



# Carbon footprint & year overview

Financial year 2021



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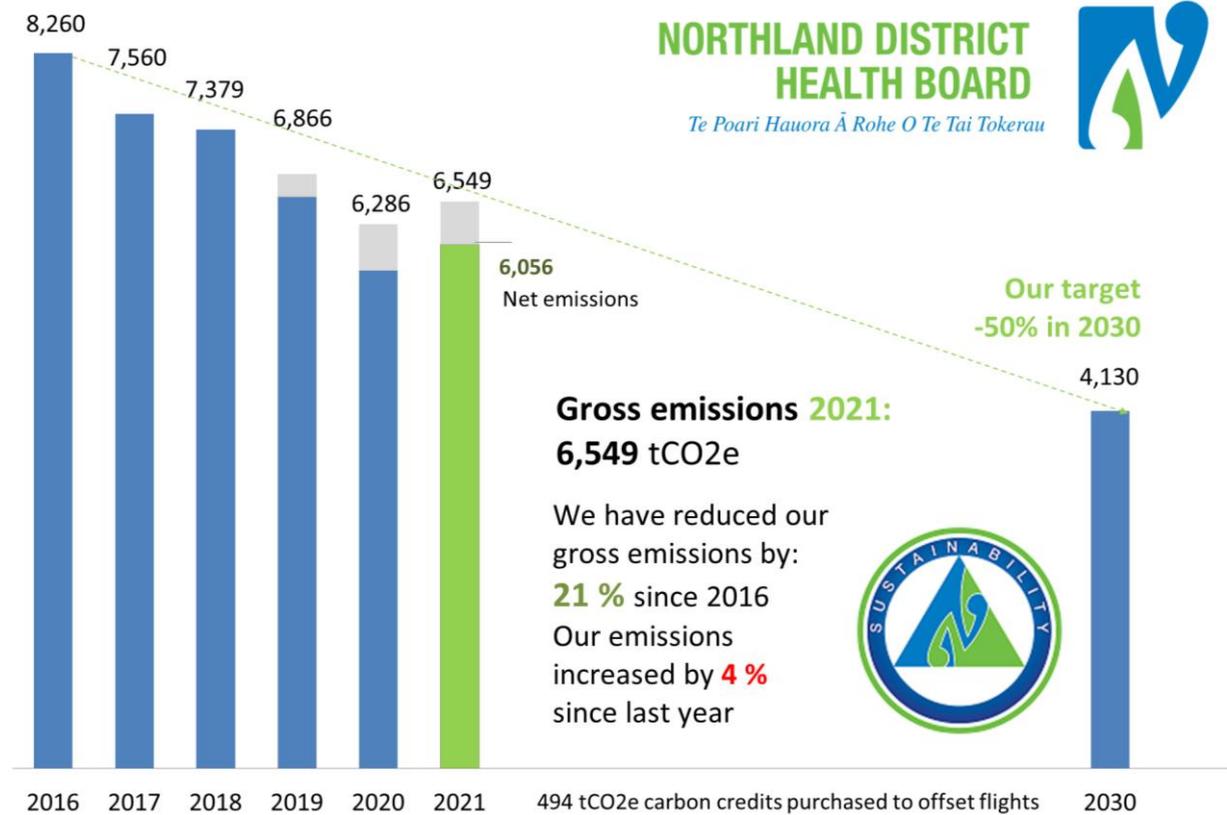


**HEALTH CARE**  
Climate Challenge

2020 Gold Award – Greenhouse Gas Reduction (energy)

This carbon footprint for the Northland District Health Board (DHB) has been calculated for the financial reporting year from 1 July 2020 until 30 June 2021.

## Northland DHB breaks its successful run with, for the first time in five years, a carbon emission increase of 4 percent



Northland DHB's emissions for 2021 were 6,549 tCO2e. This is four percent higher than 2020 but 21 percent lower than the benchmark year 2016.

Patient activity increased by eight percent in 2021 compared with 2020.

With a target to halve Northland DHB emissions in 2030, even with this year's increase, the current emission reduction rate is below the allocated carbon budget. We remain on track to achieve this.

