

Uncertainty calculation for the New Zealand Greenhouse Gas Inventory 1990 - 2004 including LULUCF (following IPCC Tier 1)

IPCC Source category	Gas	Base year emissions or absolute value of removals	Year t emissions or absolute value of removals	activity data uncertainty	emission or removal factor uncertainty	combined uncertainty	combined uncertainty as a % of the national total in year t	type A sensitivity	type b sensitivity	Uncertainty in the trend in national totals introduced by emission or removal factor uncertainty	Uncertainty in trend in national total introduced by activity data uncertainty	Uncertainty introduced into the trend in the national total	Emission /removal factor quality indicator	Activity data quality indicator
Energy sector	CO ₂	22721.55	30590.19	5	0	5	1.49	0.0317	0.3654	0.0000	2.5836	2.58	M	R
Industrial processes sector	CO ₂	2,666.52	3450.30	5	0	5	0.17	0.0021	0.0412	0.0000	0.2914	0.29	M	R
LULUCF sector - forest land	CO ₂	20624.90	26254.43	5	25	25	6.50	0.0107	0.3136	0.2683	2.2174	2.23	M	R
LULUCF sector other land use categories	CO ₂	1404.86	1577.33	15	184	185	2.83						M	R
Energy sector	CH ₄	797.03	794.25	5	50	50	0.39	-0.0022	0.0095	-0.1108	0.0671	0.13	D	R
CRF2A - mineral products	CH ₄	NO	NO											
CRF2B - chemical industry	CH ₄	20.16	45.69	0	80	80	0.04	0.0002	0.0005	0.0200	0.0000	0.02	D	R
CRF4A - enteric fermentation	CH ₄	21553.97	23714.98	2	53	53	12.22	-0.0331	0.2833	-1.7558	0.8012	1.93	M	M
CRF4B - manure management	CH ₄	583.30	745.88	2	100	100	0.72	0.0003	0.0089	0.0345	0.0252	0.04	M	M
CRF4E- prescribed burning	CH ₄	2.82	0.70	20	60	63	0.00	0.0000	0.0000	-0.0020	0.0002	0.00	D	R
CRF4F - burning of residues	CH ₄	18.78	18.88	50	40	64	0.01	-0.0001	0.0002	-0.0020	0.0159	0.02	D	R
LULUCF sector	CH ₄	93.54	75.15	10	35	36	0.03	-0.0005	0.0009	-0.0167	0.0127	0.02		
CRF 6A - Solid waste disposal	CH ₄	2177.70	1507.49	0	20	20	0.29	-0.0140	0.0180	-0.2793	0.0000	0.28	M	R
CRF 6B - wastewater handling	CH ₄	156.66	166.95	0	20	20	0.03	-0.0003	0.0020	-0.0061	0.0000	0.01	D	R
Energy sector	N ₂ O	151.26	265.05	5	50	50	0.13	0.0009	0.0032	0.0472	0.0224	0.05	D	R
CRF4D -Agricultural soils	N ₂ O	10021.98	12768.17	5	73	73	9.08	0.0053	0.1525	0.3905	1.0784	1.15	M	M
CRF4B - manure management	N ₂ O	37.93	63.50	5	100	100	0.06	0.0002	0.0008	0.0202	0.0054	0.02		
CRF4E- prescribed burning	N ₂ O	0.51	0.13	20	60	63	0.00	0.0000	0.0000	-0.0004	0.0000	0.00	D	R
CRF4F - burning of residues	N ₂ O	6.46	6.20	50	40	64	0.00	0.0000	0.0001	-0.0008	0.0052	0.01	D	R
LULUCF sector	N ₂ O	9.49	7.63	10	35	36	0.00	0.0000	0.0001	-0.0017	0.0013	0.00		
CRF6B - wastewater handling	N ₂ O	146.92	163.92	0	1200	1200	1.91	-0.0002	0.0020	-0.2392	0.0000	0.24	D	R
CRF2F	HFCs	0.00	597.36	120	50	130	0.75	0.0071	0.0071	0.3568	1.2109	1.26	D	R
CRF2C	PFCs	515.60	80.70	0	30	30	0.02	-0.0066	0.0010	-0.1982	0.0000	0.20	M	M
CRF2F	SF ₆	9.46	21.49	5	20	21	0.00	0.0001	0.0003	0.0024	0.0018	0.00		
Total emissions/removals		83721.40	102916.34				17.0%			Uncertainty in the trend		4.3%		

assumptions as per IPCC GPG

1. where only total uncertainty is known for a source category then the following rules have been used.
 - a) if uncertainty is assumed to be correlated across years, then total uncertainty is entered as emission factor uncertainty
 - b) if uncertainty is assumed not to be correlated across years, then the total uncertainty is entered as activity data uncertainty
 2. Column K: The same emission factor is used in both years and the emission factors are fully correlated.
 3. Column L: The activity data in both years is assumed independent (not correlated).
- Note that the total shown will not equal the gross or net totals reported in the CRF/NIR as not every source is specified in the uncertainty analysis