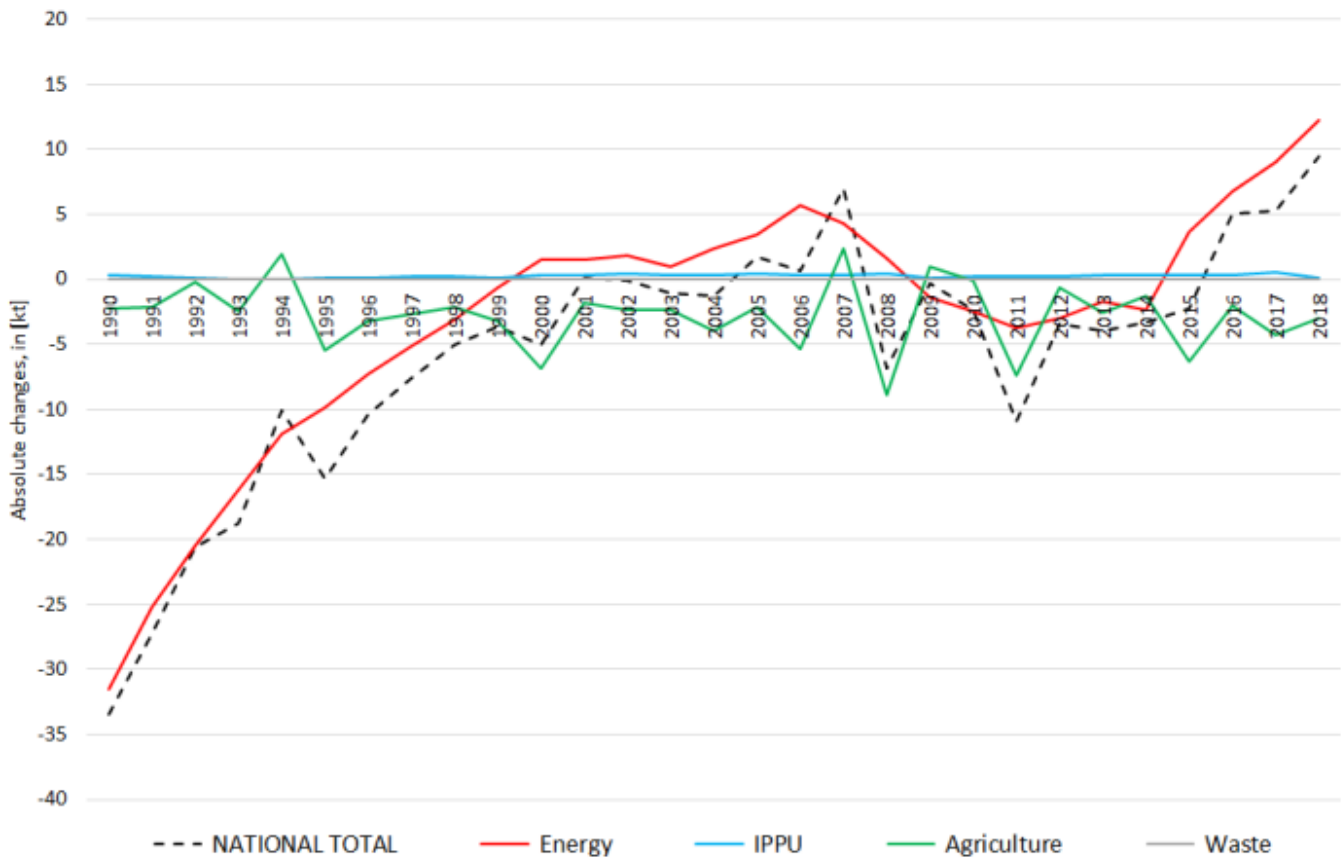
