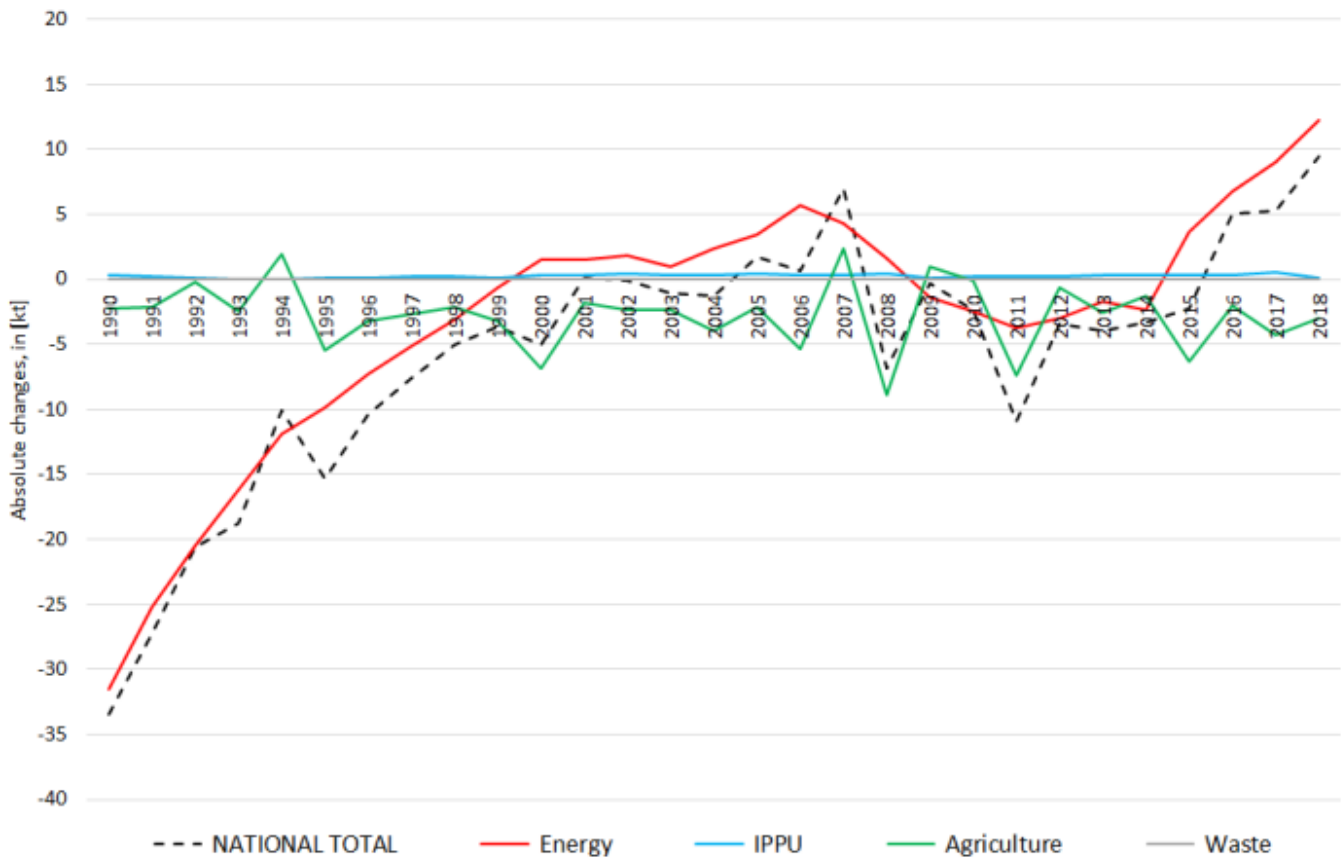
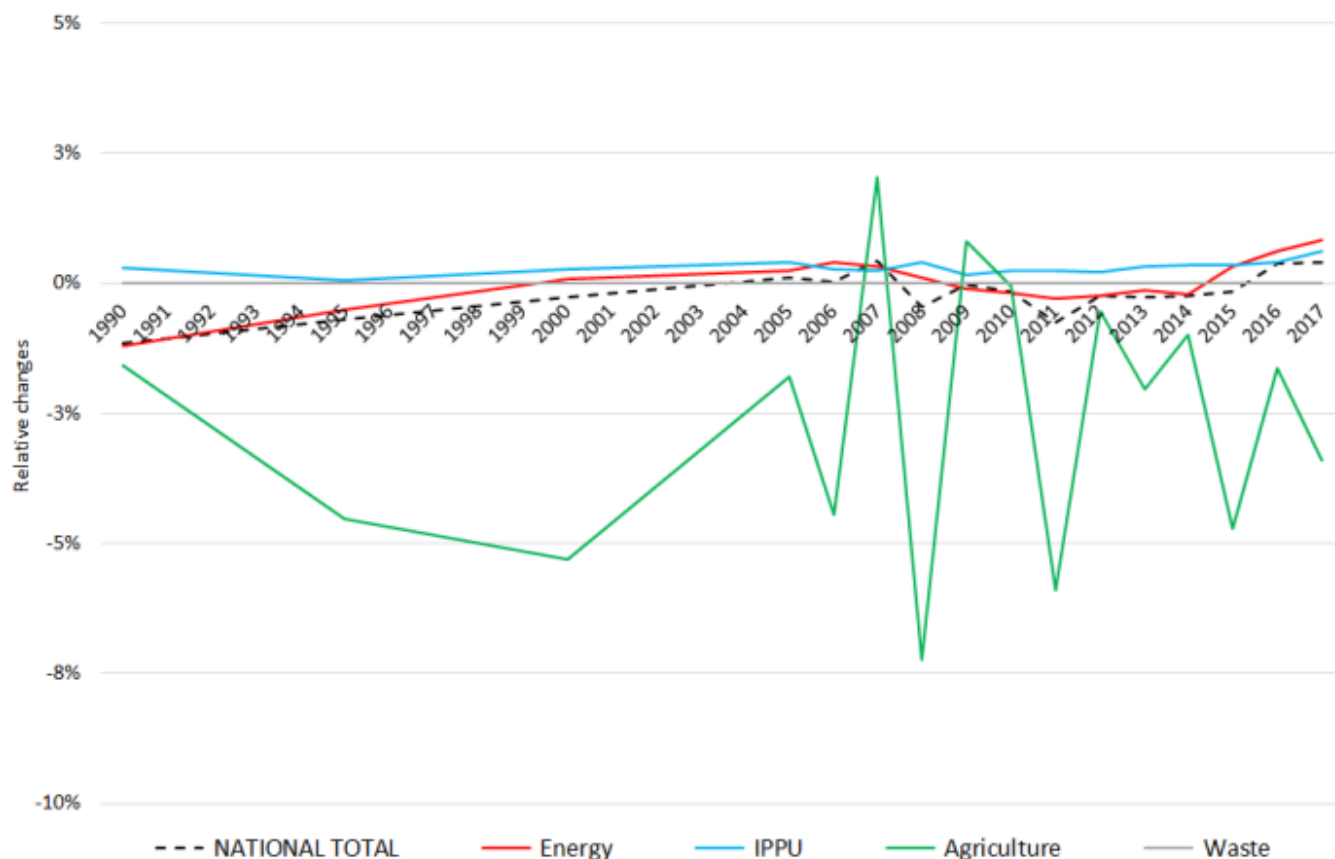


Recalculations - Nitrogen Oxides

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 10 5 0 -5 -10 -15 -20 -25 -30 -35 -40 NATIONAL TOTAL -35,47 Energy -31,50 IPPU 0,311 Agriculture -2,285 Waste 0,00 ■ NATIONAL TOTAL ■ Energy ■ IPPU ■ Agriculture ■ Waste	”	Submission 2020	Submission 2021	Difference		Reasoning
NFR Code	[kt]			relative	see description and reasoning in:	NFR Code
NATIONAL TOTAL	2.884,38	2.850,05	-34,334	-1,19%	sub-category chapters	NATIONAL TOTAL
NFR 1 - Energy	2.634,24	2.601,88	-32,360	-1,23%	sub-category chapters	NFR 1 - Energy
1.A.1.a	464,36	464,36	0,000	0,00%	1.A.1.a - Public electricity and heat production]	1.A.1.a
1.A.1.b	36,84	36,84	0,000	0,00%	1.A.1.b - Petroleum refining]	1.A.1.b

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.1.c
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.a
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.b
1.A.2.c	IE	IE	#WERT!	#WERT!	1.A.2.c - Stationary combustion in manufacturing industries and construction: Chemicals]	1.A.2.c
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.d
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.e
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.f
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 vii
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.2.g viii
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 i(i)
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.a ii(i)
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 i
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 ii
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 iii
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 iv
1.A.3.b v	NA	NA	#WERT!	#WERT!	1.A.3.b v - Gasoline Evaporation]	1.A.3.b v

1.A.3.b vi	NA	NA	#WERT!	#WERT!	1.A.3.b vi - Road Transport: Tyre and Brake Wear]	1.A.3.b vi
1.A.3.b vii	NA	NA	#WERT!	#WERT!	1.A.3.b vii - Road Transport: Road Abrasion]	1.A.3.b vii
