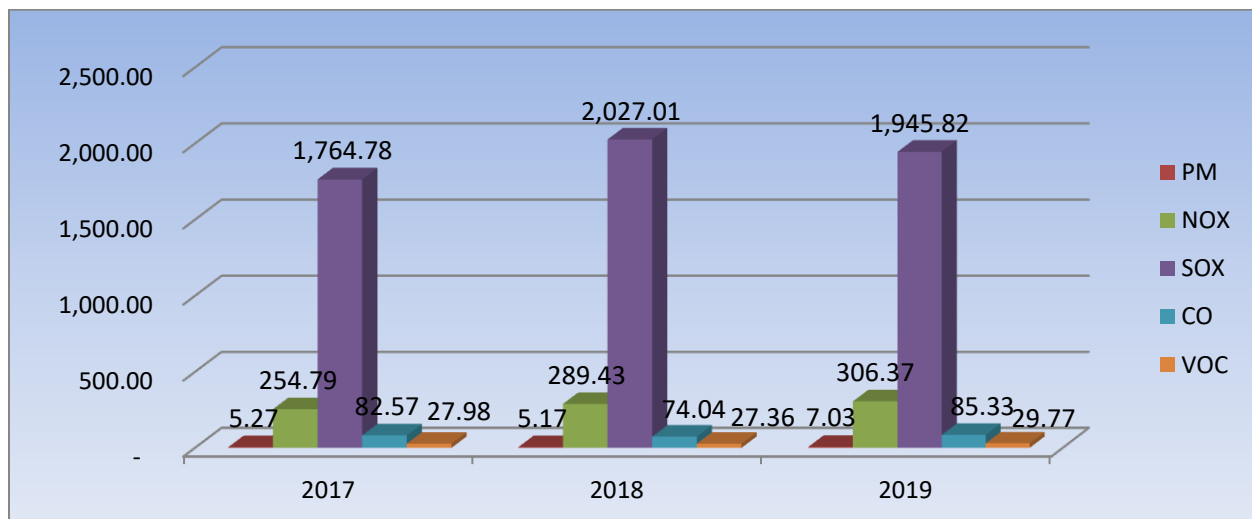
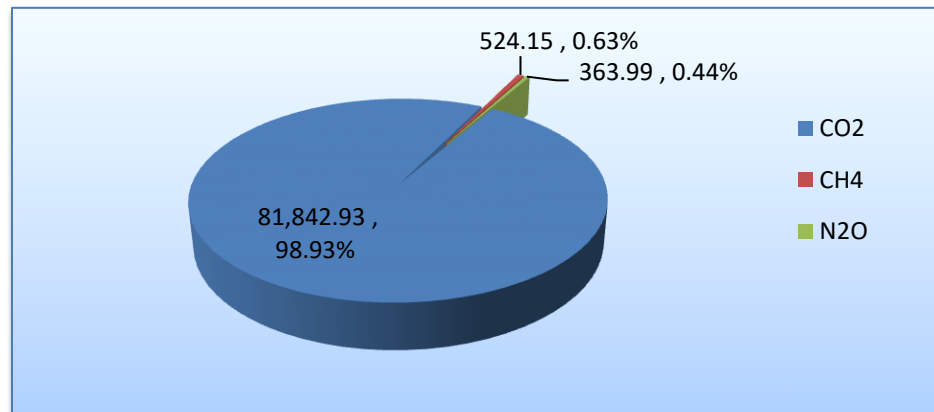
There is a 1.42% decrease in power consumption in 2019 compared with 2018.

Top 10 Facilities with Highest Power Consumption

Business Unit	2017	2018	2019	% Increase
La Mesa PS (Including North A & C Annex)	41,748,722.81	36,931,271.66	22,076,579.70	-40.22
Putatan Water Treatment Plant 1	15,652,217.60	15,903,919.40	16,584,458.36	4.28
Pagcor	14,347,678.08	14,996,366.43	13,391,218.93	-10.70
Putatan PS	11,057,037.00	10,765,520.00	10,875,302.64	1.02
Villamor	9,566,469.13	9,903,039.83	9,020,541.25	-8.91
Pasay PS	7,110,203.45	7,438,718.63	7,502,573.12	0.86
La Mesa Treatment Plant 1	2,409,371.97	2,347,680.14	2,004,331.78	-14.63
Tondo Pumping Plant	2,226,000.00	1,986,250.00	1,933,750.00	-2.64
Alazap PS	1,600,200.00	1,692,633.04	973,793.31	-42.47
La Mesa Treatment Plant 2	1,257,692.31	1,171,493.04	1,436,308.15	22.60