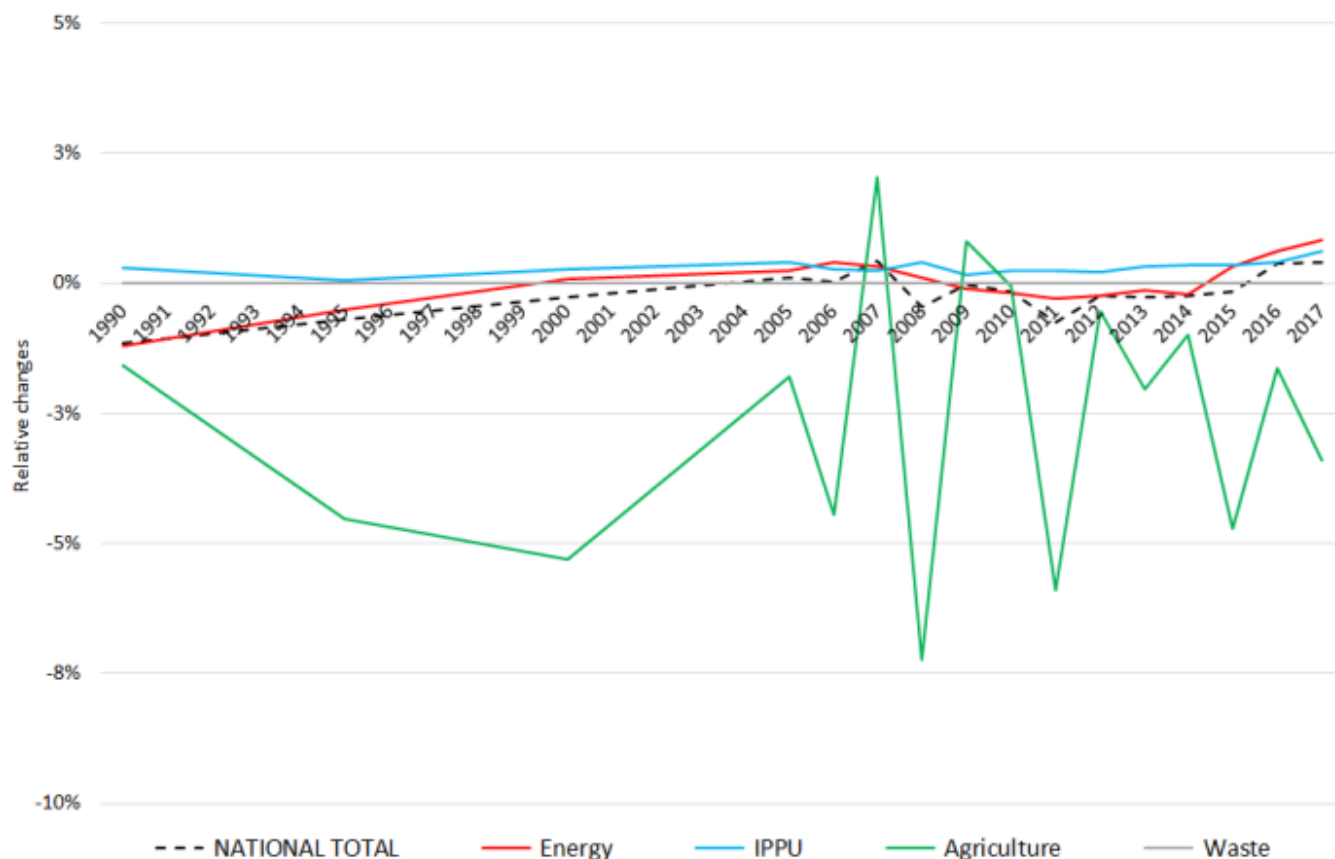


