

University of Auckland Summary of Greenhouse Emissions 2019-2022

Activity	2019 Baseline			2020			2021			2022			Progress against baseline (%) (location-based method) 2019-2022	
	Quantity	Unit	Calculated emissions (t CO2e) (location-based method)	Quantity	Unit	Calculated emissions (t CO2e) (location-based method)	Quantity	Unit	Calculated emissions (t CO2e) (location-based method)	Quantity	Unit	Calculated emissions (t CO2e) (location-based method)		Calculated emissions (t CO2e) (market-based method)*
Work Related Travel (Air)														
Air travel domestic total (staff and students)	8,281,640.00	pkm	2,007.80	3,477,913.00	pkm	1,063.87	4,122,211.00	pkm	997.75	7,096,078.00	pkm	1,372.84		N/A
Air travel short haul total < 3700km (staff and students)	19,752,947.00	pkm	3,207.09	2,408,501.00	pkm	369.78	203,070.00	pkm	30.91	9,152,421.00	pkm	1,397.48		N/A
Air travel long haul total > 3700km (staff and students)	112,981,420.00	pkm	24,015.33	13,527,696.00	pkm	2,612.06	1,255,411.00	pkm	228.17	40,796,262.00	pkm	7,011.50		N/A
Work Related Travel (Air) SUBTOTAL	141,016,007.00	pkm	29,230.22	19,414,110.00	pkm	4,045.71	5,580,692.00	pkm	1,256.83	57,044,761.00	pkm	9,781.82		N/A
Work Related Travel (Other)														
Accommodation (NZ & International)	19,447.00	v.ngt	591.48	10,231.00	v.ngt	156.77	7,812.00	v.ngt	74.84	24,036.00	v.ngt	375.78		N/A
Rental Car average (diesel)	49,544.00	km	9.96	1,225.00	km	0.25	473.00	km	0.10	30,651.00	km	5.56		N/A
Rental Car average (hybrid)	799.00	km	0.13	-	km	-	-	km	-	5,873.00	km	0.86		N/A
Rental Car average (petrol)	315,964.00	km	65.35	58,698.00	km	12.37	44,671.00	km	9.41	242,292.00	km	44.99		N/A
Rental Car EV - average	-	km	-	863.00	km	0.02	-	km	-	51.00	km	0.00		N/A
Taxi (regular)	1,160,109.40	\$	86.67	482,454.24	\$	33.88	445,185.17	\$	31.26	864,230.52	\$	44.39		N/A
Work Related Travel (Other) SUBTOTAL	n/a	n/a	753.58	n/a	n/a	203.28	n/a	n/a	115.60	n/a	n/a	471.57		N/A
International Student Air Travel														
Air travel short haul < 3700km (International students inbound)	300,525.00	pkm	48.79	-	pkm	-	-	pkm	-	258,874.00	pkm	39.74		N/A
Air travel long haul > 3700km (International students inbound)	168,764,308.00	pkm	35,872.54	18,199.00	pkm	3.51	2,764,385.00	pkm	533.78	127,327,933.00	pkm	24,585.75		N/A
International Student Air Travel SUBTOTAL	169,064,833.00	pkm	35,921.33	18,199.00	pkm	3.51	2,764,385.00	pkm	533.78	127,586,807.00	pkm	24,625.50		N/A
Energy Including Fuel														
Electricity Toitū carbonzero certified factor*	808,493.00	kWh	7.96	805,952.00	kWh	-	806,888.76	kWh	-	9,840,325.00	kWh	388.43		-
Electricity (Purchased)*	70,179,484.00	kWh	7,717.09	65,008,970.00	kWh	7,806.69	64,415,420.58	kWh	7,751.86	58,126,546.00	kWh	4,659.91	2,248.82	-
NZ Energy Certificates Purchased (Offset)*	-	-	-	-	-	-	-	-	-	30,442,857.00	kWh	-	-	-
Natural Gas distributed commercial	26,427,303.00	kWh	5,146.61	27,408,761.10	kWh	5,337.74	25,121,641.67	kWh	4,892.34	24,430,224.00	kWh	4,727.97		N/A
Steam generation - Pre-calculated (tCO2e)	341.00	t	341.00	251.70	t	251.70	113.70	t	113.70	384.30	t	384.30		N/A
Diesel stationary combustion (Fire pumps)	1,480.40	L	4.01	1,543.00	L	4.11	551.06	L	1.47	1,486.00	L	4.00		N/A
Diesel (Fuel cards)	27,430.81	L	73.90	20,144.10	L	54.27	33,078.80	L	89.11	46,927.20	L	127.40		N/A
Diesel (Inter Campus Staff Shuttle)	10,915.00	L	29.40	-	L	-	-	L	-	-	L	-		N/A
Petrol (Fuel cards)	20,074.21	L	49.22	18,295.70	L	44.93	30,482.40	L	74.86	29,397.13	L	72.18		N/A
