



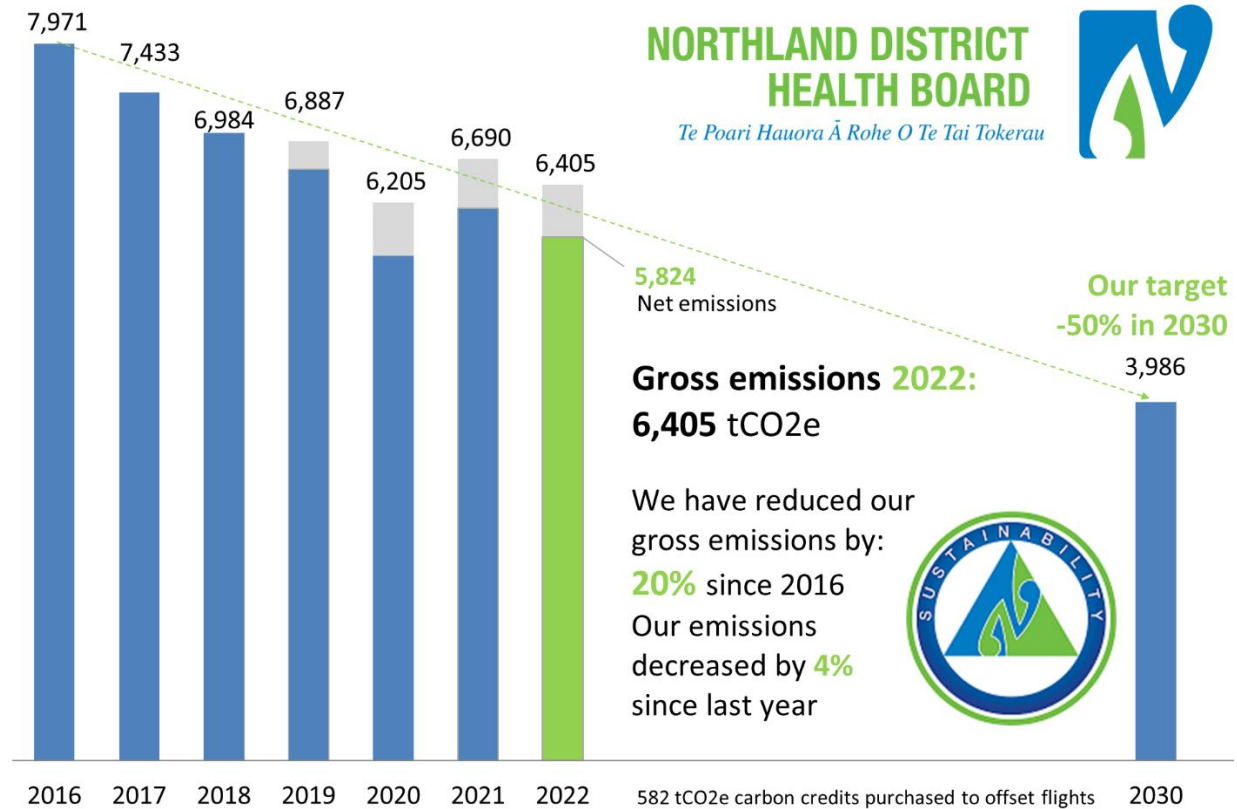
# Carbon footprint & year overview

Financial year 2021/2022



This carbon footprint for the Northland District Health Board (DHB) has been calculated for the financial reporting year from 1 July 2021 to 30 June 2022. Please note that from 1 July 2022, Northland DHB became Te Whatu Ora – Health New Zealand.

## Northland DHB remains on track to achieve its 2030 target with a four percent reduction in emissions.



Northland DHB's emissions for 2021/22 were 6,405 tCO<sub>2</sub>e. This is four percent lower than 2020/21 and 20 percent lower than the benchmark year 2015/16.

Since 2016 funding has increased by 82 percent and staff numbers increased by 45 percent.

With a target to halve Northland DHB emissions in 2030 from baseline year 2016, another reduction achieved in emissions contributes to staying on track to achieve this.