1.A.3.c	45,05	45,05	0,000	0,00%	1.A.3.c - Railways]	1.A.3.c
1.A.3.d i(ii)	IE	IE	#WERT!	#WERT!	1.A.3.d i (ii) - International Inland Navigation]	1.A.3.d i(ii)
1.A.3.d ii	60,65	60,65	0,000	0,00%	1.A.3.d ii - National Navigation]	1.A.3.d ii
1.A.3.e i	3,99	3,99	0,000	0,00%	1.A.3.e i - Pipeline Transport]	1.A.3.e i
1.A.3.e ii	NA	NA	#WERT!	#WERT!	1.A.3.e ii - Other Transport: Other]	1.A.3.e ii
1.A.4.a i	47,36	47,36	0,000	0,00%	1.A.4.a i - Households: Stationary]	1.A.4.a i
1.A.4.a ii	11,52	11,60	0,077	0,67%	1.A.4.a ii - Commercial & Institutional: Mobile]	1.A.4.a ii
1.A.4.b i	90,29	90,29	0,000	0,00%	1.A.4.b i - GHD: Stationary]	1.A.4.b i
1.A.4.b ii	0,07	0,06	-0,006	-8,44%	1.A.4.b ii - Households: Mobile]	1.A.4.b ii
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 i
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 ii
1.A.4.c iii	0,81	0,81	0,000	0,00%	1.A.4.c iii - National Fishery]	1.A.4.c iii
1.A.5.a	5,49	5,49	0,000	0,00%	1.A.5.a - Other: Military, Stationary]	1.A.5.a
1.A.5.b	41,60	41,60	0,000	0,00%	1.A.5.b - Other: Military, Mobile]	1.A.5.b
1.B.1.a	NA	NA	#WERT!	#WERT!	1.B.1 - Solid Fuels]	1.B.1.a
1.B.1.b	0,67	0,67	0,000	0,00%	1.B.1 - Solid Fuels]	1.B.1.b
1.B.1.c	NA	NA	#WERT!	#WERT!	1.B.1 - Solid Fuels]	1.B.1.c
1.B.2.a i	NA	NA	#WERT!	#WERT!	1.B.2 - Oil and Natural Gas]	1.B.2.a i
1.B.2.a iv	0,2380	0,2380	0,0000	0%	1.B.2 - Oil and Natural Gas]	1.B.2.a iv
1.B.2.a v	NA	NA	#WERT!	#WERT!	1.B.2 - Oil and Natural Gas]	1.B.2.a v
1.B.2.b	0,07	0,07	0,000	0,00%	1.B.2 - Oil and Natural Gas]	1.B.2.b
1.B.2.c	7,60	7,60	0,000	0,00%	1.B.2 - Oil and Natural Gas]	1.B.2.c
1.B.2.d	NA	NA	#WERT!	#WERT!	1.B.2 - Oil and Natural Gas]	1.B.2.d
NFR 2 - IPPU	106,06	106,37	0,311	0,29%	sub-category chapters	NFR 2 - IPPU
2.A.1	37,58	37,58	0,000	0,00%	2.A.1 Cement Production]	2.A.1
2.A.2	9,50	9,50	0,000	0,00%	2.A.2 Lime Production]	2.A.2
2.A.3	30,90	30,90	0,000	0,00%	2.A.3 Glass Production]	2.A.3
2.A.5.a	NA	NA	#WERT!	#WERT!	2.A.5.a Quarrying Mining Other Than Coal]	2.A.5.a