Maynilad GHG Emissions Report 2019

Break down of Emission per Pollutant



The project for accounting the GHG emissions for the year 2019 was successful in taking into account all the GHG emissions of Maynilad. Though there was an increase of 3.17% from the previous year (2018) which is mainly due to the continuing expansion of the company to serve its expanding customer base. This is however low compared with the percentage increase from 2017 to 2018 which is at 5.83%. The 5.83% increase was derived from 0.0857 tCO₂e/ML in 2018 to 0.0866 tCO₂e/MLD in 2019. That is considering volume of water (881,354.29 ML) and wastewater (74,499.80 ML) treated for a total volume of 936,075.84 million liters in 2019. Maynilad emission intensity was based on emissions from Scope 1 and Scope 2.

Maynilad GHG Emissions Report 2019

Emission Summary Tables

Company-wide

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	N2O (CO2e)	Total GHG (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	2,652.11	2.69	68.51	2,723.31	2.66	28.94	2.68	57.14	20.79
	Internal Combustion Engines (company-owned)	1,803.08	1.62	4.78	1,809.48	2.86	44.38	2.58	10.29	4.46
	Other Emissions (Scope 1)	382.10	499.38	-	881.48	-	-	-	-	-
	LPG									
	Acetylene									
	Others									
	Sub-total	4,837.29	503.69	73.29	5,414.27	5.52	73.33	5.26	67.43	25.25
Scope 2	Electricity Sub-total	77,005.64	20.46	290.70	77,316.80	1.50	233.04	1,940.56	17.90	4.52
TOTAL (Scope 1 and 2)		81,842.93	524.15	363.99	82,731.07	7.03	306.37	1,945.82	85.33	29.77
Scope 3	Vehicles (contracted-out)	22.66	0.02	0.54	23.22	0.02	0.15	0.02	0.33	0.17
	Business travel	138.13	0.00	1.46	139.59	-	12.91	-	7.14	-
	Internal Combustion Engines (contracted-out)									
	Other Emissions (Scope 3)									
	LPG									
	Acetylene									
	Others									
	Sub-total	160.79	0.02	2.00	162.82	0.02	13.05	0.02	7.47	0.17
TOTAL		82,003.72	524.17	365.99	82,893.89	7.05	319.42	1,945.84	92.80	29.93

Business Area

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	NO2 (CO2e)	Total GHGs (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	1,467.96	1.32	32.30	1,501.57	1.43	18.16	1.46	27.47	9.66
	Internal Combustion Engines (company-owned)	63.07	0.06	0.18	63.32	0.04	0.67	0.03	0.41	0.86
	Other Emissions (scope 1)	-	-	-	-	-	-	-	-	-
	LPG	-	-	-	-	-	-	-	-	-
	Acetylene	-			-					
	Others	-	-	-	-	-	-	-	-	-
	Sub-total	1,531.03	1.38	32.48	1,564.89	1.47	18.83	1.49	27.88	10.52
Scope 2	Electricity Sub-total	741.88	0.20	2.81	744.89	0.01	2.25	18.76	0.17	0.04
TOTAL (Scope 1 and 2)		2,272.91	1.57	35.29	2,309.78	1.48	21.08	20.25	28.05	10.57
Scope 3	Vehicles (contracted-out)	-	-	-	-	-	-	-	-	-
	Business travel	2.65	-	0.03	2.67		1.02		0.30	
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (scope 3)	-	-	-	-	-	-	-	-	-
	LPG	-	-	-	-	-	-	-	-	-
	Acetylene	-			-					
	Others	-	-	-	-	-	-	-	-	-
	Sub-total	2.65	-	0.03	2.67	-	1.02	-	0.30	-
TOTAL		2,275.56	1.57	35.32	2,312.45	1.48	22.10	20.25	28.36	10.57