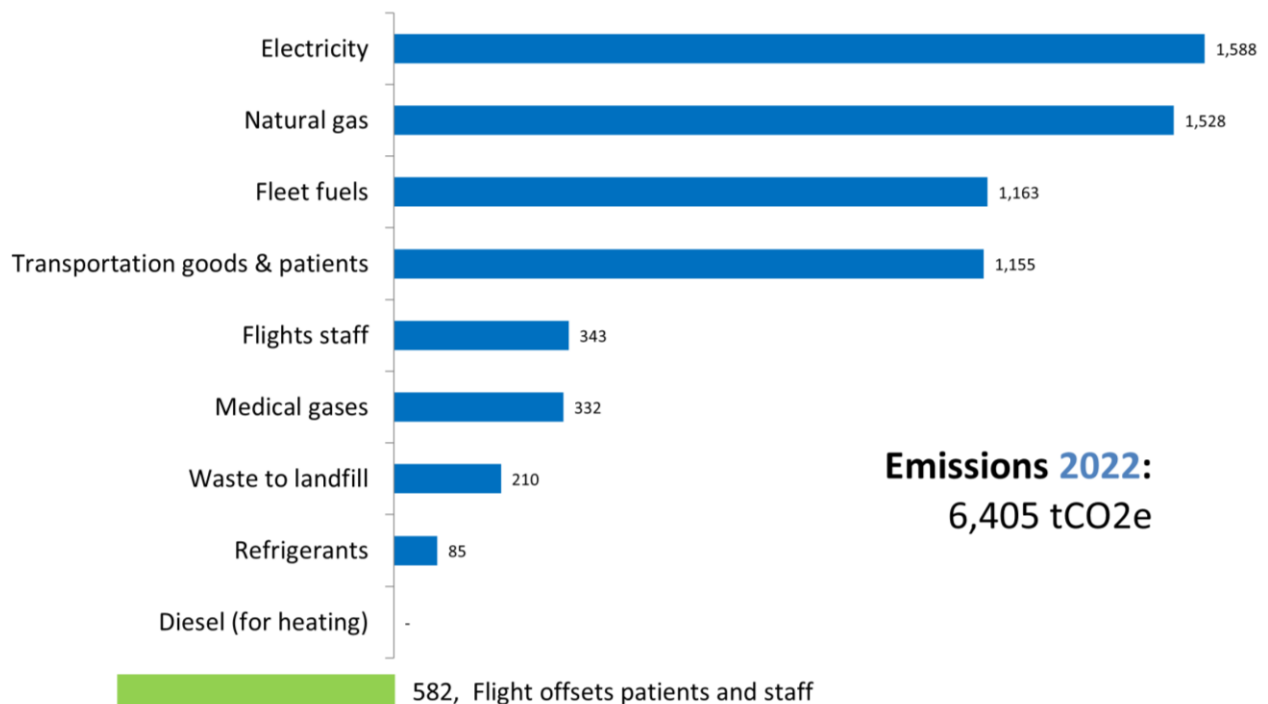
Northland DHB emissions down 20% compared with 2016