Recalculations - Nitrogen Oxides

Revision of NO_x emissions over time





The small changes within the **National Total reported for 1990 (-4.38 kt | -0.15 %)** are dominated by changes in **NFRs 1.A.3.b i, 1.A.3.b ii and 1.A.3.b iii** together with less significant revisions throughout NFRs 1, 2 and 3.

Here, the strongest relative change occurs for **NFR 1.B.2.a iv (+222,250 %)**.

Table 1: Changes of emission estimates 1990

“	absolute changes in emissions reported for 1990					”	Submission 2020	Submission 2021	Difference	Reasoning
NFR Code	[kt]							relative	see description and reasoning in	
NATIONAL TOTAL	2.884,38					2.850,05	-34,334	-1,19%	sub-category chapters	
NFR 1 - Energy	2.634,24					2.601,88	-32,360	-1,23%	sub-category chapters	
1.A.1.a	464,36					464,36	0,000	0,00%	1.A.1.a - Public electricity and heat production]	

1.A.1.b	36,84	36,84	0,000	0,00%	1.A.1.b - Petroleum refining]
1.A.1.c	107,23	107,23	0,000	0,00%	1.A.1.c - Manufacture of solid fuels and other energy industries]
1.A.2.a	50,32	50,32	0,000	0,00%	1.A.2.a - Stationary combustion in manufacturing industries and construction: Iron and Steel]
1.A.2.b	2,21	2,21	0,000	0,00%	1.A.2.b - Stationary combustion in manufacturing industries and construction: Non-ferrous Metals]
1.A.2.c	IE	IE	#WERT!	#WERT!	1.A.2.c - Stationary combustion in manufacturing industries and construction: Chemicals]
1.A.2.d	IE	IE	#WERT!	#WERT!	1.A.2.d - Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print]
1.A.2.e	3,60	3,60	0,000	0,00%	1.A.2.e - Stationary combustion in manufacturing industries and construction: Food Processing, Beverages and Tobacco]
1.A.2.f	2,64	2,64	0,000	0,00%	1.A.2.f - Stationary combustion in manufacturing industries and construction: Non-Metallic Minerals]
1.A.2.g vii	49,60	50,23	0,633	1,28%	1.A.2.g vii - Mobile Combustion in Manufacturing Industries & Construction]
1.A.2.g viii	201,21	201,21	0,000	0,00%	1.A.2.g viii - Stationary Combustion in Manufacturing Industries & Construction: Other]
1.A.3.a i(i)	3,88	3,94	0,060	1,54%	1.A.3.a i (i) - International Civil Aviation: LTO]
1.A.3.a ii(i)	2,85	2,80	-0,054	-1,90%	1.A.3.a ii (i) - Domestic Civil Aviation: LTO]
1.A.3.b i	808,22	765,68	-42,539	-5,26%	1.A.3.b i - Road Transport: Passenger Cars]
1.A.3.b ii	41,49	31,49	-10,006	-24,11%	1.A.3.b ii - Road Transport: Light duty vehicles]