Maynilad GHG Emissions Report 2019

Central NRW

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	NO2 (CO2e)	Total GHGs (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	25.15	0.02	0.60	25.77	0.03	0.31	0.03	0.44	0.20
	Internal Combustion Engines (company-owned)	675.16	0.60	1.78	677.54	1.28	18.16	1.19	3.91	1.44
	Other Emissions (scope 1)	-	-	-	-	-	-	-	-	-
	Sub-total	700.31	0.62	2.38	703.31	1.30	18.47	1.22	4.35	1.64
Scope 2	Electricity Sub-total	1,963.90	0.54	7.02	1,971.46	0.04	5.82	46.43	0.46	0.12
TOTAL (Scope 1 and 2)		2,664.21	1.16	9.39	2,674.77	1.35	24.29	47.65	4.81	1.75
Scope 3	Vehicles (contracted-out)	-	-	-	-	-	-	-	-	-
	Business travel	18.10	-	0.19	18.29	-	6.03	-	3.26	-
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (scope 3)	-	-	-	-	-	-	-	-	-
	Sub-total	18.10	-	0.19	18.29	-	6.03	-	3.26	-
TOTAL		2,682.31	1.16	9.59	2,693.06	1.35	30.32	47.65	8.08	1.75

Water Production

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	N2O (CO2e)	Total GHG (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	28.53	0.02	0.68	29.23	0.03	0.33	0.03	0.52	0.20
	Internal Combustion Engines (company-owned)	1,013.92	0.90	2.67	1,017.50	1.49	24.78	1.31	5.66	1.65
	Other Emissions (Scope 1)	-	-	-	-	-	-	-	-	-
	LPG	-	-	-	-	-	-	-	-	-
	Acetylene	-	-	-	-	-	-	-	-	-
	Others	-	-	-	-	-	-	-	-	-
	Sub-total	1,042.45	0.93	3.35	1,046.72	1.52	25.11	1.34	6.18	1.85
Scope 2	Electricity Sub-total	11,591.68	3.09	43.47	11,638.24	0.23	34.99	289.87	2.70	0.68
TOTAL (Scope 1 and 2)		12,634.13	4.02	46.82	12,684.96	1.75	60.10	291.21	8.88	2.53
Scope 3	Vehicles (contracted-out)	-	-	-	-	-	-	-	-	-
	Business travel	0.67	-	0.00	0.68	-	0.80	-	0.57	-
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (Scope 3)	-	-	-	-	-	-	-	-	-
	LPG	-	-	-	-	-	-	-	-	-
	Acetylene	-	-	-	-	-	-	-	-	-
	Others	-	-	-	-	-	-	-	-	-
	Sub-total	0.67	-	0.00	0.68	-	0.80	-	0.57	-
TOTAL		12,634.80	4.02	46.82	12,685.64	1.75	60.90	291.21	9.45	2.53

Maynilad GHG Emissions Report 2019

Corporate

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	NO2 (CO2e)	Total GHGs (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	602.35	0.58	14.65	617.58	0.63	5.29	0.64	14.35	5.39
	Internal Combustion Engines (company-owned)	22.39	0.02	0.06	22.47	0.02	0.29	0.02	0.14	0.26
	Other Emissions (scope 1)	-	-	-	-	-	-	-	-	-
	Sub-total	624.74	0.60	14.71	640.06	0.64	5.58	0.65	14.49	5.66
Scope 2	Electricity Sub-total	1,136.31	0.30	4.30	1,140.91	0.02	3.44	28.73	0.26	0.07
TOTAL (Scope 1 and 2)		1,761.05	0.91	19.01	1,780.97	0.67	9.03	29.38	14.76	5.72
Scope 3	Vehicles (contracted-out)	-	-	-	-	-	-	-	-	-
	Business travel	109.25	0.00	1.16	110.41	-	0.24	-	0.13	-
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (scope 3)	-	-	-	-	-	-	-	-	-
	Sub-total	109.25	0.00	1.16	110.41	-	0.24	-	0.13	-
TOTAL		1,870.29	0.91	20.17	1,891.37	0.67	9.27	29.38	14.89	5.72

Wastewater Management

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	NO2 (CO2e)	Total GHGs (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	296.87	0.32	15.85	313.03	0.26	2.98	0.29	6.50	1.33
	Internal Combustion Engines (company-owned)	6.36	0.01	0.02	6.39	0.01	0.14	0.01	0.04	0.03
	Other Emissions (scope 1)	382.10	499.38	-	881.48	-	-	-	-	-
	Sub-total	685.33	499.71	15.86	1,200.89	0.27	3.12	0.30	6.54	1.37
Scope 2	Electricity Sub-total	5,478.60	1.45	20.74	5,500.80	0.11	16.60	138.53	1.27	0.32
TOTAL (Scope 1 and 2)		6,163.93	501.16	36.61	6,701.69	0.38	19.72	138.83	7.81	1.69
Scope 3	Vehicles (contracted-out)	-	-	-	-	-	-	-	-	-
	Business travel	-	-	-	-	-	2.51	-	1.53	-
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (scope 3)	-	-	-	-	-	-	-	-	-
	Sub-total	-	-	-	-	-	2.51	-	1.53	-
TOTAL		6,163.93	501.16	36.61	6,701.69	0.38	22.23	138.83	9.35	1.69