## Our emissions

### 2022 Northland DHB Carbon Emissions [tCO2e]



## Liabilities (greenhouse gas stocks held)

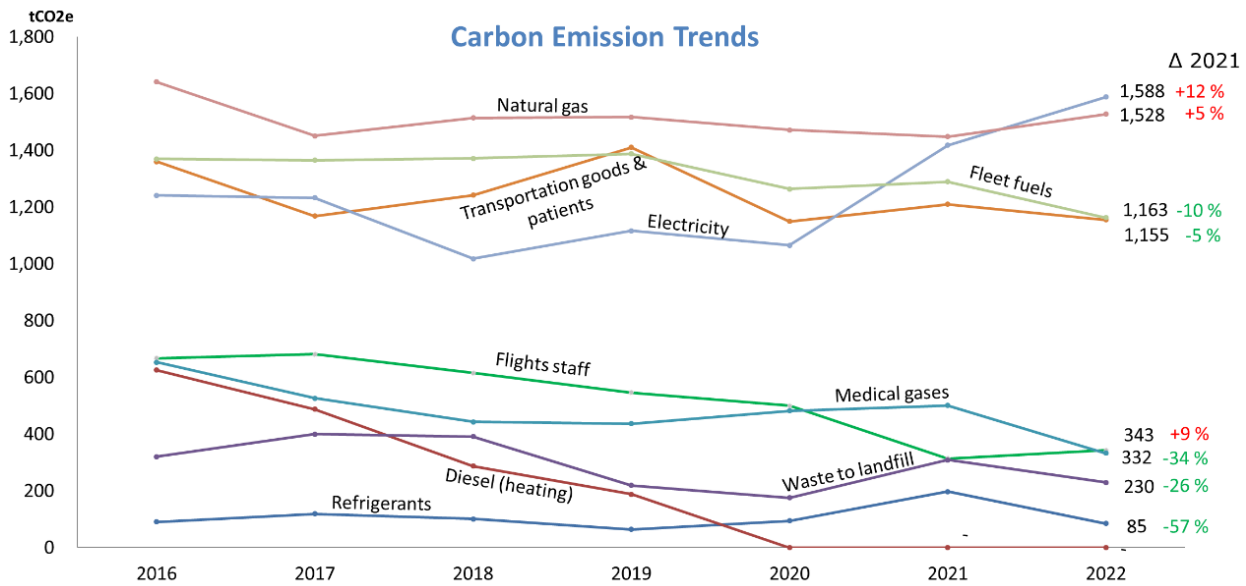
Source	Units	Potential liability tCO2e
Refrigerants	1,729 kg mostly R410A	3,391
Diesel	75,000 litres	200
Medical gases	Not available	Unknown
Anaesthetic gases	64 bottles Sevoflurane estimate	5

## New inclusions and changes to the emissions inventory

- Liabilities from stationary diesel, refrigerants and medical gases are reported on for the first time. These are stocks held of greenhouse gas emissions which by accidental release could result in a large increase in emissions.
- Updated emission factors were used from the latest 2022: MfE Measuring emissions: a guide for organisations. This included new consumption-based electricity emission data which has been corrected for all previous years.
- New AR5 emission factors are used for refrigerants, medical gases and anaesthetic gases. All previous years have been corrected to the updated factors.
- A new medical and cytotoxic waste emission factor has been introduced for these waste streams.



## Emission trends



- Electricity emissions for the first time have become the highest emission source for Northland DHB. A nine percent increase in emissions from the national grid is the dominant reason for the increase. Also, a significant increase in electricity consumption at Whangārei Hospital was recorded where a large increase in electric vehicles is a contributing factor.
- Natural gas consumption used for steam, hot water and ambient heating in Whangārei Hospital and the laundry remains the largest emission category with a reasonably stable load over the years. All four gas connections at Whangārei Hospital had a higher consumption which for the laundry could be explained by growth and moving from five to six days of laundry operation.
- The introduction of more EVs during the year has resulted in a 10 percent drop of fleet fuel consumption. With a continuous increase of EVs in the fleet fuel consumption is expected to decrease further over the coming years. At the end of the financial year the fleet consisted of around 100 EVs out of the 270 passenger fleet vehicles.
- The transportation of goods and patients category, with an overall decrease in emissions of five percent, consists of the distribution of goods and patient travel by ambulance, helicopter, flights, bus and most dominant source in this category National Travel Assistance (NTA) claims of