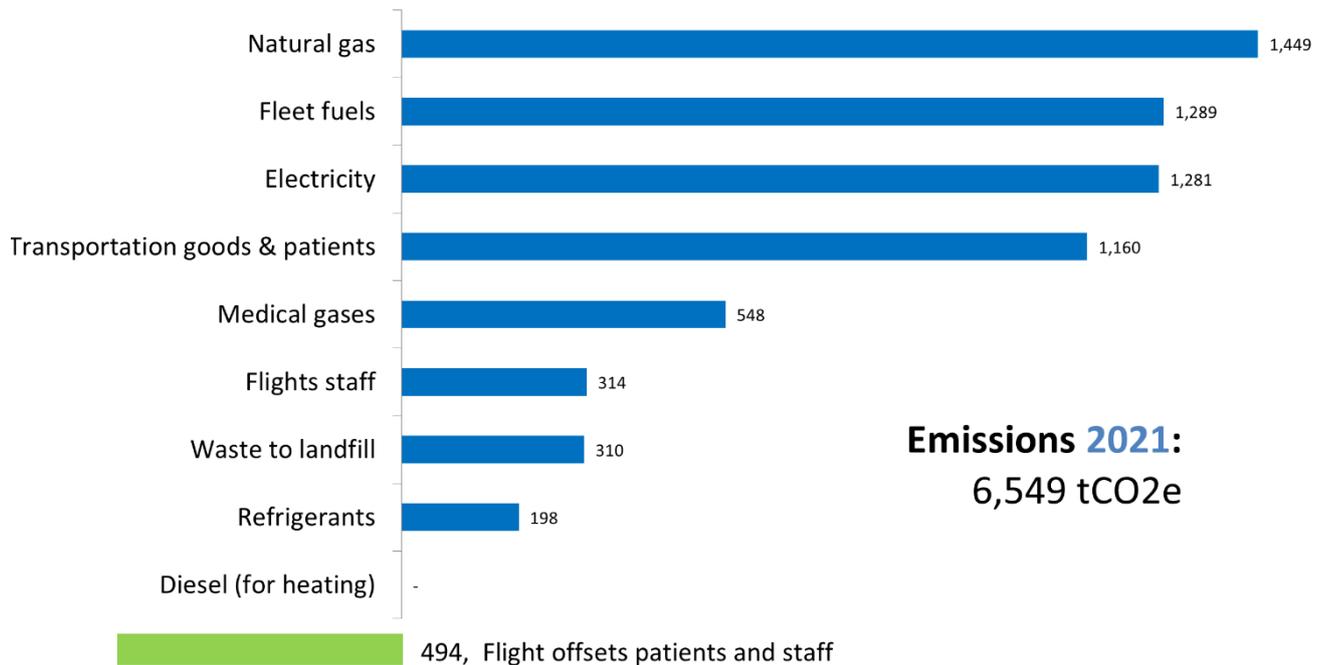
Northland DHB  
emissions down  
21% compared  
with 2016