2.A.5.b	NA	NA	#WERT!	#WERT!	2.A.5.b Construction And Demolition]	2.A.5.b
2.A.5.c	NA	NA	#WERT!	#WERT!		2.A.5.c

2.A.6	IE	IE	#WERT!	#WERT!	2.A.6 Other Mineral Products]	2.A.6
2.B.1	2,70	2,70	0,000	0,00%	2.B.1 - Ammonia Production]	2.B.1
2.B.2	16,98	16,98	0,000	0,00%	2.B.2 - Nitric Acid Production]	2.B.2
2.B.3	0,09	0,091	0,000	0,00%	2.B.3 - Adipic Acid Production]	2.B.3
2.B.5	NA	NA	#WERT!	#WERT!	2.B.5 - Carbide Production]	2.B.5
2.B.6	NE	NE	#WERT!	#WERT!	2.B.6 - Titanium Dioxide Production]	2.B.6
2.B.7	NA	NA	#WERT!	#WERT!	2.B.7 - Soda Ash Production]	2.B.7
2.B.10.a	NA	NA	#WERT!	#WERT!	2.B.10.a - Chemical Industry: Other]	2.B.10.a
2.B.10.b	NA	NA	#WERT!	#WERT!	2.B.10.b - Storage, Handling and Transport of Chemical Products]	2.B.10.b
2.C.1	4,60	4,60	0,000	0,00%	2.C.1 - Iron and Steel Production]	2.C.1
2.C.2	NE	NE	#WERT!	#WERT!	2.C.2 - Ferroalloys Production]	2.C.2
2.C.3	NA	0,74	#WERT!	#WERT!	2.C.3 - Aluminum Production]	2.C.3
2.C.4	NA	NA	#WERT!	#WERT!	2.C.4 - Magnesium Production]	2.C.4
2.C.5	NA	NA	#WERT!	#WERT!	2.C.5 - Lead Production]	2.C.5
2.C.6	NA	NA	#WERT!	#WERT!	2.C.6 - Zinc Production]	2.C.6
2.C.7.a	NA	NA	#WERT!	#WERT!	2.C.7.a - Copper Production]	2.C.7.a
2.C.7.b	NE	NE	#WERT!	#WERT!	2.C.7.b - Nickel Production]	2.C.7.b
2.C.7.c	NA	NA	#WERT!	#WERT!	2.C.7.c - Other Metal Production]	2.C.7.c
2.C.7.d	NA	NA	#WERT!	#WERT!	2.C.7.d - Storage, Handling & Transport of Metal Products]	2.C.7.d
2.D.3.a	NA	NA	#WERT!	#WERT!	2.D.3.a - Domestic solvent use including fungicides]	2.D.3.a
2.D.3.b	0,75	0,75	0,000	0,00%	2.D.3.b - Road Paving with Asphalt]	2.D.3.b
2.D.3.c	NA	NA	#WERT!	#WERT!	2.D.3.c - Asphalt Roofing]	2.D.3.c
2.D.3.d	NA	NA	#WERT!	#WERT!	2.D.3.d - Coating Applications]	2.D.3.d
2.D.3.e	NA	NA	#WERT!	#WERT!	2.D.3.e - Degreasing]	2.D.3.e
2.D.3.f	NA	NA	#WERT!	#WERT!	2.D.3.f - Dry Cleaning]	2.D.3.f
2.D.3.g	NA	NA	#WERT!	#WERT!	2.D.3.g - Chemical Products]	2.D.3.g
2.D.3.h	NA	NA	#WERT!	#WERT!	2.D.3.h - Printing]	2.D.3.h
2.D.3.i	NA	NA	#WERT!	#WERT!	2.D.3.i - Other Solvent Use]	2.D.3.i