1.A.3.b iii	485,89	506,00	20,111	4,14%	1.A.3.b iii - Road Transport: Heavy duty vehicles]
1.A.3.b iv	2,61	2,45	-0,162	-6,18%	1.A.3.b iv - Road Transport: Mopeds & Motorcycles]
1.A.3.b v	NA	NA	#WERT!	#WERT!	1.A.3.b v - Gasoline Evaporation]
1.A.3.b vi	NA	NA	#WERT!	#WERT!	1.A.3.b vi - Road Transport: Tyre and Brake Wear]
1.A.3.b vii	NA	NA	#WERT!	#WERT!	1.A.3.b vii - Road Transport: Road Abrasion]
1.A.3.c	45,05	45,05	0,000	0,00%	1.A.3.c - Railways]
1.A.3.d i(ii)	IE	IE	#WERT!	#WERT!	1.A.3.d i (ii) - International Inland Navigation]
1.A.3.d ii	60,65	60,65	0,000	0,00%	1.A.3.d ii - National Navigation]
1.A.3.e i	3,99	3,99	0,000	0,00%	1.A.3.e i - Pipeline Transport]
1.A.3.e ii	NA	NA	#WERT!	#WERT!	1.A.3.e ii - Other Transport: Other]
1.A.4.a i	47,36	47,36	0,000	0,00%	1.A.4.a i - Households: Stationary]
1.A.4.a ii	11,52	11,60	0,077	0,67%	1.A.4.a ii - Commercial & Institutional: Mobile]
1.A.4.b i	90,29	90,29	0,000	0,00%	1.A.4.b i - GHD: Stationary]
1.A.4.b ii	0,07	0,06	-0,006	-8,44%	1.A.4.b ii - Households: Mobile]
1.A.4.c i	6,11	6,11	0,000	0,00%	1.A.4.c i - Agriculture / Forestry / Fishery: Stationary]
1.A.4.c ii	49,78	49,31	-0,475	-0,95%	1.A.4.c ii - Agriculture / Forestry / Fishery: Mobile]
1.A.4.c iii	0,81	0,81	0,000	0,00%	1.A.4.c iii - National Fishery]
1.A.5.a	5,49	5,49	0,000	0,00%	1.A.5.a - Other: Military, Stationary]
1.A.5.b	41,60	41,60	0,000	0,00%	1.A.5.b - Other: Military, Mobile]
1.B.1.a	NA	NA	#WERT!	#WERT!	1.B.1 - Solid Fuels]
1.B.1.b	0,67	0,67	0,000	0,00%	1.B.1 - Solid Fuels]
1.B.1.c	NA	NA	#WERT!	#WERT!	1.B.1 - Solid Fuels]
1.B.2.a i	NA	NA	#WERT!	#WERT!	1.B.2 - Oil and Natural Gas]
1.B.2.a iv	0,2380	0,2380	0,0000	0%	1.B.2 - Oil and Natural Gas]
1.B.2.a v	NA	NA	#WERT!	#WERT!	1.B.2 - Oil and Natural Gas]
1.B.2.b	0,07	0,07	0,000	0,00%	1.B.2 - Oil and Natural Gas]
1.B.2.c	7,60	7,60	0,000	0,00%	1.B.2 - Oil and Natural Gas]

1.B.2.d	NA	NA	#WERT!	#WERT!	1.B.2 - Oil and Natural Gas]
NFR 2 - IPPU	106,06	106,37	0,311	0,29%	sub-category chapters
2.A.1	37,58	37,58	0,000	0,00%	2.A.1 Cement Production]
2.A.2	9,50	9,50	0,000	0,00%	2.A.2 Lime Production]
2.A.3	30,90	30,90	0,000	0,00%	2.A.3 Glass Production]
2.A.5.a	NA	NA	#WERT!	#WERT!	2.A.5.a Quarrying Mining Other Than Coal]
2.A.5.b	NA	NA	#WERT!	#WERT!	2.A.5.b Construction And Demolition]
2.A.5.c	NA	NA	#WERT!	#WERT!	
2.A.6	IE	IE	#WERT!	#WERT!	2.A.6 Other Mineral Products]
2.B.1	2,70	2,70	0,000	0,00%	2.B.1 - Ammonia Production]
2.B.2	16,98	16,98	0,000	0,00%	2.B.2 - Nitric Acid Production]
2.B.3	0,09	0,091	0,000	0,00%	2.B.3 - Adipic Acid Production]
2.B.5	NA	NA	#WERT!	#WERT!	2.B.5 - Carbide Production]
2.B.6	NE	NE	#WERT!	#WERT!	2.B.6 - Titanium Dioxide Production]
2.B.7	NA	NA	#WERT!	#WERT!	2.B.7 - Soda Ash Production]
2.B.10.a	NA	NA	#WERT!	#WERT!	2.B.10.a - Chemical Industry: Other]
2.B.10.b	NA	NA	#WERT!	#WERT!	2.B.10.b - Storage, Handling and Transport of Chemical Products]
2.C.1	4,60	4,60	0,000	0,00%	2.C.1 - Iron and Steel Production]
2.C.2	NE	NE	#WERT!	#WERT!	2.C.2 - Ferroalloys Production]
2.C.3	NA	0,74	#WERT!	#WERT!	2.C.3 - Aluminum Production]
2.C.4	NA	NA	#WERT!	#WERT!	2.C.4 - Magnesium Production]
2.C.5	NA	NA	#WERT!	#WERT!	2.C.5 - Lead Production]
2.C.6	NA	NA	#WERT!	#WERT!	2.C.6 - Zinc Production]
2.C.7.a	NA	NA	#WERT!	#WERT!	2.C.7.a - Copper Production]
2.C.7.b	NE	NE	#WERT!	#WERT!	2.C.7.b - Nickel Production]
2.C.7.c	NA	NA	#WERT!	#WERT!	2.C.7.c - Other Metal Production]
2.C.7.d	NA	NA	#WERT!	#WERT!	2.C.7.d - Storage, Handling & Transport of Metal Products]
2.D.3.a	NA	NA	#WERT!	#WERT!	2.D.3.a - Domestic solvent use including fungicides]