## Our emissions

### 2021 Northland DHB Carbon Emissions [tCO<sub>2</sub>e]



**Emissions 2021:**  
6,549 tCO<sub>2</sub>e

## New inclusions and changes to the emissions inventory

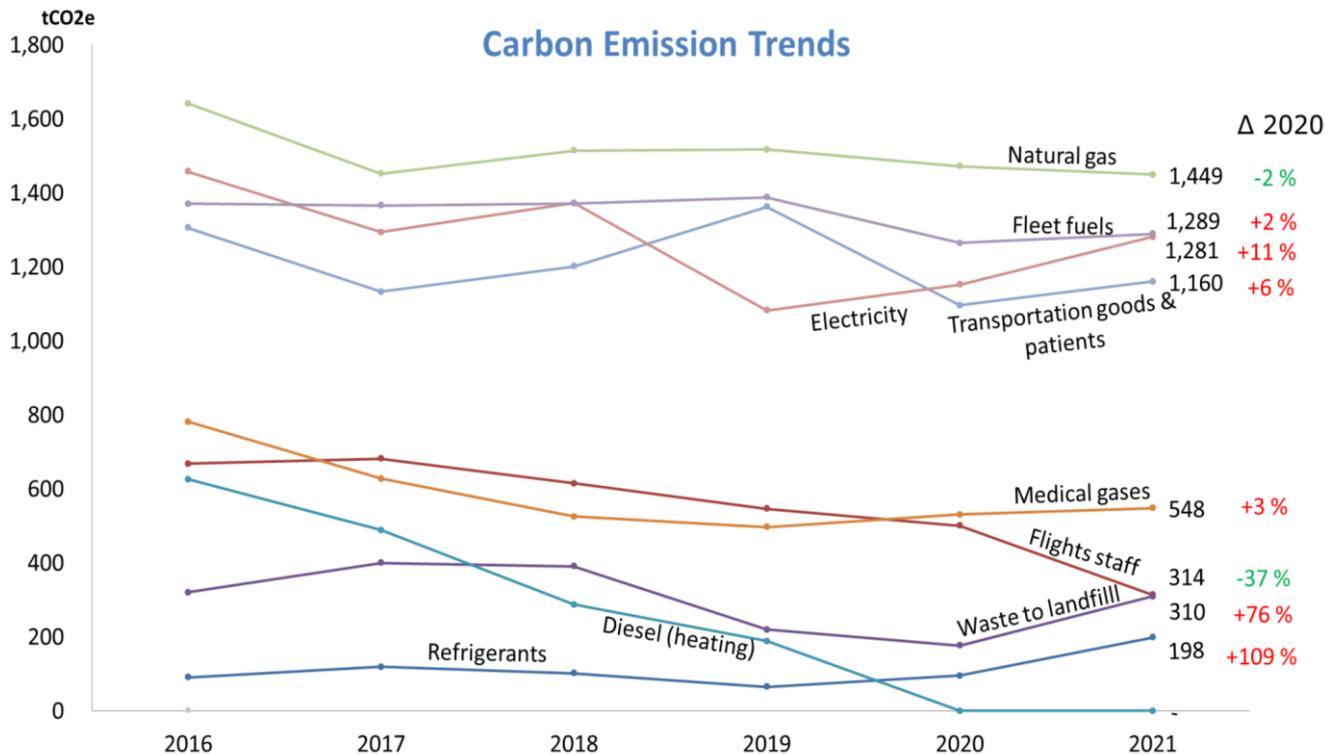
- Waste from sharps has been added as a source to include in waste volumes this year, and previous years have been corrected;
- Energy consumption from new additions to the Whangārei Hospital campus is included. These include a new Endoscopy Suite, a Cardiac Catheter Laboratory and two new theatres.

## Emission trends

- Natural gas consumption used for steam, hot water and ambient heating in the hospital and laundry remains the largest emission category with a reasonably stable load over the years;
- Fleet fuel consumption increased by two percent but is still significantly lower than earlier years. Most of the increase was due to more diesel consumption for the transport of renal dialysis patients. Videoconferencing activity remains on the rise, and another two e-bikes were added to the fleet, which now totals six;
- Electricity consumption increased significantly by eleven percent. Half of the increase in emissions is due to higher national grid and distribution emission factors. The other half is due to a rise in consumption. The increase in consumption of over 0.5 GWh was centred at the Whangārei Hospital Campus with additional buildings added and likely some impacts from COVID-19 activity;
- The transportation of goods & patients category, with an overall increase in emissions of six percent, consists of the distribution of goods and patient travel by ambulance, helicopter, flights, bus and the most dominant contribution National Travel Assistance



(NTA) claims of patients travelling in their own cars, mostly to Auckland. Ambulance and helicopter emissions dropped. The most dominant source in this category was an increase in patient NTA travel claims, which totalled 2.5 million kilometres reimbursed. This is still a quarter lower compared to pre-covid levels;