Maynilad GHG Emissions Report 2019

Water Network

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	NO2 (CO2e)	Total GHGs (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	227.69	0.43	4.19	232.30	0.29	1.84	0.24	7.64	3.99
	Internal Combustion Engines (company-owned)	15.80	0.02	0.05	15.86	0.01	0.18	0.01	0.10	0.19
	Other Emissions (scope 1)	-	-	-	-	-	-	-	-	-
	Sub-total	243.48	0.44	4.23	248.16	0.30	2.03	0.25	7.74	4.18
Scope 2	Electricity Sub-total	56,041.86	14.87	212.18	56,268.90	1.08	169.79	1,417.02	13.02	3.29
TOTAL (Scope 1 and 2)		56,285.34	15.31	216.41	56,517.06	1.38	171.82	1,417.27	20.76	7.47
Scope 3	Vehicles (contracted-out)	-	-	-	-	-	-	-	-	-
	Business travel	1.70	-	0.02	1.72	-	0.76	-	0.33	-
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (scope 3)	-	-	-	-	-	-	-	-	-
	Sub-total	1.70	-	0.02	1.72	-	0.76	-	0.33	-
TOTAL		56,287.04	15.31	216.43	56,518.78	1.38	172.58	1,417.27	21.09	7.47

Water Source

Sources		GHG Emissions (tons)				Criteria Air Pollutants (tons)				
		CO2	CH4 (CO2e)	NO2 (CO2e)	Total GHGs (CO2e)	PM	NOx	SOx	CO	VOC
Scope 1	Vehicles (company-owned)	3.57	0.01	0.26	3.83	0.00	0.02	0.00	0.20	0.01
	Internal Combustion Engines (company-owned)	6.38	0.01	0.02	6.41	0.01	0.17	0.01	0.04	0.02
	Other Emissions (scope 1)	-	-	-	-	-	-	-	-	-
	Sub-total	9.95	0.02	0.27	10.24	0.01	0.18	0.01	0.24	0.03
Scope 2	Electricity Sub-total	51.41	0.01	0.18	51.61	0.00	0.15	1.22	0.01	0.00
TOTAL (Scope 1 and 2)		61.36	0.03	0.46	61.85	0.01	0.34	1.23	0.25	0.03
Scope 3	Vehicles (contracted-out)	22.66	0.02	0.54	23.22	0.02	0.15	0.02	0.33	0.17
	Business travel	5.77	-	0.06	5.83	-	1.53	-	1.01	-
	Internal Combustion Engines (contracted-out)	-	-	-	-	-	-	-	-	-
	Other Emissions (scope 3)	-	-	-	-	-	-	-	-	-
	Sub-total	28.43	0.02	0.60	29.05	0.02	1.67	0.02	1.34	0.17
TOTAL		89.79	0.05	1.06	90.89	0.03	2.01	1.25	1.59	0.20

Maynilad GHG Emissions Report 2019

Benchmarking Maynilad emissions with other water distribution/utility companies worldwide

Country	Company	GHG Emissions (tCO ₂ e)	Year	Water Production (million liters)	Waste water collected / treated ML	CO ₂ /water produced (tCO ₂ e/unit of production)
United Kingdom	Thames Water	257,900	2019	949,000	1,679,000	0.0981
Japan	Kurita Group	223,000	2019	no data available	N/A	N/A
Australia	Sydney Water	364,245	2019	566,000	518,000	0.3360
Australia	Water Corporation	575,000	2019	367,000	165,000	1.0808
Australia	Melbourne Water Corp	431,346	2019	461,000	305,000	0.5631
New Zealand	Water Care	34,628	2019	159,557	no data available	0.2170
Philippines	Maynilad	82,731.07	2019	881,354.29	74,500	0.0866
Philippines	Manila Water	178,577	2019	843,640	64,160	0.1967

Maynilad GHG Emissions Report 2019

CONTACTS



For further information on GHG emissions within
Maynilad Water Services Inc., please contact us at +632
89813436

Email us @

roel.espiritu@mayniladwater.com.ph
enrique.deguzman@mayniladwater.com.ph
chester.delrosario@mayniladwater.com.ph



COMPANY INFORMATION



Maynilad Water Services is a private water
company located in MWSS Compound Old
Balara, Quezon City 1119