Diesel stationary combustion (Generators)	11,340.00	L	30.73	10,521.00	L	28.04	8,728.00	L	23.30	14,509.80	L	39.02		N/A
LPG stationary commercial	938.40	kg	2.84	636.00	kg	1.93	438.00	kg	1.33	426.00	kg	1.27		N/A
Bus travel (city) Tamaki - City loop Student Bus	350,020.00	pkm	29.98	-	pkm	-	-	pkm	-	-	pkm	-		N/A
Energy Including Fuel SUBTOTAL	n/a	n/a	13,432.75	n/a	n/a	13,529.40	n/a	n/a	12,947.95	n/a	n/a	10,404.46	2,248.82	-22.5
Transmission of energy (T&D losses)														
Electricity Toitū carbonzero certified factor (T & D losses)*	-	kWh	-	805,952.00	kWh	-	814,456.76	kWh	-	9,840,325.00	kWh	84.64		-
Electricity distributed T&D losses	70,987,977.00	kWh	842.39	65,008,970.00	kWh	716.65	64,552,384.54	kWh	711.61	58,126,546.00	kWh	499.98		N/A
Natural Gas distributed T&D losses	26,427,303.00	kWh	603.34	27,408,761.10	kWh	316.97	25,121,641.67	kWh	290.52	24,430,224.00	kWh	174.21		N/A
Transmission of energy (T&D losses) SUBTOTAL	97,415,280.00	kWh	1,445.73	93,223,683.10	kWh	1,033.61	90,488,482.97	kWh	1,002.13	92,397,095.00	kWh	758.83		-47.5
Waste														
Composting	108,126.00	kg	18.55	72,870.40	kg	12.50	100,755.90	kg	17.28	114,120.00	kg	20.04		N/A
Waste disposal recycling mixed total (Aluminium, glass, paper, plastic)	393,512.00	kg	583.85	268,025.90	kg	31.81	289,173.40	kg	6.37	423,406.00	kg	9.01		N/A
Waste landfilled total	1,604,824.00	kg	388.75	1,215,335.70	kg	217.08	1,108,957.00	kg	204.91	1,352,901.00	kg	243.80		N/A
Waste SUBTOTAL	2,106,462.00	kg	991.15	1,556,232.00	kg	261.39	1,508,886.30	kg	228.56	1,890,427.00	kg	272.85		N/A
Other Measures														
Paper use - default	170,520.00	kg	162.45	91,831.00	kg	84.43	67,177.00	kg	61.76	50,186.70	kg	46.14		N/A
Wastewater for treatment plants (average)	407,761.00	m3	186.13	352,203.00	m3	160.79	329,759.00	m3	158.16	337,083.61	m3	171.13		N/A
Water supply	436,912.00	m3	13.67	378,737.00	m3	11.90	354,400.00	m3	11.14	365,859.41	m3	13.51		N/A
Refrigerant totals	22,813.29	kg	185.96	21,173.70	kg	93.68	20,782.90	kg	153.55	23,286.25	kg	224.89		N/A
Enteric Fermentation Dairy Cattle	12.00	head	24.72	-	head	-	-	head	-	-	head	-		N/A
Enteric Fermentation Sheep	400.00	head	120.00	500.00	head	159.00	600.00	head	190.80	868.00	head	302.68		N/A
Freight (extended baseline)**	-	tkm	-	-	tkm	-	-	tkm	-	69,377.95	tkm	86.26		N/A
Working from home (extended baseline)**	-	epd	-	-	epd	-	-	epd	-	593,007.00	epd	216.29		N/A
Other Measures SUBTOTAL	n/a	n/a	692.93	n/a	n/a	509.80	n/a	n/a	575.41	n/a	n/a	1,060.91		N/A
TOTAL			82,467.70			19,586.71			16,660.26			47,375.94	44,491.78	-46.0

Unit Key: pkm (person kilometres), v.ngt (visitor nights), km (kilometres), \$ (New Zealand dollars), kWh (kiloWatt hours), t (tonnes), L (litres), m3 (cubic metres), head (animal count)

Note: Baseline 2019 - 2021 emissions for Grid electricity and T&D Losses were recalculated retrospectively due to the Ministry of Environment updating the emission factors in 2022

*All electricity emissions are dual reported using location-based method and market-based method. Dual reporting illustrates the role of supplier choice, onsite renewable energy generation and contractual instruments in managing indirect emissions from energy alongside any ongoing energy efficiency and reduction efforts.

**Freight and 'Working From Home' (WFH) data have been added to the inventory from 2022 so these activities have an extended baseline starting from 2022. The methodology for data collection is in early stages of reporting maturity.