- Medical gases include Nitrous Oxide, Entonox, Carbon Dioxide, Desflurane and Sevoflurane. The Anaesthetic team have done an excellent job over the last five years to reduce emissions from Desflurane. Our emissions from medical gases consist of 93percent out of nitrous oxide, which is used predominantly in maternity and ED for pain relief. These emissions have increased over the last four years every year causing an increase in medical gas emissions of three percent;
- Staff flights showed an unsurprising significant reduction in passenger kilometres flown, resulting in 37 percent lower emissions. Half of the air travel emissions are from the Kaitaia doctor's plane. The other half of air travel emissions consists for two thirds out of domestic flights;
- Waste to landfill together with refrigerants saw the most significant increase in emissions. This is partly explained by a 28 percent increase in national landfill emission factors but never before since reporting emissions had the DHB seen such an increase in waste volumes to landfill. The significant increase was across all hospitals and new buildings, both for medical waste, general waste and sharps waste streams. The most significant increase in waste was from Whangārei Hospital. Besides an increase in activity and COVID implications there was also a lot of construction waste from the building projects. On a positive note, the executive team approved the establishment of a circular economy and waste minimisation role to tackle our waste volumes;
- Refrigerant emissions increased significantly due to some large chiller repairs and new installs. The introduction of more R32 low emission refrigerants continued;
- With the diesel boiler conversions to electric heat pumps in the district hospitals completed in the previous years since 2020, no diesel for stationary heating has been ordered by the DHB.



## Funding for 150 Electric vehicles

\$4.3 million in funding

State sector decarbonisation funding was approved to convert halve of the fleet cars to electric vehicles and install charging stations.

Two more e-bikes were added to the fleet of six e-bikes.

## 2021 SUSTAINABILITY HIGHLIGHTS

### 2020 Health Care Climate Challenge Awards

Winner Greenhouse Gas Reduction

Northland DHB was the winner in the energy Greenhouse Gas reduction category for the Pacific region in the 2020 Climate Challenge awards of Health Care Without Harm.



Health Care Without Harm presents the following award to

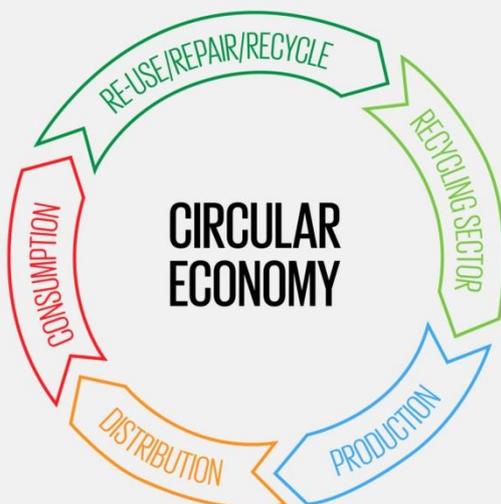
**Northland District Health Board**

Gold - Greenhouse Gas Reduction (Energy)

*Nick Thorp*  
Nick Thorp  
GG&H National Director  
Health Care Without Harm



*Josh Karliner*  
Josh Karliner  
International Director of Program and Strategy  
Health Care Without Harm



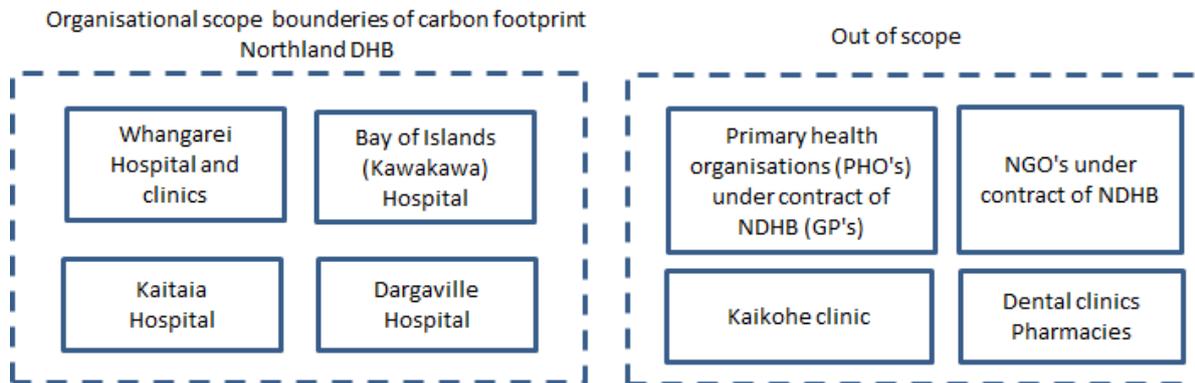
### Circular Economy and Waste Minimisation role

The creation of a new role was approved to accelerate the transition to a circular economy and minimise our healthcare waste.