2.G	0,74	0,31	-0,429	-58,05%	2.G - Other Product Use]	2.G
2.H.1	2,21	2,21	0,000	0,00%	2.H.1 - Pulp and Paper Industry]	2.H.1

2.H.2	NA	NA	#WERT!	#WERT!	2.H.2 - Food and Beverages Industry]	2.H.2
2.H.3	NA	NA	#WERT!	#WERT!	2.H.3 - Other Industrial Processes]	2.H.3
2.I	NA	NA	#WERT!	#WERT!	2.I - Wood Processing]	2.I
2.J	NE	NE	#WERT!	#WERT!	2.J - Production of POPs]	2.J
2.K	NA	NA	#WERT!	#WERT!	2.K - Consumption of POPs and Heavy Metals]	2.K
2.L	NA	NA	#WERT!	#WERT!	2.L - Other Production, Consumption, Storage, Transportation or Handling of Bulk Products]	2.L
NFR 3 - Agriculture	143,55	141,27	-2,28	-1,59%	sub-category chapters	NFR 3 - Agriculture
3.B.1.a	0,72	0,67	-0,051	-7,07%	3.B - Manure Management]	3.B.1.a
3.B.1.b	0,7876	0,6958	-0,0918	-11,65%	3.B - Manure Management]	3.B.1.b
3.B.2	0,02	0,02	0,000	0,00%	3.B - Manure Management]	3.B.2
3.B.3	0,26	0,26	0,000	0,00%	3.B - Manure Management]	3.B.3
3.B.4.a	NO	NO	#WERT!	#WERT!	3.B - Manure Management]	3.B.4.a
3.B.4.d	0,00	0,00	0,000	0,00%	3.B - Manure Management]	3.B.4.d
3.B.4.e	0,04	0,04	0,000	0,00%	3.B - Manure Management]	3.B.4.e
3.B.4.f	IE	IE	#WERT!	#WERT!	3.B - Manure Management]	3.B.4.f
3.B.4.g i	0,0144316	0,0144316	-0,0000001	0,000%	3.B - Manure Management]	3.B.4.g i
3.B.4.g ii	0,0056204	0,0056203	-0,0000001	0,00%	3.B - Manure Management]	3.B.4.g ii
3.B.4.g iii	0,0033688	0,0033850	0,0000162	0,48%	3.B - Manure Management]	3.B.4.g iii
3.B.4.g iv	0,0025	0,0025	0,0000	0,00%	3.B - Manure Management]	3.B.4.g iv
3.B.4.h	NE	NE	#WERT!	#WERT!	3.B - Manure Management]	3.B.4.h
3.D.a.1	85,31	86,57	1,256	1,47%	3.D - Agricultural Soils]	3.D.a.1
3.D.a.2.a	46,65	43,46	-3,189	-6,84%	3.D - Agricultural Soils]	3.D.a.2.a
3.D.a.2.b	1,08	1,08	0,000	0,00%	3.D - Agricultural Soils]	3.D.a.2.b
3.D.a.2.c	0,00190	0,00190	0,00000	0,00%	3.D - Agricultural Soils]	3.D.a.2.c
3.D.a.3	8,65	8,44	-0,209	-2,42%	3.D - Agricultural Soils]	3.D.a.3
3.D.a.4	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]	3.D.a.4
3.D.b	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]	3.D.b
