

# Recalculations - Nitrogen Oxides

Revision of NO<sub>x</sub> emissions over time:



Changes within the **National Total reported for 1990 (-14.72 kt | -0.52 %)** are dominated by changes in NFRs **1.A.3.d ii** (-9.73 kt) and **2.B.2** (-5.68 kt) together with less significant revisions throughout NFRs 1, 2 and 3.

The most significant percental change occurs for **NFR 1.A.4.c iii with minus 52 %**.

Table 1: Changes of emission estimates 1990

NFR Code	[kt]			relative	see description and reasoning in: sub-category chapters
	Submission 2021	Submission 2022	Difference		
<b>NATIONAL TOTAL</b>	<b>2.850,05</b>	<b>2.835,33</b>	<b>-14,72</b>	<b>-0,52%</b>	<b>sub-category chapters</b>
<b>NFR 1 - Energy</b>	<b>2.601,88</b>	<b>2.592,15</b>	<b>-9,73</b>	<b>-0,37%</b>	<b>sub-category chapters</b>
1.A.3.a i(i)	3,94	3,94	0,00	-0,02%	<a href="#">here</a>
1.A.3.a ii(i)	2,80	2,78	-0,01	-0,38%	<a href="#">here</a>
1.A.3.b iii	506,00	505,99	-0,01	0,00%	<a href="#">here</a>
1.A.3.c	45,05	45,32	0,26	0,59%	<a href="#">here</a>
1.A.3.d ii	60,65	51,47	-9,18	-15,13%	<a href="#">here</a>
1.A.4.b ii	0,06	0,08	0,02	30,65%	<a href="#">here</a>
1.A.4.c iii	0,81	0,39	-0,42	-51,95%	<a href="#">here</a>
1.A.5.b	41,60	41,20	-0,40	-0,96%	<a href="#">here</a>
<b>NFR 2 - IPPU</b>	<b>106,37</b>	<b>100,73</b>	<b>-5,64</b>	<b>-5,30%</b>	<b>sub-category chapters</b>
2.B.2	16,98	11,30	-5,68	-33,44%	<a href="#">2.B.2 - Nitric Acid Production</a>
2.B.6	NE	0,04	0,04		<a href="#">2.B.6 - Titanium Dioxide Production</a>
<b>NFR 3 - Agriculture</b>	<b>141,27</b>	<b>141,92</b>	<b>0,65</b>	<b>0,46%</b>	<b>sub-category chapters</b>
3.B.1.b	0,6958	0,6896	-0,01	-0,89%	<a href="#">here</a>
3.B.3	0,26	0,28	0,02	6,48%	<a href="#">here</a>
3.B.4.g i	0,01443	0,01427	0,00	-1,145%	<a href="#">here</a>
3.B.4.g iv	0,00251	0,00248	-0,00003	-1,33%	<a href="#">here</a>
3.D.a.2.a	43,46	44,14	0,68	1,58%	<a href="#">here</a>
3.D.a.3	8,44	8,40	-0,04	-0,49%	<a href="#">here</a>
<b>NFR 5 - Waste</b>	<b>0,53</b>	<b>0,53</b>	<b>0,00</b>	<b>0,00%</b>	
<b>NFR 6 - Other</b>	<b>NA</b>				

The small changes within the **National Total reported for 2019 (+8.22 kt | +0.68 %)** are dominated by changes in **NFRs 1 and 3**. Here, the most significant relative change occurs for **NFR 2.G with minus 49 %**.