## The organisation and the organisational boundaries

The Northland District Health Board is a Crown Agent and is responsible for providing or funding the provision of health and disability services for the people of Northland. Acute services are provided through the DHB's four hospitals, supplemented by a network of community-based, outpatient and mental health services.



The operational control consolidation approach has been used to account for operational emissions, and the boundary has been set around the hospitals of Whangārei, Bay of Islands (Kawakawa), Dargaville and Kaitāia. Outside the scope of the footprint are general practices, NGO's under contract of the Northland DHB, dental clinics, pharmacies and clinics outside the four main hospital towns.

## Emissions factors and emission source exclusions

The emission factors from the Ministry of the Environment 2020 detailed guide, Measuring Emissions a Guide for Organisations, have been used to calculate this carbon footprint. The following mandatory emissions sources were excluded from the inventory:

GHG emissions source	GHG emissions level scope	Reason for exclusion
Postage and couriers	Scope 3 Mandatory	De minimis (insignificant)
Rental cars	Scope 1 Mandatory	De minimis (insignificant)
Private cars (staff mileage claims)	Scope 3 Mandatory	De minimis (insignificant)
Business taxi transport	Scope 3 Mandatory	De minimis (insignificant)

Excluded emissions do not exceed 5 percent of the total footprint within the organisational boundaries

## Base year, audit, verification and accuracy

The carbon footprint has been third party verified by Toitū according to ISO 14064-1:2006. Verification and assurance level: reasonable (a higher assurance level than limited assurance). From the analysis conducted, the quality of the inventory checked against completeness and uncertainty is classified as High. The base year of the carbon footprint is 2016. The base year emissions were re-verified this year.

## Information and contact

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## Desflurane medical gas emission reduction

Over the last five years the use of Desflurane, a general anaesthetic gas with a very high global warming potential, has been reduced by 94 percent significantly reducing the emissions from medical gases.

## 2021 SUSTAINABILITY HIGHLIGHTS

### Syringe recycling

In theatres a new recycling scheme was introduced with the collection of syringes. A recycling scheme supported by the supplier BD.



### Medsalv single use medical device reprocessing

The DHB introduced the reprocessing of single use medical devices. Patient transfer matts, previously landfilled after use, are now collected, cleaned, reprocessed and purchased back reducing waste and saving money for the DHB.





## Carbon Footprint Summary 2021

Target 50% reduction in 2030:

4,130

tCO2e

	Qty				UOM	Emission tCO2e			
	2016	2019	2020	2021		2016	2019	2020	2021
<b>Energy use</b>									
Natural gas	7,058k	6,997k	6,789k	<b>7,034k</b>	kWh	1,641	1,517	1,472	<b>1,449</b>
Electricity	9,758k	10,299k	10,960k	<b>11,635k</b>	kWh	1,457	1,082	1,152	<b>1,281</b>
Diesel heating	234k	71k	0k	<b>0k</b>	Litre	626	188	-	<b>-</b>
Refrigerants	-	-	41	<b>95</b>	kg	90	65	95	<b>198</b>
<b>Transportation</b>									
Fleet fuels	568k	552k	501k	<b>510k</b>	Litre	1,370	1,388	1,264	<b>1,289</b>
Transportation goods & patients	4,045k	3,970k	2,875k	<b>3,202k</b>	km	1,306	1,362	1,096	<b>1,160</b>
Flights staff	2,473k	1,911k	1,782k	<b>900k</b>	km	668	546	500	<b>314</b>
<b>Waste</b>									
Waste to landfill	745	803	728	<b>995</b>	Tonne	320	219	176	<b>310</b>
<b>Other</b>									
Medical gases	-	-	-	-	kg	781	497	531	<b>548</b>