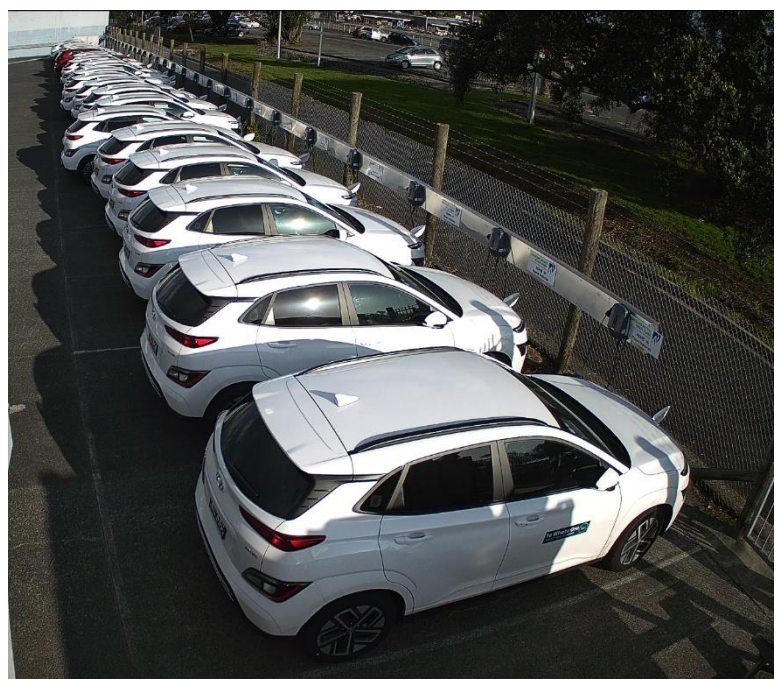


Figure 1. EVs at their chargers at Commerce street in Whangārei



patients travelling in their own cars, mostly to Auckland. A decrease in patient NTA travel claims was recorded, which totalled 2.2 million kilometres reimbursed compared to 2.5 million kilometre the year before. Helicopter use increased significantly with 13 percent more hours flown.

- Medical gases include Nitrous Oxide, Entonox, Carbon Dioxide, Desflurane and Sevoflurane. The Anaesthetic team have done an excellent job to reduce emissions from anaesthetic gases and Desflurane which has now been completely phased out. Our emissions from medical gases now consists for 91 percent out of nitrous oxide, which is used predominantly as Entonox in maternity and ED for pain relief.
- Staff flights which includes the Kaitaia doctors plane flights showed an increase of 10 percent, in line with expectation but is still significantly lower compared to pre-Covid levels and generally has a downward trend.
- Waste to landfill volumes remained similar compared to the previous year. The reduction in waste emissions is solely due to a lower emission of the landfills.
- Refrigerant emissions lowered to more average levels from a high in the previous year due to some large chiller repairs and new installs. The introduction of more R32 low emission refrigerants remains on the rise. 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.

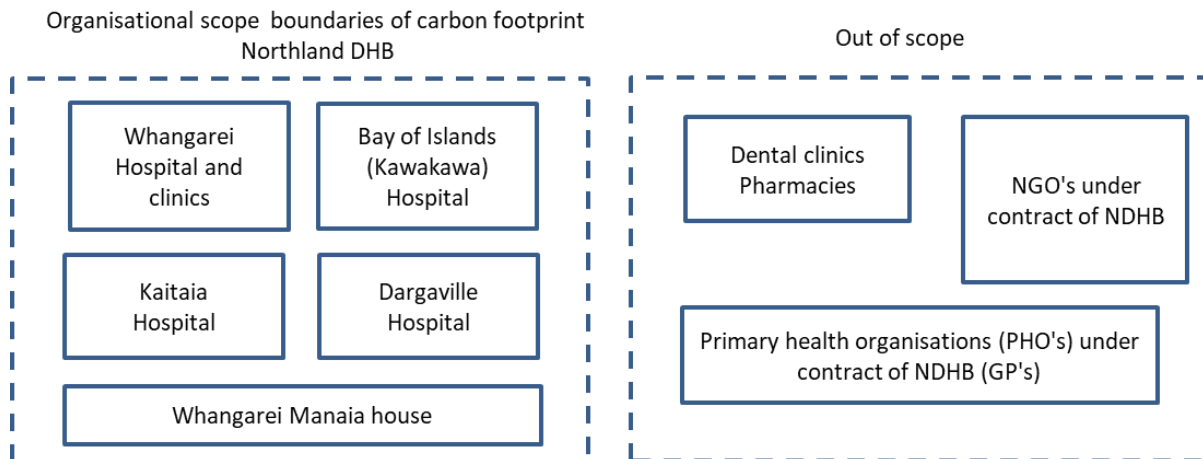


Figure 2 In 2022 Northland District Health Board won the Gold award in the 2021 Healthcare Climate Challenge for Greenhouse Gas Reduction in Energy and Non-Energy



## 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. For all emission sources all emissions part of the Northland DHB operations have been included. For electricity consumption the boundary has been set around the hospitals of Whangārei, Bay of Islands (in Kawakawa), Dargaville, Kaitaia, as well as Whangārei’s Manaia House. Community clinics and housing outside listed locations have been excluded which excludes 0.4 percent of electricity consumption. Outside the scope of the footprint are general practices, NGO’s under contract of the Northland DHB and pharmacies as Northland DHB has no operational control and influence. Northland DHB has no subsidiaries.