Table 2: Changes of emission estimates 2019

absolute changes in emissions reported for 2018					Submission 2021	Submission 2022	Difference	Reasoning
NFR Sector	[kt]				relative	see description and reasoning in:		
<b>NATIONAL TOTAL</b>	<b>1.136,79</b>	<b>1.108,82</b>	<b>-27,97</b>	<b>-2,46%</b>	sub-category chapters			
<b>NFR 1 - Energy</b>	<b>938,97</b>	<b>938,49</b>	<b>-0,48</b>	<b>-0,05%</b>	sub-category chapters			
1.A.1.a	208,92	208,57	-0,34	-0,16%	<a href="#">here</a>			
1.A.1.b	16,66	16,66	0,01	0,05%	<a href="#">here</a>			
1.A.1.c	12,01	13,38	1,37	11,43%	<a href="#">here</a>			
1.A.2.a	3,95	4,15	0,21	5,25%	<a href="#">here</a>			
1.A.2.b	1,01	0,98	-0,03	-2,88%	<a href="#">here</a>			
1.A.2.e	0,208	0,207	-0,001	-0,67%	<a href="#">here</a>			
1.A.2.g vii	14,81	14,74	-0,07	-0,47%	<a href="#">here</a>			
1.A.2.g viii	68,68	67,08	-1,61	-2,34%	<a href="#">here</a>			
1.A.3.a i(i)	11,77	11,93	0,16	1,37%	<a href="#">here</a>			
1.A.3.a ii(i)	2,61	2,65	0,03	1,28%	<a href="#">here</a>			
1.A.3.b i	275,95	271,75	-4,20	-1,52%	<a href="#">here</a>			
1.A.3.b ii	56,31	55,69	-0,61	-1,09%	<a href="#">here</a>			
1.A.3.b iii	106,05	106,65	0,60	0,56%	<a href="#">here</a>			
1.A.3.b iv	1,61	1,60	-0,02	-1,10%	<a href="#">here</a>			
1.A.3.c	7,33	7,99	0,66	8,94%	<a href="#">here</a>			
1.A.3.d ii	24,70	24,75	0,05	0,22%	<a href="#">here</a>			
1.A.4.a i	20,65	20,43	-0,22	-1,06%	<a href="#">here</a>			
1.A.4.a ii	7,96	7,92	-0,04	-0,55%	<a href="#">here</a>			
1.A.4.b i	56,94	60,05	3,11	5,47%	<a href="#">here</a>			
1.A.4.b ii	0,4913	0,5745	0,08	16,94%	<a href="#">here</a>			
1.A.4.c i	6,03	7,01	0,98	16,21%	<a href="#">here</a>			
1.A.4.c iii	0,5584	0,3768	-0,18	-32,53%	<a href="#">here</a>			
1.A.5.a	0,22	0,23	0,01	4,92%	<a href="#">here</a>			
1.A.5.b	3,52	3,10	-0,43	-12,09%	<a href="#">here</a>			
1.B.2.a iv	0,7171	0,7172	0,0001	0,01%				
<b>NFR 2 - IPPU</b>	<b>84,76</b>	<b>58,71</b>	<b>-26,05</b>	<b>-30,73%</b>	sub-category chapters			
2.A.1	12,49	12,49	0,00	0,00%	<a href="#">here</a>			
2.A.2	3,843	3,843	0,000	0,00%	<a href="#">here</a>			
2.A.3	11,14	10,67	-0,47	-4,20%	<a href="#">here</a>			
2.A.5.a	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.A.5.b	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.A.5.c	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.A.6	2,13	2,13	0,00	0,04%	<a href="#">here</a>			
2.B.1	2,95	2,95	0,00	0,00%	<a href="#">here</a>			
2.B.2	26,69	1,07	-25,62	-96,00%	<a href="#">here</a>			
2.B.3	0,13	0,13	0,00	0,00%	<a href="#">here</a>			
2.B.5	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.B.6	NE	0,04	#WERT!	#WERT!	<a href="#">here</a>			
2.B.7	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.B.10.a	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.B.10.b	NA	NA	#WERT!	#WERT!	<a href="#">here</a>			
2.C.1	21,12	21,12	0,00	0,00%	<a href="#">here</a>			

absolute changes in emissions reported for 2018					Submission 2021	Submission 2022	Difference	Reasoning
<b>NFR Sector</b>	<b>[kt]</b>						<b>relative</b>	<b>see description and reasoning in:</b>
<b>NATIONAL TOTAL</b>	<b>1.136,79</b>	<b>1.108,82</b>	<b>-27,97</b>	<b>-2,46%</b>			<b>sub-category chapters</b>	
<b>NFR 1 - Energy</b>	<b>938,97</b>	<b>938,49</b>	<b>-0,48</b>	<b>-0,05%</b>			<b>sub-category chapters</b>	
2.C.2	NE	NE	#WERT!	#WERT!			<a href="#">here</a>	
2.C.3	0,51	0,51	0,53	104,34%			<a href="#">here</a>	
2.C.4	NA	NA	#WERT!	#WERT!			<a href="#">here</a>	
2.H.1	2,95	2,94	0,00	-0,11%			<a href="#">here</a>	
<b>NFR 3 - Agriculture</b>	<b>112,24</b>	<b>110,79</b>	<b>-1,44</b>	<b>-1,29%</b>			<b>sub-category chapters</b>	
3.B.1.a	0,489	0,507	0,017	3,52%			<a href="#">here</a>	
3.B.1.b	0,487	0,515	0,029	5,88%			<a href="#">here</a>	
3.B.3	0,3276	0,2616	-0,0660	-20,14%			<a href="#">here</a>	
3.B.4.d	0,00187	0,00191	0,00004	2,35%			<a href="#">here</a>	
3.B.4.e	0,0362	0,0386	0,0024	6,67%			<a href="#">here</a>	
3.B.4.g i	0,0180	0,0182	0,0003	1,46%			<a href="#">here</a>	
3.B.4.g ii	0,0179	0,0139	-0,0039	-21,88%			<a href="#">here</a>	
3.B.4.g iii	0,0108	0,0100	-0,0007	-6,78%			<a href="#">here</a>	
3.B.4.g iv	0,00202	0,00205	0,00002	1,06%			<a href="#">here</a>	
3.D.a.1	55,97	55,34	-0,62	-1,11%			<a href="#">here</a>	
3.D.a.2.a	37,54	37,05	-0,49	-1,30%			<a href="#">here</a>	
3.D.a.2.b	0,51	0,56	0,05	10,17%			<a href="#">here</a>	
3.D.a.2.c	11,55	11,56	0,01	0,08%			<a href="#">here</a>	
3.D.a.3	5,10	4,73	-0,37	-7,21%			<a href="#">here</a>	
3.I	0,172	0,169	-0,003	-1,86%			<a href="#">here</a>	
<b>NFR 5 - Waste</b>	<b>0,826</b>	<b>0,830</b>	<b>0,004</b>	<b>0,50%</b>			<b>sub-category chapters</b>	
5.C.2	0,283	0,288	0,004	1,44%			<a href="#">here</a>	
<b>NFR 6 - Other</b>	<b>NA</b>							