### Total gross emissions

Total **8,260** **6,866** **6,286** **6,549**

Reduction compared to benchmark -17% -24% -21%

Reduction compared to last year -8.4% 4%

### Offsets

Carbon credits flights 0 - 264 - 536 **-494**

### Total net emissions

Total **8,260** **6,601** **5,751** **6,055**

-20% -30% -27%

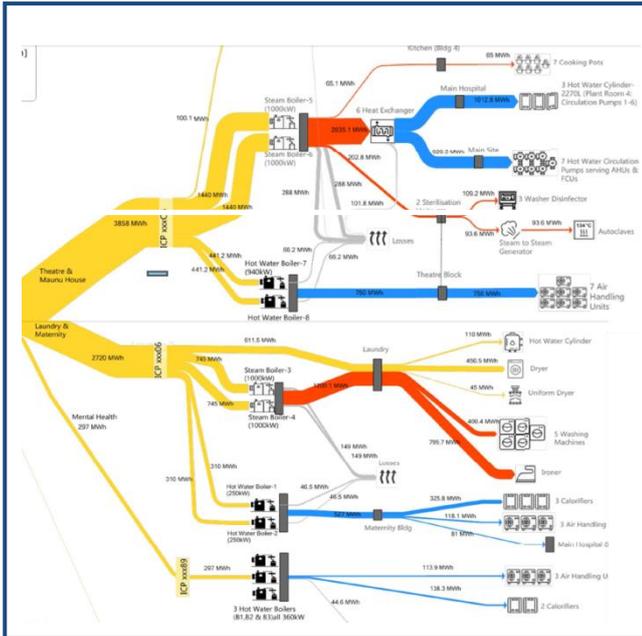
### Benchmark data, emissions per:

	2016	2017	2018	2019	2020	2021	
PBFF share (%)*	-	-	-	-	1,355	1,342	tCO2e/ % funding
Funding (m\$)**	23	20	19	16	14	13	tCO2e/ M
FTE	3.7	3.3	3.3	2.6	2.3	2.5	tCO2e/ FTE
Patient activity***	69	63	64	60	55	53	kgCO2e/ PA
Building area (m <sup>2</sup> )	115	105	108	101	88	90	kgCO2e/ m <sup>2</sup> building

\* PBFF is the population-based funding formula and is the total percentage of budget the Northland DHB receives out of the total DHB funding. For 2021 this is 4.88 percent.

\*\* Based on \$506M DHB funding of the hospitals/provider arm and mental health out of \$822M total.

\*\*\*Patient Activity includes total patient bed days and day cases and excludes outpatient appointments.



## Energy decarbonisation roadmap

Northland DHB was the first DHB to complete an energy decarbonisation roadmap as part of the EECA energy transition accelerator programme. This roadmap guides the DHB in phasing out natural gas and increase energy efficiency over the next five to ten years.

# 2021 SUSTAINABILITY HIGHLIGHTS

## Zero Carbon flights

Offsetting patient and staff flights

Northland DHB is the only DHB to offset their emissions from patient flights by helicopter and plane and from staff business air travel.

The carbon credits exclude emissions from Continuing Medical Education claims.



## Zero Carbon Flights

This is to certify that  
**Northland District Health Board**  
Has measured and offset the CO<sub>2</sub>e emissions from its patient and staff flights for the period between the 1st of July 2019 and the 30th of June 2020.

Total emissions = 537.00 tCO<sub>2</sub>e (including radiative forcing but excluding flights for Continued Medical Education).  
Total Offsets = 537.00 tCO<sub>2</sub>e (including radiative forcing but excluding flights for Continued Medical Education)

Offsets retired on the Markit Environmental Registry and the New Zealand Emissions Trading Register.

Certificate #: 40000451  
Date Issued: 03rd February 2021  
Carbon Credits: Kānuka Hill - Urwhenua Native Regeneration Project the Hopai Bay Nature Carbon Project (NZUs, verified to the New Zealand Emissions Trading Register) and the Raraku Rainforest Carbon Project, Southland New Zealand (VERs, verified to the Plan Vivo carbon standard).  
Registry: The New Zealand Emissions Trading Register and the Markit Environmental Registry, New York/London.

Signed  
Dr Sean Weaver  
Executive Director