2.D.3.b	0,75	0,75	0,000	0,00%	2.D.3.b - Road Paving with Asphalt]
2.D.3.c	NA	NA	#WERT!	#WERT!	2.D.3.c - Asphalt Roofing]
2.D.3.d	NA	NA	#WERT!	#WERT!	2.D.3.d - Coating Applications]
2.D.3.e	NA	NA	#WERT!	#WERT!	2.D.3.e - Degreasing]
2.D.3.f	NA	NA	#WERT!	#WERT!	2.D.3.f - Dry Cleaning]
2.D.3.g	NA	NA	#WERT!	#WERT!	2.D.3.g - Chemical Products]
2.D.3.h	NA	NA	#WERT!	#WERT!	2.D.3.h - Printing]
2.D.3.i	NA	NA	#WERT!	#WERT!	2.D.3.i - Other Solvent Use]
2.G	0,74	0,31	-0,429	-58,05%	2.G - Other Product Use]
2.H.1	2,21	2,21	0,000	0,00%	2.H.1 - Pulp and Paper Industry]
2.H.2	NA	NA	#WERT!	#WERT!	2.H.2 - Food and Beverages Industry]
2.H.3	NA	NA	#WERT!	#WERT!	2.H.3 - Other Industrial Processes]
2.I	NA	NA	#WERT!	#WERT!	2.I - Wood Processing]
2.J	NE	NE	#WERT!	#WERT!	2.J - Production of POPs]
2.K	NA	NA	#WERT!	#WERT!	2.K - Consumption of POPs and Heavy Metals]
2.L	NA	NA	#WERT!	#WERT!	2.L - Other Production, Consumption, Storage, Transportation or Handling of Bulk Products]
NFR 3 - Agriculture	143,55	141,27	-2,28	-1,59%	sub-category chapters
3.B.1.a	0,72	0,67	-0,051	-7,07%	3.B - Manure Management]
3.B.1.b	0,7876	0,6958	-0,0918	-11,65%	3.B - Manure Management]
3.B.2	0,02	0,02	0,000	0,00%	3.B - Manure Management]
3.B.3	0,26	0,26	0,000	0,00%	3.B - Manure Management]
3.B.4.a	NO	NO	#WERT!	#WERT!	3.B - Manure Management]
3.B.4.d	0,00	0,00	0,000	0,00%	3.B - Manure Management]
3.B.4.e	0,04	0,04	0,000	0,00%	3.B - Manure Management]
3.B.4.f	IE	IE	#WERT!	#WERT!	3.B - Manure Management]
3.B.4.g i	0,0144316	0,0144316	-0,0000001	0,000%	3.B - Manure Management]
3.B.4.g ii	0,0056204	0,0056203	-0,0000001	0,00%	3.B - Manure Management]
3.B.4.g iii	0,0033688	0,0033850	0,0000162	0,48%	3.B - Manure Management]
3.B.4.g iv	0,0025	0,0025	0,0000	0,00%	3.B - Manure Management]
3.B.4.h	NE	NE	#WERT!	#WERT!	3.B - Manure Management]
3.D.a.1	85,31	86,57	1,256	1,47%	3.D - Agricultural Soils]
3.D.a.2.a	46,65	43,46	-3,189	-6,84%	3.D - Agricultural Soils]
3.D.a.2.b	1,08	1,08	0,000	0,00%	3.D - Agricultural Soils]