3.D.c	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]	3.D.c
3.D.d	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]	3.D.d
3.D.e	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]	3.D.e
3.D.f	NA	NA	#WERT!	#WERT!	3.D - Agricultural Soils]	3.D.f
3.F	NO	NO	#WERT!	#WERT!		3.F
3.I	0,000083	0,000083	0,000000	0,00%		3.I
NFR 5 - Waste	0,53	0,53	0,00	0,00%	sub-category chapters	NFR 5 - Waste
5.A	NA	NA	#WERT!	#WERT!		5.A
5.B.1	NA	NA	#WERT!	#WERT!	5.B.1 - Composting]	5.B.1

5.B.2	NA	NA	#WERT!	#WERT!	5.B.2 - Anaerobic Digestion at Biogas Facilities]	5.B.2
5.C.1.a	NO	NO	#WERT!	#WERT!		5.C.1.a
5.C.1.b i	NO	NO	#WERT!	#WERT!		5.C.1.b i
5.C.1.b ii	NO	NO	#WERT!	#WERT!		5.C.1.b ii
5.C.1.b iii	NO	NO	#WERT!	#WERT!		5.C.1.b iii
5.C.1.b iv	NO	NO	#WERT!	#WERT!		5.C.1.b iv
5.C.1.b v	0,139687350	0,139687350	0,000000000	0,00%	5.C.1.b v - Cremation]	5.C.1.b v
5.C.1.b vi	NA	NA	#WERT!	#WERT!		5.C.1.b vi
5.C.2	0,388254384	0,388254384	0,000000000	0,00%	5.C.2 Bonfires etc.]	5.C.2
5.D.1	NA	NA	#WERT!	#WERT!		5.D.1
5.D.2	NA	NA	#WERT!	#WERT!		5.D.2
5.D.3	NO	NO	#WERT!	#WERT!		5.D.3
5.E	NE	NE	#WERT!	#WERT!	5.E - building and car fires]	5.E
NFR 6 - Other	0,00	0,00	0,000	#DIV/0!		NFR 6 - Other
6.A	NA	NA	#WERT!	#WERT!		6.A

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 Absolute changes, in [kt] ■ NATIONAL TOTAL ■ Energy ■ IPPU ■ Agriculture ■ Waste <table border="1"><thead><tr><th>Category</th><th>Value (kt)</th></tr></thead><tbody><tr><td>NATIONAL TOTAL</td><td>5,25</td></tr><tr><td>Energy</td><td>8,97</td></tr><tr><td>IPPU</td><td>0,54</td></tr><tr><td>Agriculture</td><td>-4,27</td></tr><tr><td>Waste</td><td>-</td></tr></tbody></table>						Category	Value (kt)	NATIONAL TOTAL	5,25	Energy	8,97	IPPU	0,54	Agriculture	-4,27	Waste	-	=				
Category	Value (kt)																					
NATIONAL TOTAL	5,25																					
Energy	8,97																					
IPPU	0,54																					
Agriculture	-4,27																					
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