## Emissions factors and emission source exclusions

The emission factors from the Ministry of the Environment 2022 detailed guide, Measuring Emissions a Guide for Organisations and AR5 data, 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	Cat 3 Mandatory	De minimis (insignificant)
Rental cars	Cat 3 Mandatory	De minimis (insignificant)
Private cars (staff mileage claims)	Cat 3 Mandatory	De minimis (insignificant)
Business taxi transport	Cat 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 14064-1:2018. 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 accuracy of the emission source data is high except for the following sources with medium confidence: CME air travel, Kaitaia patient bus and general waste from Kaitaia. The base year of the carbon footprint is 2016. The base year emissions were re-verified in the previous year.

## Information and contact

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### Zero Carbon Flights

*This is to certify that*

**Northland District Health Board**

*has measured and offset the CO<sub>2</sub>e emissions for flights taken during the 2022 financial year.*

*Total emissions = 581.8 tCO<sub>2</sub>e (including radiative forcing but excluding flights claimed for Continuing Medical Education)*

*Total Offsets = 582 tCO<sub>2</sub>e (including radiative forcing but excluding flights claimed for Continuing Medical Education)*

*Offsets retired on the appropriate registry.*

Certificate #: 40000573  
Date Issued: 3rd February 2023  
Carbon Credits: Indigenous forest VERs (Verified Emissions Reduction Units) certified to the Plan Vivo standard.  
Registry: Market Environmental Registry, New York/London

 Signed

Dr Sean Weaver  
Executive Director



Flights



## Carbon Footprint Summary 2022

Target 50% reduction in 2030:  
3,986 tCO<sub>2</sub>e

	Qty			UOM	Emission tCO <sub>2</sub> e			
	2016	2021	2022		2016	2021	2022	
<b>Energy use</b>								
Natural gas	7,058k	7,034k	<b>7,417k</b>	kWh	1,641	1,449	<b>1,528</b>	
Electricity	9,758k	11,635k	<b>12,125k</b>	kWh	1,241	1,418	<b>1,588</b>	
Diesel (stationary)	234k	0k	<b>0k</b>	Litre	626	-	-	
Refrigerants	-	95	<b>35</b>	kg	90	198	<b>85</b>	
<b>Transportation</b>								
Fleet fuels	568k	510k	<b>458k</b>	Litre	1,370	1,289	<b>1,163</b>	
Transportation goods & patients	4,045k	3,202k	<b>2,841k</b>	km	1,361	1,210	<b>1,155</b>	
Flights staff	2,473k	900k	<b>963k</b>	km	668	314	<b>343</b>	
<b>Waste generation</b>								
Waste to landfill	745	995	<b>996</b>	Tonne	320	310	<b>210</b>	
<b>Other</b>								
Medical gases	-	-	-	kg	654	501	<b>332</b>	
<b>Total gross emissions</b>					Total	<b>7,971</b>	<b>6,690</b>	<b>6,405</b>
Reduction compared to benchmark							-16%	-20%
Reduction compared to previous year							8%	-4%
<b>Offsets</b>								
Carbon credits flights						0	-545	<b>-582</b>
<b>Total net emissions</b>					Total	<b>7,971</b>	<b>6,145</b>	<b>5,824</b>
							-23%	-27%

### Benchmark data, emissions per:

	2016	2021	2022	
PBFF share (%)*		1,371	<b>1,310</b>	tCO <sub>2</sub> e/ % funding
Funding (M\$)**	23	13	<b>11</b>	tCO <sub>2</sub> e/ M\$
FTE	3.7	2.6	<b>2.1</b>	tCO <sub>2</sub> e/ FTE
Patient activity***	69	54	<b>51</b>	kgCO <sub>2</sub> e/ PA
Building area (m <sup>2</sup> )	115	92	<b>88</b>	kgCO <sub>2</sub> e/ 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 2022 this is 4.89 percent.

\*\* Based on \$600M DHB funding of the hospitals/provider arm and mental health out of \$978M total.