3.D.a.2.c	0,00190	0,00190	0,00000	0,00%	3.D - Agricultural Soils]
3.D.a.3	8,65	8,44	-0,209	-2,42%	3.D - Agricultural Soils]
3.D.a.4	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]
3.D.b	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]
3.D.c	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]
3.D.d	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]
3.D.e	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]
3.D.f	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]
3.F	NO	NO	#WERT!	#WERT!	
3.I	0,000083	0,000083	0,000000	0,00%	
NFR 5 - Waste	0,53	0,53	0,00	0,00%	sub-category chapters
5.A	NA	NA	#WERT!	#WERT!	
5.B.1	NA	NA	#WERT!	#WERT!	5.B.1 - Composting]
5.B.2	NA	NA	#WERT!	#WERT!	5.B.2 - Anaerobic Digestion at Biogas Facilities]
5.C.1.a	NO	NO	#WERT!	#WERT!	
5.C.1.b i	NO	NO	#WERT!	#WERT!	
5.C.1.b ii	NO	NO	#WERT!	#WERT!	
5.C.1.b iii	NO	NO	#WERT!	#WERT!	
5.C.1.b iv	NO	NO	#WERT!	#WERT!	
5.C.1.b v	0,139687350	0,139687350	0,000000000	0,00%	5.C.1.b v - Cremation]
5.C.1.b vi	NA	NA	#WERT!	#WERT!	
5.C.2	0,388254384	0,388254384	0,000000000	0,00%	5.C.2 Bonfires etc.]
5.D.1	NA	NA	#WERT!	#WERT!	
5.D.2	NA	NA	#WERT!	#WERT!	
5.D.3	NO	NO	#WERT!	#WERT!	
5.E	NE	NE	#WERT!	#WERT!	5.E - building and car fires]
NFR 6 - Other	0,00	0,00	0,000	#DIV/0!	
6.A	NA	NA	#WERT!	#WERT!	

The changes within the **National Total reported for 2017 (+100.56 kt | +8.47 %)** are dominated by changes in **NFRs 1.A.3.b i, 1.A.3.b ii and 1.A.3.b iii** together with less significant revisions throughout NFRs 1, 2 and 3.

Here, the strongest relative change occurs for **NFR 1.B.2.a iv (+824,150 %)**.

Table 2: Changes of emission estimates 2017

absolute changes in emissions reported for 2018 ■ NATIONAL TOTAL ■ Energy ■ IPPU ■ Agriculture ■ Waste					
=					
			= Submission 2019	= Submission 2020	= Difference = Reasoning
= NFR Code				= [kt]	= relative < see description and reasoning in:
~ NATIONAL TOTAL			> 1,187.50	> 1,288.07	> 100.56 > 8.47% < sub-category chapters
NFR 1 - Energy			> 972.26	> 1,073.00	> 100.74 > 10.36% < sub-category chapters
1.A.1.a			> 257.85	> 251.15	> -6.69 > -2.60% < here]
1.A.1.b			> 16.88	> 14.64	> -2.24 > -13.26% < here]
1.A.1.c			> 12.51	> 12.24	> -0.27 > -2.17% < here]
1.A.2.a			> 4.26	> 4.21	> -0.05 > -1.10% < here]
1.A.2.b			> 1.25	> 1.00	> -0.24 > -19.61% < here]
1.A.2.e			> 0.22	> 0.19	> -0.02 > -11.33% < here]
1.A.2.g vii			> 13.44	> 13.47	> 0.03 > 0.25% < here]
1.A.2.g viii			> 75.07	> 72.79	> -2.28 > -3.04% < here]
1.A.3.a i(i)			> 10.98	> 11.44	> 0.46 > 4.17% < here]
1.A.3.a ii(i)			> 2.81	> 2.36	> -0.45 > -15.87% < here]
1.A.3.b i			> 244.99	> 313.87	> 68.88 > 28.12% < here]
1.A.3.b ii			> 32.64	> 65.78	> 33.14 > 102% < here]
1.A.3.b iii			> 122.05	> 140.10	> 18.05 > 14.79% < here]
1.A.3.b iv			> 2.74	> 1.74	> -1.00 > -36.58% < here]
1.A.3.c			> 11.78	> 9.30	> -2.47 > -21.00% < here]
1.A.3.d ii			> 27.06	> 26.11	> -0.95 > -3.52% < here]
1.A.4.a i			> 19.34	> 21.31	> 1.96 > 10.15% < here]
1.A.4.a ii			> 10.32	> 10.34	> 0.02 > 0.17% < here]
1.A.4.b i			> 57.94	> 55.04	> -2.90 > -5.01% < here]
1.A.4.b ii			> 0.5137	> 0.5135	> -0.0002 > -0.04% < here]
1.A.4.c i			> 9.54	> 6.38	> -3.16 > -33.10% < here]
1.A.4.c ii			> 30.65	> 30.82	> 0.16 > 0.54% < here]
1.A.4.c iii			> 1.3267	> 1.3264	> -0.0003 > -0.02% < here]
1.A.5.a			> 0.27	> 0.26	> -0.01 > -2.14% < here]
1.A.5.b			> 3.44	> 3.36	> -0.08 > -2.43% < here]
1.B.2.a iv			> 0.0001	> 0.7674	> 0.7673 > 824.150% < here]
1.B.2.c			> 0.33	> 0.43	> 0.10 > 29.02% < here]
NFR 2 - IPPU			> 88.67	> 88.68	> 0.01 > 0.02% < sub-category chapters
2.A.2			> 4.123	> 4.122	> -0.002 > -0.04% < here]
2.A.6			> 2.49	> 2.13	> -0.36 > -14.51% < here]
2.G			> 0.434	> 0.435	> 0.001 > 0.13% < here]
2.H.1			> 2.78	> 3.01	> 0.23 > 8.27% < here]
NFR 3 - Agriculture			> 125.79	> 125.60	> -0.20 > -0.16% < sub-category chapters

3.B.1.a	> 0.523	> 0.522	> -0.001	> -0.19%	< here]
3.B.1.b	> 0.574	> 0.581	> 0.007	> 1.15%	< here]
3.B.2	> 0.011	> 0.011	> 0.000	> 0.00%	< here]
3.B.3	> 0.3468	> 0.3464	> -0.0004	> -0.11%	< here]
3.B.4.g i	> 0.0171	> 0.0176	> 0.0005	> 3.06%	< here]
3.B.4.g ii	> 0.0174	> 0.0177	> 0.0003	> 1.85%	< here]
3.B.4.g iii	> 0.0103	> 0.0109	> 0.0006	> 5.34%	< here]
3.B.4.g iv	> 0.0023	> 0.0020	> -0.0002	> -9.49%	< here]
3.D.a.2.a	> 40.38	> 40.45	> 0.07	> 0.17%	< here]
3.D.a.2.b	> 0.74	> 0.56	> -0.18	> -24.29%	< here]
3.D.a.2.c	> 11.91	> 11.72	> -0.20	> -1.64%	< here]
3.D.a.3	> 5.64	> 5.75	> 0.11	> 1.88%	< here]
3.I	> 0.178	> 0.176	> -0.002	> -1.23%	<
NFR 5 - Waste	> 0.79	> 0.79	> 0.00	> 0.00%	<
NFR 6 - Other					= NA