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





## Detailed Carbon Footprint 2022 per scope

Description	Emissions in tCO <sub>2</sub> e							
	2016	2017	2018	2019	2020	2021	2022	
<b>Category 1</b>								
Gas heating	1,482	1,298	1,354	1,358	1,317	1,368	1,439	
Diesel heating	626	488	287	188	-	-	-	
Fleet fuels petrol	1,149	1,063	1,023	985	846	858	750	
Fleet fuels diesel	222	302	349	402	418	431	412	
Medical gases - NOX	428	325	281	342	438	453	304	
Medical gases - CO2	1	1	1	1	1	1	3	
Desflurane & Sevoflurane	225	201	162	94	43	47	26	
Refrigerants	90	119	101	64	94	198	85	
	<b>47%</b>	<u>4,223</u>	<u>3,797</u>	<u>3,558</u>	<u>3,435</u>	<u>3,158</u>	<u>3,356</u>	<u>3,019</u>
<b>Category 2</b>								
Electricity	1,151	1,125	938	1,020	964	1,280	1,455	
	<b>23%</b>	<u>1,151</u>	<u>1,125</u>	<u>938</u>	<u>1,020</u>	<u>964</u>	<u>1,280</u>	<u>1,455</u>
<b>Category 3</b>								
Flights business- domestic	150	155	176	168	93	74	85	
Flights business- short haul	45	44	48	37	22	2	5	
Flights business - long haul	45	42	5	9	11	- 11	-	
Doctors plane WHA-Kaitaia	132	127	87	159	123	157	133	
Flights CME SMO	296	314	300	173	251	90	120	
Daily truck run	67	67	67	67	67	67	67	
Ambulance	129	174	161	156	135	123	97	
Helicopter	333	214	249	291	327	305	344	
Fixed wing patient flights	2	7	4	21	14	16	14	
	<b>14%</b>	<u>1,198</u>	<u>1,143</u>	<u>1,095</u>	<u>1,081</u>	<u>1,043</u>	<u>825</u>	<u>866</u>
<b>Category 4</b>								
T&C losses gas	159	153	160	160	155	81	89	
T&C losses electricity	90	108	80	97	101	138	133	
Waste to landfill with LFGR	245	330	319	188	176	310	210	
Waste to landfill no LFGR	75	70	72	31	-	-	-	
	<b>7%</b>	<u>569</u>	<u>660</u>	<u>631</u>	<u>476</u>	<u>432</u>	<u>529</u>	<u>433</u>
<b>Category 6</b>								
Kaitaia patient bus	37	37	37	37	37	37	37	
NTA claims patients	793	670	722	839	571	663	596	
	<b>10%</b>	<u>830</u>	<u>707</u>	<u>759</u>	<u>876</u>	<u>608</u>	<u>699</u>	<u>633</u>
<b>Total gross emissions</b>	<b>7,971</b>	<b>7,433</b>	<b>6,981</b>	<b>6,887</b>	<b>6,205</b>	<b>6,690</b>	<b>6,405</b>	
Reduction since 2016		-7%	-12%	-14%	-22%	-16%	-20%	
<b>Net emissions incl. offsets</b>	<b>7,971</b>	<b>7,433</b>	<b>6,981</b>	<b>6,696</b>	<b>5,615</b>	<b>6,145</b>	<b>5,824</b>	
Reduction since 2016		-7%	-12%	-16%	-30%	-23%	-27%	



### Cat 1 emissions per GHG

	tCO2e	CO2 (tCO2e)	CH4 (tCO2e)	N2O (tCO2e)
Stationary fuels	1,438.8	1,438.8	0.6	0.7
Transport fuels	1,162.7	1,123.0	9.0	30.8
Carbon dioxide	2.6	2.6	-	-
Nitrous Oxide	78.0	-	-	78.0
HFCs	4.7	-	-	-
Refrigerant blends: Zeotropes	80.7	-	-	-
Anaesthetic gases Sevoflurane	26.3	-	-	-
Anaesthetic gases Desflurane	-	-	-	-
Entonox	225.6	-	-	225.6
<b>Total cat 1</b>	<b>3,019.3</b>	<b>2,564.4</b>	<b>313.1</b>	<b>31.5</b>